# PhD Survey 2017

## Experiences of PhD students at the University of Groningen

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# Preface

Looking through this fifth edition of the Groningen PhD survey I feel proud to see the large diversity of activities that PhD students are involved in and, more specifically, the positive way in which they are undertaken. These activities concern doing research, training in skills, teaching and all the other daily challenges faced by PhD students.

There has been some recent debate in the Dutch press about the purpose of PhD projects; about the apparently overly high number of PhD students in the Netherlands (which is a misconception); about the levels of stress (which is indeed a problem that must and will be tackled); and about the low job prospects for those who complete a PhD (which is also a misconception). Luckily, this often negatively charged debate has not greatly affected our PhD students, and for good reason, as doing research is a great experience, presenting many intellectual challenges, as well as freedom and opportunities to interact with dedicated people, such as university professors, staff members and, of course, fellow PhD students from around the world. No doubt, doing a PhD can be hard work (as is also evident from the results of this survey) and may even involve quite serious setbacks. However, in the end, most PhD students will succeed (80% will ultimately defend their thesis) and also discover that they had learned a lot more than they thought during their PhD student journey. Almost all of our PhD graduates find a good job and will contribute to the further advancement of our knowledge society, both in and outside academia. It is my sincere opinion that doing a PhD is a good choice for young ambitious students and we must encourage our Master's students to do so. Educating an increasing number of PhD students is good both from the perspective of PhD students and from the perspective of society. It is our job as the Groningen Graduate Schools to provide the best possible academic and social environment for these future academics and professionals to flourish and develop their potential to the fullest. That's why in 2009 we started asking our PhD students about their well-being and satisfaction with their educational environment. And that's why we repeat these surveys every two years. The results have helped in the past and will help us to learn and improve in the future!

How are things going in the Groningen Graduate Schools? This 2017 survey reveals that PhD students in Groningen are quite satisfied. Although the scales in the present survey are not comparable to the scales in the previous surveys, a 'general satisfaction' score of 3.75 (mean of the scores in Table 95 of this survey) on a scale from 1-5 can be considered 'good'. This is comparable to the score in 2015. So, yes, PhD students are happy with the way things are going in Groningen. They are especially satisfied with their daily supervisors, perceived freedom and sense of belonging to the academic community in Groningen. Do we think that there is still room for improvement? Yes, certainly. Although we can see a steady improvement in the appreciation of PhD students for their graduate school and the educational activities that are

offered, we can still do things better. Scores of 3.32 and 3.42 for these two aspects can only be considered 'satisfactory', leaving room for further improvement.

The start of the PhD scholarship programme in Groningen in September 2016 has brought additional momentum to the establishment of educational activities for PhD students. Although specifically targeted at PhD scholarship students, it is clear that all PhD students at the University of Groningen could benefit. Therefore, I am quite confident that the score for 'educational activities' (especially those aimed at preparing for the career after PhD) will improve during the years to come. Offering better education is also in line with the notion that 70-80% of PhD students will not end up in academia and as a result must receive better targeted training to properly prepare them for jobs outside academia.

I would like to make a special remark here on the activities and appreciation of the PhD organizations in Groningen, which include GOPHER, the PhD Day committee, GRIN and the various PhD councils. According to this survey, the majority of PhD students (66%) indicated that these organizations offer sufficient activities and services. This reflects our own perception that these PhD student organizations are increasingly putting more effort into organizing a broad range of educational and recreational events. Last year's PhD Day (22 September 2017) was a climax, with more than one thousand PhD students attending a great programme. The activities of PhD student organizations certainly contribute a lot to our PhD students' high levels of 'feeling of belonging'. We appreciate this a lot!

I would like to thank all PhD students who took the time to answer the long list of questions (same response rate as in 2015, which is great!) and, of course, many thanks to Esther Bouma, as well as Els van Rooij, Marjon Fokkens-Bruinsma, Ellen Jansen and Marjan Koopmans.
Enjoy reading!

Prof. Lou de Leij,
Dean of the Groningen Graduate Schools

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## Management summary

The overall picture presented by the 2017 PhD survey is positive. Almost 70% of the PhD students in the response group are satisfied or very satisfied with their PhD trajectory. Information provisioning, awareness about career training possibilities and the role of the graduate school have improved. The proportion of PhD students with a Training and Supervision Plan has increased. However, despite these improvements, not all of the recommendations designed to achieve the high quality and satisfaction standards that the University desires have been fulfilled.

PhD completion time, delay and drop-out are still points of concern. As in 2015, the average time between start and thesis defence is around 61 months, which is 11 months more than the standard of 4 years (+3 months, due to the delay between submission of the dissertation and the actual thesis defence) that the University desires. Compared to previous years, more PhD students believe they can finish in time, but more PhD students also reported they had considered quitting, especially those in the last stages of their project. Determining the factors that play a role in timely completion, delay and drop-out may lead to effective interventions.

Around 80% of employed PhD students said they were involved in teaching or supervision. Most of them present small-scale lectures or supervise individuals or groups, engaging in these tasks after their first year. However, the attendance of teacher training activities is low. Three-quarters of PhD students who said that they did not feel sufficiently prepared for their teaching tasks had not completed any training. More attention should be given to the promotion of teacher training activities available at the University of Groningen and more encouragement given to PhD students to attend them.

Information provision was another point of attention in previous PhD surveys. The percentage of PhD students who feel well informed about regulations and conditions concerning employment or scholarships increased in 2017. However, not all PhD students feel this way. Employed PhD students feel insufficiently informed about the conditions surrounding sick leave and holidays. PhD scholarship students feel insufficiently informed about scholarship conditions in general and the difference in their working conditions compared to employed PhD students.

The majority of international PhD students received help with applying for visas, finding housing and other formalities, most often from the University's International Service Desk (ISD). Although most of these PhD students were satisfied or very satisfied with the support received, 15% were dissatisfied or very dissatisfied, mainly regarding their housing.

The graduate schools actively encourage PhD students to start their PhD programme with a Training and Supervision Plan (TSP). The proportion of PhD students who reported having a TSP has increased from 57% in 2013 to 74% in 2017. About one-third had their TSP formalized at the start and almost half within one month, which is a large improvement when compared to 2015. The TSP document is also more regularly updated.

Comparable to previous years, about 70% of the respondents who were beyond their first year reported that their performance was evaluated regularly in a Results and Development (R&D) interview. However, the proportion of PhD students that have had a go/no-go interview has decreased from 70% in 2015 to 64%. Moreover, only 53% of PhD students had their go/no-go interview within a year of the start of their project. There were also differences between graduate schools: having an evaluation interview is still not common at the Graduate School of Law, the Graduate School for the Humanities or the Graduate School of Medical Sciences. These are insufficient outcomes and require improvement.

The majority of PhD students with employment status have an official contract, varying from 24 to 40 hours a week. About 60% work more than their official hours and about 5% work less. Almost half of the PhD students described their workload as high and about 40% as normal. PhD students with a high or overly high workload were concerned about this.

Comparable to 2015, about three-quarters of PhD students were satisfied or very satisfied with the overall supervision they receive. No differences were seen according to graduate school, nationality or affiliation. In general, PhD students are more satisfied with their daily supervisor. Similar to previous years, senior PhD students are more critical about their supervisors than PhD students who have just started.

As in previous surveys, PhD students more often meet with their daily supervisor(s) than with their first supervisor(s). The proportion that has at least a weekly meeting with their daily supervisor and/or a monthly meeting with their first supervisor has dropped compared to 2015. This meeting frequency differed between the graduate schools, phases and nationality.

Compared to 2015, more PhD students are aware of the role of their graduate school. Similar to previous years, less than half of the PhD students attended the Groningen Graduate Schools PhD introductory event. Overall satisfaction with the graduate school has remained roughly

the same as in 2015 but differed between graduate schools. PhD students were most satisfied with the information provisioning by their graduate school. As in 2015, PhD students with a scholarship, PhD students from outside Europe and PhD students at the start of their projects were most satisfied with their graduate school.

Although the awareness of career training opportunities organized by the University has increased, the proportion of students exploring career options has decreased. A slightly higher number of PhD students said they wanted to pursue a career within rather than outside academia, and the graduate schools did not differ in this proportion. PhD students believe that the knowledge and skills acquired during their PhD trajectory are significantly more useful for a career within academia than for one outside. We found that both supervisors and graduate schools are primarily focused on careers within academia. This might be the reason that PhD students were less satisfied with the University's support for careers outside academia.

# 1    Introduction

This chapter presents a short overview of the background of the PhD survey and the research questions, and it concludes with an overview of the structure of this report.

## 1.1    Quantitative and qualitative goals

The present goals of the Board of the University are: 1) the number of doctoral degrees awarded should increase from 500 a year in 2015 to 600 a year by 2020, 2) 75% of all PhD students should graduate within five years and 85% should graduate within six years and 3) no more than 10% of PhD students should drop out. Although graduation rates are improving steadily, these goals have not yet been attained (see Table 1).

Table 1. Description of PhD goals of the University of Groningen

| Goal | Goal |
| --- | --- |
| PhD degree in 2020 | 600 |
| Graduation within 5 yrs | 75% |
| Graduation within 6 yrs | 85% |
| Drop out | < 10% |

In addition to these quantitative goals, the University of Groningen also wants to create the ideal environment in which PhD students can develop the necessary skills to carry out their research, as well as prepare them for a career after their PhD (www.rug.nl/phd-training).

## 1.2    PhD survey

The aim of the present and previous PhD surveys is to increase the University's knowledge about the experiences of its PhD students and their satisfaction with several aspects of the PhD trajectory. The first PhD survey was conducted in 2009, with several questions added to the following three surveys in 2011, 2013 and 2015. The 2017 survey underwent major changes[1] to include an evaluation of the PhD Scholarship Programme[2] and allow comparison with other Dutch universities. Due to these alterations, several aspects cannot be quantitatively compared to previous survey results. The 2017 survey includes questions about personal characteristics, the application process, affiliation with UG/UMCG, several aspects of supervision, project organization, progress and delay, the research environment, education, teaching, career development, graduate schools and PhD organizations.

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[1] See chapter 12 for an overview of these changes.
[2] This programme of the UG, in the framework of the national PhD scholarship experiment, began on 1 September 2016, and will continue until 31 August 2024.
For information, see: www.rug.nl/education/phd-programme/phd-scholarship-programme.

The results of the survey should help answer the following questions:

1. What is the current state of affairs regarding the different aspects of the PhD trajectory?
2. How satisfied are PhD students with these aspects?
3. Are there differences in experiences and satisfaction according to background characteristics or type of affiliation with the University?

Reports of the surveys can be found at:
http://www.rug.nl/education/phd-programme/general-information/phd-survey/.

## 1.3 Important information

It is important to note that not every question was presented to every PhD student. Different questions were presented according to phase, affiliation and nationality. If a question was presented only to a specific group, this is mentioned. Differences between PhD students are examined according to graduate school (Hora Finita[3] registration), nationality (Dutch, non-Dutch European and non-European), phase (starter, intermediate, senior) and affiliation (employee UG/UMCG, bursary student,[4] external PhD student, PhD scholarship student). Differences between groups were only examined when each group had at least 15 respondents. Only significant group differences are mentioned.

## 1.4 About this report

This report consists of 12 chapters and an Appendix. Chapters 2 to 10 present the results for each of the different aspects distinguished in this survey: characteristics of the response sample (Chapter 2), start of the PhD project (Chapter 3), supervision (Chapter 4), performance, planning and progress (Chapter 5), research environment (Chapter 6), education, teaching and career development (Chapter 7), graduate schools and PhD organizations (Chapter 8), completion of the PhD project (Chapter 9) and, finally, general satisfaction with the PhD trajectory (Chapter 10). Conclusions are formulated in Chapter 11. Detailed information about the methodology and research accountability can be found in Chapter 12. An overview of the various items and the average scale scores for each graduate school can be found in the Appendix.

[3] Hora Finita is the PhD registration system of the UG.
[4] Bursary students are international PhD students with a scholarship (usually from their home country) who are not eligible to participate in the PhD Scholarship Programme because they started before 1 September 2016. From that time on both PhD students with a full scholarship and those with a (topped up) scholarship from their home country are included in the PhD Scholarship Programme and are labelled 'PhD scholarship students'.

# 2 Characteristics of the response sample

This chapter first presents characteristics of the response sample, such as gender, nationality, average age, phase, graduate school and the type of affiliation PhD students have with the University of Groningen.

## 2.1 Response and representability

The response rate was 34.5%, which is comparable to 2015. Relatively more PhD students born outside the Netherlands filled in the questionnaire, while the distribution of males and females was roughly the same as the total population. In addition, relatively more PhD scholarship students, relatively more starters and relatively fewer senior PhD students participated in 2017. PhD students from the Graduate School of Law and the Graduate School of Medical Sciences were relatively less present in the response sample. For more information about the representability of the response sample, see Chapter 12.

## 2.2 Gender and nationality

Information about gender, nationality and age comes from the Hora Finita PhD registration system of the University of Groningen. A little over half (55%) of the respondents are female. Almost half (45%) of the PhD students have Dutch nationality; 12% were born in a European country (mostly Italy, 5% and Germany, 6%) and 35% were born outside Europe (mostly Mexico, 3%, Indonesia, 4% and China, 10%). PhD students come from 82 countries (see Figure 59 in the appendix). On 1 May 2017, the average age of the respondents was 30.3 years (sd = 6.9). The youngest respondent was 23 and the oldest 73. As shown in Figure 1, the distribution of gender and nationality has not changed much over the years.
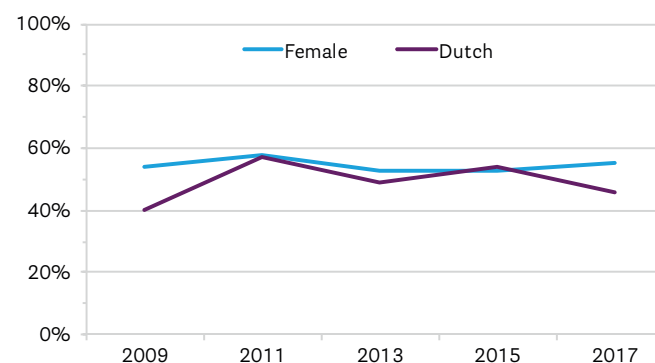


Figure 1. Proportion of female and Dutch respondents

## 2.3 Phase of the PhD project

The first question in the survey concerned the month and year in which the PhD student started their project. PhD students who started on or after 1 May 2016 were considered 'starters' (26%), while PhD students who had worked on their project for at least four years (at 1 May 2017) were considered 'seniors' (31%). Those who had worked for more than one year but less than four were categorized as 'intermediates'.

## 2.4 Affiliation with the University of Groningen

PhD students were asked to choose the description that best fit their current situation. Starters were presented with an additional response option: 'I am a PhD scholarship student' (which is not an option for PhD students who started before 1 September 2016). Results are presented in Table 2.

Table 2. Which description best fits your current situation?

| Response option | n | % | Group |
|---|---|---|---|
| 1. I am employed as a PhD student by the University of Groningen/ UMCG | 586 | 50 | A |
| 2. I am employed as a PhD student by NWO I (formerly FOM), ASTRON or SRON | 46 | 4 | A |
| 3. I am employed by a University of Applied Sciences (HBO) | 25 | 2 | B |
| 4. I am employed by an external party or company | 44 | 4 | B |
| 5. I am a bursary student at the University of Groningen/UMCG | 147 | 13 | C |
| 6. I am a PhD scholarship student (promotiestudent) at the University of Groningen/UMCG | 119 | 10 | D |
| 7. I am an MD/PhD student[5] at the UMCG | 43 | 4 | X |
| 8. I was employed by the University of Groningen/UMCG and I am currently finishing my PhD project in my spare time | 58 | 5 | X |
| 9. I had a scholarship and I am currently finishing my PhD project in my spare time | 16 | 1 | X |
| 10. I have never received funding and I work on my PhD project in my spare time | 46 | 4 | B |
| 11. Other | 33 | 3 | X |
| Total | 1163 | 100 | |

To compare meaningful groups, we excluded PhD students who chose the response options 7, 8, 9 and 11 (n = 150, 13%) from the group analyses because they were either too small or not specific enough to compare. We will look at differences between four affiliation groups. The numbers refer to the response option number in Table 2.

A) Employee (1 + 2)
B) External PhD student[6]  (3 + 4 + 10)
C) Bursary PhD student (5)
D) PhD scholarship student (6)
X) Not included in group analyses

## 2.5 Graduate school

Table 3 shows the division of respondents over the ten faculty graduate schools. As in previous years, and in line with the number of PhD students affiliated with these graduate schools, most PhD students are members of the Graduate School of Medical Sciences or the Graduate School of Science and Engineering (previously known as the Graduate School of Science). Table 3 shows the affiliation of the respondents to the graduate schools as registered in Hora Finita. As in previous years, some inconsistencies between survey answers and Hora Finita registrations were present (for more information see Chapter 8).

Table 3. Graduate Schools (Hora Finita)

| Abbreviation | Graduate School | n | % |
|---|---|---|---|
| GSBSS | Graduate School of Behavioural and Social Sciences | 100 | 9 |
| GSCF | Graduate School Campus Fryslân | 4 | <1 |
| GSEB | Graduate School of Economics and Business (SOM) | 66 | 6 |
| GSH | Graduate School for the Humanities | 97 | 8 |
| GSL | Graduate School of Law | 31 | 3 |
| GSMS | Graduate School of Medical Sciences | 370 | 32 |
| GSP | Graduate School of Philosophy | 15 | 1 |
| GSSE | Graduate School of Science and Engineering | 414 | 36 |
| GSSS | Graduate School of Spatial Sciences | 41 | 4 |
| GSTRS | Graduate School of Theology and Religious Studies | 25 | 2 |
| | Total | 1163 | 100 |

[5] MD/PhD students follow a combined 5-year MD/PhD programme at the UMCG.

[6] 'External PhD student' is an extended definition of 'buitenpromovendus', which is restricted to category 10.

## PhD student characteristics per graduate school

Table 4 shows the percentages for all ten graduate schools for the categories: female, Dutch nationality, employment, starters and average age. Four PhD students were not registered in Hora Finita and therefore their graduate school is unknown. Since the Graduate School Campus Fryslân has only four respondents, no statistically relevant conclusions can be drawn from the results. PhD students from the Graduate School for the Humanities are, on average, the oldest respondents (also in 2015). With regard to the proportion of starters, there are statistically significant differences between the graduate schools. The Graduate School of Philosophy and the Graduate School of Theology and Religious Studies have the highest proportion of starters among the respondents, while the Graduate School of Economics and Business has the lowest.

Table 4. PhD student characteristics by graduate school

| GS | n | % female | % Dutch | % employees | % starters | age |
|----|-----|----------|---------|-------------|------------|-----|
| GSBSS | 100 | 75 | 70 | 70 | 18 | 32 |
| GSCF | 4 | 75 | 25 | 25 | 100 | 26 |
| GSEB | 66 | 36 | 49 | 75 | 15 | 30 |
| GSH | 97 | 72 | 68 | 48 | 23 | 36 |
| GSL | 31 | 52 | 61 | 55 | 29 | 33 |
| GSMS | 370 | 68 | 60 | 71 | 24 | 30 |
| GSP | 15 | 20 | 60 | 54 | 47 | 30 |
| GSSE | 414 | 41 | 23 | 62 | 29 | 29 |
| GSSS | 41 | 54 | 39 | 49 | 20 | 33 |
| GSTRS | 25 | 44 | 28 | 41 | 44 | 34 |
| **Total** | **1163** | **55** | **46** | **62** | **26** | **30** |

## 2.6 Previous education

This subsection concerns the previous education of the PhD students. As in previous years, PhD students were asked about the type and discipline in which they completed their previous degree and the institution where it was obtained. Figure 2 shows that the majority of PhD students have a Research Master's degree or equivalent, which is comparable to previous years. A very small proportion has already obtained a PhD degree elsewhere. This year, we asked PhD students if the final year of their research Master could be considered part of their PhD project. This was felt to be true for almost a quarter (24%) of the 1088 PhD students who answered this question.



- Master's degree or equivalent  58.6%
- Research Master's degree or equivalent 35.1%
- PhD degree at a different university  0.5%
- Other degree.  5.8%

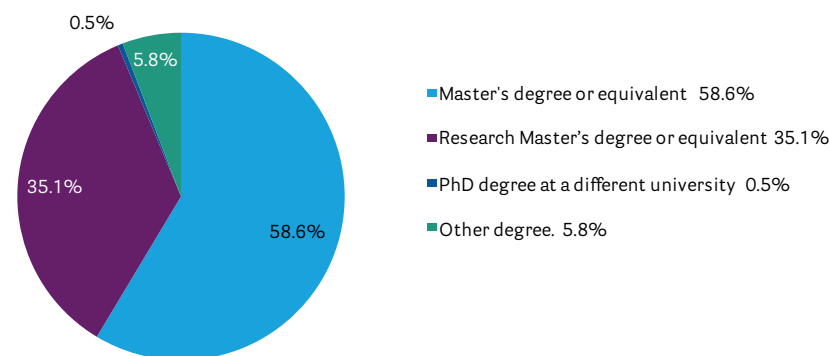Figure 2. What degree did you obtain before you started your PhD project?

Figure 3 shows the division over the disciplines in which the Master's degrees were obtained. Obviously, this division mirrors the number of PhD students per graduate school. The majority (94%) of the respondents obtained their Master's degree in the last ten years.
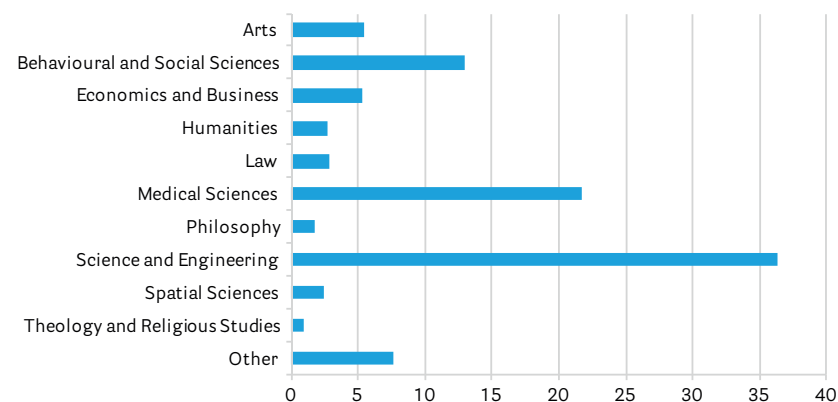


Figure 3. In what discipline did you obtain your most recent degree?

Figure 4 shows where the Master's degree was obtained. Almost 42% of the PhD students obtained their degree at the University of Groningen, while 23% obtained their degree from a country outside Europe. The 151 (14%) PhD students who obtained their degree at another Dutch university received this degree in most cases either from the University of Nijmegen (16%), Utrecht University (16% of this group), Leiden University (11%) or the University of Amsterdam (10%).



1.5%

22.5%

41.8%

20.3%

13.9%

- At the University of Groningen 41.8%
- At another Dutch university 13.9%
- At another European university 20.3%
- At a university outside Europe 22.5%
- Other 1.5%
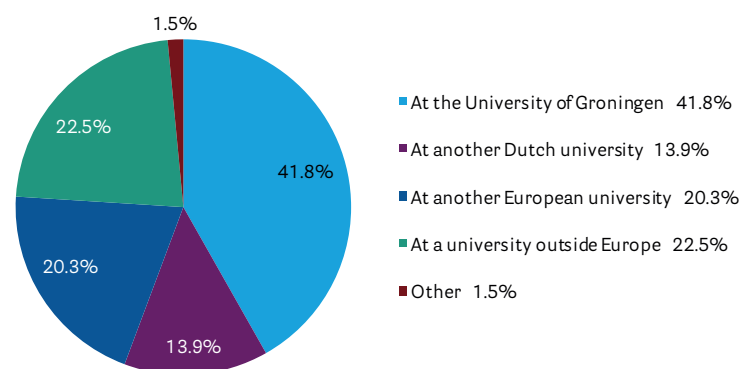
Figure 4. Where did you obtain your most recent Master's degree?

# 3 Start of the PhD project

This chapter discusses several aspects concerning the start of the PhD project, such as project funding, the application process, working hours and perceived importance of rights and benefits, and support for international PhD students. Several topics in this chapter concern only starting, international or external PhD students. If the results concern only a specific group, this is indicated in the section title.

## 3.1 Funding

Bursaries (B) and PhD scholarship students (S) were asked to select the funding situation which best described them (see Table 5). About 25% received a full scholarship from the UG/UMCG, while 60% have their own personal scholarship. In the latter case, PhD students were asked whether the UG/UMCG provided them with an additional scholarship to the level of a full UG/UMCG scholarship (which is only possible for PhD scholarship students). This is the case for a little over half (53%) and 12% did not know. Most of those with personal scholarships come from China (China Scholarship Council, CSC, 41%) or Indonesia (Indonesian Endowment Fund, LPDP, 16%).

Table 5. Which description best fits your current situation?

| Response option | B | | S | | Total | |
|---|---|---|---|---|---|---|
| | n | % | n | % | n | % |
| Full scholarship: I receive a full scholarship from the University of Groningen/UMCG for the greater part of my PhD research | 16 | 11 | 51 | 44 | 67 | 26 |
| Full scholarship & sandwich:[7] 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 | 20 | 14 | 8 | 7 | 28 | 11 |
| Own scholarship: I have my own scholarship (funded by my home country) for the greater part of my PhD research | 100 | 70 | 53 | 46 | 153 | 60 |
| 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) | 6 | 4 | 3 | 3 | 9 | 3 |
| Total | 142 | 100 | 115 | 100 | 257 | 100 |

Note: B = bursary PhD students, S = PhD scholarship students

[7] Sandwich construction: part of the programme is undertaken at another university.

The funding of other PhD students is presented in Table 6. About one-third of PhD students are funded by the UG/UMCG, another third are funded by NWO or another Dutch funding organization.

Table 6. Where does the funding for your PhD project come from?

| Response option | n | % |
|---|---|---|
| University of Groningen/UMCG | 271 | 34 |
| The Netherlands National Research Council (NWO)[8] | 139 | 17 |
| Other funding from the Netherlands | 119 | 15 |
| Other funding from Europe (incl. the European Union) | 87 | 11 |
| Other non-European funding (incl. scholarships from your home country) | 14 | 2 |
| Combination of other funding/self-funded & funding from UG/UMCG | 78 | 10 |
| Self-funded | 21 | 3 |
| Other | 48 | 6 |
| I do not know | 29 | 4 |
| **Total** | **806** | **100** |

### Sandwich construction
Some PhD projects are co-financed by the University of Groningen and an international partner institution. These sandwich constructions are more common among bursary and scholarship PhD students (13%, n = 37) than among employed PhD students (5.5%, n = 40).

## 3.2      Employment and scholarship conditions: starters only
First-year PhD students with employment or scholarship status answered different questions with regard to their working conditions. The following question was presented to employed PhD students: 'How did you find out about your employment conditions, such as your monthly income, working hours and conditions regarding sick leave?' The results are presented in Table 7 (respondents could choose more than one option). The majority (83%) were positive when asked if they received sufficient information about their employment conditions. This percentage is higher compared to 2015 (70%). They felt less sufficiently informed about the conditions surrounding sick leave and holidays.

Table 7. How did you find out about your employment conditions?

| Response option | n | % |
|---|---|---|
| During my job interview | 34 | 23 |
| During an appointment with HRM | 57 | 39 |
| From my graduate school | 23 | 15 |
| From the information package | 62 | 42 |
| From the University's website | 32 | 22 |
| From my PhD guide | 22 | 15 |
| Other | 17 | 12 |
| I did not receive any information | 5 | 3 |
| I do not remember | 5 | 3 |
| **Total number of employed PhD students** | **148** | |

The following question was presented to PhD scholarship students: 'How did you find out about your scholarship conditions, such as monthly payment, working hours, rights and duties?' The results are presented in Table 8 (respondents could choose more than one option). When asked if they received sufficient information about their scholarship conditions, 70% were positive. The issues they felt less sufficiently informed about concerned scholarship conditions in general and the difference in their working conditions compared to employed PhD students.

Table 8. How did you find out about your scholarship conditions?

| Response option | n | % |
|---|---|---|
| At my admission interview | 20 | 17 |
| At the intake interview at the graduate school | 10 | 8 |
| From the PhD Scholarship Desk[9] | 33 | 28 |
| From the information package | 29 | 24 |
| From the University's website | 35 | 29 |
| From my PhD guide | 15 | 13 |
| Other | 24 | 20 |
| I did not receive any information | 6 | 5 |
| I do not remember | 13 | 11 |
| **Total number or PhD scholarship students** | **119** | |

PhD scholarship students who indicated they were insufficiently informed about their scholarship conditions (n = 61) were asked if they experienced problems as a result. About three-fifths (58%) said no; 39% experienced minor problems and 3% reported major problems.

## 3.3    Application process – all PhD students except externals

All non-external PhD students were asked which of six different scenarios describing possible application processes fitted them best (see Table 9). The most common scenario (40%) was an application process that consisted of one formal interview. In about 20%, there was no formal interview. Another 20% of the PhD students chose the scenario of an interview + assignment. This latter scenario was relatively most common at the Graduate School of Economics and Business (29%) and the Graduate School of Spatial Sciences (27%).

Table 9. Which of the following descriptions best fits your application process?

| Response option | n | % |
| --- | --- | --- |
| I was offered a PhD position without a formal application interview | 206 | 21 |
| The application process consisted of one formal interview | 382 | 39 |
| The application process consisted of two or more formal interviews | 113 | 12 |
| The application process consisted of one or more interviews plus an assignment (e.g. an assessment, a writing assignment, a presentation) | 192 | 20 |
| Other | 81 | 8 |
| Total | 974 | 100 |

## 3.4    Additional questions for starters

PhD students in their first year (starters) were asked to answer some additional questions concerning their application process. Below, we start with questions for employed PhD students, followed by questions for PhD scholarship students and end with questions for both groups concerning the selection committee.

### 3.4.1    Starting employed PhD students

First-year UG/UMCG employed PhD students were asked how they found out about their PhD project. PhD students could choose from five options, presented in Table 10. About 40% saw a vacancy and another 14% applied with their own proposal.

Table 10. How did you find out about your PhD project?

| Response option | n | % |
| --- | --- | --- |
| I saw a vacancy for a PhD project | 58 | 39 |
| Someone from the University told me and asked me to apply for an existing vacancy or project | 23 | 16 |
| I was offered a PhD position | 34 | 23 |
| I applied with my own proposal | 21 | 14 |
| Other | 12 | 8 |
| Total | 148 | 100 |

### Group differences

There were differences between graduate schools (Figure 5). At the Graduate School of Behavioural and Social Sciences, most PhD students chose 'vacancy'; at the Graduate School for the Humanities, the Graduate School of Law, the Graduate School of Theology and Religious Sciences and the Graduate School of Spatial Sciences, most PhD students chose, 'I was asked to apply for an existing vacancy' (which is the least selected option at the Graduate School of Medical Sciences and the Graduate School of Science and Engineering), while at the Graduate School of Economics and Business, the two most selected options were 'Vacancy' and 'I applied with my own proposal'.
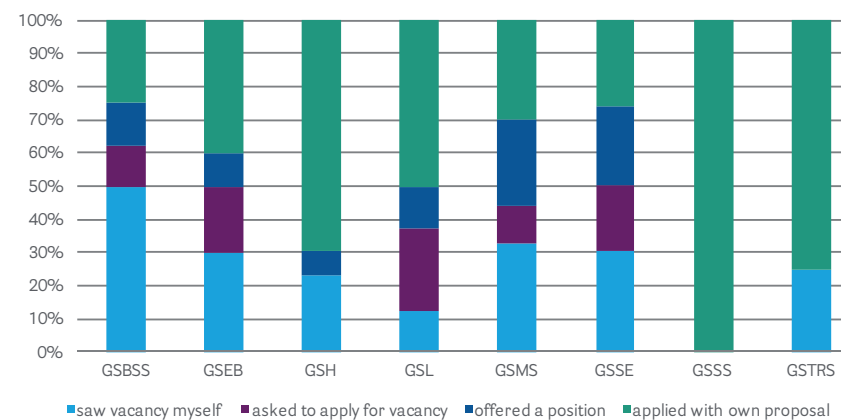


Figure 5. How did you find out about your PhD project?

### 3.4.2    Starting PhD scholarship students

About 40% of the PhD scholarship students found out about the University's PhD Scholarship Programme through the UG website. Another 40% (n = 43) selected the option 'Other'; one-third were informed in China and another third heard about it from a UG staff member (Table 11).

Table 11. How did you find out about the PhD Scholarship Programme?

| Response option | n | % |
|---|---|---|
| I did a Research Master's degree at UG and someone told me | 26 | 23 |
| I saw the information on the UG website | 42 | 38 |
| Other: | 43 | 39 |
|    China PhD workshop/CSC website | 11 | |
|    Someone at UG (mostly future supervisor) | 11 | |
|    Some other way | 21 | |
| **Total** | **111** | **100** |

### 3.4.3    Selection committee

The final additional question for starters concerned who was on the selection committee for the PhD project. Table 12 presents the answers: PhD students could select more than one option. This question was presented to starters who were employed at UG/UMCG and those who were PhD scholarship students.

Table 12. Who was on the selection committee?

| Response option | n | % |
|---|---|---|
| My supervisor(s) | 224 | 19 |
| Other people from the department in which I currently work | 87 | 8 |
| Someone from HRM or the graduate school | 47 | 4 |
| Someone from a funding agency | 24 | 2 |
| **Other** | **19** | **2** |

### 3.5    Importance of rights and benefits – all PhD students except externals

All non-external PhD students could rate the importance of several rights and benefits on a scale from 1 (not important) to 5 (very important). Table 13 shows the average score for each item. For most PhD students, having a monthly income is very important.

Table 13. Importance of rights and benefits

| Item | n | mean | sd |
|---|---|---|---|
| Having a regular monthly income | 1057 | 4.83 | 0.49 |
| Having a pay rise every year | 1051 | 4.02 | 0.92 |
| Receiving a holiday allowance | 1052 | 4.11 | 0.88 |
| Receiving an end-of-year bonus | 1050 | 4.05 | 0.92 |
| Having good conditions regarding sick leave and maternity leave | 1050 | 4.46 | 0.80 |
| Having access to a good range of sports facilities | 1054 | 3.35 | 1.26 |
| Having access to a good range of health facilities, including mental health services | 1055 | 3.85 | 1.14 |
| Having the freedom to make my own choices in my project | 1055 | 4.48 | 0.65 |
| Having flexible working hours | 1054 | 4.33 | 0.81 |
| Being allowed to teach and supervise Bachelor's and Master's students | 1053 | 3.67 | 1.05 |
| Being able to go abroad to do research at another university | 1054 | 3.94 | 1.00 |
| Being able to follow an internship at a company or government organization | 1053 | 3.38 | 1.14 |

## 3.6 Moving to Groningen

About half of the PhD students moved to Groningen, most from abroad, to start their project, while about one-third already lived in Groningen (see Table 14).

Table 14. Did you move to Groningen for your PhD?

| Response option | n | % |
|---|---|---|
| No, I already lived in Groningen | 408 | 35 |
| No, I do not live in Groningen | 150 | 13 |
| Yes, from elsewhere in the Netherlands | 129 | 11 |
| Yes, from my home country, which is not the Netherlands | 407 | 35 |
| Yes, from a country other than my home country | 69 | 6 |
| Total | 1163 | 100 |

## 3.7 PhD project details

This section concerns the relationship of the PhD project with other projects, design of the project and possibility of adaptations in the content and duration by the PhD student.

### 3.7.1 Connection to other research projects

PhD students could choose one or more scenarios regarding the connection of their project with other research. The results are presented in Table 15. Half of the PhD students selected the option stating that their project is stand-alone and 40% stated that their PhD project was closely linked to the research of their supervisors. There are two notable differences between graduate schools: a project is most likely to be part of a consortium when the PhD student is doing their research at the Graduate School of Science and Engineering or the Graduate School of Medical Sciences, whereas a project is most likely to be 'stand alone' at the Graduate School of Law, the Graduate School for the Humanities and the Graduate School of Theology and Religious Sciences.

Table 15. Which of the following descriptions best fits your PhD project?

| Response option | n | % |
|---|---|---|
| My project is a stand-alone project. I am the only one in my department who is working on this topic | 596 | 51 |
| My project is closely linked to other PhD students' projects | 381 | 33 |
| My project is closely linked to research by a postdoc or other colleagues | 187 | 16 |
| My project is closely linked to research by my daily supervisor and/or first supervisor | 446 | 38 |
| My project is part of a national or international consortium | 137 | 12 |
| Other | 37 | 3 |

### 3.7.2 Design of PhD project proposal

PhD students were asked to make a choice from several options concerning the design of their project proposal (see Table 16). For about 40% of PhD students, their contribution to the initial proposal design was modest or not required. About one-third designed the project with their supervisor and 5% designed the entire proposal themselves. As one of the conditions of participating in the PhD Scholarship Programme is the design of one's own project, we took a closer look at the six graduate schools with the highest proportion of PhD scholarship students (see for an overview Table 99 in the Appendix). For four of the six graduate schools, the most selected option was indeed 'I designed the entire project' (GSH: 22%; GSL: 23%; GSSS: 24%; GSTRS: 24%). However, this was only the case for 1% of the PhD students from the GSSE and 2% of those from the GSMS. The most selected option at the Graduate School of Science and Engineering was, 'My supervisor designed the entire project' (33%) and at the Graduate School of Medical Sciences, 'My supervisor(s) and I co-designed the project' (27%).

Table 16. Who designed your PhD project before or at the beginning of your trajectory?

| Response option | n | % |
|---|---|---|
| My supervisor(s) designed the entire project | 219 | 19 |
| My supervisor(s) designed most of the project, my contribution was modest | 214 | 19 |
| My supervisor(s) and I co-designed the project | 388 | 34 |
| I designed most of the project, my supervisors' contribution was modest | 208 | 18 |
| I designed the entire project | 65 | 5 |
| My project was designed by a national or international consortium | 22 | 2 |
| Other | 33 | 3 |
| Total | 1149 | 100 |

### 3.7.3    Level of freedom in PhD project

PhD students were asked about the level of freedom they experienced in their PhD project. They could rate their agreement with several statements on a scale of 1 to 5. Most PhD students agreed with all statements, except for one concerning the freedom of journal choice (see Table 17).

Table 17. Agreement with statements about level of freedom

| Response option | n | mean | sd |
|---|---|---|---|
| In my PhD project there is much room for my own ideas | 1146 | 4.21 | 0.83 |
| I have the freedom to make my own choices about the direction of my project and the methods to be used | 1145 | 3.94 | 0.87 |
| I have the freedom to choose which conferences to attend | 1143 | 3.94 | 0.90 |
| I have the freedom to choose which courses to take | 1144 | 4.17 | 0.83 |
| I have the freedom to choose which journals to publish in | 1133 | 3.53 | 0.91 |
| I have the freedom to choose when and where I work | 1143 | 3.98 | 0.95 |
| **Perception of Freedom scale score** | **1143** | **3.97** | **0.63** |

The items in Table 17 were used to construct the 'freedom' scale, of which the average was 3.97 (sd = 0.63). There were differences in scale scores between graduate schools (see Table 102 in the Appendix). Although there were differences between graduates schools in the average score, these differences were not significant. We did find a small but significant difference between externals (4.12) and employees (3.94), and between Dutch (4.01) and non-Dutch (3.92) PhD students. When we look at item level, differences in the freedom scores on when and where to work can be seen between externals (4.36) and employees (3.93), and between Dutch (4.12), and non-Dutch (3.86). Another difference according to nationality concerns courses: Dutch PhD students agreed more (4.25) with the statement, 'I have the freedom to choose which courses to take', than those with a non-Dutch nationality (4.10).

### 3.8    Official and actual working hours

This section discusses official working hours (as indicated in a contract or agreement) and actual working hours. All PhD students, except those who indicated they worked on their PhD in their own time, were asked to indicate how many hours they officially work/had to work according to their contract or agreement.[10]  Their answers are shown in Table 18. About 80% have a contract for three to five days (25-40 hours) per week.

Table 18. How many hours a week do you officially work on your PhD project?

| Response option | n | % |
|---|---|---|
| 33-40 hours | 695 | 71 |
| 25-32 hours | 67 | 7 |
| 17-24 hours | 31 | 3 |
| 9-16 hours | 14 | 1 |
| 0-8 hours | 0 | 0 |
| I have a contract without hour specification | 141 | 14 |
| I have never had a contract or agreement for my PhD project | 17 | 2 |
| I had a contract/agreement but it has ended | 3 | < 1 |
| Other | 14 | 1 |
| **Total** | **982** | **100** |

In addition to their official working hours, they were also asked how many hours they actually spend on their PhD work. We combined the open answers in the categories (see Table 19) and found that the majority (70%) work between 33 and 50 hours a week on their project.

Table 19. How many hours a week do you actually work on your PhD project?

| Response option | n | % |
|---|---|---|
| > 60 | 25 | 3 |
| 51-60 hours | 107 | 11 |
| 41-50 hours | 343 | 34 |
| 33-40 hours | 353 | 35 |
| 25-32 hours | 92 | 9 |
| 17-24 hours | 42 | 4 |
| 9-16 hours | 25 | 3 |
| 0-8 hours | 30 | 3 |
| **Total** | **1017** | **100** |

[10] Bursary and PhD scholarship students do not have official working hours. They are free to determine the number of hours they spend on their PhD project, but are expected to make the best effort to finish their PhD project within the allotted time.

For the 807 PhD students who have a contract with hour specification, 90% answered both questions about official and actual working hours. For this group of 723 PhD students, we looked at the discrepancy between official and actual hours and noticed that 58% (n = 418) work more hours than officially mentioned in their contract; only 5% work less. The proportion of PhD students that work less than the official hours are mostly found at the Graduate School for the Humanities (15%), the Graduate School of Law (16%) and the Graduate School of Spatial Sciences (11%). A high proportion of the PhD students from the Graduate School of Medical Sciences (69%) indicated that they worked more than their official hours. There were no differences according to phase or nationality group.

### Additional questions for external PhD students

External PhD students (n = 115) were presented with two questions regarding working hours. First, they were asked if they had another job in addition to their PhD. This was the case for almost two-thirds (58%). In addition, they were asked how many hours they spend on their project on a weekly basis. Almost half (46%) reported spending less than nine hours a week on their project (see Table 20).

Table 20. Actual hours spent on PhD project by external PhD students

| Response option | n | % |
|---|---|---|
| 25-32 | 2 | 5 |
| 16-24 | 6 | 15 |
| 9-15 | 13 | 34 |
| 8 hours or less | 18 | 46 |
| Total | 39 | 100 |

## 3.9     Support for international starters

Starting PhD students with a non-Dutch nationality were asked several questions about support with applying for a visa, finding accommodation or other formalities such as opening a bank account or getting insurance. If they received assistance, we asked from whom and how satisfied they were (on a scale from 1-5). Of the 289 international starters, 160 have a European nationality and 129 a non-European nationality. More PhD students from outside the EU answered the questions than those from inside the EU (85% versus 70%).

The majority (93%) of PhD students with a non-European nationality received help, in most cases (98%) from the University's International Service Desk (ISD). Although most PhD students (85%) were satisfied or very satisfied with the support, 15% were very dissatisfied. PhD students are least satisfied with the support they received regarding housing accommodation

(mean score = 3.36, sd = 1.15). With regard to accommodation, PhD students from outside the EU received more help (54%) than those from within the EU (29%).
The source of help was diverse (27% department, 25% graduate school, 29% ISD, 4% PhD Scholarship Desk). About 58% of the PhD students have received help with other formalities, mostly from the ISD (47%) but also by someone in their department (23%), the graduate school (8%) and the PhD Scholarship Desk (11%). PhD students from the EU are a little more satisfied than those from countries outside the EU (78% versus 68%). However, the satisfaction scores for EU and non-EU PhD students were not significantly different.

# 4    Supervision

Supervision is an essential part of a successful PhD project. This chapter considers the structure of the supervision, followed by several aspects of supervision, such as availability and academic and personal support. In addition, we asked PhD students about their supervisors' expectations and their perceptions of their autonomy as a researcher. All of these five aspects are valued separately for the first and daily supervisors.

## 4.1    Structure

The questions in this section were answered by 98% of the PhD students in the response group. First, we asked about the constitution of the supervision team. The results are presented in Figure 6. About 15% have only one (first) supervisor, while another 15% have two supervisors. More than half of the PhD students chose the option 'Primary supervisors and co-supervisors'. As the difference between a co-supervisor or daily supervisor might not always be that clear, the percentage of categories that include these should not be considered that strict. Seven PhD students indicated that their supervision was not officially documented.
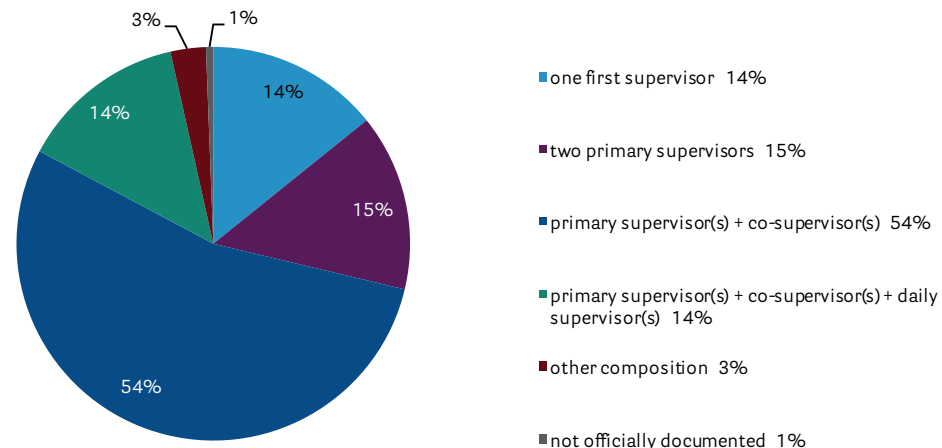
Figure 6. Composition of the supervision team

If PhD students indicated that they had more than one supervisor, they were asked if they had ever experienced substantial disagreement between their supervisors. A majority of 67% indicated that this had never been the case. If this had occurred once (11%) or a few

times (17%), we asked who usually makes the final decision. In almost half of the occasions a compromise is reached. In less than 10%, the PhD student decides, and on the other occasions, one of the supervisors makes the final decision. When asked who within the team is the daily supervisor, a little over half (52%) indicated one of the primary supervisors, while about one-third (32%) indicated a co-supervisor. Finally, Table 21 shows where the supervision team is located. More than 70% of PhD students have their whole supervision team within the UG.

Table 21. Where is your supervision team based?

| Response option | n | % |
| --- | --- | --- |
| All supervisors work at the UG in my department | 583 | 51 |
| All supervisors work at the UG but in different departments | 176 | 15 |
| All supervisors work at the UG but in different faculties | 53 | 5 |
| One or more supervisors work at the UG and one or more at another university in the Netherlands | 97 | 9 |
| One or more supervisors work at the UG and one or more at another university in another country | 168 | 15 |
| Other | 62 | 5 |
| **Total** | **1139** | **100** |

## Additional questions for external PhD students

We asked our external PhD students (n = 115) two questions, namely where their first supervisor is located and how they made contact with their first supervisor. The majority (92%) indicated that the UG is the primary location. Table 22 shows how the external PhD students met their first supervisor. In one-third of the cases, the PhD student already knew their first supervisor, while in 10% of the cases, the first supervisor was assigned to them.

Table 22. How did you come into contact with your first supervisor?

| Response option | n | % |
| --- | --- | --- |
| I approached him/her myself and asked him/her to act as my supervisor | 41 | 36 |
| I submitted a PhD application to him/her | 14 | 12 |
| I already knew him/her and this led to the idea of him/her acting as my supervisor | 38 | 33 |
| He/she was assigned to me | 15 | 13 |
| In another way | 7 | 6 |
| **Total** | **115** | **100** |

## 4.2    Frequency of meetings

PhD students were asked to indicate how often they meet with their daily supervisor and their first supervisor by selecting an option that most suited their situation. Figure 7 presents the results. As in previous surveys, PhD students more often meet with their daily supervisors than with their first supervisor. About 10% of PhD students meet their daily supervisor multiple times a week. About 15% of PhD students meet their first supervisor only every three months.
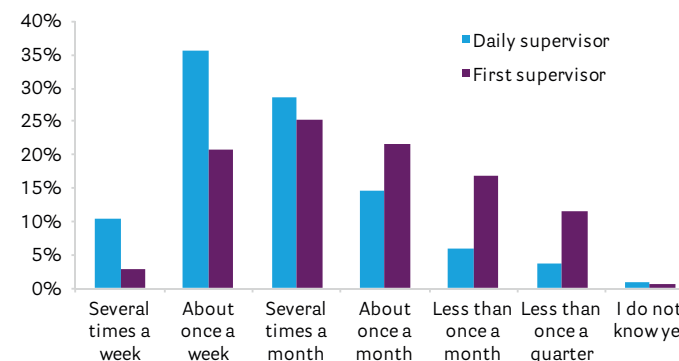


Figure 7. Frequency of meetings with daily supervisor and first supervisor

## Group differences

Several significant group differences were observed regarding phase, affiliation and graduate school. To interpret these differences more easily, we combined the categories of 'Several times per week' and 'Once a week' into 'At least once a week'; and 'Several times a month' and 'Once a month' into 'At least once a month'. Starting PhD students have significantly more weekly meetings with their daily supervisor and more monthly meetings with their first supervisor than PhD students who are further into their project. External PhD students have significantly less frequent meetings with both their daily supervisor (Figure 8) and their first supervisor (Figure 9) than the other affiliation groups.
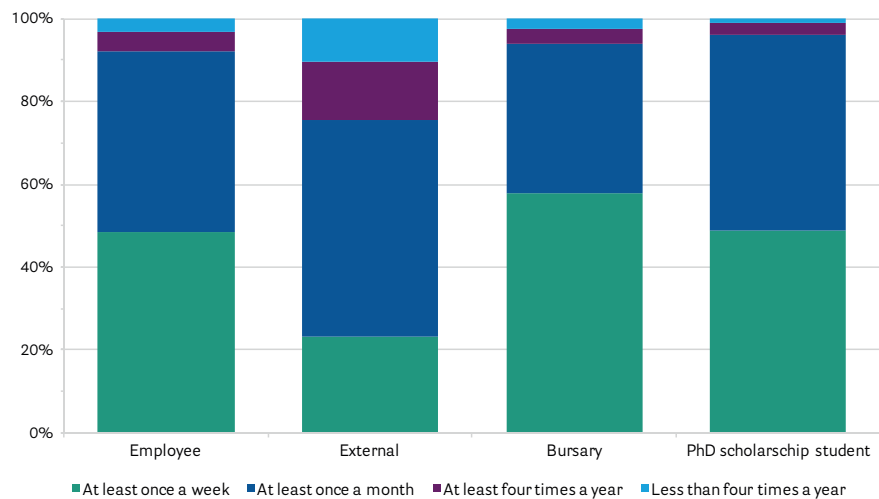
Figure 8. Meeting frequency with daily supervisor, by affiliation
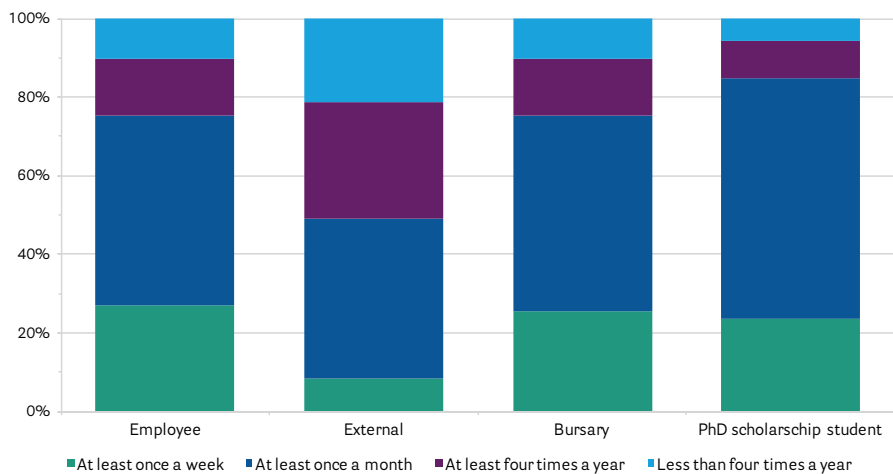


Figure 9. Meeting frequency with first supervisor, by affiliation

Finally, there were large differences between graduate schools, both for the daily supervisor (Figure 10) and the first supervisor (Figure 11). At least 40% of the PhD students from the Graduate School of Medical Sciences, the Graduate School of Science and Engineering and the Graduate School of Behavioural and Social Sciences have a meeting with their daily supervisor at least once a week. This is not the case for the other graduate schools. For the Graduate School for the Humanities, the Graduate School of Economics and Business, the Graduate School of Theology and Religious Studies, the Graduate School of Law and the Graduate School of Spatial Sciences, less than 25% of PhD students reported having a weekly meeting with their daily supervisor.



Figure 10. Meeting frequency with daily supervisor, by graduate school



Figure 11. Meeting frequency with first supervisor, by graduate school

When we compare 2017 with 2015, we see that the proportion of PhD students who have at least a weekly meeting with their daily supervisor and at least a monthly meeting with their first supervisor has decreased in 2017 (see Table 23).

Table 23. Meeting frequency (in %) with supervisors in 2015 and 2017

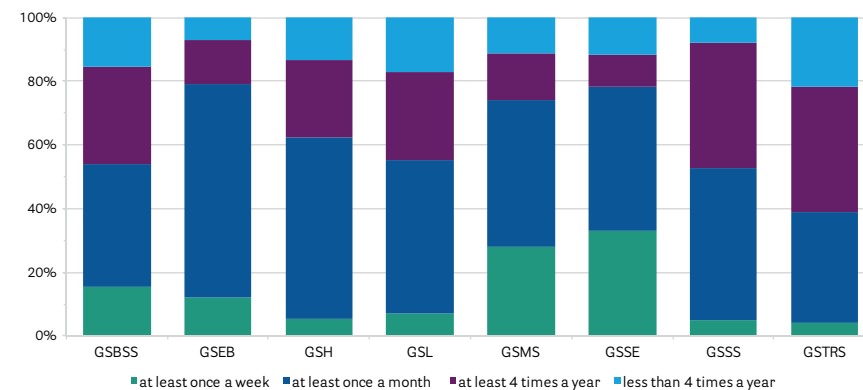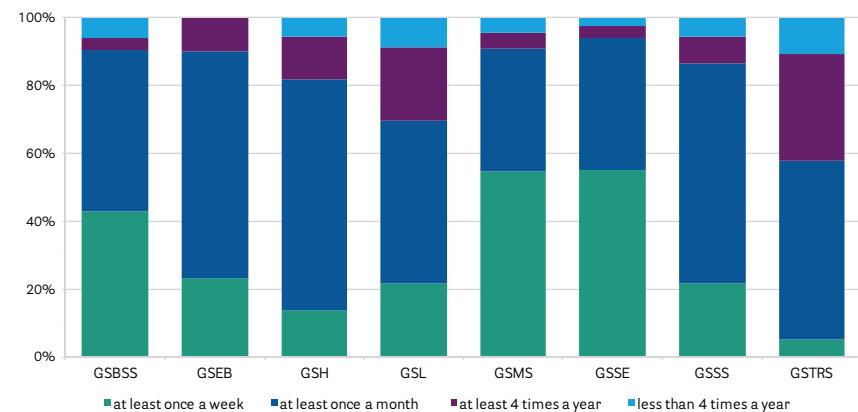| Supervisor | First supervisor | | Daily supervisor | |
|---|---|---|---|---|
| Year | 2015 | 2017 | 2015 | 2017 |
| At least once a week | 35 | 24 | 67 | 47 |
| At least once a month | 53 | 47 | 31 | 44 |
| At least twice a year | 10 | 29 | 2 | 10 |
| Less than twice a year | 2 | 1 | 0 | 1 |

## 4.3    Relationship with supervisors

Figure 12 presents the response to the question, 'Overall, how would you describe your relationship with your daily supervisor/first supervisor?' PhD students could answer this question on a scale from 1 to 5 (very bad to very good). A little less than 80% (n = 908) of the response group answered this question for the daily supervisor and 92% (n = 1067) for the first supervisor. A large majority (91%) of PhD students indicated that their relationship with the daily supervisor was good (37%) or very good (54%). These percentages are different for the relationship with the first supervisor (good: 44%; very good: 40%).
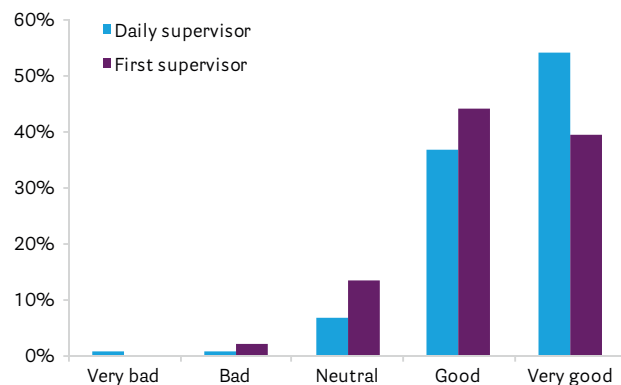


Figure 12. Average relationship score for daily supervisor and first supervisor

### Group differences

There are several differences between groups. First, PhD students with a non-Dutch nationality rated their relationship with their daily supervisor more positively than did students with Dutch nationality. Second, starting PhD students rated the relationship with their daily supervisor higher compared to PhD students who were further into their project.

We see a significant difference between employed PhD students and PhD scholarship students in the relationship scale score for both the daily supervisor and the first supervisor. Employed PhD students rate both relationships less positively than PhD scholarship students. In addition, external PhD students were significantly more positive about the relationship with their first supervisor than were employed PhD students (see Figure 13). There were no differences between graduate schools for the daily supervisor or the first supervisor.

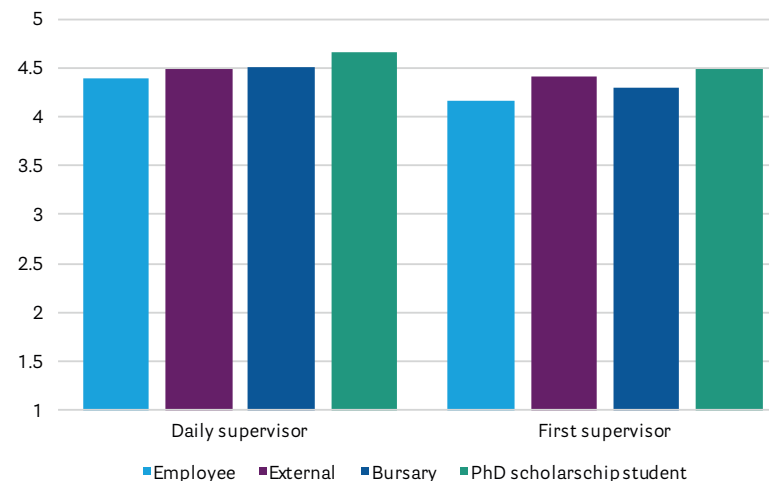

Figure 13. Average relationship score for daily supervisor and first supervisor, by affiliation

## 4.4 Aspects of supervision

In 2015, we asked how satisfied PhD students were with the organization and quality of their supervision. For 2017, we used a different set of validated (Overall et al. 2011[11]) questions to measure four different aspects of supervision: 1) availability, 2) academic support, 3) personal support and 4) whether the supervisor stimulated the PhD student to become an autonomous researcher. In addition, 5) we asked about expectations supervisors might have of their PhD students.

We asked PhD students to consider several statements concerning these five aspects, separately for their daily supervisor and first supervisor. PhD students could rate their agreement on a scale of 1 to 5 (completely disagree to completely agree). If they had more than one primary supervisor they were asked to consider the statements for the supervisor they collaborate with most closely. If they did not have a daily supervisor, they could skip the statements about the daily supervisor. From Figure 6 we can see that 14% (163 PhD students) have only one supervisor: their first supervisor.

### 4.4.1 Availability

Table 24 shows the three statements concerning availability and the average agreement score for the daily supervisor and the first supervisor. The daily supervisors score significantly higher on the availability scale than the first supervisors.

Table 24. Agreement with statements concerning perception of availability

| Supervisor | First supervisor | | | Daily supervisor | | |
|---|---|---|---|---|---|---|
| Statement | n | mean | sd | n | mean | sd |
| My supervisor responds to my queries or requests for help within a reasonable time frame | 1054 | 4.12 | 0.95 | 917 | 4.39 | 0.81 |
| My supervisor provides me with prompt feedback whenever I submit written work to him/her | 1047 | 3.91 | 1.05 | 905 | 4.20 | 0.94 |
| My supervisor is available to answer any questions I have | 1049 | 4.10 | 0.93 | 902 | 4.39 | 0.79 |
| Availability scale score | 1058 | 4.04 | 0.87 | 919 | 4.33 | 0.76 |

### Group differences

There were no group differences for the average availability scale score for the daily supervisor. With regard to the availability scale score for the first supervisor, there are differences regarding graduate school, gender, nationality, affiliation and phase. PhD students from the Graduate School of Medical Sciences and the Graduate School of Behavioural and Social Sciences, on average gave their first supervisor the lowest score (see Table 102 in the Appendix). Female PhD students agreed less than males with the statements about their supervisor, Dutch PhD students agreed less than non-Dutch PhD students and starters agreed less than PhD students further into their project. Finally, employed PhD students agreed less than bursaries and externals, and PhD scholarship students agreed the most. Although these small group differences are significant, we should keep in mind that, overall, the majority of PhD students were satisfied with the availability of their supervisors.

### 4.4.2 Academic support

PhD students were asked to consider ten statements concerning their perceptions of academic support. The average score for each statement and the 'academic support' score are shown in Table 25. We can conclude that PhD students perceived that they receive more academic support from their daily supervisor than from their primary supervisor.

[11] Overall, N. C., Deane, K. L., & Peterson, E. R. (2011). Promoting doctoral students' research self-efficacy: Combining academic guidance with autonomy support. Higher Education Research & Development, 30(6), 791-805.

Table 25. Agreement with statements concerning perception of academic support

| Supervisor | First supervisor | | | Daily supervisor | | |
|---|---|---|---|---|---|---|
| Statement | n | mean | sd | n | mean | sd |
| My supervisor helps me to plan and manage the different research tasks I have to complete | 999 | 3.69 | 1.04 | 853 | 3.39 | 1.10 |
| My supervisor helps me construct timelines and deadlines to ensure that I complete tasks on time | 997 | 3.37 | 1.08 | 848 | 3.18 | 1.11 |
| My supervisor gives me good, practical advice about how to plan and conduct my research | 995 | 3.82 | 1.04 | 850 | 3.55 | 1.08 |
| My supervisor offers suggestions about how to find the resources I need | 997 | 3.91 | 0.92 | 847 | 3.65 | 1.02 |
| My supervisor gives me guidance in finding relevant literature and research materials | 997 | 3.76 | 1.00 | 849 | 3.56 | 1.07 |
| My supervisor helps me develop good writing skills (e.g. expression of ideas, grammar, structure of thesis, etc.) | 994 | 3.92 | 1.02 | 847 | 3.75 | 1.04 |
| My supervisor looks for information that will help me with my thesis | 991 | 3.60 | 1.11 | 846 | 3.30 | 1.12 |
| My supervisor teaches me the technical knowledge and skills that I need to complete my research | 994 | 3.49 | 1.14 | 846 | 3.10 | 1.14 |
| My supervisor spends time helping me learn the skills I need to complete my research | 993 | 3.48 | 1.13 | 845 | 3.06 | 1.13 |
| My supervisor provides practical assistance when I need help conducting research tasks | 993 | 3.63 | 1.10 | 844 | 3.16 | 1.18 |
| Academic support scale score | 1002 | 3.68 | 0.80 | 855 | 3.37 | 0.86 |

We see similar group differences for academic support as we saw for availability. Males perceive more academic support than females from both supervisors. Dutch PhD students agreed less with various statements concerning support from the supervisor than PhD students from a European country, who in turn agreed less than PhD students from outside Europe. Similarly to the average availability score, employed PhD students agreed the least with the statements concerning academic support. For phase, we see also a familiar picture: starting PhD students score higher, followed by intermediates and then seniors, who scored the lowest. No differences between graduate schools were found.

## 4.4.3    Personal support

Table 26 shows the thirteen statements concerning the perceptions of personal support and the average scores for both the daily supervisor and the first supervisor. Overall, PhD students reported that they received more personal support from their daily supervisor than from their first supervisor.

Group differences

Again, we see similar group differences as above: women perceived less personal support than men; employed PhD students perceived less personal support than scholarship students; and starters perceived more support than PhD students who are further into their project. No differences according to nationality or graduate school were observed.

Table 26. Agreement with statements concerning perception of personal support

| Supervisor | First supervisor | | | Daily supervisor | | |
|---|---|---|---|---|---|---|
| Statement | n | mean | sd | n | mean | sd |
| My supervisor behaves warmly towards me when discussing my research and/or any problems I am experiencing | 961 | 4.29 | 0.84 | 819 | 4.12 | 0.90 |
| My supervisor expresses understanding and empathy when I experience difficulties | 960 | 4.24 | 0.88 | 814 | 4.01 | 0.97 |
| My supervisor listens and responds to any concerns I have | 961 | 4.27 | 0.84 | 816 | 4.04 | 0.92 |
| My supervisor is friendly, supportive and approachable | 957 | 4.42 | 0.80 | 812 | 4.20 | 0.87 |
| My supervisor comforts and reassures me when I am feeling down | 955 | 3.91 | 1.03 | 810 | 3.66 | 1.05 |
| My supervisor compliments me and makes me feel good about myself and my work | 958 | 4.03 | 1.00 | 812 | 3.83 | 1.01 |
| My supervisor shows me that he/she respects and values me | 959 | 4.15 | 0.94 | 814 | 3.97 | 0.98 |
| My supervisor reassures me that I will be able to successfully complete my research/thesis | 958 | 4.10 | 0.95 | 813 | 3.94 | 0.98 |
| My supervisor makes me feel that I have the ability to do well | 957 | 4.12 | 0.94 | 814 | 3.98 | 0.97 |
| My supervisor is interested in my personal situation | 957 | 3.79 | 1.07 | 813 | 3.48 | 1.12 |
| My supervisor tells me personal things about himself/herself | 962 | 3.66 | 1.06 | 813 | 3.34 | 1.13 |
| My supervisor understands me | 957 | 3.80 | 1.00 | 811 | 3.57 | 1.00 |
| My supervisor supports me when I have a conflict with a colleague | 937 | 3.56 | 0.95 | 793 | 3.43 | 0.90 |
| **Personal support scale score** | **967** | **4.03** | **0.76** | **819** | **3.82** | **0.80** |

## 4.4.4　Autonomy

We asked PhD students to what extent they perceive they are encouraged to think and become independent researchers. The average scores for each statement and the 'autonomy' scale are shown in Table 27. We can conclude that PhD students consider that they receive more autonomy support from their daily supervisor than from their first supervisor.

Table 27. Agreement with statements concerning autonomy as a researcher

| Supervisor | First supervisor | | | Daily supervisor | | |
|---|---|---|---|---|---|---|
| Statement | n | mean | sd | n | mean | sd |
| My supervisor encourages me to ask questions | 935 | 4.17 | 0.83 | 785 | 4.08 | 0.84 |
| My supervisor encourages me to be open about my own ideas and any issues that concern me | 933 | 4.23 | 0.82 | 782 | 4.09 | 0.87 |
| My supervisor listens to how I would like to do things | 929 | 4.24 | 0.80 | 781 | 4.09 | 0.83 |
| My supervisor welcomes my input in discussions and treats my ideas with respect | 930 | 4.29 | 0.79 | 781 | 4.18 | 0.82 |
| My supervisor provides me with choices and options | 929 | 4.01 | 0.91 | 780 | 3.84 | 0.94 |
| My supervisor encourages me to work independently | 928 | 4.34 | 0.77 | 782 | 4.28 | 0.80 |
| My supervisor always presses his/her own point of view | 931 | 2.84 | 1.15 | 782 | 2.89 | 1.12 |
| My supervisor gives me the main responsibility for my project | 931 | 4.31 | 0.77 | 782 | 4.24 | 0.78 |
| **Autonomy scale score** | **937** | **4.06** | **0.57** | **786** | **3.96** | **0.59** |

### Group differences

There were no differences regarding phase, graduate school, gender or affiliation. Non-European PhD students reported more autonomy from their daily supervisor than did Dutch PhD students. For the first supervisor, we also see a difference: Dutch PhD students perceive less autonomy support than PhD students with a non-Dutch nationality.

## 4.4.5    Expectations of supervisor

PhD students were asked to consider seven statements regarding expectations of their supervisors. The average scores for each statement are presented in Table 28. No scale score is displayed in the table as it would be difficult to interpret. Some items could be regarded as 'bad' (e.g. 'I have the impression that nothing is good enough for my supervisor' or 'I feel that my supervisor is pushing me too much'). Items such as, 'My supervisor expects me to publish in high-impact journals' or 'My supervisor expects all my papers to be published before I submit my thesis', cannot be judged as being either good or bad, as this depends on the individual situation. For a lot of PhD students, high expectations of their supervisors might be stimulating and encouraging.

Table 28. Agreement with high expectations

| Supervision | First supervisor | | | Daily supervisor | | |
|---|---|---|---|---|---|---|
| Statement about supervisor | n | mean | sd | n | mean | sd |
| My supervisor expects me to publish in high-impact journals | 935 | 3.72 | 0.97 | 785 | 3.74 | 0.97 |
| My supervisor expects all of my papers to be published before I submit my thesis | 933 | 2.79 | 1.03 | 782 | 2.80 | 1.01 |
| My supervisor expects me to finish my PhD in my spare time if I don't finish within the time of my contract | 929 | 3.16 | 0.98 | 781 | 3.24 | 0.99 |
| My supervisor thinks that courses and seminars are a waste of time | 930 | 2.05 | 0.96 | 781 | 2.10 | 0.99 |
| My supervisor emphasizes the importance of finishing my PhD in time | 929 | 3.55 | 1.00 | 780 | 3.52 | 1.04 |
| I have the impression that nothing is good enough for my supervisor | 928 | 1.93 | 1.01 | 782 | 2.02 | 1.07 |
| I feel that my supervisor is pushing me too much | 931 | 1.93 | 0.95 | 782 | 1.98 | 0.99 |

### Group differences

More advanced PhD students and PhD students with a non-Dutch nationality reported the highest expectations score for both their supervisors. There were no differences according to gender or affiliation, but there were some minor differences between graduate schools (see Table 95 in the Appendix).

## 4.5    Overall satisfaction with supervision

PhD students were presented with the question: 'Overall, how satisfied are you with the supervision you receive?' The average score was 3.95, with a standard deviation of 1.10, which is quite large, indicating a modest to large amount of difference between individual PhD students. More than three-quarters (77%) of the 1122 PhD students who answered this question were either satisfied or very satisfied (see Figure 14). The average overall satisfaction score decreased significantly with increasing project phase: starters were most satisfied (4.22), followed by intermediates (3.95) and then seniors (3.73). There were no differences between graduate schools.
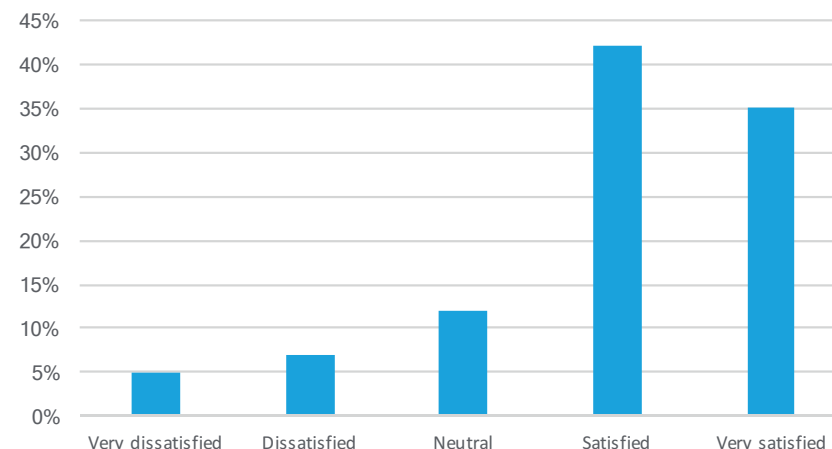


Figure 14. Overall satisfaction with supervision

# 5 Performance, planning and progress

This chapter concerns aspects of performance, planning and progress. We start with an overview of the yearly performance evaluation interviews, followed by the presence and content of the Training and Supervision Plan (TSP), scientific output, and progress and delay.

## 5.1 Performance evaluation

All PhD students should have a performance evaluation (Result & Development interview)[12] at least once a year. They should also have a formal go/no-go interview at nine months, preceded by an informal interview at six months (as a first check on how they are doing, and to give them the opportunity to improve on certain aspects, if necessary).

### 5.1.1 Go/no-go interview

We found that the timing of the PhD students' formal go/no-go interview varied. Just over half of the PhD students in the response group had a go/no-go interview within the first year of their project (Table 29). More than half (53%) of the 289 PhD students who have not had an interview are starting PhD students, 25% are intermediates and 22% are seniors.

Table 29. Have you had a formal go/no-go interview?

| Response option | n | % |
|---|---|---|
| Yes, nine months after the start of my PhD project | 342 | 35 |
| Yes, twelve months after the start of my PhD project | 194 | 20 |
| Yes, after the following number of months …. | 93 | 10 |
| No, but I will have one in the future | 66 | 7 |
| No | 289 | 30 |
| **Total** | **984** | **100** |

### Group differences

The data revealed differences between different affiliation groups for a go/no-go interview (see Figure 15). In this graph, the first four categories from Table 29 are combined as a 'yes' answer. Bursary PhD students most often reported that they had attended a go/no-go interview. PhD scholarship students reported the least interviews, but this small proportion is due to the fact that they had all started less than nine months ago. Two-thirds of external PhD students had attended a formal go/no-go interview, which is an increase compared to previous years. There are differences between graduate schools (Figure 16). As in 2015, go/no-go interviews are least common at the Graduate School of Medical Sciences.

[12] In Dutch this interview is called 'Resultaat- en Ontwikkelingsgesprek (R&O)'.

## 5.1.2 Timing of the go/no-go interview

Table 30 shows when the interview took place. PhD students could choose between nine months, twelve months or other. Of those who chose this latter option, 91% filled in a specific time period, as categorized and displayed in Figure 17.
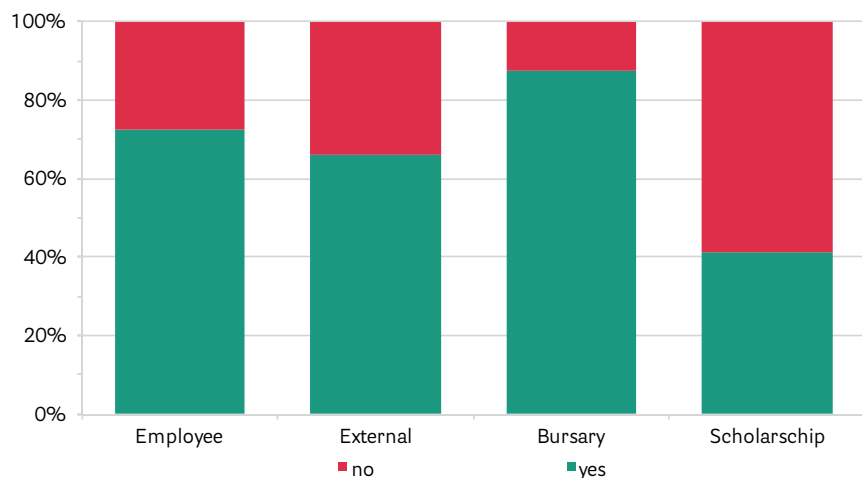


Figure 15. Completion of go/no-go interview by affiliation
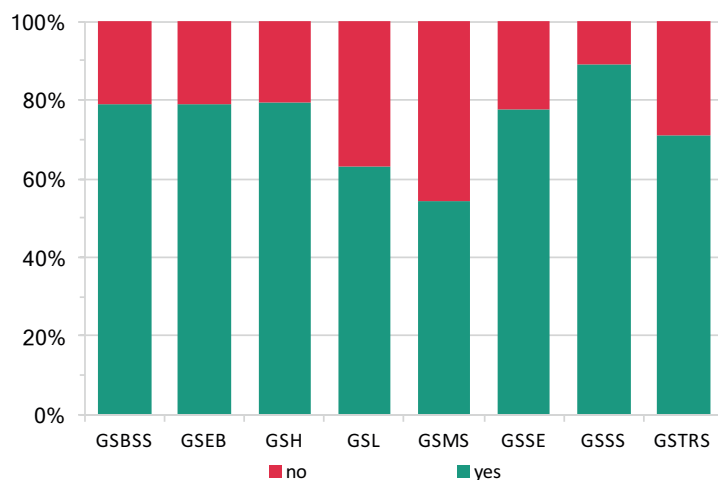


Figure 16. Completion of go/no-go interview by graduate school
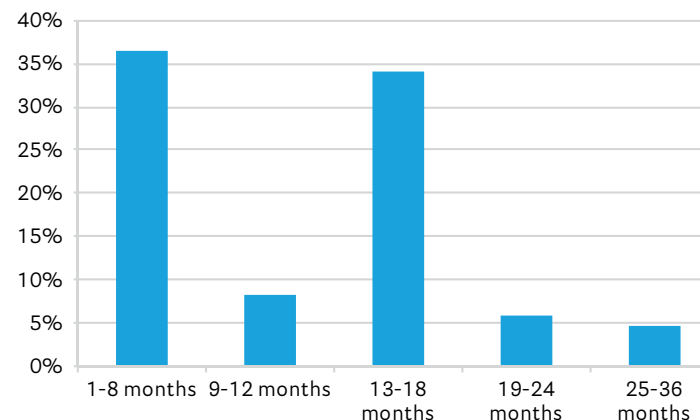


Figure 17. Timing of go/no-go interview, number of months after start

### People present at go/no-go interview

Table 31 shows the people who were present at the go/no-go interview. PhD students could select more than one option. The majority (82%) of the answers of the 95 PhD students who selected the option 'Someone else', could be classified into a subcategory. The results are comparable to those of 2015.

Table 31. Who was present at your go/no-go interview?

| Response option | n | % |
|---|---|---|
| Primary supervisor | 590 | 94 |
| Daily supervisor | 375 | 60 |
| Graduate school delegate | 111 | 18 |
| Human Resources representative | 15 | 2 |
| Someone else: | 95 | 15 |
|   Other first supervisor | 23 | |
|   Other supervisor | 27 | |
|   Delegate of research institute/department | 8 | |
|   Someone else | 20 | |
| Total number of PhD students who selected at least one option | 627 | 100 |

## 5.1.3   Results & Development interview: intermediates and seniors

According to university regulations, PhD students should have an annual Results and Development interview (called annual interview at the UMCG). PhD students in their first year who have not yet completed a whole year were not asked questions about the R&D interview. Intermediate and senior PhD students were asked if their performance was evaluated at least once a year, with 84% of the 865 PhD students (who were beyond their first year) answering the questions. As indicated in Table 32, about 70% had an interview at least once a year. This is comparable to results from 2015 (69%) and 2013 (68%). The percentage of PhD students who had not had an interview was lower in 2017 (6%) compared to 2015 (17%).

Table 32. Is your performance evaluated at least once a year?

| Response option | n | % |
|---|---|---|
| Yes, I have a Results and Development (R&O) interview every year | 393 | 54 |
| Yes, I have an annual interview/evaluation (this is not an R&O or I don't know if this is an R&O) | 116 | 16 |
| No, my performance is not evaluated on a regular basis | 135 | 19 |
| No, my performance has not yet been evaluated | 43 | 6 |
| I don't know | 37 | 5 |
| Total | 724 | 100 |

### Group differences

There were differences between graduate schools and types of affiliation (see Figure 18). About 61% of PhD students from the Graduate School for the Humanities, 40% of those from the Graduate School of Medical Sciences and 32% of those from the Graduate School of Law reported not having any type of R&D interview. PhD students from the Graduate School of Science and Engineering (52%) and the Graduate School of Economics and Business (68%) most often reported having had such an evaluation. These results are comparable to those of 2015.

With regard to affiliation, we also observed significant differences (see Figure 19). Over half of the external PhD students (56%) had an interview, while 72% of the employed and 80% of the bursaries had attended an interview. These proportions are comparable to 2015 for externals (53%) and employed PhD students (77%), while they have increased for bursaries (68% in 2015).



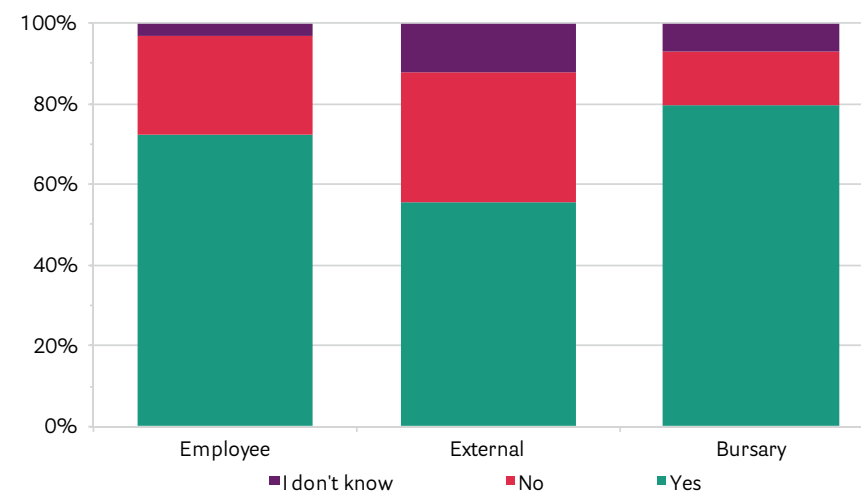Figure 18. Performance evaluation by graduate school



Figure 19. Performance evaluation by affiliation

### 5.1.4    People present at R&D interview

PhD students who had an R&D interview indicated who was present. They could select more than one option (see Table 33). The majority (95%) of the answers of PhD students who selected the option, 'Someone else', could be classified into a subcategory. The majority of the PhD students indicated that their primary supervisor was present at their R&D interview. In less than 10% of the interviews, a graduate school delegate or an HR representative was present. These results are comparable to those of 2015.

Table 33. Who was present at your performance evaluation interview?

| Response option | n | % |
|---|---|---|
| Primary supervisor | 464 | 92 |
| Daily supervisor | 308 | 61 |
| Graduate school delegate | 29 | 6 |
| Human Resources representative | 8 | 2 |
| Someone else: | 59 | 12 |
| Other first supervisor | 19 | |
| Other supervisor | 19 | |
| Delegate of research institute/department | 6 | |
| Someone else | 12 | |
| Total number of PhD students who selected at least one option | 503 | 100 |

### 5.2    Training and Supervision Plan

According to the PhD Regulations of the UG, all PhD students should have a Training and Supervision Plan (TSP)[13] within three months after admission to the PhD programme. Table 34 shows that almost three-quarters of the PhD students have a TSP (questions were answered by 84% of the response group).

### 5.2.1    Presence of a TSP

Since 2009, the proportion of PhD students with a formal TSP has increased from 57% (in 2009 and 2011), 63% (in 2013), 69% in 2015 to 74% in 2017. The proportion of TSPs exhibited an increase for all graduate schools, with the exceptions of the Graduate School of Economics and Business and the Graduate School of Medical Sciences (Figure 20). The proportion of employed PhD students with a TPS decreased from 75% to 73%. However, while only 40% of PhD students with a non-employment affiliation had a TSP in 2015, this proportion had increased to 63% for externals and to 83% for bursaries in 2017.

[13] In Dutch: Opleidings-en Begeleidingsplan.

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

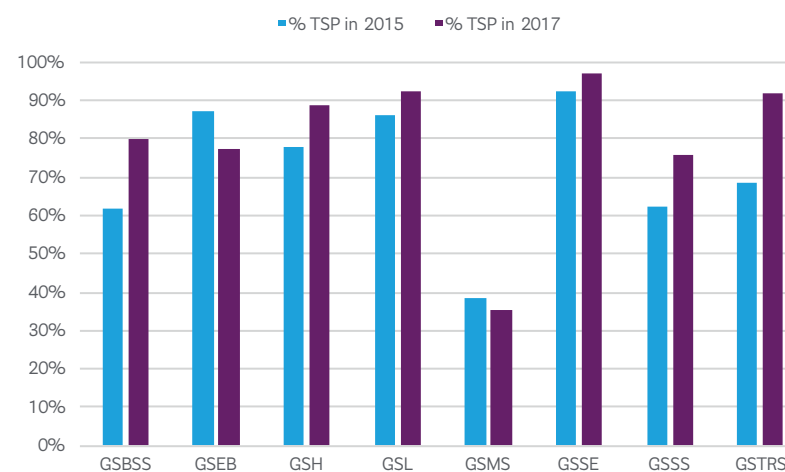| Response option | n | % |
|---|---|---|
| Yes | 725 | 74 |
| No | 148 | 15 |
| I don't know | 107 | 11 |
| Total | 980 | 100 |



Figure 20. Proportion of respondents with a TSP in 2015 and 2017, by graduate school

## 5.2.2    Timing of TSP formalization

Those who have a TSP were asked how many months after the start of their PhD project their TSP was formalized. Of the 725 PhD students who have a TSP, 96% (n = 707) responded to the follow-up questions. Less than half (43%) did not know or remember the exact moment (which is comparable to 2015, where it was 39%). For the response of those who did know, see Figure 21. One-third of the PhD students had their TPS formalized at the start, and half within one month after starting. This is a large increase compared to 2015.
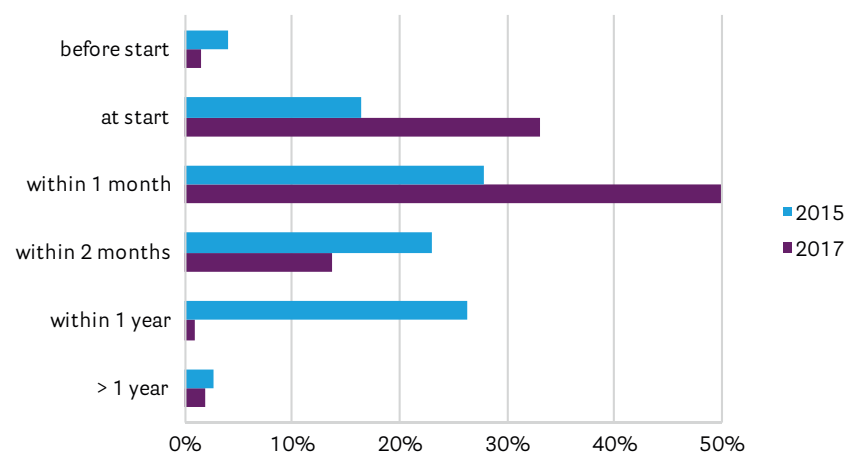


Figure 21. Timing of TSP formalization in 2015 and 2017

## 5.2.3    Elements in the TSP

An overview of the elements included in the TSP in 2015 and 2017 are shown in Table 35. The TSP element of 'Evaluation moments and appraisal of milestones' as well as the answer option, 'I do not know', were added in 2017. About 10% of the PhD students who had a TSP did not know the content of their TSP. Compared to 2015, we see differences with regard to two elements: 'Contact hours with supervisors' (decreased from 37% to 29%) and 'Teaching activities' (increased from 32% to 42%).

Table 35. Elements included in TSP in 2015 and 2017

| Response option | % 2015 | % 2017 |
|---|---|---|
| Research content and design | 84 | 79 |
| Planning | 82 | 78 |
| Number of contact hours with your supervisors | 37 | 29 |
| Educational activities | 75 | 71 |
| Teaching activities | 32 | 42 |
| Evaluation moments and appraisal of milestones | - | 42 |
| PhD requirements, e.g. the number of papers to be published and submitted | 25 | 28 |
| I don't know/remember | - | 10 |

## 5.2.4    Additional questions about the TSP – intermediates and seniors only

PhD students who were beyond their first year were presented with two additional questions concerning the update of the TSP, as well as their agreement or not with several statements concerning the TSP.

### Update of the TSP

Of the 865 PhD students, 518 had a TSP and almost all (n = 503) answered the follow-up questions. For a small majority (65%), their TSP was updated at least once a year (11% chose the option 'Not applicable (yet)'). In 2015, only 33% of PhD students (beyond their first year) indicated an annual update.

### Satisfaction with TSP

PhD students were presented with five statements about their Training and Supervision Plan and indicated their agreement on a scale of 1 to 5. The average item scores are presented in Table 36.  Overall the satisfaction with the TSP is rather low.

Table 36. Level of agreement with statements about TSP

| Statement | n | mean | sd |
|---|---|---|---|
| My TSP serves as a good guideline for my time as a PhD student | 503 | 2.88 | 1.14 |
| Drawing up a TSP helped me to plan my PhD project | 502 | 2.98 | 1.16 |
| I can revise my TSP when necessary | 503 | 3.53 | 1.00 |
| My TSP is evaluated regularly during my R&O or annual interview/ evaluation | 503 | 2.82 | 1.26 |
| Overall, I am satisfied with my TSP | 503 | 3.32 | 0.99 |

## Group differences

For the item, 'My TSP is evaluated regularly', there were significant differences between the graduate schools (see Figure 22). PhD students from the Graduate School of Economics and Business agreed most with this statement, while PhD students from the Graduate School of Medical Sciences agreed the least. The TSP was evaluated more often at the Graduate School of Science and Engineering than at the Graduate School for the Humanities and the Graduate School of Medical Sciences. In addition, on average, intermediates agreed more with this statement (2.95) than seniors (2.61).
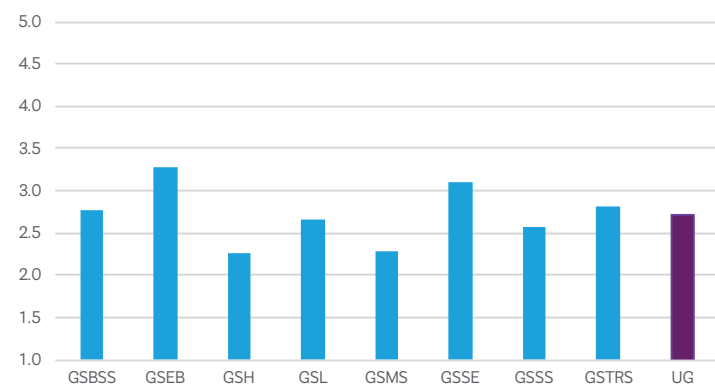


Figure 22. Average agreement with 'My TSP is evaluated regularly during my R&O or annual interview/evaluation', by graduate school

Figure 23 displays the differences between the three different affiliation groups. Bursary and external PhD students both agreed more with the items, 'My TSP serves as a good guideline for my time as a PhD student' and 'Drawing up a TSP helped me to plan my PhD project' than employed PhD students. The difference for the other two items, 'My TSP is evaluated regularly' and 'Overall, I am satisfied with my TSP', is only significant between employees and bursaries.
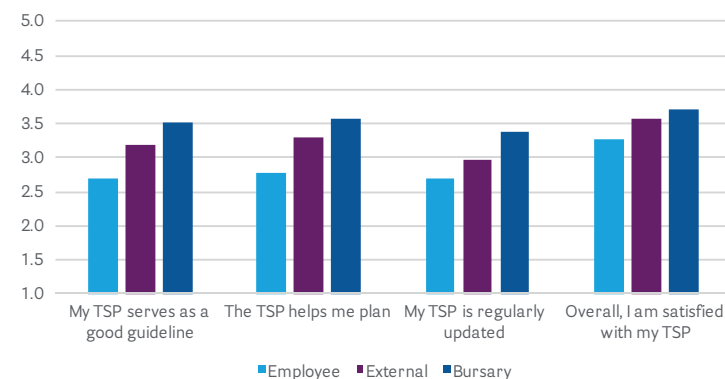


Figure 23. Average agreement with four statements about the TSP, by affiliation

The three nationality groups differed in their average agreement on all five statements (see Figure 24). PhD students from countries outside the EU agreed most with the statements, followed by those from countries in Europe. Dutch PhD students agreed, on average, the least. For the items, 'My TSP serves as a good guideline for my time as a PhD student' and 'My TSP is evaluated regularly during my R&O or annual interview/evaluation', the differences were significant between all three groups. For the item, 'I can revise my TSP when necessary', those from Europe agreed less than those from elsewhere. For the other two items, 'Drawing up a TSP helped me to plan my PhD project' and 'Overall, I am satisfied with my TSP', only the difference between Dutch and non-Europeans was significant.



Figure 24. Average agreement with four statements about the TSP, by nationality group

## 5.3    Progress and delay

The following section concerns progress and delay. We start with an overview of the average PhD duration in different affili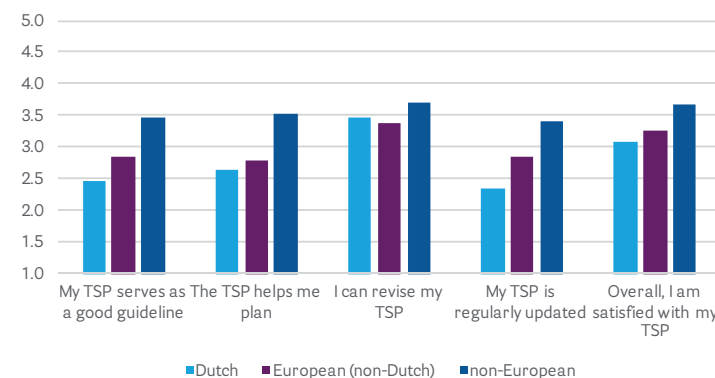ation groups and then we discuss how many PhD students are on schedule and what output they have achieved thus far. For those who are not on schedule, an overview of the most common perceived causes for delay are presented. Finally, we explored to what extent PhD students have ever considered quitting their PhD project and why.

### 5.3.1    Self-reported official duration of PhD project

Figure 25 shows the self-reported official duration of PhD projects (question answered by 96% of the response group). Interestingly, for 15%, it is perceived that no official duration has yet been determined (indicated by 'nd' in the graph). The majority have an official project duration of four years.
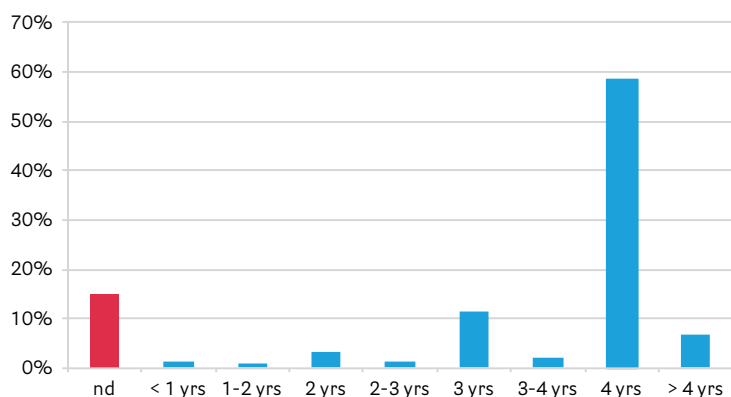


Figure 25. Self-reported duration of the PhD project

Employed PhD students indicated an average duration of 40 months (sd = 16 months), which is a little more than bursaries and PhD scholarship students, who indicated 38 months (with a standard deviation of 19 and 16 months respectively). Externals significantly deviated from these three groups, with an average reported duration of 30 months (sd = 24 months).

### 5.3.2    Research output and academic requirements

Table 37 summarizes the output produced by PhD students thus far. PhD students could select all of the options that applied to them. Of the 68 PhD students who chose the option, 'Other', 12 answers could not be considered as 'Research output', 28 answers fitted one of the predefined categories, and the answers of the remaining PhD students (n = 28) are included in the table.

Table 37. What research output have you produced thus far?

| Response option | n | % |
|---|---|---|
| Finalized my research plan | 579 | 61 |
| Collected data | 726 | 77 |
| Presented my work at a conference | 607 | 64 |
| Written one or more articles (or chapters for my thesis) | 630 | 67 |
| Published one or more articles | 388 | 41 |
| Other: | 28 | 3 |
|   Presentation at meetings | 5 | |
|   BKO | 1 | |
|   Wrote grant application | 7 | |
|   Completed dissertation | 15 | |
| Total number of PhD students who selected at least one option | 945 | 100 |

Obviously, there is a statistically significant increase in output with increasing PhD project length (Figure 26). Concerning the publication of articles, we see PhD students from GSL, GSMS and GSSS have published more articles than the UG average of 51% (see Figure 27, only intermediate and senior PhD students were included in this graph).
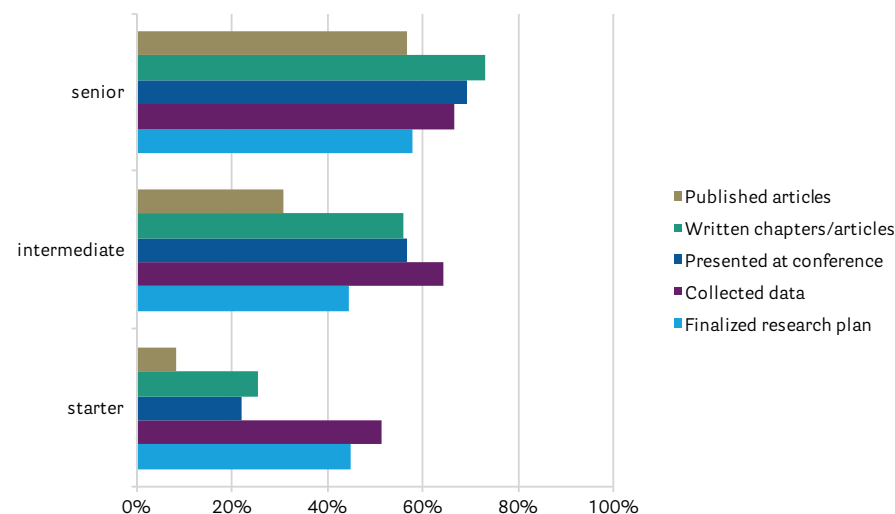


Figure 26. Research output, by phase
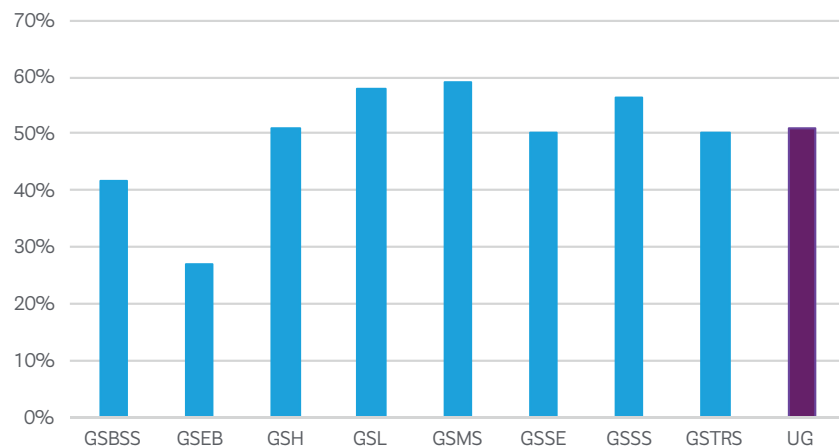
Figure 27. Proportion of intermediate and senior PhD students who have published at least one article, by graduate school

PhD students were asked if they had discussed the academic requirements of their thesis, such as the content and number of articles that needed to be submitted and/or published. Responses are shown in Table 38 (PhD students could select more than one option). The majority discussed the requirements with their primary supervisor. In addition, we asked if the requirements were clear (Figure 28). About 10% of the PhD students stated that the requirements were rather unclear/very unclear. No group differences were found.

Table 38. Have you discussed the academic requirements for your thesis?

| Response option | n | % |
|---|---|---|
| Yes, with my primary supervisor | 641 | 68 |
| Yes, with one of my other supervisors | 319 | 34 |
| No, I have not discussed the academic requirements with anyone (yet) | 209 | 22 |
| **Total number of PhD students who selected at least one option** | **944** | |
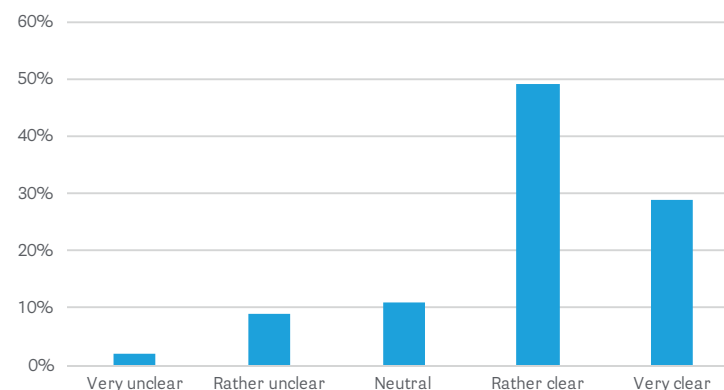


Figure 28. Are the academic requirements for your PhD thesis clear to you?

### 5.3.3    About being on schedule

Table 39 shows the response to the question, 'Are you currently on schedule with your work?' (83% responded to this question). Almost 50% of the PhD students in the response group thought they would be able to finish their project in time (this includes 5 PhD students who have since finished their thesis in time). This proportion is a little higher compared to 2015 (41%) and 2013 (45%).

Table 39. Are you currently on schedule with your work?

| Response option | n | % |
|---|---|---|
| 1. Yes, I think I will be able to finish my PhD in time | 476 | 50 |
| 2. No, I have fallen behind, but I still think I will be able to finish in time | 198 | 20 |
| 3. No, I have fallen behind and I don't think I will be able to finish in time | 109 | 10 |
| 4. I was unable to finish in time and am currently on an extension | 42 | 4 |
| 5. I was unable to finish in time and am currently finishing my thesis in 6. my spare time | 53 | 6 |
| 7. I do not have a schedule | 25 | 3 |
| 8. I don't know | 47 | 5 |
| 9. Other | 17 | 2 |
| **Total** | **967** | **100** |

Group differences

A new variable, 'Able to finish in time', was constructed by recoding the first five response options (see Table 39; options 1, 2 = yes; options 3, 4, 5 = no) and differences between the groups were analysed. Starting PhD students were most confident, with 99% believing they will be able to finish in time. This confidence decreases in intermediates (86%) and seniors (49%). In 2015, these proportions were different, as 54% of the seniors believed they would be able to finish in time (and 42% of those in their first three years). The difference between 2015 and 2017 might be explained by the high proportion of starting PhD scholarship students in the 2017 sample. This explanation is supported by the significant difference between PhD scholarship students and the other three affiliation groups. All PhD scholarship students expected to finish in time, compared to 80% in the other three groups (employed 80%, externals 81% and bursaries 79%). There were no significant differences between graduate schools.

## 5.3.4    About being delayed

Of the 204 PhD students who thought they would not finish in time or are already behind (answer options 3, 4 and 5 in Table 39), 90% stated the expected length of delay. The majority (n = 183) of these open answer responses could be categorized. Figure 29 shows that 18% thought they needed less than half a year, 27% half a year, 11% between 6 and 12 months, 28% a year and 17% more than a year. On average, PhD students expected they would need 11.4 additional months to finish their projects; which is more than indicated in previous years (2015: 8.6 months; 2013: 7.6 months; 2011: 6.6 months; 2009: 8.0 months).
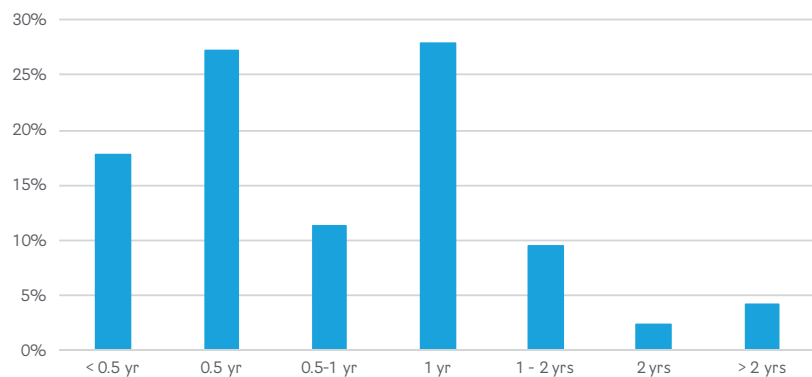


Figure 29. Frequency of self-reported expected delay

PhD students who chose option 3 (Table 39), 'No, I have fallen behind and I don't think I will be able to finish in time', were asked if agreements had been made about a possible extension. This was not the case for half of the delayed PhD students (see Table 40).

Table 40. Have agreements been made about a possible extension of the contract?

| Response option | n | % |
|---|---|---|
| Yes, formal agreements about an extension | 12 | 12 |
| Yes, informal agreements about an extension | 19 | 19 |
| Extension is not possible | 13 | 13 |
| No agreements have been made (yet) | 51 | 50 |
| Total | 102 | 100 |

Reasons for delay

PhD students who indicated having fallen behind schedule or being delayed (response options 2, 3, 4 and 5 in Table 39) were presented with the most common reasons for delay. The PhD students could select all of the reasons that applied to them. The response of the 402 PhD students with a delay are displayed in descending order in Table 41. The reasons most often selected were practical setbacks and complexity of the project. Almost 10% selected the option, 'Other reasons': the open answers revealed project-specific problems which did not fit into one of the other predefined categories.

Table 41. What are/were the main reasons for your delay?

| Reason | n | % |
|---|---|---|
| I have experienced too many practical setbacks | 189 | 19 |
| My project is too complex | 110 | 11 |
| My project is too big | 83 | 9 |
| I have lost too much time because of my work on side projects or other tasks | 78 | 8 |
| I do not receive enough assistance or supervision | 76 | 8 |
| My planning is too tight | 68 | 7 |
| Lack of motivation | 64 | 7 |
| My supervisor(s) keep(s) on adding new perspectives and research themes to my project | 54 | 6 |
| I have become completely stuck | 52 | 5 |
| Illness | 47 | 5 |
| I have lost too much time because of my teaching load | 38 | 4 |
| Pregnancy | 23 | 2 |
| Other reason | 91 | 9 |

### Group differences

Pregnancy and illness are more prevalent among senior PhD students (5%, respectively 8%) than in starters (0%, < 1%) and intermediates (< 1%, 3%). Dutch PhD students more often reported, 'Lost to much time because of side projects and other tasks' (25%) and 'My project is too big' (25%) compared to PhD students with a non-Dutch nationality (17% and 18% respectively). Almost half (47%) of the employed PhD students with a delay chose, 'I have lost too much time because of work on side projects or other tasks'. This reason was less often selected by external PhD Students (12%), bursaries (6%) and PhD scholarship students (3%). PhD students from the Graduate School of Behavioural and Social Sciences and the Graduate School of Medical Sciences reported that their project was too big more often than PhD students from the other large graduate schools. PhD students from the Graduate School of Economics and Business, the Graduate School of Medical Sciences and the Graduate School of Science and Engineering more often reported practical setbacks (see Figure 33).
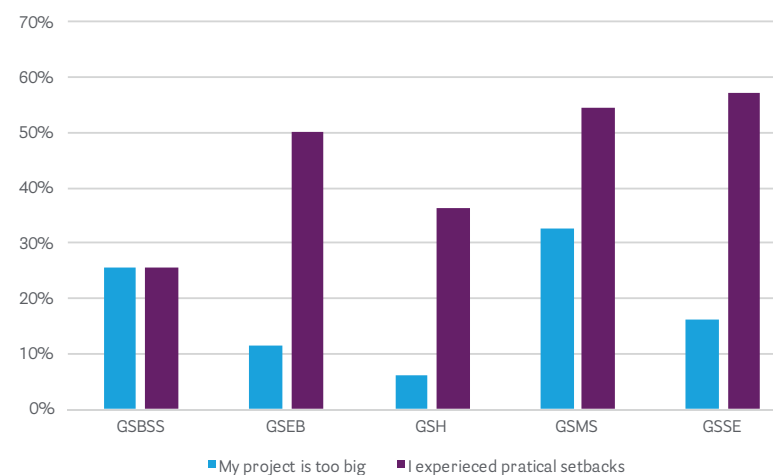


Figure 30. Frequency of two reasons for delay that differ between the larger graduate schools

## 5.4    About discontinuing the PhD project

In 2017, almost 30% of PhD students considered discontinuing their PhD at least once (see Table 42). This percentage increased compared to previous years (2015: 24%; 2013: 22%; 2011: 27%).

Table 42. Have you ever considered quitting your PhD project?

| Response option | n | % |
|---|---|---|
| Yes, very often | 34 | 4 |
| Yes, often | 40 | 4 |
| Yes, sometimes | 214 | 22 |
| No, never | 679 | 70 |
| Total | 967 | 100 |

### Group differences

Of the non-Dutch PhD students, 66% had never considered quitting their project, compared to 74% of Dutch PhD students. With regard to phase, we see that obviously the proportion of PhD students who consider quitting at some point (categories: 'Sometimes', 'Often' and 'Very often') increases with phase (see Figure 31).
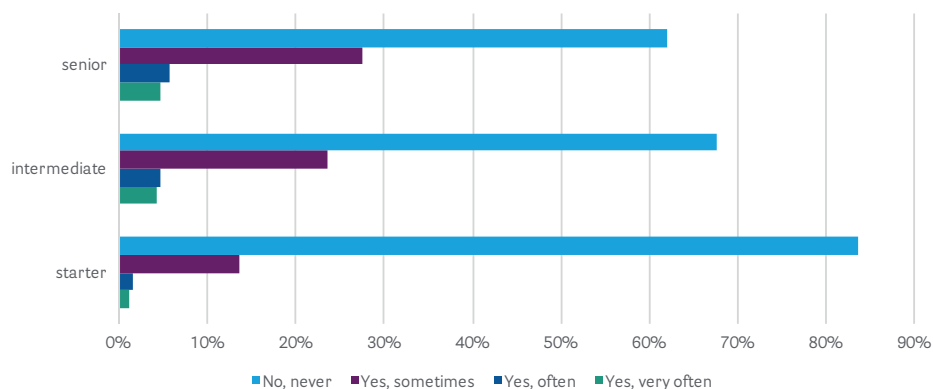
Figure 31. 'Have you ever considered quitting your PhD project?', by phase

### 5.4.1    Reasons for considering quitting

PhD students who had considered quitting were asked for the main reason. The 273 open answers were categorized, and the frequencies are displayed in Table 43. The most common reasons are personal problems, doubts about academia, stress, mental health problems and high workload.

Table 43. What was/is your main reason for considering quitting your PhD project?

| Response option | n | % |
|---|---|---|
| Personal problems | 46 | 17 |
| Doubts about academia | 46 | 17 |
| Stress of not finishing in time | 32 | 12 |
| Mental health problems | 29 | 11 |
| High workload | 29 | 11 |
| Problems with the execution of the project | 20 | 7 |
| Lost interest in the subject | 19 | 6 |
| Problems with supervision | 12 | 4 |
| I do not enjoy it anymore | 12 | 4 |
| Other | 11 | 4 |
| Uncertainty about my capabilities/PhD work | 10 | 4 |
| Discontent with the working environment | 7 | 3 |
| Total | 273 | 100 |

## 6    Research environment

This chapter focuses on the environment in which PhD students perform their research. This covers workplace facilities, satisfaction with academic and social interactions, perceived workload and problems due to language difficulties.

### 6.1    Research institute

Of the total response population of 1163 PhD students, 945 (81%) answered the question, 'What is the name of your research institute?' PhD students could choose from a list of 27 institutes. Of those 945 PhD students, 83% (n = 787) reported the institute they had registered in Hora Finita, 9% reported a different institute, 5% did not know the name of their institute and for 3% the institute could not be verified, since no information about the research institute was present in Hora Finita.

### 6.2    Workplace facilities

PhD students could state the extent to which facilities (workplace, computer, research facilities and access to information) are provided (not adequately, adequately and very adequately, see Table 45).

Regarding the workplace, we found a significant difference between externals and the other three affiliation groups: 11% of external PhD students indicated that their workplace was not adequately provided for (against 1% of bursary PhD students, 2% of PhD scholarship students and 4% of employed PhD students).

Table 44. In your opinion, to what extent have the following facilities been adequately provided?

| Response option | n | % Not adequately | % Adequately | % Very adequately |
|---|---|---|---|---|
| Workplace | 911 | 4 | 32 | 64 |
| Computer and accompanying software | 924 | 8 | 37 | 55 |
| Research facilities (e.g. labs, instruments, access to secondary data) | 803 | 6 | 42 | 53 |
| Access to information (e.g. journals, books) relevant to my research topic | 218 | 3 | 30 | 67 |

## 6.3 Academic and social relationships and sense of belonging

PhD students were asked about academic relationships, social relationships and their sense of belonging to the research environment. By 'academic relationships', we mean the formal relationships with colleagues at work, such as colleagues' willingness 'To help you when you are experiencing a work-related problem'. 'Social relationships' are the informal relationships with colleagues, for example whether you also meet for social activities outside of work. 'Sense of belonging' concerns feeling at home in your research group and having the sense that you fit in. PhD students were presented with several statements concerning these concepts and were asked to rate them on a scale of 1 to 5. About 800 PhD students answered the questions.

In general, PhD students were positive about the relationships they have with colleagues. Table 45 shows the percentage of PhD students who completely agreed with the academic relationship statements. Table 47 shows the responses for social relationships and Table 48 for statements concerning sense of belonging.

Table 45. Agreement with statements concerning perception of formal/academic relationships

| Statement | n | mean | sd |
|---|---|---|---|
| Colleagues invite me to work with them on projects or tasks | 811 | 3.19 | 0.99 |
| It is easy to find colleagues to collaborate with | 808 | 3.33 | 0.98 |
| In my department, people often work together | 808 | 3.36 | 0.99 |
| Colleagues approach me to discuss their work | 807 | 3.52 | 0.98 |
| Colleagues appreciate my feedback | 806 | 3.75 | 0.73 |
| I collaborate well with my colleagues | 808 | 3.71 | 0.79 |
| My interpersonal relationships with my colleagues have a positive influence on my performance | 809 | 3.95 | 0.79 |
| There are people to turn to in my department when I need help | 806 | 3.99 | 0.82 |
| **Academic relationship scale score** | **812** | **3.60** | **0.65** |

Table 46. Agreement with statements concerning perception of informal/social relationships

| Statement | n | mean | sd |
|---|---|---|---|
| I know my colleagues quite well | 806 | 3.69 | 0.84 |
| My colleagues are interested in how I am doing | 805 | 3.75 | 0.82 |
| I regularly spend time outside work with my colleagues | 804 | 3.27 | 1.08 |
| I have close interpersonal relationships with my colleagues | 804 | 3.29 | 1.02 |
| **Social relationship scale score** | **807** | **3.50** | **0.80** |

Table 47. Agreement with statements concerning sense of belonging

| Statement | n | mean | sd |
|---|---|---|---|
| I feel at home in my department | 805 | 3.75 | 0.94 |
| I enjoy the atmosphere in my department | 805 | 3.84 | 0.89 |
| This department is a good place for me to work | 805 | 3.91 | 0.87 |
| I get on well with most of the people in my department | 805 | 4.10 | 0.64 |
| I share the same values with most of the people in my department | 805 | 3.70 | 0.85 |
| **Sense of belonging scale score** | **805** | **3.86** | **0.71** |

### Group differences

There were differences for sense of belonging and academic relationships. Sense of belonging was significantly lower for: 1) external PhD students (3.74) compared to employed PhD students (3.86); 2) starters (3.95) compared to seniors (3.77); and finally 3) Dutch PhD students (3.56) compared to European (3.50) and non-European PhD students (3.43). With regard to academic relationships, small but significant differences were found between graduate schools (see Table 102. Average scale scores by graduate school).

## 6.4    Workload

Since 2015, questions concerning workload have been added to the PhD survey. A little less than half (48.2%) of the PhD students described their workload as high, while two-fifths (42.9%) described it as normal (see Table 48).

Table 48. How would you describe the workload in your PhD project?

| Response option | n | % |
|---|---|---|
| Too high | 56 | 6 |
| High | 465 | 48 |
| Normal | 412 | 43 |
| Low | 5 | < 1 |
| Too low | 3 | < 1 |
| I don't know | 19 | 2 |
| Total | 960 | 100 |

PhD students, who reported high or low workloads of any degree, were asked if they were bothered by the workload. Of the PhD students who reported a high workload, 60% were somewhat bothered, 25% considerable bothered and 5% extremely bothered. For the PhD students who reported that their workload was too high, 20% were somewhat bothered, 60% were considerably bothered and 15% were extremely bothered (see Figure 32). In the low workload group, 20% were considerably bothered by the low workload. Nobody in the low workload group chose the options, 'Extremely bothered' or 'Somewhat bothered'.
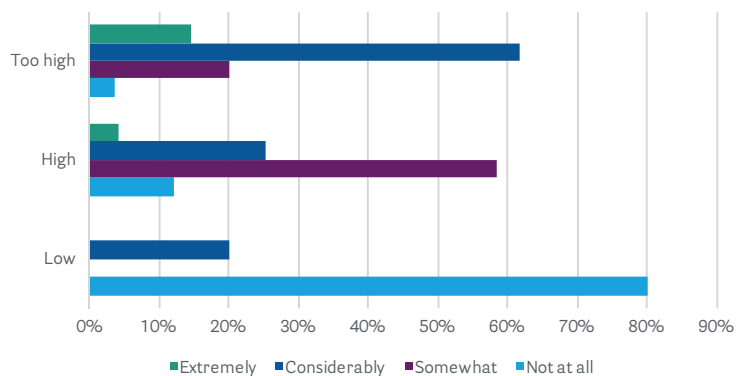


Figure 32. To what extent does this workload bother you?

The average workload score (1 = too low – 5 = too high) was 3.60 (sd = 0.62, n = 941). PhD students from non-European countries (score: 3.50) reported a significantly lower perceived workload than the Dutch (3.67) and European PhD students (3.64). The difference between employed PhD students (3.66) on the one hand and bursary students (3.48) and PhD scholarship students (3.36) on the other, was most likely in part explained by nationality. With regard to phase of the project, starting PhD students reported a lower perceived workload (3.45) compared to both intermediates (3.62) and seniors (3.71).

Differences between graduate schools are presented in Figure 33. A small proportion of PhD students from the Graduate School of Behavioural and Social Sciences and the Graduate School of Science and Engineering reported a low or too low workload. PhD students from the Graduate School of Theology and Religious Sciences, the Graduate School for the Humanities and the Graduate School of Law have a perceived workload that is above the UG average of 3.6. Those from the Graduate School of Spatial Sciences and the Graduate School of Science and Engineering overall reported a lower workload than the UG average.
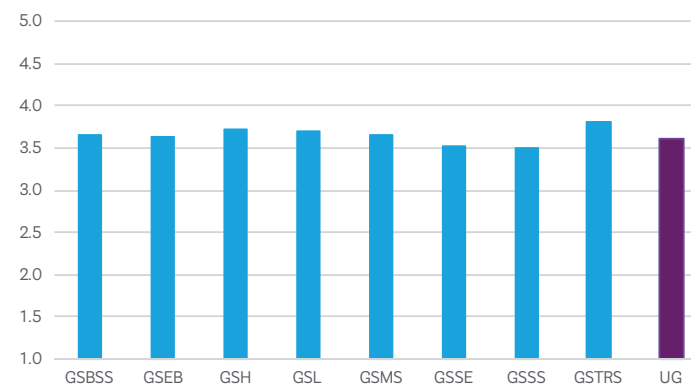


Figure 33. Average workload score by graduate school

## 6.4.1    Reasons for heavy workload

The 463 PhD students who reported a high or too high workload and were concerned by this were asked about their reasons. Table 49 presents the results. The most frequently mentioned reasons were complexity, amount or pace of work (70%), deadlines (48%) and pressure to publish (45%). These results are similar to those in 2015.

Table 49. What are the main reasons for your heavy workload?

| Response option | n | % |
|---|---|---|
| Complexity, amount and/or pace of work | 325 | 70 |
| Deadlines | 220 | 48 |
| Pressure to publish | 209 | 45 |
| Other required activities, e.g. teaching | 160 | 35 |
| Contact with supervisors and/or colleagues | 93 | 20 |
| Problems due to working with living subjects and/or animals | 88 | 19 |
| Problems with equipment and facilities | 87 | 19 |
| Significant personal events | 85 | 18 |
| Other reasons | 69 | 15 |
| **Total number of PhD students who indicated at least one reason** | **463** | **100** |

## 6.5    Problems due to language difficulties

PhD students were asked about a variety of problems due to language difficulties (Table 51). They could indicate all of the problems that they have encountered. Figure 34 and Figure 35 present the differences between nationality groups (Dutch, European, non-European). Interestingly, Dutch PhD students reported more problems with writing and presenting in academic English than PhD students who come from other European countries (Figure 34). This latter finding might reflect that these PhD students have more experience in speaking and writing in English. At first sight, it might seem strange that non-European PhD students report less problems with writing and presenting in academic Dutch than in academic English. This could be explained by the fact that presenting and writing in Dutch is not an issue for most non-European PhD students. PhD students from outside the EU (mostly from China and Indonesia) reported having more problems with writing and presenting in academic English (Figure 34) and with general communication in the workplace because neither English, nor Dutch, is their native language (Figure 35). There were no differences between Dutch, EU and non-EU PhD students with regard to reporting problems due to colleagues speaking non-native English (see Figure 35).

Table 50 Have you experienced any of the following language problems?

| Response option | n | % |
|---|---|---|
| Problems with writing and presenting in academic English | 250 | 22 |
| Problems with writing and presenting in academic Dutch | 117 | 10 |
| Problems with general communication in the workplace due to being a non-native English speaker | 112 | 10 |
| Problems with general communication in the workplace due to being a non-native Dutch speaker | 124 | 11 |
| Problems due to colleagues being non-native English speakers | 116 | 10 |
| None of the above | 614 | 55 |
| Something else | 39 | 3 |
| **Number of PhD students who selected at least one option** | **1123** | **100** |
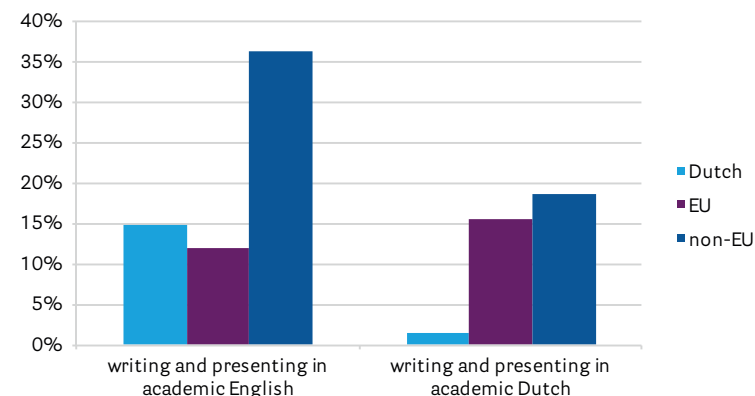


Figure 34. Difficulties in writing and presenting due to language used, by nationality group
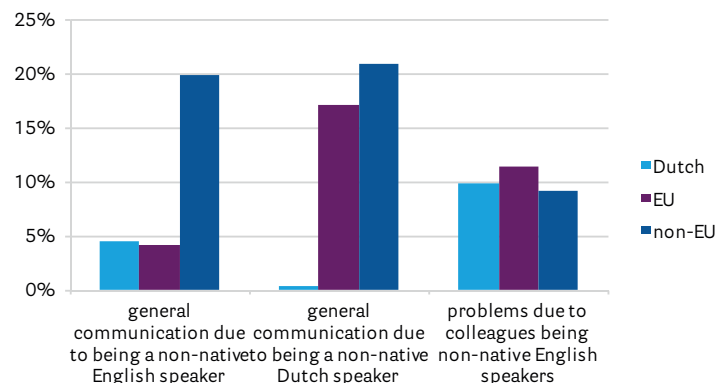
Figure 35. Difficulties in communication due to language used, by nationality group

# 7 Education, teaching and career preparation

This chapter is about PhD students' education, teaching activities, teacher training and career development. We start with an overview of the number of credits, followed by the type of activities and satisfaction with the activities. Subsequently, we examine how many PhD students are involved in teaching and supervisory activities, how much time they spend and if they have received sufficient teaching training. The final section concerns career preparation, job perspectives, preferred career (within or outside academia) and the role of the graduate school in career preparation.

## 7.1 Education programme

As part of the PhD programme, PhD students have to earn a certain number of credits (ECTS[14]) for educational activities. PhD students were asked to report how many credits they have to earn (on average they reported 28[15]) to complete their programme and how many they have earned so far (on average 20). Around 14% answered that they did not need to earn credits to complete their PhD, 31% did not know how many they needed and another 30% did not know how many they had earned so far.

### Group differences

There were no differences in the self-reported number of credits to be earned between the four different affiliation groups. However, there were differences in the number of credits earned so far (see Table 52). PhD scholarship students had earned the least number of credits, which seems logical, as they had only just started their projects. In addition, externals had gained fewer credits compared to bursaries and employed PhD students.

Table 51. Credits to be earned/already earned, by affiliation group

| Affiliation group | Credits to earn | | | Credits earned | | |
|---|---|---|---|---|---|---|
| | n | mean | sd | n | mean | sd |
| Employee | 316 | 27.1 | 9.2 | 299 | 20.5 | 13.6 |
| External | 21 | 27.1 | 10.6 | 26 | 15.9 | 13.6 |
| Bursary | 90 | 28.9 | 9.9 | 87 | 22.3 | 11.4 |
| PhD scholarship student | 68 | 27.5 | 8.7 | 65 | 7.4 | 6.6 |
| **UG total** | **529** | **27.6** | **9.3** | **515** | **19.5** | **13.6** |

[14] ECTS = European Credit Transfer and Accumulation System.

[15] At most graduate schools, PhD students are required to complete 30 ECTS in four-year PhD programmes. The number is lower for shorter programmes, PhD programmes in combination with a Master's programme (2+3 programmes) and sandwich programmes (with part of the programme at another university). A difference in the number of credits reported to have been earned may therefore reflect the prevalent types of PhD programmes in a graduate school.

There were no differences reported in credits to be earned between PhD students in different phases; however, not surprisingly, PhD students further into their projects had earned more credits than PhD students who had just started (see Table 52). There were significant differences between the three phases in the number of credits earned for all graduate schools, except for the Graduate School of Economics and Business.

Table 52. Credits to be earned/already earned, by phase

| Phase | Credits to earn | | | Credits earned | | |
|---|---|---|---|---|---|---|
| | n | mean | sd | n | mean | sd |
| Starter (≤ 1st year) | 153 | 27.6 | 8.3 | 138 | 8.0 | 6.8 |
| Intermediate | 232 | 26.7 | 10.1 | 230 | 19.4 | 11.4 |
| Senior (≥ 4th year) | 143 | 28.8 | 8.7 | 146 | 30.6 | 12.5 |

Figure 36 shows the average number of credits to be earned and earned so far for each graduate school. The reported number of credits to be earned is significantly lower at the Graduate School of Spatial Sciences compared to the other graduate schools. However, PhD students from this graduate school gained, on average, more credits than they required. A distinction by phase within graduate school was not possible, as group numbers were smaller than 15 respondents for most graduate schools (except for the Graduate School of Medical Sciences and the Graduate School of Science and Engineering).
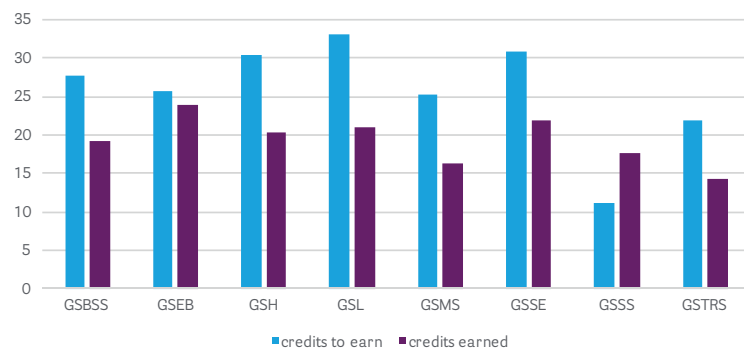


Figure 36. Average credits to be earned/already earned, by graduate school

### 7.1.1.  Type of educational activities

PhD students were asked about their participation in five types of educational activities: 1) discipline specific, 2) generic skills[16] , 3) teacher training, 4) career orientation and 5) conferences. For each activity, they could indicate how many times they participated (none, once, twice, three times or more) or they could select the option 'I do not know/I can't remember'. Around 25% of all PhD students had not participated in a discipline-specific course or generic skills course (see Table 54). However, these percentages make more sense in the context of the phase.

Table 53. How many of the following types of courses and activities have you undertaken during your PhD to date?

| Activity | n | 0 | 1 | 2 | >3 | I don't know/remember |
|---|---|---|---|---|---|---|
| Discipline-specific | 878 | 29% | 25% | 17% | 24% | 5% |
| Generic skills | 916 | 20% | 27% | 26% | 26% | 2% |
| Teacher training | 872 | 70% | 18% | 6% | 4% | 2% |
| Career orientation | 864 | 57% | 24% | 11% | 4% | 4% |
| Conferences | 920 | 13% | 17% | 16% | 53% | 1% |

For each activity, Figure 37 shows the proportion of PhD students who participated in at least one course or activity for each phase. The participation in discipline-specific activities, career orientation and conferences increases significantly with project phase. Regarding generic skills and teaching training courses, we see that starters participate less often than more advanced PhD students, but the attendance of intermediates and seniors is not significantly different.

In addition to differences between phases, there were significant differences between graduate schools (see Figure 38). At the Graduate School of Behavioural and Social Sciences, there were differences for career activities and conferences, at the Graduate School for the Humanities for teacher training, at the Graduate School of Science and Engineering for all five courses and activities, and at the Graduate School of Medical Sciences for four out of five activities: discipline-specific and general skills courses, teacher training and conferences.

More information concerning teacher-training activities will be presented in Section 7.2. Detailed analyses concerning career orientation courses will be presented in Section 7.3.

[16] Generic skills concern, e.g. project management, writing skills, presentation skills.
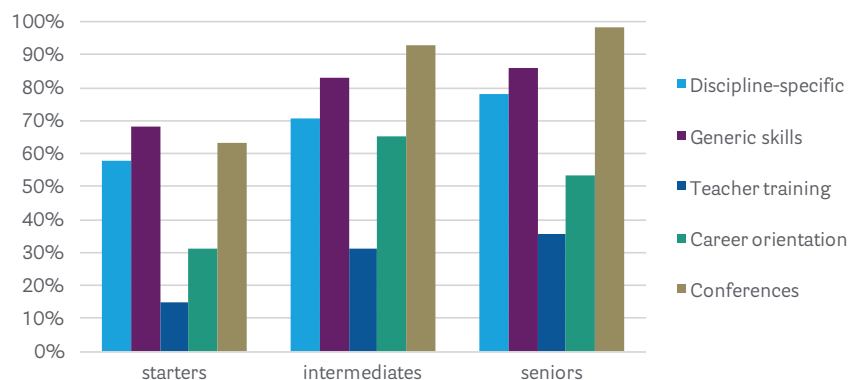
Figure 37. Proportion of participation in at least one course or activity, by phase
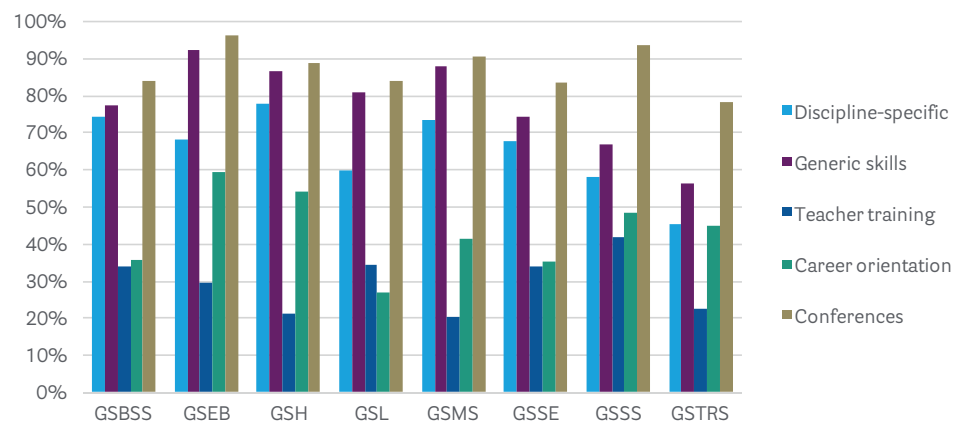


Figure 38. Proportion of participation in at least one course or activity, by graduate school

## 7.1.2    Satisfaction with educational activities

PhD students rated their level of agreement with eight statements about the educational activities offered by the university (overarching Groningen Graduate Schools), their faculty's graduate school, or other institutes and organizations. The eight statements were combined into a score, of which the average was 3.42 (sd = 0.64). The item and scale scores are presented in Table 54.

Table 54. Agreement with statements about educational activities

| Statement | n | mean | sd |
|---|---|---|---|
| I have sufficient time to participate in educational activities | 927 | 3.33 | 0.93 |
| I am satisfied with the number of educational activities on offer | 922 | 3.51 | 0.85 |
| I am satisfied with the quality of the educational activities on offer | 923 | 3.48 | 0.86 |
| I am satisfied with the diversity of the educational activities on offer | 922 | 3.36 | 0.92 |
| I am satisfied with the information I receive about educational activities | 921 | 3.33 | 0.94 |
| The educational activities in which I have participated contribute to the completion of my PhD | 924 | 3.47 | 0.89 |
| My supervisors encourage me to participate in educational activities | 919 | 3.40 | 0.97 |
| In general, I am satisfied with the educational activities on offer | 922 | 3.47 | 0.83 |
| **Satisfaction with educational activities scale score** | **927** | **3.42** | **0.64** |

### Group differences

There were differences in the average satisfaction scores between graduate schools (Figure 39). The UG average is 3.4, which can be regarded as satisfactory. PhD students from the Graduate School of Behavioural and Social Sciences, the Graduate School of Economics and Business, the Graduate School of Science and Engineering and the Graduate School of Theology and Religious Sciences were most satisfied with their educational activities. In 2015, PhD students from the Graduate School of Theology and Religious Sciences were least satisfied, while those from the Graduate School of Economics and Business were most satisfied. There were no differences between the three phases. Bursary PhD students were significantly more satisfied than employed PhD students, and Dutch PhD students were less satisfied than non-Dutch PhD students.
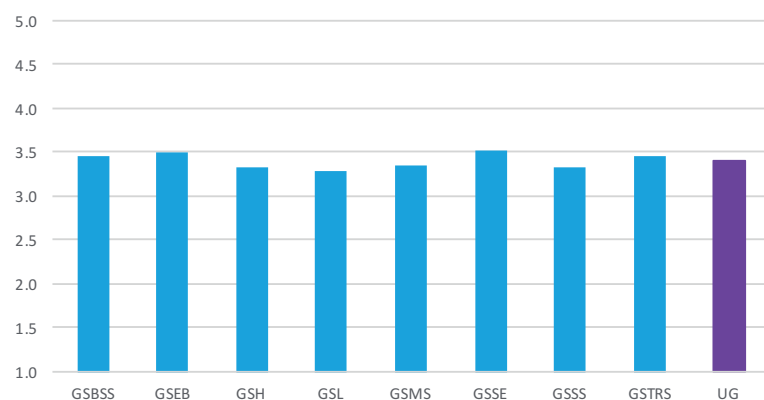
Figure 39. Average satisfaction with educational activities, by graduate school

## 7.2 Teaching and supervising students

This section concerns teaching and supervision. Questions were presented to employed PhD students, bursaries and PhD scholarship students, but not to external PhD students. Almost 80% of employed PhD students, 62% of bursaries and 18% of PhD scholarship students reported they were involved in teaching and supervising. About 40% were involved in teaching and supervision on a voluntary basis and about 30% were obliged (see Table 56). Bursaries and PhD scholarship students are not obliged to teach or supervise, and are only allowed if doing so is on a voluntary basis and/or within the framework of their training programme (e.g. the present course 'Start to Teach').

Table 55. Do you teach and/or supervise students?

| Response option | n | % |
|---|---|---|
| Yes, because it is obligatory | 228 | 30 |
| Yes, voluntarily | 307 | 40 |
| No | 230 | 30 |
| Total | 765 | 100 |

Of the PhD students who do not teach, 56% are first-year students (as in 2015). Reasons for not teaching are shown in Table 56. About 100 PhD students chose the option, 'Other', and were asked to elaborate on their reasons. The majority (96%) of these answers could be categorized as 'I just started', 'Maybe later', 'No opportunity (yet)', 'Nobody has asked me (yet)', 'Planned for later'.

Table 56. Please indicate the reason(s) why you do not teach or supervise students

| Response option | n | % |
|---|---|---|
| I don't want to | 10 | 4 |
| I don't have time | 33 | 14 |
| I don't feel confident enough about my teaching/supervising skills | 31 | 14 |
| My contract or agreement does not allow me to teach/supervise | 75 | 33 |
| Other | 104 | 46 |
| Total number of PhD students that selected at least one option | 228 | |

There were differences between affiliation groups for the first three of the four predefined reasons (see Table 57). Employed PhD students significantly more often chose the option, 'I do not have time', than PhD scholarship students. PhD scholarship students and bursaries significantly more often selected, 'I do not feel confident' and 'I am not allowed'. Of the 31 PhD students who did not feel confident enough, 26 answered questions about teacher training activities (see Section 7.1). Of these, only two PhD students had participated in a teacher training activity.

Table 57. Reasons for not teaching by affiliation

| Reasons | Employee | | Bursary | | PhD scholarship | | Total | |
|---|---|---|---|---|---|---|---|---|
| | n | % | n | % | n | % | n | % |
| I do not have time | 21 | 48 | 50 | 60 | 4 | 7 | 74 | 41 |
| I do not feel confident | 5 | 11 | 9 | 11 | 17 | 32 | 31 | 17 |
| I am not allowed | 18 | 41 | 24 | 29 | 33 | 61 | 76 | 42 |
| Total | 44 | 100 | 83 | 100 | 54 | 100 | 181 | 100 |

## 7.2.1    Teaching training

Almost three-fifths (58%) of the PhD students answered 'No' to the question, 'Do you (or did you) receive sufficient training on how to teach and supervise students?' Table 59 shows the percentages of PhD students who participated in none, one, two, or three or more teacher-training activities. Of the PhD students who did not feel well prepared, 75% had not participated in any teacher-training activity.

Table 58. Attendance of teacher-trainer activities by PhD students who do and do not feel sufficiently trained to teach and supervise

| Number of teacher-training activities | 0 | 1 | 2 | >3 | I do not remember |
|---|---|---|---|---|---|
| Feeling sufficiently trained | % | % | % | % | % |
| Yes | 43 | 33 | 14 | 7 | 2 |
| No | 75 | 17 | 3 | 3 | 2 |

### Group differences

Figure 40 shows, by graduate school, the percentage of PhD students who did not feel sufficiently prepared. On average, a little less than 60% of PhD students did not feel prepared. Almost three-quarters of PhD students from GSMS who had teaching duties did not feel sufficiently prepared.
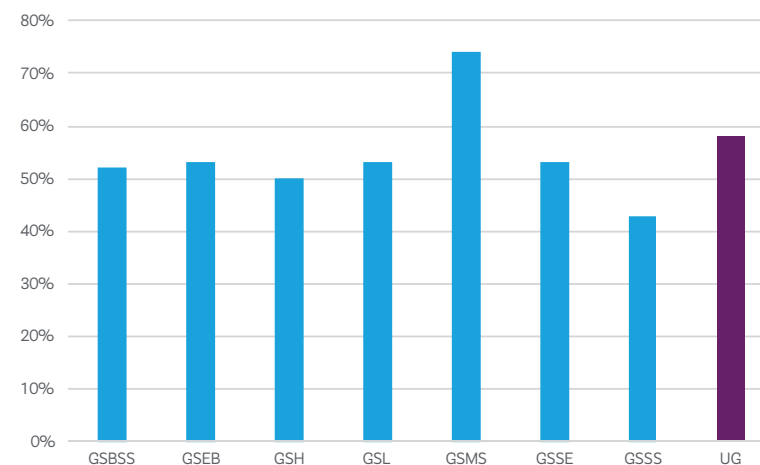


Figure 40. Proportion of PhD students with teaching duties who do not feel sufficiently prepared, by graduate school

By making a distinction between PhD students who participated in at least one teacher-training activity and PhD students who did not participate in any teacher-training activities, it is apparent that PhD students who had not participated in any teacher-training activities felt significantly less prepared than PhD students who had attended at least one activity. Figure 41 shows this distinction for graduate schools that had at least 15 respondents in each group. The proportion of PhD students who felt insufficiently prepared but had not completed any training is the highest at the Graduate School of Medical Sciences.

Figure 41. Attendance of teacher-training activities by PhD students who do not feel sufficiently prepared, by graduate school

## 7.2.2    Type of teaching activities

The 535 PhD students who have (or had) teaching duties (at the moment the survey was taken) were asked about the type of activities (such as giving lectures, workshops, practicals, tutorials, supervising groups or individual students). PhD students could select one or more of the predefined answer options (see Table 59). Of those who have teaching duties, about 42% were involved in only one activity, 33% in two, 19% in three and 6% in more than three.

Table 59. What kind of teaching activities do you do or have you done during your PhD trajectory?

| Response option | n | % |
|---|---|---|
| Giving lectures | 142 | 27 |
| Giving workshops/seminars/practicals/tutorials | 253 | 47 |
| Supervising groups of students | 203 | 38 |
| Supervising individual students | 404 | 76 |
| Other | 10 | 2 |
| Total number of PhD students that selected at least one option | 533 | |

Graduate schools differed in the average number of teaching activities (see Table 60). PhD students from the Graduate School of Behavioural and Social Sciences were more involved in teaching and supervising than PhD students from other graduate schools. The difference between the GSBSS and the three graduate schools of GSEB, GSMS and GSSE was significant.

Table 60. Differences in average number of teaching activities, by graduate school

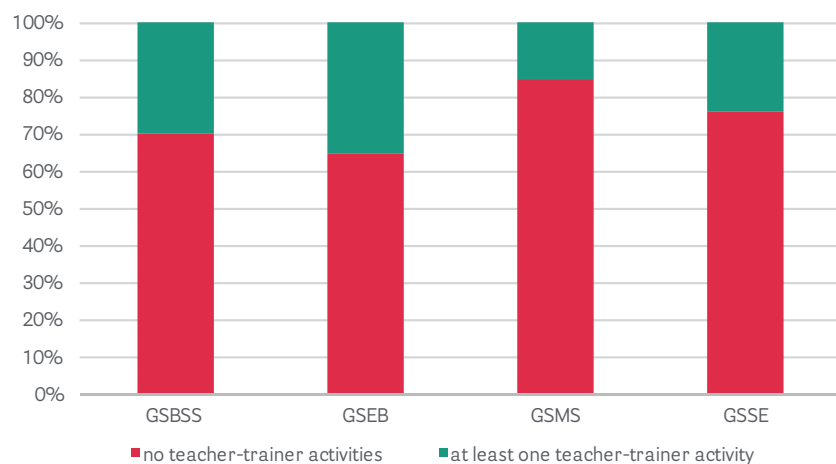| Graduate school | n | mean | sd |
|---|---|---|---|
| Behavioural and Social Sciences | 43 | 2.81 | 1.03 |
| Graduate School of Economics and Business | 35 | 1.91 | 1.04 |
| Graduate School for the Humanities | 20 | 2.45 | 0.94 |
| Graduate School of Law | 15 | 1.80 | 0.77 |
| Graduate School of Medical Sciences | 161 | 1.73 | 0.81 |
| Graduate School of Science and Engineering | 234 | 1.80 | 0.86 |
| Graduate School of Spatial Sciences | 15 | 2.27 | 1.16 |

In addition, there were significant differences between the average number of teaching activities between the three phases (see Table 61). Senior PhD students were more involved in teaching activities than intermediates, and intermediates in more activities than starters.

Table 61. Differences in average number of teaching activities, by phase

| Phase | n | mean | sd |
|---|---|---|---|
| Starters | 104 | 1.50 | 0.74 |
| Intermediates | 265 | 1.94 | 0.95 |
| Seniors | 164 | 2.09 | 0.95 |

Figure 42 shows, for graduate schools with more than 15 respondents, the proportion involved in the four different teaching activities: giving lectures, giving workshops/seminars/practicals/ tutorials, supervising groups of students and supervising individual students.
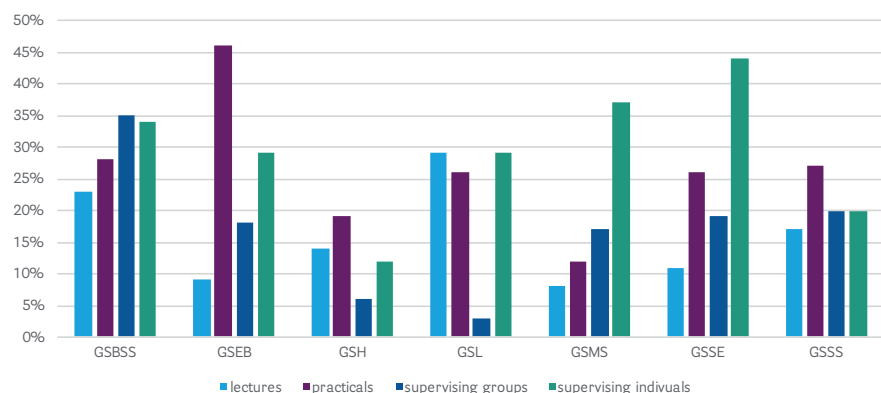
Figure 42. Frequencies of different teaching activities, by graduate school

## 7.2.3    Balance between teaching/supervision and other PhD work

Almost three-quarters of the PhD students were satisfied with the amount of time spent on teaching and supervising (see Table 62). This is comparable to 2015, when 70% of PhD students were satisfied.

Table 62. How do you feel about the balance between teaching/supervising and other PhD work?

| Response option | n | % |
|---|---|---|
| I would like to teach/supervise less | 78 | 15 |
| I am satisfied with the amount of time I spend teaching/supervising | 383 | 73 |
| I would like to teach/supervise more | 65 | 12 |
| Total | 526 | 100 |

### Group differences

There were no group differences for phase or graduate school. However, there were significant differences between employed and bursary PhD students. While around three-quarters of both employed and bursary PhD students were satisfied with the balance between teaching and other PhD work, bursaries would like to teach/supervise more (17%) than would employed PhD students (12%). In addition, more employed PhD students (15%) than bursary PhD students (10%) would like to supervise less.

## 7.3    Career orientation

The following section discusses future prospects of PhD students, considering the timing of career orientation, career activities engaged in, job perspectives, and support by the UG, the graduate schools and supervisors in orientation and preparation for a future career.

### 7.3.1    Exploring future career options

About 44% of the PhD students were currently exploring options for their future career. The percentage of those not yet exploring their options (37%) is similar to that of 2015 (39%). Table 63 shows the significantly different responses of PhD students in different phases of their project. Around 60% of seniors and 45% of the intermediates were exploring their options. In addition, one-quarter of PhD students in their first year were already thinking about their future career.

Table 63. Are you currently exploring options for a future career?

| Response option | Starter | | Intermediate | | Senior | | UG total | |
|---|---|---|---|---|---|---|---|---|
| | n | % | n | % | n | % | n | % |
| Yes | 62 | 24 | 178 | 45 | 180 | 61 | 420 | 44 |
| No, not yet | 148 | 58 | 163 | 41 | 38 | 13 | 350 | 37 |
| No, I already know what I am going to do/want to do after my PhD | 38 | 15 | 48 | 12 | 66 | 22 | 15 | 16 |
| Not applicable | 8 | 3 | 10 | 3 | 13 | 4 | 33 | 4 |
| Total | 256 | 100 | 399 | 100 | 297 | 100 | 955 | 100 |

Note: starter: ≤ 1 year; intermediate: in 2nd or 3rd year; senior: ≥ 4 years

PhD students who selected the option, 'No, not yet', were asked when they thought they would start to explore their options for a future career. Around one-third (35%) said they would do this in their second or second-to-last year, 47% in their final year and 20% did not know. Answers were different for staring and intermediate PhD students (see Figure 43).
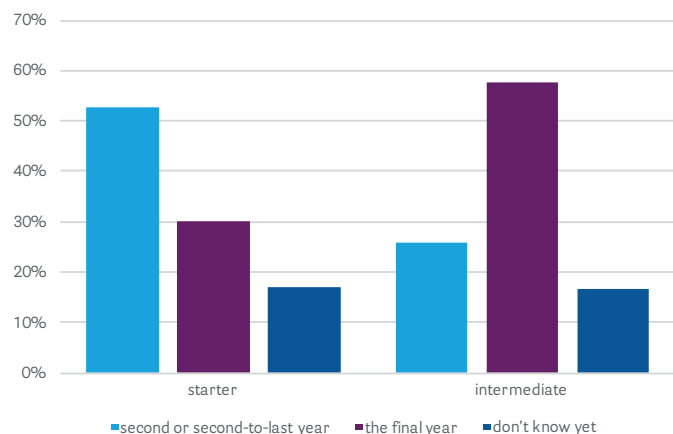
Figure 43. When do you think you will start exploring your options for a future career?

## Group differences

When only considering the answer options 'Yes' and 'No, not yet', it is apparent that there is a significant difference between employed PhD students and bursaries, of whom 56% and 55% respectively were exploring their options, in comparison to 46% of externals and 34% of PhD scholarship students. That fewer PhD scholarship students were exploring their options can be explained by the fact that they are in their first year. There were no significant differences between the graduate schools (see final column in Table 64). Exploring differences between the phases within a graduate school, there were some differences; however, they were not significant (see Table 64). Four graduate schools have no results by phase because the number of respondents in one of the subgroups was below 15.

Table 64. Proportion of PhD students exploring future career options, by phase and graduate school

| | Starter | | Intermediate | | Senior | | Graduate school | |
|---|---|---|---|---|---|---|---|---|
| GS | n | % | n | % | n | % | n | % |
| GSBSS | 1 | 8 | 20 | 53 | 16 | 94 | 37 | 54 |
| GSEB | | | | | | | 28 | 60 |
| GSH | 8 | 47 | 9 | 36 | 14 | 67 | 31 | 49 |
| GSL | | | | | | | 11 | 58 |
| GSMS | 18 | 33 | 62 | 62 | 52 | 84 | 132 | 61 |
| GSSE | 24 | 26 | 57 | 46 | 68 | 84 | 149 | 50 |
| GSSS | | | | | | | 16 | 62 |
| GSTRS | | | | | | | 10 | 56 |

Note: empty cells because < 15 respondents in subgroups

## 7.3.2 Career events attended

PhD students could state how many activities (none, one, two, three or more) they had attended so far that focused specifically on a career within or outside academia. This could be events offered by the graduate school or by other institutes or organizations. Over half (53%) of the PhD students had not attended any activities so far (see Table 65) and there were differences between graduate schools (Figure 44). PhD students from the Graduate School for the Humanities and the Graduate School of Economics and Business most often attended career activities, those from the Graduate School of Law and the Graduate School of Theology and Religious Sciences attended the least.

Table 65. Career events attended

| Response option | n | % |
|---|---|---|
| None | 467 | 53 |
| Only within | 122 | 14 |
| Only outside | 125 | 14 |
| Both within and outside | 162 | 19 |
| **Total** | **876** | **100** |

Figure 44. Proportion of PhD students who have not yet attended career activities, by graduate school
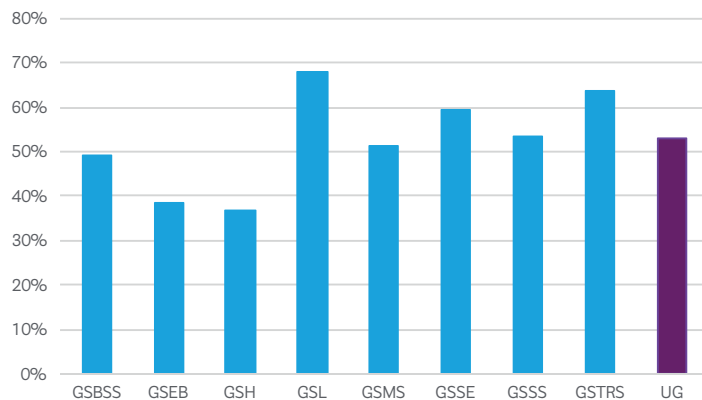
## Group differences in attendance of activities: within, outside or both

When we look at difference in the type of activity attended (within, outside or both), there are no differences between PhD students from different phases or affiliation groups. There were differences between graduate schools (see Figure 45). At most graduate schools, PhD students attended career activities that focused on a career within academia, as well as activities that focused on a career outside academia.
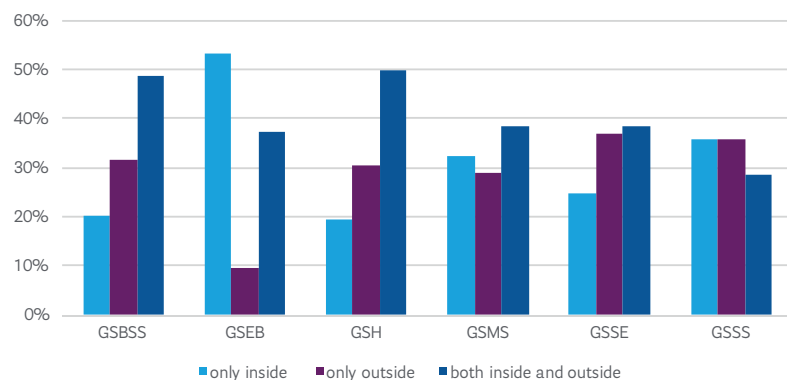


Figure 45. Career events attended, by graduate school

## Differences between the phases within graduate schools

Table 66 shows the percentage of attendance of career activities for each graduate school. There were differences between the phases for two graduate schools: the Graduate School of Science and Engineering and the Graduate School of Medical Sciences. For the Graduate School of Medical Sciences it is apparent that most starting PhD students explore options both within and outside, while most seniors attend career activities specifically concerned with a career within academia. For the Graduate School of Science and Engineering, it is apparent that starters are more focused on activities outside academia than PhD students in the other two phases.

Table 66. Proportion attending career events, by phase and graduate school

| | Starter | | | | Intermediate | | | | Senior | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GS | None | In | Out | Both | None | In | Out | Both | None | In | Out | Both |
| GSBSS | 38 | 5 | 29 | 29 | 54 | 11 | 9 | 26 | 54 | 15 | 15 | 15 |
| GSH | 29 | 14 | 14 | 43 | 32 | 18 | 25 | 25 | 60 | 0 | 18 | 18 |
| GSMS | 43 | 11 | 15 | 31 | 52 | 15 | 17 | 16 | 63 | 23 | 5 | 8 |
| GSSE | 37 | 10 | 29 | 25 | 65 | 12 | 9 | 13 | 74 | 7 | 9 | 10 |

Note: None = no attendance of career orientation activities (coa), In = attendance of coa inside academia, Out = attendance of coa outside of academia, Both = attendance of coa both inside and outside of academia.

## 7.3.3   Job prospects

A little over half (56%) of the PhD students were positive about their general prospects, which is comparable to previous years. The job prospect score (1 = very bad to 5 = very good) was, on average, 3.68 (sd = 0.93). Comparing the job prospect score between the phases, it is apparent that starting PhD students were more optimistic (3.82) than PhD students who were further into their project (intermediates 3.67; seniors 3.56). The four different affiliation groups did not differ significantly from each other on job perspective score.

Table 67 shows the average job prospect score in total and for each phase for each graduate school. Some graduate schools have no results presented by phase because the number of respondents in one of the subgroups was below 15. Differences between the phases were only significant within the Graduate School of Science and Engineering: starters were more positive compared to intermediates, who in turn were more positive than seniors about their general job prospects.

In addition to their general job prospects, we asked PhD students about their prospects for a career within and outside academia. Overall, PhD students were significantly more positive about their job prospects outside academia than about their prospects within academia (see Figure 46).

Table 67. Average job prospect score by phase and graduate school

| GS | Starter | | | Intermediate | | | Senior | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | n | mean | sd | n | mean | sd | n | mean | sd | n | mean | sd |
| GSBSS | 12 | 3.50 | 0.80 | 33 | 3.64 | 0.78 | 19 | 3.42 | 0.69 | 64 | 3.55 | 0.75 |
| GSEB | | | | 29 | 4.03 | 0.63 | 14 | 3.93 | 0.83 | 52 | 4.00 | 0.74 |
| GSH | 18 | 3.33 | 1.08 | 27 | 3.00 | 1.07 | 26 | 2.92 | 1.09 | 71 | 3.06 | 1.08 |
| GSL | | | | | | | | | | 24 | 3.67 | 0.87 |
| GSMS | 61 | 3.90 | 0.96 | 113 | 3.67 | 0.96 | 81 | 3.79 | 0.93 | 255 | 3.76 | 0.95 |
| GSSE | 102 | 3.95 | 0.76 | 127 | 3.79 | 0.85 | 99 | 3.63 | 0.98 | 328 | 3.79 | 0.87 |
| GSSS | | | | 15 | 3.60 | 0.74 | | | | 32 | 3.63 | 0.75 |
| GSTRS | | | | | | | | | | 21 | 2.95 | 0.92 |

Note: empty cells: < 15 respondents
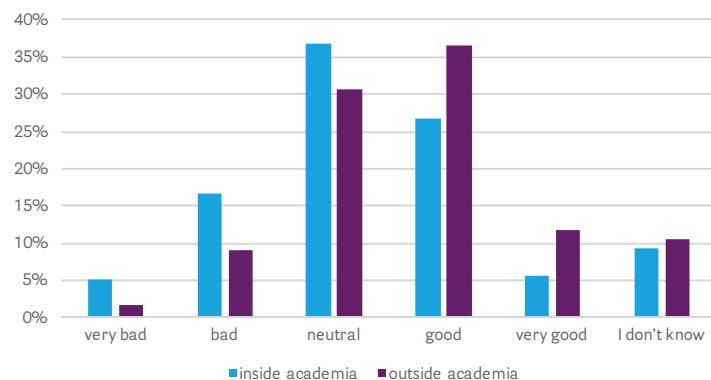


Figure 46. Job prospects within and outside academia

Figure 47 shows the average job prospects within and outside academia for each graduate school. The job prospects within and outside academia are significantly different for all graduate schools, with the exceptions of the Graduate School of Law and the Graduate School of Spatial Sciences.

Regarding job prospects within academia, starters were more positive (3.26) than seniors (3.03) and Dutch PhD students (2.88) were less positive than European (3.22) and non-European (3.36) PhD students. Employed PhD students (3.04) were less positive about their job prospects within academia than bursary PhD students (3.51) and PhD scholarship students (3.37).

Regarding job prospects outside academia, Dutch PhD students (3.63) differed significantly from PhD students from outside Europe (3.38) but not from PhD students from a European country (3.56). There were no differences between the phases, graduate schools or affiliation groups.
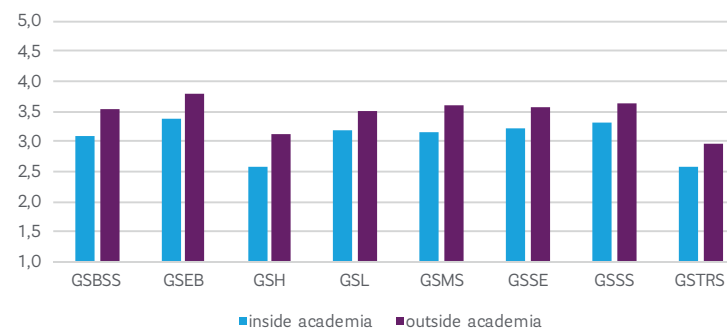


Figure 47. Job prospects within and outside academia, by graduate school

### 7.3.4 Familiarity with career opportunities within and outside academia

We asked to what extent PhD students were familiar with the options in their field regarding a career within or outside academia (see Figure 48). PhD students who selected the option, 'I do not know', were mostly first-year PhD students. The PhD students were significantly more familiar with career options within academia (3.23) than with options outside (2.89).
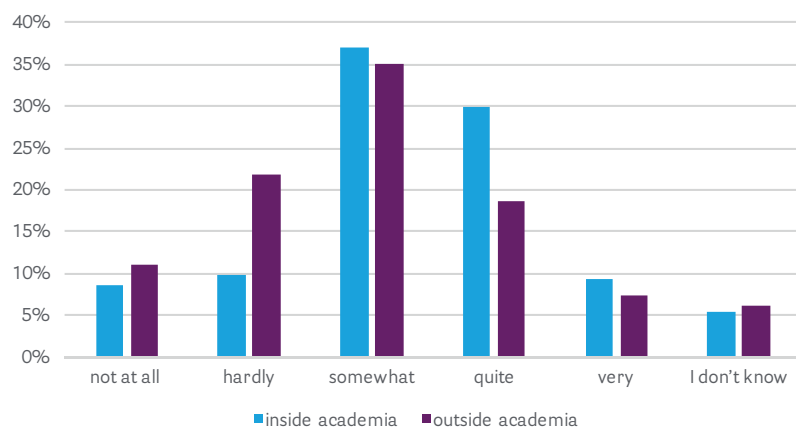


Figure 48. Familiarity with career opportunities within and outside academia

#### Group differences

Starters (3.15) and intermediates (3.18) were less familiar with career options within academia than seniors (3.37), while all phases were equally unfamiliar with the options outside academia. External PhD students (2.84) were significantly less familiar with career opportunities within academia compared to employees (3.25), bursaries (3.13) and PhD scholarship students (3.28). There were significant differences according to nationality group on both the awareness of opportunities within and outside academia. Non-Europeans were significantly less aware of career opportunities (3.06 and 2.63 within and outside respectively) than Dutch (3.27 and 3.08) and European PhD students (3.42 and 2.90). Familiarity with career opportunities outside academia differed between the graduate schools (see Figure 49). The awareness of career opportunities within academia was significantly higher than the awareness of opportunities outside academia for all graduate schools, with the exceptions of the Graduate School of Law and the Graduate School of Spatial Sciences.
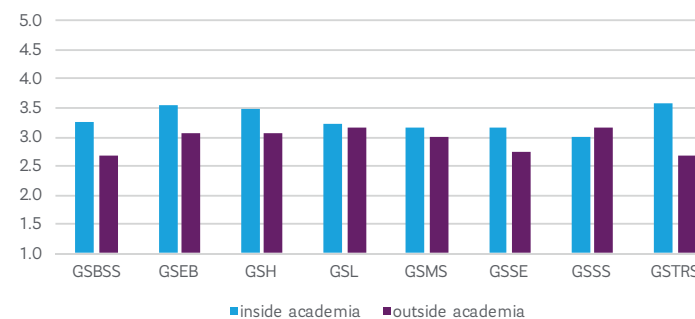


Figure 49. Average familiarity with career opportunities within and outside academia, by graduate school

#### Differences between the phases within graduate schools

There were significant differences between the phases only for the Graduate School of Science and Engineering: seniors (2.95) were significantly more aware of career opportunities outside academia than starters (2.65) and intermediates (2.63).

### 7.3.5 Support

PhD students were asked about support they received from their graduate school, supervisors and the University in general regarding orientation and preparation for a future career. This section first discusses the results for graduate school, followed by supervisors and, finally, some results for the University.

#### Support from the graduate school

First, we asked to what extent the graduate school pays attention to career orientation and preparation in general, and second, specifically in relation to a career within or outside academia. The responses are presented in Figure 50. A little less than one-third of the PhD students were not aware of the extent to which their graduate school could support them in their career orientation and preparation.

Excluding the answer option, 'I do not know', it is apparent that, on average, graduate schools pay significantly more attention to careers within academia (3.35) than outside academia (2.84).
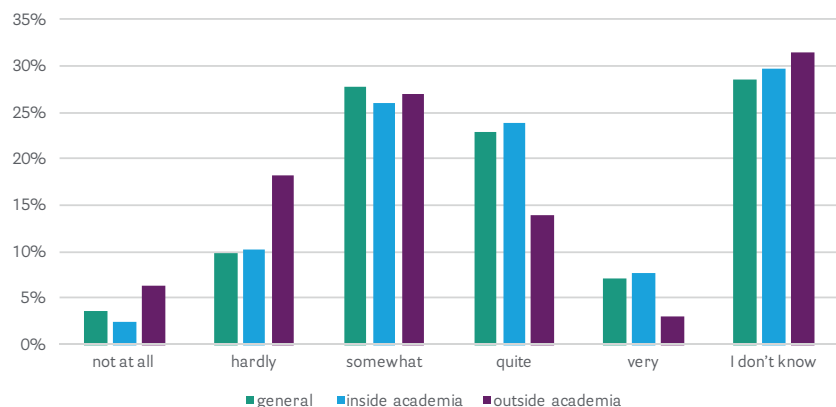
Figure 50. To what extent does your graduate school make an effort to prepare PhD students for a career in general, a career within academia and a career outside academia?

### Group differences

The average attention to careers score for each graduate school is shown in Figure 51. For all graduate schools, with the exception of the Graduate School of Theology and Religious Sciences, the difference between preparation for a career within and outside academia by graduate school was significant. The Graduate School of Economics and Business pays significantly more attention to careers within academia than the Graduate School of Spatial Sciences. The Graduate School of Behavioural and Social Sciences and the Graduate School of Medical Sciences pay significantly less attention to careers outside academia than the Graduate School of Science and Engineering.
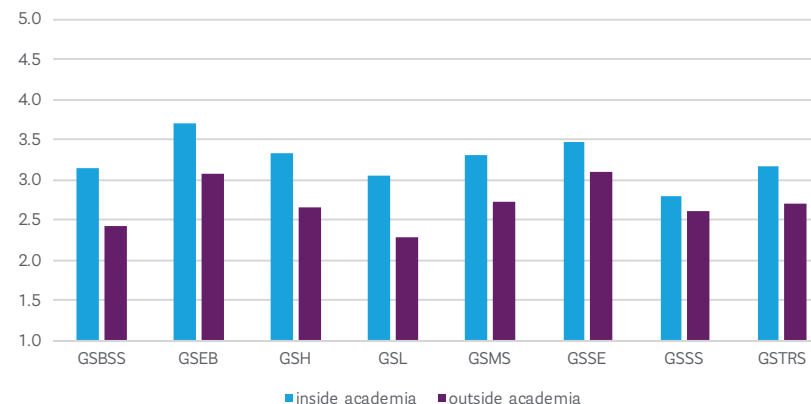


Figure 51. Graduate school attention to careers within and outside academia, by graduate school

Regarding nationality, Dutch PhD students (2.71) believed that their graduate school paid less attention to careers outside academia than did European (2.92) and non-European PhD students (2.96). Regarding preparation for a career within academia, employed PhD students (3.31) were significantly more positive than PhD scholarship students (3.08).

### Support from supervisors

PhD students could rate their agreement with several statements concerning the support they perceive their supervisors giving to a career within or outside academia (on a 5-point scale). See Table 68 for the results. PhD students perceived more support concerning preparation for a career within academia than for outside academia. For three of the four statements, PhD students perceived significantly more support from their daily supervisor than from their first supervisor (encouragement of supervisor to orient oneself towards a career within academia and useful network of supervisor within and outside academia).

Table 68. Agreement with statements concerning career support from supervisors

| Supervisor | First supervisor | | Daily supervisor | |
|---|---|---|---|---|
| Statement | mean | sd | mean | sd |
| My supervisor encourages me to orient myself towards a career **within** academia (*in 1 sup*) | 3.34 | 0.86 | 3.52 | 0.88 |
| My supervisor has a useful network **within** academia that can help me find a job (*in 2 sup*) | 3.30 | 0.89 | 3.70 | 0.92 |
| My supervisor encourages me to orient myself towards a career **outside** academia (*out 1 sup*) | 2.84 | 0.80 | 2.86 | 0.94 |
| My supervisor has a useful network **outside** academia that can help me find a job (*out 2 sup*) | 2.81 | 0.75 | 2.97 | 0.95 |

Group differences

The averages for the four items concerning career support differed between some graduate schools (see Table 69). PhD students from the Graduate School of Law were least satisfied with the guidance of their supervisors. Graduate schools differed significantly for the items, 'My first supervisor has a useful network within academia that can help me find a job' (In 2 first).

Table 69. Supervisor support in career preparation, by graduate school

| | GSBSS | GEB | GSH | GSL | GSMS | GSSE | GSSS | GSTRS |
|---|---|---|---|---|---|---|---|---|
| In 1 daily | 3.33 | 3.48 | 3.48 | 3.53 | 3.32 | 3.26 | 3.41 | 3.33 |
| In 2 daily | 3.40 | 3.59 | 3.52 | 3.89 | 3.55 | 3.47 | 3.57 | 3.60 |
| In 1 first | 3.35 | 3.53 | 3.39 | 3.36 | 3.22 | 3.29 | 3.47 | 3.20 |
| In 2 first | 3.73 | 4.06 | 3.59 | 3.55 | 3.77 | 3.63 | 3.97 | 3.40 |
| Out 1 daily | 2.64 | 2.86 | 2.59 | 2.94 | 2.88 | 2.89 | 2.89 | 2.73 |
| Out 2 daily | 2.70 | 2.96 | 2.61 | 3.28 | 2.91 | 2.83 | 2.96 | 2.8 |
| Out 1 first | 2.63 | 2.84 | 2.57 | 2.95 | 2.89 | 2.91 | 2.93 | 2.6 |
| Out 2 first | 2.97 | 3.06 | 2.76 | 3.18 | 3.06 | 2.93 | 3.27 | 2.55 |
| Total | 56 | 48 | 50 | 15 | 208 | 221 | 25 | 14 |

Notes: for an explanation of item abbreviations see Table 68, daily = daily supervisor, first = first supervisor, colour coding: red = not good, orange = satisfactory, light green = good, dark green = very good

There were several differences between the phases. Starters (2.99) agreed significantly more than seniors (2.69) with the statement that their first supervisor had a useful network within academia. Regarding the encouragement of first supervisors towards a career outside academia, starters (2.99) agreed more than seniors (2.78). In addition, both starters (3.14) and intermediates (3.01) agreed more than seniors (2.79) with the statement that their first supervisor had a useful network outside academia.

Support by the University

Two-thirds (66%) were aware of career training opportunities (e.g. Career Perspective Series) organized by the University (yes or no). This proportion has increased greatly compared to 2015, when only one-third knew about UG career training activities.

Group differences

Employed PhD students and bursaries were significantly more aware (68% and 62% respectively) compared to externals (55%). Interestingly, almost three-quarters of PhD scholarship students (71%) were aware of UG career training opportunities. Awareness of UG career activities differed between graduate schools and was highest at the Graduate School of Behavioural and Social Sciences (84%) and the Graduate School for the Humanities (83%) and lowest at the Graduate School of Medical Sciences (48%). Overall, there were no differences according to phase; however, within the large graduate schools there were differences (see Table 70). For some graduate schools, there are no results by phase because the number of respondents in one of the subgroups was below 15.

Table 70. Proportion of PhD students aware of career training activities organized by UG

| Phase | Starter | | Intermediate | | Senior | | Total | |
|---|---|---|---|---|---|---|---|---|
| Graduate school | n | % | n | % | n | % | n | % |
| GSBSS | | | | | | | 61 | 84 |
| GSEB | | | 25 | 81 | | | 41 | 76 |
| GSH | 16 | 89 | 25 | 86 | 16 | 89 | 62 | 83 |
| GSL | | | | | | | 18 | 72 |
| GSMS | 31 | 45 | 52 | 43 | 31 | 45 | 131 | 48 |
| GSSE | 75 | 72 | 86 | 63 | 75 | 72 | 238 | 69 |
| GSSS | | | 13 | 81 | | | 26 | 77 |
| GSTRS | | | | | | | 16 | 73 |

Note: empty cells because < 15 respondents in subgroups

## Satisfaction with UG's career preparation

PhD students could rate their agreement with several statements concerning career preparation, both for within and outside academia. As indicated in Table 71, PhD students were more satisfied with the support they received regarding career preparation within academia. PhD students believed that the knowledge and skills learned during their PhD trajectory were significantly more useful for a career within academia than for one outside.

Table 71. Agreement with statements concerning career support by UG

| Statement | mean | sd |
|---|---|---|
| In general, I am satisfied with the guidance that the University offers regarding career preparation **within** academia (in 1) | 3.20 | 0.78 |
| The topic of my PhD research is useful for a future career **within** academia (in 2) | 3.77 | 0.76 |
| The skills I am learning during my PhD trajectory are useful for a future career **within** academia (in 3) | 4.03 | 0.66 |
| There are sufficient job opportunities at this University after the completion of my PhD (in 4) | 2.66 | 0.95 |
| In general, I am satisfied with the guidance that the University offers regarding preparation for a career **outside** academia (out 1) | 2.91 | 0.77 |
| The topic of my PhD research is useful for a future career **outside** academia (out 2) | 3.34 | 0.94 |
| The skills I am learning during my PhD trajectory are useful for a future career **outside** academia (out 3) | 3.57 | 0.85 |

## Group differences

For the statement, 'In general, I am satisfied with the guidance that the University offers regarding career preparation outside academia', starters (3.09) were more positive than intermediates (2.87) and seniors (2.82).

The averages for the seven items concerning career support differed between some graduate schools (see Table 72). PhD students from the Graduate School of Law were more negative compared to PhD students regarding the UG's support for a career within academia; however, PhD students from Law agreed more strongly with the statement that their PhD topic would help them find a job within academia. Only PhD students from the Graduate School of Economics and Business were satisfied about the job opportunities at the University of Groningen. They were also more satisfied about the University's guidance regarding a career outside academia.

Table 72. UG career support by graduate school

|  | GSBSS | GEB | GSH | GSL | GSMS | GSSE | GSSS | GSTRS |
|---|---|---|---|---|---|---|---|---|
| In 1 | 3.11 | 3.48 | 3.32 | 2.96 | 3.11 | 3.21 | 3.23 | 3.38 |
| In 2 | 3.71 | 3.98 | 3.77 | 4.08 | 3.71 | 3.75 | 3.97 | 3.76 |
| In 3 | 4.06 | 4.10 | 4.01 | 4.20 | 4.03 | 3.98 | 4.13 | 4.10 |
| In 4 | 2.64 | 3.00 | 2.24 | 2.63 | 2.77 | 2.64 | 2.45 | 2.43 |
| Out 1 | 2.81 | 3.06 | 2.73 | 2.79 | 2.89 | 2.99 | 2.80 | 2.86 |
| Out 2 | 3.61 | 3.60 | 3.16 | 3.80 | 3.31 | 3.28 | 3.58 | 3.14 |
| Out 3 | 3.71 | 3.68 | 3.44 | 3.71 | 3.54 | 3.58 | 3.61 | 3.38 |
| n | 56 | 48 | 50 | 15 | 208 | 221 | 25 | 14 |

Notes: for an explanation of item abbreviations see Table 71, daily = daily supervisor, first = first supervisor, colour coding: red = not good, orange = satisfactory, light green = good, dark green = very good

### 7.3.6 Preference for a career within or outside academia

PhD students could state their preference for a career within or outside academia (see Table 73). Of the 30 PhD students who selected the option, 'Other', 25 wanted to be a medical doctor doing part-time research. About a quarter of the PhD students had no clear preference for within or outside. Combining 'Definitely within (1)' with 'Probably within (2)', and 'Probably outside (3)' with 'Definitely outside (5)', a small majority (57%) wanted to pursue a career within and 43% wanted to pursue a career outside academia.

Table 73. Do you currently wish to pursue a career within or outside academia?

| Response option | n | % |
|---|---|---|
| Definitely within | 108 | 12 |
| Probably within | 232 | 25 |
| I don't know | 212 | 23 |
| Probably outside | 170 | 19 |
| Definitely outside | 87 | 10 |
| I don't aspire to pursue a career at all | 9 | 1 |
| I already have a career | 63 | 7 |
| Other | 30 | 3 |
| **Total** | **911** | **100** |

PhD students who selected either 'Probably within' or 'Definitely within' were asked to state their main reason, of which the most mentioned were 'Interest in science', 'Freedom', 'Flexible working environment' and 'Sharing knowledge'. PhD students who selected 'Probably outside' or 'Definitely outside' mostly mentioned the following reasons why they did not want to stay in academia: 'I do not like the academic system', 'I do not like science enough', 'I do not know if I am good enough', 'I do not like teaching', 'Too much pressure in science' or 'I want more security'.

## Group differences

Table 74 shows the results by graduate school. About 1% of PhD students from the Graduate School for the Humanities and 2% of those from the Graduate School of Science and Engineering did not aspire to pursue a career. Almost one-fifth of the PhD students from the Graduate School of Spatial Sciences already have a career.

Table 74. Proportion of preferred career, by graduate school

| Career | GSBSS | GSEB | GSH | GSL | GSMS | GSSE | GSSS | GSTRS |
|---|---|---|---|---|---|---|---|---|
| n | 73 | 54 | 75 | 24 | 274 | 343 | 33 | 22 |
| Def. within | 14 | 11 | 9 | 8 | 13 | 11 | 9 | 27 |
| Prob. within | 26 | 26 | 29 | 32 | 21 | 27 | 21 | 27 |
| I don't know | 23 | 26 | 24 | 16 | 22 | 23 | 27 | 14 |
| Prob. outside | 15 | 24 | 15 | 28 | 19 | 19 | 12 | 23 |
| Def. outside | 6 | 4 | 4 | 4 | 11 | 13 | 3 | 0 |
| I don't aspire | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 9 |
| Already career | 11 | 6 | 11 | 12 | 6 | 4 | 21 | 0 |
| Other | 6 | 4 | 7 | 0 | 8 | 2 | 6 | 0 |

There were no differences between the graduate schools (see Figure 52) or between the phases. However, there were differences between the three nationality and the four affiliation groups. A significantly larger proportion of non-European PhD students (65%) would prefer a career within academia compared to Dutch PhD students (47%) and PhD students from other European countries (60%). The difference between Dutch and non-European PhD students was significant. Related to this, it is apparent that a higher proportion of bursary PhD students (77%) and PhD scholarship students (64%) would prefer a career within academia, compared to 50% for employed and external PhD students.
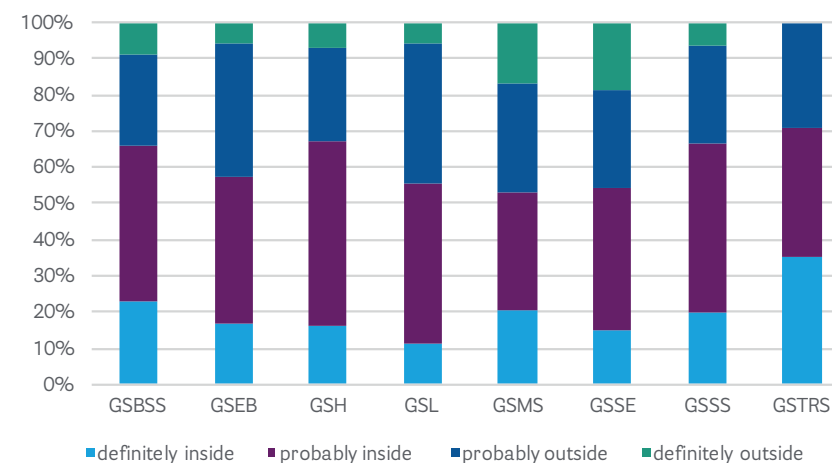


Figure 52. Frequency of career preferences, by graduate school

## Career outside academia: preferred domain

PhD students who said they wanted to pursue a career outside academia were asked what areas they were considering. Their responses are presented in Table 75 (they could indicate all options that applied).

Table 75. What career do you aspire to after completing your PhD trajectory?

| Response option | n | % |
|---|---|---|
| Industry | 135 | 24 |
| Business | 60 | 11 |
| Consultancy | 84 | 15 |
| Government | 86 | 15 |
| Education | 80 | 14 |
| Non-profit | 53 | 10 |
| I want to start my own company | 40 | 7 |
| I don't know yet | 18 | 3 |
| Other: | 21 | 4 |
|   Health care | 7 | |
|   Medical doctor | 11 | |
|   Other | 3 | |
| Total number of PhD students that selected at least one option | 556 | 100 |

## Group differences

The preferred domain differed between PhD students from different graduate schools (see Table 76). For example, PhD students from the Graduate School of Science and Engineering and the Graduate School of Medical Sciences most often preferred a career in Industry, while PhD students from the Graduate School of Behavioural and Social Sciences and the Graduate School of Economics and Business more often preferred a career in Education or Government. Graduate schools with less than 15 respondents are not included in the table.

Table 76. Proportion of preferred domains for a career outside academia, by graduate school

| Domain | GSBSS | GSEB | GSMS | GSSE |
|---|---|---|---|---|
| n | 15 | 15 | 82 | 110 |
| Industry | 0 | 20 | 45 | 84 |
| Bussiness | 7 | 40 | 23 | 26 |
| Consultancy | 33 | 40 | 38 | 26 |
| Government | 40 | 60 | 28 | 25 |
| Education | 60 | 53 | 22 | 26 |
| Non-profit | 27 | 27 | 12 | 19 |
| Own company | 7 | 33 | 11 | 18 |

With regard to nationality groups, there were differences in preferred domains (see Table 77): non-European PhD students less often reported wanting to start their own business and more often preferred a career in a non-profit organization. Dutch PhD students most often preferred a career in Government or Education.

Table 77. Preferred branches for a career outside academia, by nationality group

| Domain | Dutch | European | non-European |
|---|---|---|---|
| n | 117 | 76 | 145 |
| Industry | 38 | 0 | 0 |
| Bussiness | 23 | 16 | 14 |
| Consultancy | 35 | 25 | 17 |
| Government | 45 | 22 | 11 |
| Education | 40 | 18 | 13 |
| Non-profit | 27 | 14 | 49 |
| Own company | 15 | 13 | 9 |

# 8      Graduate Schools and PhD organizations

This chapter is about graduate schools and PhD organizations. First, we focus on the Groningen Graduate Schools and PhD students' satisfaction with activities and support. In the second part of this chapter, we focus on familiarity with and activities of PhD organizations.

## 8.1 Groningen Graduate Schools

### 8.1.1      Familiarity with the Groningen Graduate Schools

PhD students were asked to which graduate school they believed they belonged. Table 78 presents their answers (self-report) as well as the graduate school they belonged to according to the registration system Hora Finita. Sixteen PhD students did not know to which graduate school they belonged. Comparing the self-reported graduate school with the registered graduate school, we noticed 29 (2.5%) discrepancies. Compared to 2015, this percentage has dropped by half. The largest percentage of discrepancies (> 5%) between self-report and registration were present for PhD students from the Graduate School of Medical Sciences and the Graduate School of Science and Engineering. As in 2015, there are three common discrepancies. First, 11 PhD students who are registered in the Graduate School of Medical Sciences (BCN-Brain or SHARE) reported being enrolled in the Graduate School of Behavioural and Social Sciences. Of the eight PhD students who are enrolled at the Graduate School of Medical Sciences but reported being enrolled at the Graduate School of Science and Engineering, seven are doing their research at the GRIP institute. Finally, six PhD students who are members of the Graduate School of Science and Engineering (either BCN-Brain or SHARE) reported being enrolled in the Graduate School of Medical Sciences.

Table 78. Affiliation with graduate school: self-report and according to Hora Finita

| Graduate School | Self-report | | Actual registration | | > 5% diff. |
|---|---|---|---|---|---|
| | n | % | n | % | |
| Behavioural and Social Sciences | 88 | 8.6 | 100 | 8.6 | |
| Campus Fryslân | 5 | 0.4 | 4 | 0.3 | |
| Economics and Business | 56 | 4.8 | 66 | 5.7 | |
| Humanities | 76 | 6.5 | 97 | 8.3 | |
| Law | 25 | 2.1 | 31 | 2.7 | |
| Medical Sciences | 274 | 23.6 | 370 | 31.8 | yes |
| Philosophy | 12 | 1 | 15 | 1.3 | |
| Science and Engineering | 337 | 29 | 414 | 35.6 | yes |
| Spatial Sciences | 33 | 2.8 | 41 | 3.5 | |
| Theology and Religious Studies | 22 | 1.9 | 25 | 2.1 | |
| I don't know | 16 | 1.4 | | | |
| missing | 219 | 18.8 | | | |
| Total | 1163 | 100 | 1163 | 100 | |

## 8.1.2 Participation in the Groningen Graduate Schools introductory event

At least once a month, the Groningen Graduate Schools organizes a two-day PhD introductory event at the Allersmaborg. Of the 925 PhD students, 45% have attended such an event, 4% do not remember and 7% stated that this event was not applicable to them. This latter group mainly consisted of external PhD students. In addition, PhD students from the Graduate School of Behavioural and Social Sciences, the Graduate School for the Humanities and the Graduate School of Law also chose the option, 'Not applicable', more often (around 11%) than the other graduate schools (around 7%). Finally, 13% of PhD students from the Graduate School of Economics and Business did not remember the event, which is much higher compared to other graduate schools (0% to 4%).

### Group differences
To determine whether attendance rates in 2017 differed among groups we re-calculated the percentage of attendance by only taking into account PhD students who either answered 'yes' or 'no'. There were group differences for affiliation, phase and graduate school. Bursary students and PhD scholarship students attended the introductory event more often (64% and 74% respectively) than employed (46%) and external PhD students (22%). The differences between graduate schools are presented in Figure 53. In 2017, low attendance rates are apparent for four graduate schools: the Graduate School of Behavioural and Social Sciences, the Graduate School of Economics and Business, the Graduate School of Law and the Graduate School of Spatial Sciences. In 2015, 51% participated in an introductory module organized by the Groningen Graduate Schools. In 2015, PhD students from the Graduate School for the Humanities participated more and PhD students from the Graduate School of Law and Behavioural and Social Sciences participated less than PhD students from other graduate schools.
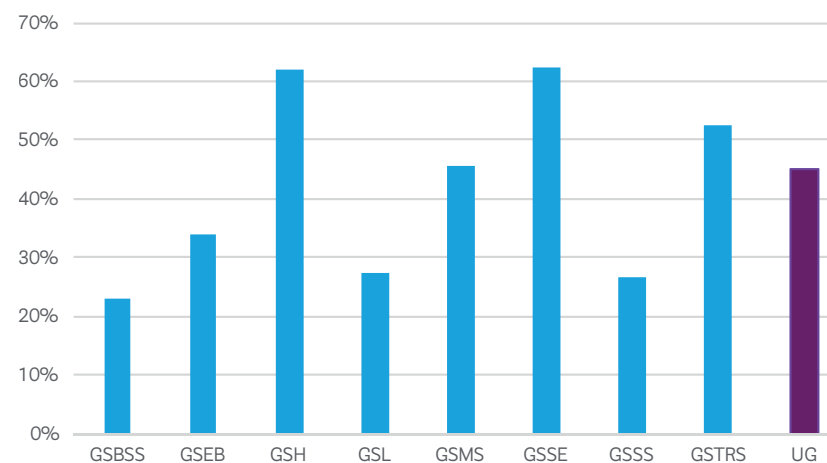


Figure 53. Proportion of Groningen Graduate School introductory event attendance, by graduate school

### 8.1.3 Perceived support by Groningen Graduate Schools

The next question concerned the support PhD students received from their faculty graduate school. PhD students could choose from several predefined answers and could indicate all applicable options. A total number of 805 PhD students selected at least one of the first four options. Table 79 presents the results. More than half of the PhD students believed their graduate school supports them by providing information and offering courses and workshops.

Table 79. How does your graduate school support you during your PhD trajectory?

| Response option | n | % |
|---|---|---|
| Providing information | 560 | 48 |
| Keeping track of my progress | 308 | 27 |
| Supporting me in case of problems (e.g. with my progress, supervisor, funding) | 280 | 24 |
| Offering courses, symposia, workshops, etc. | 623 | 54 |
| I don't know | 119 | 10 |
| Other: | 27 | 3 |
|   Funding for conferences and courses | 7 | |
|   Yearly PhD conference | 2 | |
|   Help with my administration | 2 | |
|   Received hardly/no support, more of a burden | 16 | |

#### Group differences

Table 80 shows that PhD students from the Graduate School of Economics and Business and the Graduate School of Law perceived the most support from their graduate school. They perceived more support from their graduate school than PhD students from the Graduate School of Behavioural and Social Sciences, the Graduate School for the Humanities, the Graduate School of Medical Sciences, and the Graduate School of Science and Engineering. As in 2013 and 2015, PhD students from the Graduate School of Behavioural and Social Sciences were least familiar with the role of their graduate school.

Table 80. Proportion of PhD students familiar with graduate school roles, by graduate school

| Role GS | Providing information | Keep track of progress | Support in case of problems | Offering courses |
|---|---|---|---|---|
| GSBSS | 41 | 15 | 12 | 42 |
| GSEB | 61 | 70 | 59 | 65 |
| GSH | 56 | 23 | 29 | 62 |
| GSL | 55 | 36 | 55 | 65 |
| GSMS | 40 | 21 | 17 | 54 |
| GSSE | 51 | 26 | 22 | 53 |
| GSSS | 59 | 32 | 32 | 56 |
| GSTRS | 64 | 48 | 40 | 40 |
| **UG** | **48** | **27** | **24** | **54** |

### 8.1.4 Satisfaction with the Groningen Graduate Schools

PhD students could state their level of agreement (on a five-point scale) with seven statements about their graduate school. The item scores were combined into a 'Satisfaction with graduate school' scale, of which the UG average is 3.3 (see Table 81). This means that, overall, PhD students were positive about their graduate school.

Table 81. Agreement with statements about graduate school

| Statement | n | mean | sd |
|---|---|---|---|
| I know who I can turn to in my graduate school when I encounter problems in general (e.g. with my supervision or training) | 918 | 3.37 | 1.10 |
| I am satisfied with the educational activities provided by my graduate school | 912 | 3.40 | 0.89 |
| I am satisfied with the way in which my graduate school monitors and supports the supervision of my PhD project | 910 | 3.16 | 0.93 |
| I am satisfied with the way in which my graduate school monitors the progress of my PhD project | 910 | 3.16 | 0.92 |
| My graduate school provides a stimulating study and research environment that facilitates interaction and efficiency | 907 | 3.19 | 0.92 |
| My graduate school provides me with adequate information (e.g. e-mails, website, PhD guide) | 912 | 3.55 | 0.88 |
| Overall, I am satisfied with the way in which my graduate school functions | 913 | 3.43 | 0.90 |
| **Satisfaction with graduate school scale score** | **918** | **3.32** | **0.75** |

#### Group differences
The average satisfaction with the graduate school score differed significantly between graduate schools, affiliation, nationality and project phase. Similarly to 2013 and 2015, PhD students with a scholarship and those at the beginning of their project were most satisfied with their graduate school. We also found a significant difference between PhD students from outside Europe and from within.

Figure 54 shows the satisfaction score for each graduate school. PhD students from the Graduate School of Behavioural and Social Sciences and the Graduate School of Medical Sciences were the least satisfied, while PhD students from the Graduate School of Economics and Business and the Graduate School of Theology and Religious studies were most satisfied with their graduate school. The Graduate School of Behavioural and Social Sciences scored significantly lower than all other graduate schools.
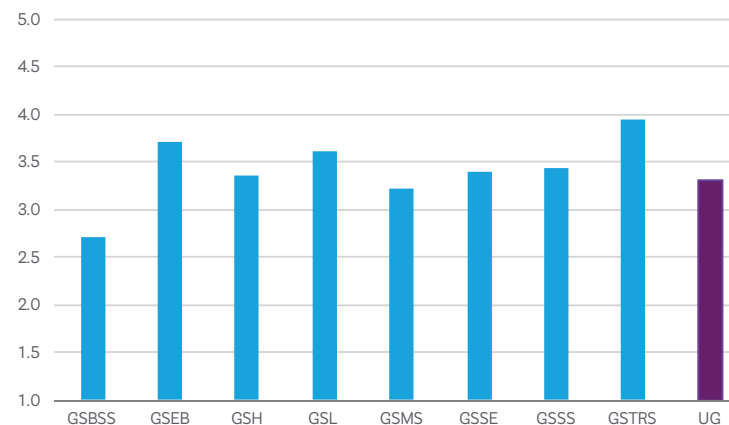


Figure 54. Satisfaction with graduate school, by graduate school

### 8.1.5 Familiarity with Hora Finita
Of the 918 PhD students, 89% were familiar with the University's PhD registration system, Hora Finita. This is higher than in 2015 (73%). The familiarity is comparable across the graduate schools (see Table 82), with the exceptions of the Graduate School of Law (80%) and the Graduate School of Theology and Religious Sciences (67%). PhD scholarship students were significantly less familiar with Hora Finita compared to the other affiliation groups (employee: 91%; external: 87%; bursary: 88%). PhD students in their first year (85%) were less familiar with Hora Finita than PhD students beyond their first year (91%).

Table 82. Proportion of PhD students familiar with the UG's PhD registration system, Hora Finita

| Graduate School | n | % |
|---|---|---|
| Graduate School of Behavioural and Social Sciences | 78 | 87 |
| Graduate School of Economics and Business | 54 | 83 |
| Graduate School for the Humanities | 80 | 91 |
| Graduate School of Law | 25 | 80 |
| Graduate School of Medical Sciences | 274 | 91 |
| Graduate School of Philosophy | 339 | 89 |
| Graduate School of Science and Engineering | 32 | 91 |
| Graduate School of Spatial Sciences | 21 | 67 |
| University of Groningen | 918 | 89 |

## 8.1.6    Federation of Graduate Schools in Social Sciences and the Humanities

All PhD students who were not in the Graduate School of Science and Engineering or the Graduate School of Medical Sciences were asked if they were familiar with the Federation of Graduate Schools in Social Sciences and the Humanities, which was set up in 2015. Of the 379 PhD students who were presented with this question, 307 responded, and the majority (87%) were not familiar with the Federation.

## 8.2    Organizations and activities for PhD students

This section focuses on familiarity with PhD organizations and their activities. GOPHER (Groningen Organization for PhD Education and Recreation) and GRIN (Groningen Graduate Interest Network) are local organizations, while PNN (Promovendi Netwerk Nederland) is a national organization. PhD students were asked if they were familiar with these organizations and the PhD council of their graduate school. They could select as many options as applied. Their responses are presented in Table 83. Familiarity with GOPHER was greater than familiarity with GRIN, as was the case in 2015. Familiarity with their graduate school's PhD council was similar to that of 2015 (55%). There were differences between graduate schools (see Table 84). Moreover, external PhD students were least familiar with all PhD organizations, while bursary and PhD scholarship students were less familiar with PNN compared to employed PhD students. Finally, the further advanced the PhD students were in their project, the more familiar they were with the PhD organizations.

Table 83. With which of the following PhD organizations are you familiar?

| Response option | n | % |
|---|---|---|
| GOPHER (Groningen Organization for PhD Education and Recreation) | 740 | 80 |
| GRIN (Groningen Graduate Interest Network) | 223 | 24 |
| PhD council of your graduate school | 521 | 56 |
| PNN (Promovendi Netwerk Nederland) | 136 | 15 |
| I do not know any PhD organizations | 121 | 13 |
| Other | 4 | < 1 |
| Total number of PhD students who selected at least one option | 930 | 100 |

Table 84. Proportion of PhD students familiar with PhD organizations, by graduate school

| Organisation | PhD council | GRIN | GOPHER | PNN |
|---|---|---|---|---|
| GSBSS | 59 | 14 | 69 | 25 |
| GSEB | 44 | 17 | 70 | 5 |
| GSH | 58 | 24 | 65 | 17 |
| GSL | 68 | 19 | 55 | 19 |
| GSMS | 36 | 17 | 59 | 12 |
| GSSE | 42 | 21 | 66 | 8 |
| GSSS | 76 | 17 | 76 | 15 |
| GSTRS | 48 | 32 | 52 | 16 |

### 8.2.1 Activities and services offered by Groningen PhD organizations

Table 85 presents the responses to the question, 'Do you think the PhD organizations in Groningen offer sufficient activities and services for PhD students?' The percentage of respondents who were satisfied is 66%. This is lower than in 2015 (86%) and 2013 (73%). There were no differences between graduate schools, affiliation groups, phases or nationality groups.

Table 85. Do you think the PhD organizations in Groningen offer sufficient activities and services for PhD students?

| Response option | n | % |
|---|---|---|
| Yes | 537 | 66 |
| No, I would like to see more of the following activities or services | 51 | 6 |
| I don't know | 228 | 28 |
| Total | 816 | 100 |

The 51 PhD students who were not satisfied were asked what kind of activities/services they would like to see. More than half replied to this question and their answers were combined into categories. Similar to 2013 and 2015, PhD students indicated that they especially would like more information about practical issues concerning their PhD and living in Groningen. More social activities (cultural and sport) and professional skills courses (academic writing, methodology) were also mentioned again. New to this year were stress management, events to initiate interdisciplinary collaborations and events about careers outside academia.

# 9  Finishing your PhD project

This chapter concerns information about the clarity of procedures around the thesis defence. Questions were only presented to PhD students who were beyond their first year (intermediates and seniors). Less than half (45%) answered the questions.

As indicated in Table 86, more seniors (56%) than intermediates (33%) looked for information about their defence. The 323 PhD students who looked for information were asked where they looked or whom they asked (see Table 87). Of the 19 PhD students who chose the option, 'Other', 26% answered 'Google' and 21% 'Hora Finita'. Finally, we asked if the information was clear. This was the case for 93% (n = 300).

Table 86. Have you looked for information about the procedures and requirements for the thesis defence?

| Phase | Intermediates | | Seniors | |
|---|---|---|---|---|
| Response option | n | % | n | % |
| Yes | 126 | 33 | 163 | 56 |
| Yes, but I could not find them | 17 | 5 | 11 | 4 |
| No, but I will do this soon | 132 | 35 | 93 | 32 |
| No, this is not yet relevant to me | 107 | 28 | 26 | 9 |
| Total | 382 | 100 | 293 | 100 |

Table 87. Where did you look for information, or whom did you ask?

| Response option | n | % |
|---|---|---|
| PhD Guide | 171 | 53 |
| PhD regulations on the University website | 191 | 59 |
| Graduate school website | 101 | 31 |
| Graduate school staff | 41 | 13 |
| The office of the Beadle (Pedel) | 5 | 2 |
| My supervisor(s) | 175 | 54 |
| Fellow PhD students | 202 | 63 |
| The secretary in my department | 30 | 9 |
| Other | 19 | 6 |
| PhD students who selected at least one option | 323 | |

# 10 Overall satisfaction with PhD trajectory

The final question in the survey was, 'Overall, how satisfied are you with your PhD trajectory?' PhD students could state their satisfaction on a scale of 1 to 5 (see Table 88). The average satisfaction was 3.72 (sd = 0.88), which can be considered good. Overall satisfaction was not significantly different between graduate schools (see Table 89). In addition, no differences were found between the four affiliation groups or between the three nationality groups. Starters (3.88) were significantly more satisfied with their PhD trajectory than senior PhD students (3.62).

Table 88. Overall, how satisfied are you with your PhD trajectory?

| Response option | n | % |
|---|---|---|
| Very dissatisfied | 14 | 2 |
| Dissatisfied | 86 | 9 |
| Neutral | 190 | 20 |
| Satisfied | 508 | 54 |
| Very satisfied | 143 | 15 |
| **Total** | **941** | **100** |

Table 89. Average satisfaction with PhD trajectory by graduate school

| Response option | n | mean | sd |
|---|---|---|---|
| Graduate School of Behavioural and Social Sciences | 79 | 3.86 | 0.78 |
| Graduate School of Economics and Business | 56 | 3.80 | 0.80 |
| Graduate School for the Humanities | 81 | 3.54 | 0.98 |
| Graduate School of Law | 25 | 3.88 | 0.83 |
| Graduate School of Medical Sciences | 282 | 3.69 | 0.94 |
| Graduate School of Philosophy | 12 | 3.50 | 0.91 |
| Graduate School of Science and Engineering | 346 | 3.72 | 0.83 |
| Graduate School of Spatial Sciences | 34 | 3.74 | 0.99 |
| Graduate School of Theology and Religious Studies | 22 | 4.00 | 0.93 |

# 11    Conclusions

The overall picture presented by the 2017 PhD survey is positive. Almost 70% of the PhD students in the response group reported that they were satisfied or very satisfied with their PhD trajectory. Improvements in information provisioning and career training awareness were found. In addition, the proportion of PhD students with a Training and Supervision Plan has increased, as has the proportion who have had at least one Result and Development interview.

Comparing the results with those from previous PhD surveys, it was decided to focus the conclusions presented in this chapter on the following themes:

1.    to decrease the time beyond the allotted time period for PhD students to finish their PhD
2.    to improve information provision
3.    to improve familiarity with the graduate schools and increase their role in helping PhD students
4.    to help all PhD students obtain and use a Training and Supervision Plan
5.    to broaden career-orientation opportunities.

The current status of these issues and some other important findings from the 2017 survey will be addressed in the following sections.

## 11.1    Time span of the PhD project

The average time to complete a PhD trajectory in the Netherlands is 61 months,[17] a small increase of half a month compared to 2015. In 2016, the time to complete at the University of Groningen was also 61 months, which places the University of Groningen in fifth place out of 12 Dutch Universities, as in 2015.

Awareness of the factors that play a role in delay and drop-out may result in the design of interventions that achieve the two-fold goal of increasing PhD satisfaction as well as shortening completion time. Preliminary analyses of the previous survey data suggest that self-confidence, acquired research skills, teaching duties, organization of the project, quality of supervision and satisfaction with the working environment all play a role. Not discussed here is the role of supervisors. However, it goes without saying that the interplay of the supervisor's and the PhD student's wishes and expectations are most important in this respect.

Timely completion is influenced by many factors. One of these is the belief in one's own ability to finish within the allotted time. Compared to previous years, almost half of the PhD students

[17] VSNU 2016

in 2017 thought they could finish their project in time. This is a higher percentage than in 2015 (41%) and 2013 (45%) and might be related to the confidence of starting PhD students in particular, of which 99% believed they could finish in time. This confidence decreases with increasing project phase, as seen in previous years.

About 10% of the PhD students in the response group reported not being able to finish in time. The main reasons reported for delay were 'Practical setbacks' and 'Complexity of the project'. Dutch PhD students and those who are employees more often reported that they 'Lost too much time because of side projects and other tasks'. The average reported additional time that may be needed has increased from 8.6 months in 2015 to 11.4 months in 2017. Formal agreements about a possible extension had been made by only 12% of the PhD students who had fallen behind.

Although overall in 2017 more PhD students believed they could finish in time, which is positive, the proportion of PhD students who had considered quitting also increased to 30% (24% in 2015 and 22% in 2013), especially reported by students in the last stages of their project. This a negative finding. The most often mentioned reasons for this were, 'Uncertainty about own capabilities and the PhD work', 'Doubts about academia', 'Personal problems' and 'Stress and high workload'.

## 11.2 Information provision

Information provision was another point of attention in previous PhD surveys. The percentage of PhD students who felt well informed about regulations and conditions of employment or their scholarship only increased for employed PhD students (83%).

In 2015, PhD students most often consulted the University's website and their contract for information about employment/scholarships. In contrast, in 2017, starting PhD students who were employed received this information primarily during their appointment at HRM (39%) or from the information package (42%). PhD scholarship students received this information from the PhD Scholarship Desk (28%) or the University's website (29%). The proportion of PhD students that used their PhD guide dropped from 50% to 13%, while the information package was used more compared to 2015 (30%).

Employed PhD students felt less sufficiently informed about the conditions surrounding sick leave and holidays. Scholarship PhD students did not feel sufficiently informed about scholarship conditions in general and the difference in their working conditions compared to employed PhD students. Of the PhD scholarship students who felt not well informed, 40% experienced minor and 3% experienced major problems.

Familiarity with the Hora Finita registration system was assessed for the first time in 2015, and at that time, 73% were familiar with the system. This has increased to 89% in 2017.

This year, the survey assessed the information provisioning around the PhD defence. A little over half of the PhD students in their final year had looked for information about their defence and 4% were not able to find it. Those who had looked, most often used the PhD guide and the PhD regulations on the website. About half also asked their supervisors or fellow PhD students.

## 11.3    Language difficulties

In 2017, Dutch PhD students reported more problems with writing and presenting in English than PhD students who come from other European countries. This might be due to a higher proportion of native English speakers or PhD students who have completed a Master's programme taught in English. In addition, it was found that PhD students from outside the EU (mostly from China and Indonesia) have problems with writing and presenting in academic English. They also have problems with general communication in the workplace because neither English nor Dutch is their native language.

## 11.4    Training and Supervision Plan

Graduate schools actively encourage all of their PhD students to start their PhD with a Training and Supervision Plan. The graduate schools endorsed the importance and usefulness of this document and were therefore motivated to implement it. The proportion of PhD students who reported having a TSP has increased from 57% to 74% in 2017. Thus, the goal to have all PhD students with a TSP has not yet been reached.

As in 2015, around 40% of the PhD students did not know when their TSP was formalized. In 2017, 32% had their TSP formalized at the start and 49% within one month after the start. These are large improvements compared to 2015 (26% and 30% respectively).

The TSPs are becoming increasingly more complete. Planning and clarity about the research design are important factors in reducing the time PhD students require to finish their PhD. These aspects were present in most TSPs in 2017, but a little less often than in 2015. At the same time, agreements on teaching activities were more common in the TSPs in 2017 (42%, compared to 32% in 2015). This is important, as we know that too many teaching activities can delay PhD completion time. About 10% of the PhD students who reported having a TSP did not recall the content of their TSP. However, in general, PhD students were satisfied with the content of their TSP.

Another factor that may influence timely completion are clear agreements about the content and number of articles that need to be submitted or published. A small majority of PhD students (65%) had discussed this with their first supervisor.

Although more PhD students have a TSP, regular updates are still not standard for all PhD students, despite the fact that we see a major increase in 2017, with 65% of the PhD students reporting a regular update, compared to 33% in 2015.

## 11.5    Support for international starters

This year we examined the start of PhD students with a non-Dutch nationality. The majority (93%) received help (with applying for visas, housing and other formalities), most often from the University's International Service Desk (ISD). Although most PhD students (85%) were satisfied or very satisfied with the support, 15% were very dissatisfied. The PhD students were least satisfied with the support they received regarding housing. Overall, PhD students from European countries were a little more satisfied with the support received than PhD students who were from countries outside Europe.

## 11.6    Result and Development interview and first-year performance evaluation

Almost 70% of the respondents in their second or subsequent year reported that their performance was evaluated on a regular basis in a Results and Development (R&D) interview, which is comparable to 2015 and 2013. The proportion of PhD students who have never had an R&D interview has decreased from 17% in 2015 to 6% in 2017. However, the proportion of PhD students that have had a go/no-go interview decreased from 70% to 64%, while 53% had the interview a year after the start of their project. Having an evaluation interview is still not common at the Graduate School of Law, the Graduate School for the Humanities and the Graduate School of Medical Sciences.

The first supervisor was not present at about 7% of these evaluation interviews. The attendance of a graduate school delegate or a Human Resources representative was, as in previous years, not very common. The presence of an HR representative is important, especially in the case of a no-go, to inform the PhD student about the work-related consequences of the decision. A graduate school representative is important to support the supervisor in the process of formalizing agreements, or providing aftercare in the case of a no-go .

## 11.7    Teacher training for PhD students with teaching duties

Around 80% of employed PhD students, 60% of bursaries and 20% of PhD scholarship students were involved in teaching or supervising under graduate students. Most were involved in giving small-scale lectures and supervising individuals or groups of students. About three-quarters of the PhD students involved in teaching and supervising were satisfied with the load, which is similar to 2015. Bursary PhD students would like to teach more, while employed PhD students would like to teach less.

Almost 60% of PhD students with teaching activities  felt they had not received sufficient training. Of the PhD students who reported this, 75% had not participated in any teacher training activities. There are several teacher training activities available at the University of Groningen, which indicates that information provision needs more attention. Preliminary analyses revealed that PhD students involved in teaching activities are more often delayed than those without these duties. Of course, other factors play a role in PhD completion time, but learning how to prepare and perform teaching duties in an effective way might benefit both the PhD student and the University. For this purpose, the 'Start to Teach' course has been set up for the academic year 2017-2018.

## 11.8    Supervision

Supervision is an essential part of a successful PhD project. Several studies indicate the important role of the supervisor as coach (e.g. Berger & de Jonge, 2005, Wadee et al., 2010). In general, more than three-quarters (77%) of the PhD students were satisfied with the supervision they were receiving, which is comparable to 2015. This general satisfaction score does not differ between males and females, graduate schools or nationality and affiliation groups.

About 15% of PhD students have only one supervisor: the first supervisor. Around three-quarters (72%) have their whole supervising team within the University of Groningen. Of the PhD students with more than one supervisor, 67% have experienced no substantial disagreement between their supervisors.

As in previous surveys, PhD students more often meet with their daily supervisor(s) than with their first supervisor(s). The proportion that have at least a weekly meeting with their daily supervisor has dropped from 67% in 2015 to 47% in 2017. The proportion that have a monthly meeting with their first supervisor has decreased from 53% to 47%. Starting PhD students have significantly more weekly meetings with their daily supervisor and more monthly meetings with their first supervisor than PhD students who are further into their project. External PhD students have significantly less frequent meetings with both their daily supervisor and their first supervisor than other PhD students. Meeting frequency differs between the graduate schools for both the daily supervisor and the first supervisor.

The relationship with the daily supervisor was reported to be good by 37% and very good by 54%. These proportions are different for the relationship with the first supervisor (44% good,

40% very good). PhD students with a non-Dutch nationality and starting PhD students were more positive about the relationship with their daily supervisor than were other PhD students. There were no differences between graduate schools.

This year we assessed four aspects of supervision for both the daily supervisor and the first supervisor: 1) availability, 2) academic support, 3) personal support and 4) autonomy stimulation. PhD students were more satisfied with their daily supervisor than with their first supervisor regarding these four aspects. The availability of the first supervisor was significantly different across graduate schools, phases and nationality. PhD students from the Graduate School of Medical Sciences and the Graduate School of Behavioural and Social Sciences were least satisfied with the availability of their first supervisor. Overall, starters and non-Dutch PhD students were the most satisfied. For academic support in general, starters and non-Dutch PhD students reported perceiving the most support from their daily and first supervisors. Starting PhD students perceived more personal support from their daily supervisor than PhD students who were further into their project. Supervisors have a role in preparing the PhD student to become an independent researcher. Concerning the stimulation of autonomy, there were no differences between phases, graduate schools or genders. Non-European PhD students perceived significantly more stimulation of autonomy by both their daily and first supervisors than did Dutch PhD students.

There was an interesting gender difference in relation to availability, academic support and personal support: female PhD students significantly reported less agreement with statements concerning these three aspects. It is not clear whether women indeed received less attention from their supervisors. Further research should examine this in more detail.

## 11.9    Familiarity and satisfaction with the graduate schools

The proportion of PhD students that did not know their graduate school affiliation has remained the same as in 2015 (1.4%). In 2017, only 10% of the respondents did not know how their graduate school supports them. About 50% knew their graduate school supports them by providing information and offering courses and workshops, about 30% knew the graduate school keeps track of their progress and 25% knew the graduate school can support PhD students in the case of problems. As in 2013 and 2015, PhD students from the Graduate School of Behavioural and Social Sciences were least familiar with their graduate school's role.

Overall satisfaction with the graduate school has remained roughly the same as in 2015. PhD students were most satisfied with information provision by their graduate school. The average satisfaction differed between graduates schools, with a similar pattern to 2013. PhD students from the Graduate School of Behavioural and Social Sciences and the Graduate School of Medical Sciences were least satisfied and PhD students from the Graduate School of Economics and Business and the Graduate School of Theology and Religious Studies were

most satisfied. Again, it is apparent that PhD students with a scholarship, PhD students from outside Europe and PhD students at the start of their projects were most satisfied with their graduate school.

As seen in previous years, the attendance at the Groningen Graduate Schools PhD introductory event was too low (45%). This hampers adequate information provision from the start. There may be multiple reasons for this too low attendance but one important reason might be that PhD students do not receive the invitation in time because of a delay in registration in Hora Finita.

## 11.10    Career orientation

At the time of data collection, 44% of the respondents said they were exploring options for their future career, which is less than in 2015 (61%) but similar to 2013 (45%). These proportions differ when phase of the project is taken into account: 61% of seniors were exploring their options, compared to 45% of intermediates and 25% of starters. Of the respondents, 47% had attended at least one career activity.

Two-thirds (66%) were aware of career training opportunities (e.g. Career Perspective Series) organized by the University. This proportion has largely increased compared to 2015, when only one-third knew about UG career training activities.

A little over half (56%) were positive about their job prospects in general. Dutch and European PhD students differed significantly from non-Europeans in their awareness of job opportunities in their own field. The PhD students believed that the knowledge and skills acquired during their PhD trajectory would be significantly more useful for a career within academia than for one outside.

PhD students perceived that graduate schools significantly pay more attention to careers within academia than to careers outside, and also supervisor support is more oriented towards a career within academia. Concerning the University's support for career preparation, PhD students were less satisfied with the preparation they receive for a career outside academia. With the start of the Career Perspective Series more option for preparation for also a career outside academia will become available.

About 26% did not yet know what kind of career they wanted to pursue. About one-third reported that they would probably prefer to work outside academia. Often these PhD students do not want to stay in academia because they do not like science, teaching or the academic system, or they want more security or, alternatively, they believe they are not good enough. The reasons for pursuing a career within academia are more often intrinsic, such as wishing to share knowledge and an interest in science. Non-European PhD students significantly more

often reported that they would prefer a career within academia. The graduate schools did not differ in the proportions of PhD students who wanted to pursue a career within or outside academia.

## 11.11    Working environment

In general, academic and social relationships with colleagues were valued as good. The majority (85%) reported that they get on well with their colleagues and 68% said they felt at home. Starters and non-Dutch PhD students felt the least at home in their departments.

In 2017, we examined the difference between official and actual working hours. We found that the majority (80%) of PhD students have an official contract (or agreement), varying from 24 to 40 hours a week. However, around 70% reported that they work between 33 and 50 hours per week on their PhD project. About 60% work more than their official hours, while only 5% work less.

Regarding the workload of PhD students, 48% described it as high and 43% as normal. Most PhD students with a high or very high workload were concerned by this. PhD students from non-European countries reported a significantly lower workload compared to Dutch and European PhD students. With regard to phase of the project, starting PhD students reported a lower workload compared to PhD students who were more advanced. The most mentioned reasons were: 'Complexity, amount or pace of work' (70%), 'Deadlines' (48%) and 'Pressure to publish' (45%). These results are similar to those in 2015.

### Final remark
The overall survey response rate was 35%, which is quite good and comparable to 2015. Although we consider representability to be satisfactory, any interpretation of the results must take into account that the response sample is not a one-to-one representation of the University's PhD population. Relatively more PhD students born outside the Netherlands, relatively more PhD scholarship students, relatively more starters and relatively fewer senior PhD students and PhD students from the Graduate School of Law and the Graduate School of Medical Sciences made up the response sample.

# 12    Research accountability

This chapter provides information about the survey instrument, the reliability of the scales, graduate school corrections, invitations and response rate, the representability of the sample and the statistical analyses.

## 12.1    Instrument
The first PhD Student Survey was administered by the UOCG in 2009. This was done at the request oft the Groningen Graduate Schools that started in that year. The goal was to obtain information about the circumstances in which PhD students conduct their research and the degree of satisfaction with these circumstances. The PhD Thesis Supervision Questionnaire used at the University of Manchester was taken as the example. A few items were added to the 2011 survey, relating to the PhD students' motivations, skills and competences, as well as items relating to abilities and skills that correspond to the position of a researcher. In 2013, items about the cum laude distinction were added and questions about the research schools were removed. In 2015, questions about familiarity with Hora Finita, NEXT Career Services and concerning work-related stress were added, while items in the supervision scales were altered.

In 2017, the survey underwent major changes for four reasons. First, to allow evaluation of the PhD Scholarship Programme (Programma Promotieonderwijs), questions regarding rights and benefits were added. Second, as part of the longitudinal research project, 'Succesvol Promoveren', in-depth questions about supervision were added and alterations were made to questions concerning career aspirations and perceptions. Third, questions (e.g. concerning support for international students) were added (or altered) to allow comparisons between Dutch universities regarding PhD experiences and PhD student satisfaction. The fourth and last reason concerns alterations due to feedback from PhD students in previous surveys. This feedback suggested we needed to make a better connection between our questions and the personal situation of our PhD students. In the survey, specific questions are now presented to specific groups. For example, first-year students are not asked about a Results and Development interview (as they have not had one yet) and external PhD students do not have to answer questions about teaching.

These changes have consequences for the comparability of the results for 2017 with those of previous years, especially with regard to scale scores. Compared to 2015, the items on three satisfaction scales (Education, Graduate School and Training and Supervision Plan) were the same, but cannot be compared because we used a five-point Likert scale in 2017, while in previous years we used a four-point scale.

## 12.2    Invitations and response rate

Active PhD students were traced in Hora Finita and a total of 3374 PhD students were sent an invitation email with a link to the questionnaire. The questionnaire was created in Qualtrics. Specific questions were only presented to specific groups of PhD students, according to phase, nationality or affiliation group. It is important to keep in mind that not all questions were presented to all PhD students.

PhD students could complete the questionnaire between 10 May and 6 June 2017. Two reminders were sent to non-responders or those who had not properly completed the questionnaire. A total of 1230 PhD students filled in the questionnaire; however, the responses of 67 PhD students were discarded as more than 67% of the questions were left blank. The final dataset consisted of 1163 PhD students, resulting in a response rate of 34.5%. As shown in Figure 55, the response in 2017 was almost the same as in 2015.
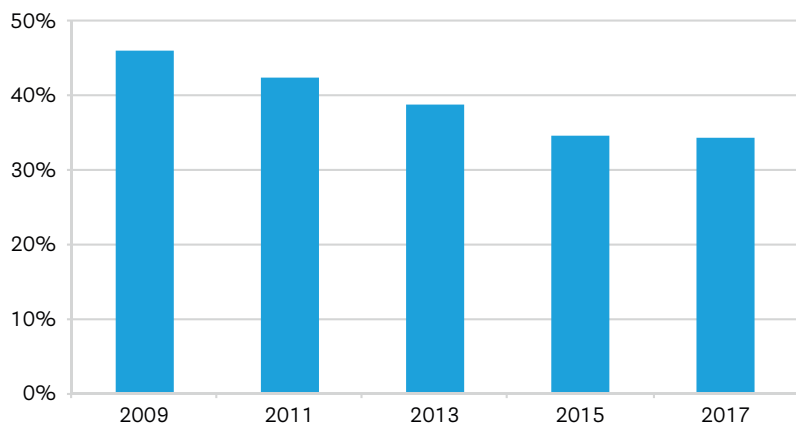


Figure 55. Historical overview of UG's PhD survey response rates

Figure 56 shows the response rate by graduate school. As in 2015, PhD students from the Graduate School of Law and the Graduate School of Medical Sciences are less represented in the response sample than PhD students from the other graduate schools. The response rate for PhD students from the Graduate School of Philosophy, the Graduate School of Behavioural and Social Sciences and the Graduate School of Theology and Religious studies has increased. The red bars in Figure 65 indicate a response rate lower than the UG average (in purple), while the green bars indicate a response rate similar to or higher than the UG average.
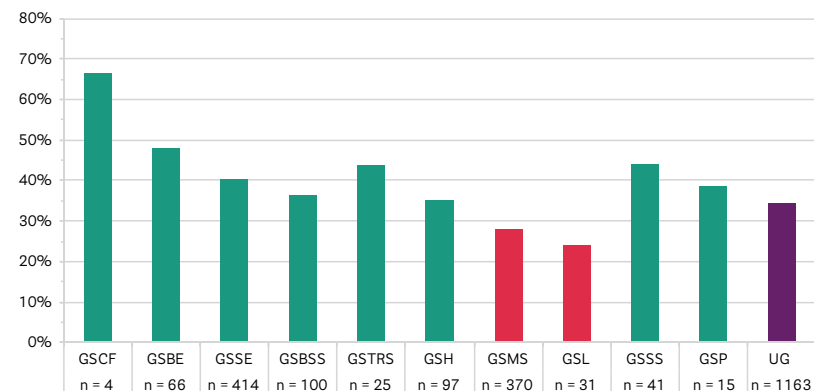


Figure 56. Response rate by graduate school in 2017

## 12.3    Representability of the response sample

Relatively more PhD students born outside the Netherlands filled in the questionnaire, while the distribution of males and females was roughly the same as in the total population (Figure 57). These results are comparable to those of previous years.
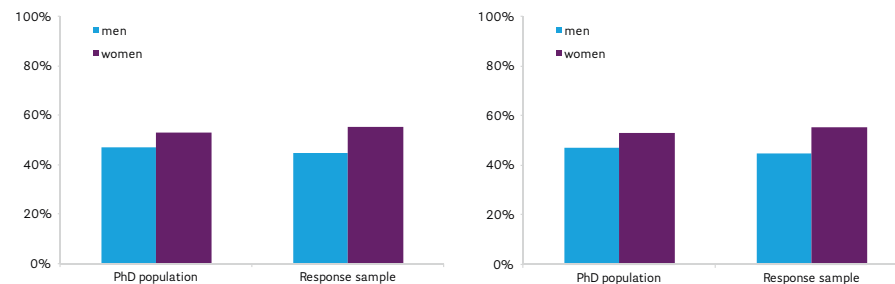


Figure 57. Representability of the response sample according to gender (left) and nationality (right)

This year we checked whether our response sample was representative of PhD scholarship students. As shown in Figure 58, relatively more PhD scholarship students responded to the survey. With regard to phase, we see that relatively more first-year PhD students and relatively fewer senior PhD students participated in 2017 (see Figure 59). The results regarding phase are comparable to those of previous years (see Table 90).
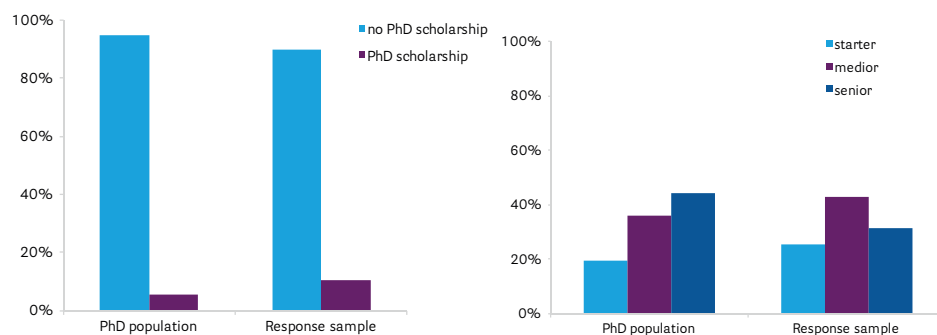
Figure 58. Representability of the response sample according to PhD scholarship status (left) and phase (right)

Table 90. Response rate by phase and survey year

| Response | % 2011 | % 2013 | % 2015 | % 2017 |
|---|---|---|---|---|
| Starters (first year) | 30 | 26 | 31 | 26 |
| Intermediates (2nd/3rd year) | 48 | 45 | 41 | 43 |
| Seniors (4th year or more) | 22 | 28 | 28 | 31 |

## 12.5    Calculation and reliability of scales

Several items (questions) were combined into scales that measured one underlying concept. The nineteen scales listed in black and green in Table 91 were used to determine PhD students' agreement or satisfaction with the topics indicated. The scale score was calculated by averaging the scores on the items that constituted each scale (see Table 96 in the Appendix). All items were answered on a five-point Likert Scale, where 1 = 'completely disagree/completely unsatisfied', 2 = 'disagree/unsatisfied', 3 = 'neutral', 4 = 'agree/satisfied', 5 = 'completely agree/completely satisfied'. The scale scores vary between 1 and 5, with higher scores indicating a higher degree of agreement or satisfaction. An average scale score below 3 is considered 'not good', between 3 and 3.5, 'satisfactory', between 3.5 and 4, 'good', and between 4 and 5, 'very good' (see Table 95 in the Appendix).

The degree to which several items measure the same concept is represented in the reliability of the scale, indicated by Cronbach's alpha, which can vary between 0 and 1. A reliability between .60 and .90 can be regarded as reasonable to high. Table 91 shows the reliability of scales over the years.

Table 91. Reliability of scales used in UG's PhD surveys

| Cronbach's alpha | % 2009 | % 2011 | % 2013 | % 2015 | % 2017 |
|---|---|---|---|---|---|
| Perception amount of freedom | | | | | 0.80 |
| Satisfaction educational activities | 0.81 | 0.88 | 0.87 | 0.85 | 0.86* |
| Training and Supervision Plan | 0.81 | 0.88 | 0.87 | 0.85 | |
| Satisfaction with graduate school | | 0.92 | 0.9 | 0.87 | 0.91 |
| Supervision organization | 0.83 | 0.87 | 0.88 | .88* | |
| Supervision quality | 0.84 | 0.89 | 0.87 | .87* | |
| Availability daily supervisor | | | | | 0.87 |
| Academic sup. daily supervisor | | | | | 0.91 |
| Personal sup. daily supervisor | | | | | 0.97 |
| Autonomy daily supervisor | | | | | 0.87 |
| Availability first supervisor | | | | | 0.88 |
| Academic sup. first supervisor | | | | | 0.93 |
| Personal sup. first supervisor | | | | | 0.95 |
| Autonomy first supervisor | | | | | 0.87 |
| Satisfaction with expertise | 0.65 | 0.73 | 0.73 | 0.75 | |
| Satisfaction with contacts | 0.78 | 0.83 | 0.81 | 0.86 | |
| Academic relationships | | | | | 0.87 |
| Social relationships | | | | | 0.87 |
| Sense of belonging | | | | | 0.90 |
| General work satisfaction | 0.68 | 0.76 | 0.82 | 0.79 | |

Notes: empty cells = not measured in that year, *small differences in number and content of items in indicated year and previous year.

## 12.6    Analyses of group differences

Differences were examined between different groups of PhD students for several items and scales (e.g. gender, affiliation status, nationality group, graduate schools and phase). The minimum number of respondents per group had to be 15. The significance of differences was examined with a Chi-square test or Analysis of Variance (ANOVA). Only significant group differences were mentioned in this report and only group means and standard deviations were presented. It is important to remember that a high (> 1) standard deviation (sd) indicates large individual differences between PhD students in a group.

## Correlations between grouping variables

When interpreting differences between groups, it is important to keep in mind that the variables are associated. For example, differences between graduate schools might also be a consequence of affiliation, gender or nationality. Some specific examples include: most female PhD students are found at the Graduate School of Behavioural and Social Sciences and the Graduate School for the Humanities; most scholarship students are found at the Graduate School of Law and the Graduate School of Theology and Religious Sciences; most employed students are found at the Graduate School of Behavioural and Social Sciences, the Graduate School of Economics and Business and the Graduate School of Medical Sciences; most Dutch students are found at the Graduate School of Behavioural and Social Sciences and the Graduate School for the Humanities; most non-European students are found at the Graduate School of Science and Engineering and the Graduate School of Spatial Sciences (see Table 92). There is also a skewed division with regard to gender and nationality: female PhD students most often have Dutch nationality, while non-Europeans are most often males. Regarding affiliation and nationality, we see that Dutch PhD students are most often employed (at UG/UMCG or external) and that non-Europeans more often have a bursary or PhD scholarship (see Table 93). Finally, in this survey, PhD scholarship students were all in the first phase of their project and were more likely to have non-European nationality. With regard to nationality, there were no differences between intermediate and senior PhD students. Although these above-mentioned associations are significant, this does not entail causal relationships.

Table 92. Proportion of nationality and affiliation groups, by graduate school

| Graduate School | Nationality | | | Affiliation | | | |
|---|---|---|---|---|---|---|---|
| | Dutch | European | non-European | Employee | External | Bursary | PhD scholarship student |
| GSBSS | 70 | 12 | 18 | 70 | 13 | 13 | 3 |
| GSEB | 48 | 26 | 26 | 75 | 13 | 10 | 3 |
| GSH | 68 | 13 | 19 | 48 | 33 | 8 | 10 |
| GSL | 61 | 10 | 29 | 55 | 14 | 14 | 17 |
| GSMS | 60 | 16 | 24 | 71 | 10 | 9 | 9 |
| GSSE | 23 | 26 | 50 | 62 | 4 | 20 | 13 |
| GSSS | 39 | 22 | 39 | 49 | 14 | 23 | 14 |
| GSTRS | 28 | 36 | 36 | 41 | 23 | 9 | 27 |

Table 93. Proportion of nationality groups and phase, by affiliation

| Affiliation | Nationality | | | Phase | | |
|---|---|---|---|---|---|---|
| | Dutch | European | non-European | Starters | Intermediates | Seniors |
| Employee | 55 | 25 | 20 | 22 | 50 | 28 |
| External | 64 | 16 | 20 | 18 | 45 | 37 |
| Bursary | 3 | 8 | 88 | 6 | 56 | 37 |
| PhD scholarship student | 26 | 9 | 65 | 96 | 4 | 0 |

# Appendix
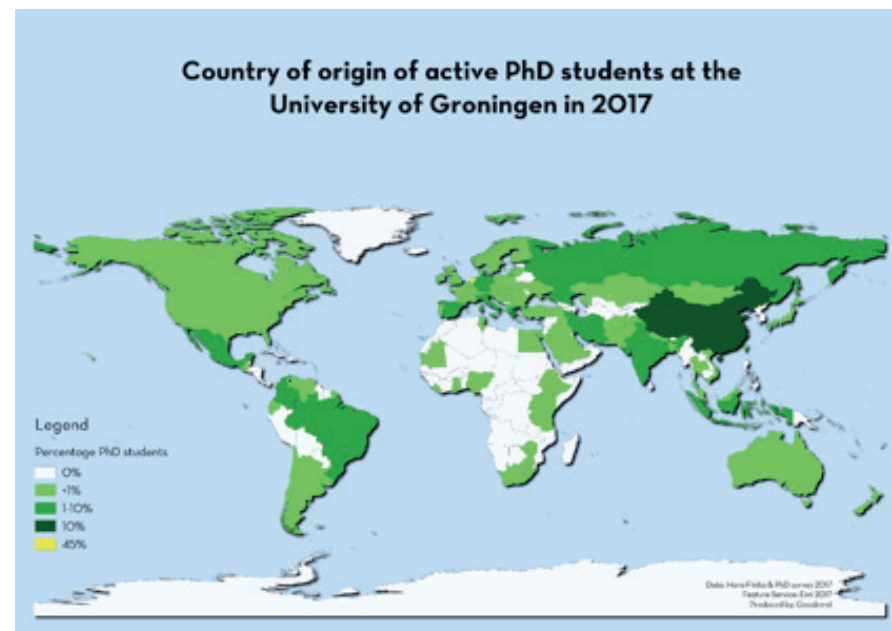


Figure 59. Country of origin of respondents

Table 94. Abbreviations of the Faculty Graduate Schools

| | |
|---|---|
| GSBSS | Graduate School of Behavioural and Social Sciences |
| GSCF | Graduate School Campus Fryslân |
| GSEB | Graduate School of Economics and Business |
| GSH | Graduate School for the Humanities |
| GSL | Graduate School of Law |
| GSMS | Graduate School of Medical Sciences |
| GSP | Graduate School of Philosophy |
| GSSE | Graduate School of Science and Engineering |
| GSSS | Graduate School of Spatial Sciences |
| GSTRS | Graduate School of Theology and Religious Studies |

Table 95. Average scale scores by graduate school

| Scale | UG | GSBSS | GSEB | GSH | GSL | GSMS | GSP | GSSE | GSSS | GSTRS |
|---|---|---|---|---|---|---|---|---|---|---|
| Perception amount of freedom | 3.96 | 3.99 | 4.03 | 4.15 | 4.24 | 3.85 | 4.44 | 3.92 | 4.19 | 4.37 |
| Satisfaction educational activities | 3.42 | 3.46 | 3.50 | 3.33 | 3.29 | 3.34 | 3.09 | 3.51 | 3.32 | 3.45 |
| Satisfaction graduate school | 3.32 | 2.71 | 3.72 | 3.37 | 3.61 | 3.22 | 3.22 | 3.40 | 3.45 | 3.95 |
| Availability first supervisor | 4.04 | 3.96 | 4.24 | 4.00 | 4.26 | 3.95 | 4.29 | 4.06 | 4.29 | 4.32 |
| Academic support first supervisor | 3.37 | 3.24 | 3.56 | 3.34 | 3.39 | 3.29 | 3.78 | 3.40 | 3.61 | 3.58 |
| Personal support first supervisor | 3.82 | 3.85 | 3.96 | 3.88 | 3.97 | 3.76 | 3.86 | 3.76 | 4.06 | 4.01 |
| Autonomy first supervisor | 3.96 | 3.96 | 4.01 | 3.97 | 4.01 | 3.92 | 4.17 | 3.95 | 4.13 | 3.99 |
| Availability daily supervisor | 4.33 | 4.33 | 4.49 | 4.20 | 4.22 | 4.34 | | 4.29 | 4.44 | 4.61 |
| Academic support daily supervisor | 3.67 | 3.56 | 3.77 | 3.54 | 3.69 | 3.67 | | 3.68 | 3.71 | 3.93 |
| Personal support daily supervisor | 4.03 | 4.09 | 4.06 | 4.06 | 3.98 | 4.05 | | 3.95 | 4.18 | 4.26 |
| Autonomy daily supervisor | 4.06 | 4.04 | 4.10 | 4.06 | 3.99 | 4.07 | | 4.02 | 4.12 | 4.24 |
| Academic relationships | 3.60 | 3.60 | 3.46 | 3.48 | 3.33 | 3.74 | 3.03 | 3.59 | 3.28 | 3.73 |
| Social relationships | 3.50 | 3.50 | 3.49 | 3.41 | 3.35 | 3.58 | 2.83 | 3.49 | 3.42 | 3.64 |
| Sense of belonging | 3.86 | 3.87 | 3.84 | 3.86 | 3.83 | 3.91 | 3.40 | 3.85 | 3.64 | 4.06 |

Notes: the Graduate School Campus Fryslân (GSCF) is not included in the table because the number of respondents was < 15. For the Graduate School of Philosophy (GSP), scales need to be interpreted with caution as the averages of the scales were based on 10 to 14 respondents, empty cells < 10 respondents. Colours: dark green = very good, light green = good, orange = satisfactory, red = not good

Table 96. Items per scale

| Perception amount of freedom |
|---|
| In my PhD project there is much room for my own ideas. |
| I have the freedom to make my own choices about the direction of my project and the methods to be used. |
| I have the freedom to choose which conferences to attend. |
| I have the freedom to choose which courses to take. |
| I have the freedom to choose which journals to publish in. |
| I have the freedom to choose when and where I work. |

| Satisfaction educational activities |
|---|
| I have sufficient time to participate in educational activities. |
| In general, I am satisfied with the educational activities on offer. |
| I am satisfied with the number of educational activities on offer. |
| I am satisfied with the quality of the educational activities on offer. |
| I am satisfied with the diversity of the educational activities on offer. |
| I am satisfied with the information I receive about educational activities. |
| The educational activities in which I have participated contribute to the completion of my PhD. |
| My supervisors encourage me to participate in educational activities. |

| Satisfaction Graduate School |
|---|
| I am satisfied with the educational activities provided by my Graduate School. |
| I am satisfied with the way in which my Graduate School monitors and supports the supervision of my PhD project. |
| I am satisfied with the way in which my Graduate School monitors the progress of my PhD project. |
| My Graduate School provides a stimulating study and research environment that facilitates interaction and efficiency. |
| My Graduate School provides me with adequate information (e.g. e-mails, website, PhD guide). |
| Overall, I am satisfied with the way in which my Graduate School functions. |

| Availability first supervisor / daily supervisor |
|---|
| My supervisor responds to my queries or requests for help within a reasonable time frame. |
| My supervisor provides me with prompt feedback whenever I submit written work to him/her. |
| My supervisor is available to answer any questions I have. |

| Academic support first supervisor / daily supervisor |
|---|
| My supervisor helps me to plan and manage the different research tasks I have to complete. |
| My supervisor helps me construct timelines and deadlines to ensure that I complete tasks on time. |
| My supervisor gives me good, practical advice about how to plan and conduct my research. |
| My supervisor offers suggestions about how to find the resources I need. |
| My supervisor gives me guidance in finding relevant literature and research materials. |
| My supervisor looks for information that will help me with my thesis. |
| My supervisor teaches me the technical knowledge and skills that I need to complete my research. |
| My supervisor spends time helping me learn the skills I need to complete my research. |
| My supervisor provides practical assistance when I need help conducting research tasks. |
| My supervisor helps me develop good writing skills (e.g. expression of ideas, grammar, structure of thesis, etc.). |

| Personal support first supervisor / daily supervisor |
|---|
| My supervisor behaves warmly towards me when discussing my research and/or any problems I am experiencing. |
| My supervisor expresses understanding and empathy when I experience difficulties. |
| My supervisor listens and responds to any concerns I have. |
| My supervisor is friendly, supportive and approachable. |
| My supervisor comforts and reassures me when I am feeling down. |
| My supervisor compliments me and makes me feel good about myself and my work. |
| My supervisor shows me that he/she respects and values me. |
| My supervisor reassures me that I will be able to successfully complete my research/thesis. |
| My supervisor makes me feel that I have the ability to do well. |
| My supervisor is interested in my personal situation. |
| My supervisor tells me personal things about himself/herself. |
| My supervisor understands me. |
| My supervisor supports me when I have a conflict with a colleague. |

| Autonomy first supervisor / daily supervisor |
|---|
| My supervisor encourages me to ask questions. |
| My supervisor encourages me to be open about my own ideas and any issues that concern me. |
| My supervisor listens to how I would like to do things. |
| My supervisor welcomes my input in discussions and treats my ideas with respect. |
| My supervisor provides me with choices and options. |
| My supervisor encourages me to work independently. |
| My supervisor always presses his/her own point of view. |
| My supervisor gives me the main responsibility for my project. |

| Academic relationships |
|---|
| Colleagues invite me to work with them on projects or tasks. |
| It is easy to find colleagues to collaborate with. |
| In my department, people often work together. |
| Colleagues approach me to discuss their work. |
| Colleagues appreciate my feedback. |
| I collaborate well with my colleagues. |
| My interpersonal relationships with my colleagues have a positive influence on my performance. |
| There are people to turn to in my department when I need help. |

| Social relationships |
|---|
| I know my colleagues quite well. |
| My colleagues are interested in how I am doing. |
| I regularly spend time outside work with my colleagues. |
| I have close interpersonal relationships with my colleagues. |

| Sense of belonging |
|---|
| I feel at home in my department. |
| I enjoy the atmosphere in my department. |
| This department is a good place for me to work. |
| I get on well with most of the people in my department. |
| I share the same values with most of the people in my department. |