university of groningen

PhD Survey
2023

Experiences of PhD students at the University of Groningen

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1 Preface

We are pleased to present the results of the PhD survey 2023, assessing the experiences and perceptions of our PhD students regarding their supervision, the support that they receive from their Graduate Schools and their overall wellbeing. This is the eighth time we conduct the survey since 2009, when the Groningen Graduate Schools were founded. All reports are on our Graduate Schools webpage. We are very happy that the findings reveal a consistent pattern of high satisfaction among our PhD candidates with the supervision they receive. This positive feedback underscores the dedication and commitment of our faculty members, who strive to provide not only academic guidance but also personal support to their supervisees. We hope that the new PhD supervisor training implemented this past year, with the massive open online course and the workshops on many different topics, will ensure that also our future PhD supervisors are well-prepared for mentoring a diverse PhD population in changing times.

We are also happy to see that the percentage of doctoral candidates expecting to be delayed in submitting their dissertation has gone down considerably with respect to 2021. Sensitising our supervisors to the excessive duration of PhD projects and introducing the description of a "plan B" in case of delay in the yearly progress interview seem to bear fruit. With the current efforts of the faculty Graduate Schools to reduce the completion time of PhD projects, we hope to see even better numbers in future surveys. Likewise, the percentage of PhD candidates who consider their working load too heavy has decreased – probably also a result of the Graduate Schools alerting the supervisors to the issue after the 2021 survey. We are confident that having organised intervision sessions and retreats where supervisors reflect on what is really needed to demonstrate that a PhD candidate has reached the purpose of the PhD training and become a good, reliable and independent researcher, helps to reduce/avoid too ambitious research programmes and correspondingly high workload.

Additionally, the survey highlights an encouraging trend regarding the wellbeing of our PhD students. Approximately half of the respondents reported that their wellbeing is positively influenced by their PhD studies. This is a higher number than before the COVID pandemic and suggests that the PhD support structure, the courses on how to deal with stress, perfectionism, procrastination, etc., and resources available to our PhD candidates are effective in promoting a balanced and fulfilling doctoral journey. We seem to succeed in making our doctoral candidates more resilient and ensure that they many of them

experience engaging in research and scholarly activities as contributing to a sense of purpose, personal growth, and professional development.

Next to these findings that are a cause for celebration, there is also an urgent call to action stemming from a new item we included in the 2023 survey. It is alarming that nearly one in five of our PhD candidates indicated that they experienced undesired behaviour in the past year. Although more than 70% of them know how to get help, we recognize the importance of better addressing this issue with supervisors, fellow researchers and technical staff to eliminate such negative experiences as much as possible. Offering bystander training is clearly not enough.

We extend our heartfelt gratitude to all the PhD candidates who participated in the survey. Your honest feedback is invaluable in helping us understand our strengths and areas for improvement. A big thank you to Esther Bouma, who improved the survey, performed all the analyses and wrote the report. The support of student assistant Ward Eiling for Dr. Bouma's work was much appreciated. I would also like to acknowledge the valuable input in discussions by Marjon Fokkens-Bruinsma and Marjan Koopmans, which helped to further refine the survey.

Prof. Petra Rudolf
Dean of the Groningen Graduate Schools

2 Introduction

This PhD report provides an overview of the current state of affairs for PhD students at the University of Groningen (UG). The Board of the University has the aim to prepare PhD graduates in the best possible way for their subsequent career steps as researchers and professionals, whether within or outside academia. The UG has aimed to have 600 PhD defences each year since 2020. The introduction of the PhD Scholarship Programme at the UG in 2016, in the framework of a national experiment initiated by the Ministry of Education, Culture and Science (OCW), has helped to achieve these goals, but also presented a number of challenges. Thus, it is important to monitor the interplay between policies and actual outcomes in daily practice. Due to the PhD registration system, Hora Finita, all PhD students in Groningen are clearly registered and easily approachable for the biennial PhD survey, which is an important monitoring tool.

Goals of the survey

The present PhD survey provides insights into the way PhD students in Groningen experience the organization of their project, their workload, working environment, educational opportunities, supervision, social safety and support in the case of problems. By means of an online survey, all PhD students from the UG and UMCG (University Medical Center Groningen) were invited to participate and answer questions about the many aspects of their PhD life. The information gathered in this survey was used for the following two goals:

1 To improve PhD programmes at the University of Groningen
2 To gain insight into the experiences of PhD students at the national level

PhD students could indicate for each goal independently whether their answers could be used (see Appendix A for an overview of the percentages of informed consent for each goal). Only respondents who gave consent for Goal 1 were included in the sample for analysis.

National PhD evaluation

Some of the questions in the 2023 survey are part of the broader national PhD evaluation project. All other Dutch universities incorporated these questions into their own surveys. Answers to the national questions by the UG PhD students were combined with those of PhD students affiliated with other Dutch universities to gain insight into the experiences of PhD students on a national level. The results can be found on the website of the Universities of the Netherlands (UNL) from June 2024.

Content of the survey

The 2023 survey is largely similar to those of 2017, 2019 and 2021. New to the 2023 survey are questions related to social safety. Due to the various backgrounds of the PhD students, not every PhD student answered the same questions. For example, questions about the thesis defence were not presented to firstyear PhD students, while questions about scholarship conditions were not presented to PhD students with an employment contract. Furthermore, PhD students were free to skip questions if they wanted to do so (apart from questions that were necessary to determine different routes through the survey and questions for the national PhD evaluation project). For this reason, not all questions have the same number of respondents.

Content of the report

The results of the UG survey are presented in this report, where we focus on aspects that are considered to be the core elements of PhD student policy, while details are provided in Appendices. For several questions, statistical analyses were performed to compare the results across different groups. Detailed information about these statistical tests can be found in the Appendix Table B1. This present chapter (Chapter 2) provides an introduction to the PhD survey 2023 and an overview of the chapters.

- Chapter 3 provides an overview of background characteristics of the PhD students who participated in the survey, followed by the response rate and representativeness of the survey sample with respect to the overall UG PhD student population.
- Chapter 4 provides an indication of the overall satisfaction with the PhD trajectory, supervision and the Graduate School. This chapter also concerns the design of the PhD project and the level of freedom experienced.
- Chapter 5 gives information about several aspects of supervision such as the constitution of the supervision team, hours of supervision and how PhD students feel in relation to their supervisors and the supervision they receive.
- Chapter 6 looks at how integrated PhD students feel in relation to their scientific communities and how they value the relationships with colleagues.
- Chapter 7 describes the accessibility of, and satisfaction with, courses and other educational activities.
- Chapter 8 concerns familiarity with the different tasks of the Graduate School and PhD student satisfaction.

– Chapter 9 concerns wellbeing and the positive and negative effects of the PhD trajectory on PhD student wellbeing. This chapter also concerns familiarity with the PhD psychologists and other support structures.
– Chapter 10 describes PhD student participation in teaching and supervisory activities.
– Chapter 11 concerns formal and actual working hours and experienced workload.
– Chapter 12 is new and concerns social safety issues. In the case of issues, details on type of behaviour and actors are described; and in the case of reports, whether PhD students felt protected by the University.
– Chapter 13 assesses the various ways in which PhD students are monitored and evaluated during their PhD trajectory.
– Chapter 14 describes the presence and content of the Training and Supervision Plan.
– Chapter 15 explores to what extent PhD students are on track and reasons for delay.
– Chapter 16 concerns the impact of COVID-19 on wellbeing and progress of the PhD project.
– Chapter 17 describes to what extent PhD students explore their options for a future career and to what extent they feel supported in doing this.
– Chapter 18 deals with the importance of, and satisfaction with, employment and scholarship conditions.
– Chapter 19 concerns information provision for the final stage of the PhD trajectory.
– Chapter 20 presents the conclusions that can be drawn from the UG PhD survey 2023.

3 Sample characteristics

This chapter provides an overview of several characteristics of the PhD students who participated in the survey (the response sample) and provides details about the response rate and the sample representativeness.

Response rate

On 1 May 2023, a total of 4,146 PhD students were invited to participate in the survey (all PhD students registered in Hora Finita as 'not finished yet'). After sending three reminders (on 15 May, 30 May and 7 June) to those who had not completed the survey, the survey was closed at midnight on 12 June. At that time, 1,307 PhD students had completed a sufficient part of the survey.[1] Of these PhD students, four did not give permission to use their data to improve PhD programmes at the University of Groningen (Goal 1). Information about permission for Goal 2 (to gain insight into the experiences of PhD students at the national level) can be found in Appendix Table A1. The response rate for the sample used for this report was 31.4% (1,303/4,146). This is higher than the response rate of 2021 (27.4%) and comparable to that of other years prior to 2021 (around 30-35%).

Defining the characteristics

To assess the representativeness of the sample, PhD characteristics such as age, gender, nationality group, phase of the PhD project, PhD student type and Graduate School were compared with the UG PhD student population as a whole, as indicated by information in Hora Finita, the PhD registration system.

Age
PhD students were asked to report their current age. They could enter a digit between 0 and 99 or, if they did not want to disclose their age, they could enter 0. For those who did not report their age, it was calculated as the difference between 12 June 2023 (the closing date of the survey) and the date of birth as indicated in Hora Finita.

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1   1,715 PhD students started the survey; only PhD students who completed more than 70% of the survey, and almost all obligatory questions for the national survey, were included in the 'response sample' (n = 1,307, 76%).

Gender

PhD students were asked: 'What is your gender?' They could choose from the answer options: 'male' (N = 544, 42%), 'female' (N = 728, 56%), 'other' (N = 6, < 1%) and 'prefer not to say' (N = 25, 2%). For those who selected one of the last two options or left the answer blank, gender as indicated in Hora Finita was used.

Nationality group

PhD students were asked: 'What is your nationality (as indicated on your passport)?' 'If you have more than one, choose the one you feel is the most relevant'. They could choose from the following answer categories: 'Dutch' (N = 498, 39%), 'Nationality from a European Economic Area (EEA) country' (N = 255, 20%) or 'Other nationality' (N = 535, 42%). A list of all EEA countries was accessible from the survey. For those who left the answer blank, nationality as indicated in Hora Finita was used.

Phase

The phase was based on the starting date of the project, with the students answering the question: 'In what year and month did you officially start your PhD?' PhD students were considered starters if they were undertaking the survey within one year of their starting date. For those who did not complete the question, the phase was calculated from the difference between June 2023 and the student's starting date as indicated in Hora Finita.

PhD student types

There are six types of PhD students in the Netherlands, as formulated by UNL (Universities of the Netherlands):

1a. Employed PhD students ('werknemer-promovendus'). These PhD students have a temporary PhD employment contract (usually four years full time or five years part time) with the UG/UMCG.

1b. Employee engaged in a PhD track ('promoverend medewerker'). A UG/UMCG employee with a contract (often physician, research assistant or lecturer), who is permitted to work on their PhD research for an allocated period of time.

2a. PhD student on a scholarship from UG/UMCG ('beurspromovendus UG/UMCG'). Not employed, but financed by a scholarship from UG/UMCG. Most of these students are PhD scholarship students ('promotiestudenten') in the national PhD Scholarship experiment.

2b. PhD student on a scholarship from another institution ('beurspromovendus andere beursverstrekker'). Not employed, but financed by a scholarship from a provider other than UG/UMCG (usually from their home country). Most of these PhD students receive a top-up scholarship from UG/UMCG and have the same conditions as PhD scholarship students with a full scholarship from UG/UMCG (2a).

3. Externally financed PhD student ('extern gefinancierde promovendus'). These PhD students are employed by an institute/organization other than UG/UMCG. The research is sometimes partly done at that institution.

4. External PhD student ('buitenpromovendus met eigen middelen'). These PhD students do not receive any financial assistance for their research work.

To assign each PhD student to a UNL PhD type, PhD students answered three questions to assess how they were affiliated to the UG (or UMCG). For more information see Appendix C. For those who did not complete the question, the UNL PhD student type as registered in Hora Finita was used.

Sample representativeness

Table 1 presents an overview of the characteristics of the total response sample (N = 1,307) and that of the total invited population (N = 4,315) as deduced from the characteristics registered in Hora Finita. It appears that the response sample is marginally younger than the invited population. Moreover, compared to the whole population, PhD students with Dutch nationality are underrepresented, while women and starters are overrepresented in the response sample.

Table 1 Overview of background characteristics in the survey response sample compared to the UG PhD student population

		Response sample		UG PhD population	
		Mean	Sd	Mean	Sd
Age (years)		31.9	7.5	30.3	6.7
Gender	% Women	57		55	
Phase	% Starter	26		17	
Nationality	% Dutch	39		47	

**Abbreviation:** *Sd = standard deviation*

Table 2 presents an overview of the PhD student types as registered in Hora Finita and the response sample. Employed PhD students are slightly overrepresented, while employees in a PhD track and both externally financed and external PhD students are underrepresented.

Table 2 Overview of PhD student type in the response sample compared to the UG PhD student population

UNL PhD student type	Response sample		UG PhD population	
	N	%	N	%
1a. Employed PhD student	639	49	1.844	43
1b. Employee in a PhD track	37	3	220	5
2a. Scholarship UG/UMCG	180	14	577	13
2b. Scholarship other	268	21	731	17
3. Externally financed PhD student	105	8	481	11
4. External PhD student	74	6	452	11
Total	1,303	100	4,305	100

Figure 1 presents the percentages of students allocated to each Graduate School and the related percentages in the total invited sample (the UG PhD student population). The figure shows that PhD students from the Medical Sciences are underrepresented in the response sample.

Figure 1 Overview of population and response sample by Graduate School
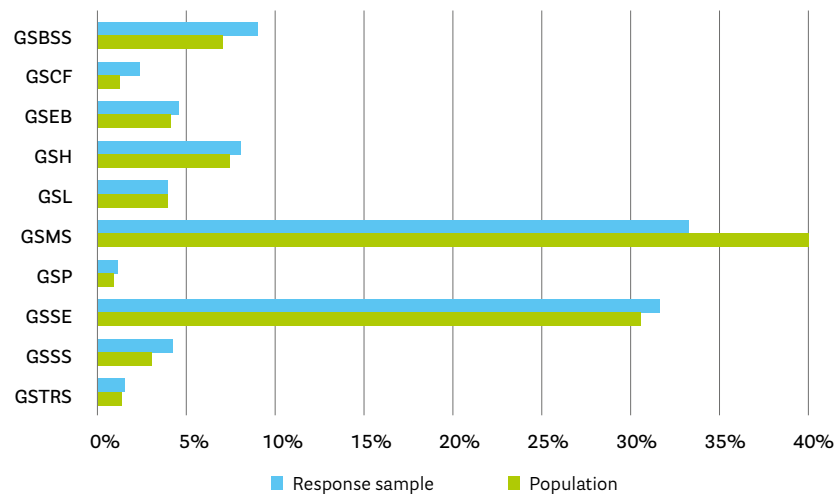
Abbreviations: *GSBSS = Graduate School of Behavioural and Social Sciences; GSCF = Graduate School of Campus Fryslân; GSEB = Graduate School of Economics and Business; GSH = Graduate School of Humanities; GSL = Graduate School of Law, GSMS = Graduate School of Medical Sciences; GSP = Graduate School of Philosophy; GSSE = Graduate School of Science and Engineering; GSSS = Graduate School of Spatial Sciences; GSTRS = Graduate School of Theology and Religious Studies.*

PhD student characteristics per Graduate School

Table 3 presents the number of PhD students and their characteristics per Graduate School. Comparable to previous surveys, most PhD students were part of either the Graduate School of Medical Sciences or the Graduate School of Science and Engineering. The Graduate School of Theology and Religious Studies had, on average, the oldest PhD students, while the Graduate School of Philosophy had the smallest percentage of female PhD students.

Table 3 PhD student characteristics, displayed by Graduate School

Abbreviation	Graduate School	N	% UG sample	% Female	% Dutch	% Starter	Mean age
GSBSS	Behavioural and Social Sciences	118	9	72	51	25	33.4
GSCF	Campus Fryslân	31	2	52	28	29	30.5
GSEB	Economics and Business	60	5	52	32	25	29.6
GSH	Humanities	106	8	61	46	28	32.6
GSL	Law	14	1	67	48	27	30.6
GSMS	Medical Sciences	469	36	71	29	29	29.8
GSP	Philosophy	15	1	31	64	27	29.7
GSSE	Science and Engineering	410	32	44	27	26	28.9
GSSS	Spatial Sciences	56	4	58	26	27	32.3
GSTRS	Theology and Religious Studies[2]	21	2	42	25	14	34.5
Total		1,300	100	55	47	26	31.9

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2   As at the time of the survey the name of the Graduate School was Theology and Religious Studies this name is used throughout this report.

Chapter conclusions

Based on the results presented in this chapter, we can conclude that the response sample is adequately representative of the UG PhD student population. In the remainder of this report, we will refer to the response sample as 'PhD students'. In the following chapters, results will be presented for the entire sample and, if appropriate, by Graduate School, PhD student type, phase and/or nationality group.

4 Overarching aspects of the PhD trajectory

This chapter discusses overarching aspects of the PhD trajectory. It starts with overall satisfaction with the PhD project, contribution to the design of the project and the amount of freedom experienced in the project. Following this, satisfaction with the supervision team and the Graduate School is presented.

Overall satisfaction with PhD trajectory

At the start of the survey, PhD students were asked to indicate their general satisfaction with their PhD trajectory on a ten-point scale ('Overall, how satisfied are you with your PhD trajectory on a scale of 1 [very dissatisfied] to 10 [very satisfied]?'). An average score (mean) of 7.5 and a standard deviation (Sd) of 1.5 was found. This is a slight increase compared to 2021 (mean = 7.3, Sd = 1.5). An overview of all ten response categories is presented in Figure 2.

Figure 2   Overall, how satisfied are you with your PhD trajectory on a scale of 1 (very dissatisfied) to 10 (very satisfied?
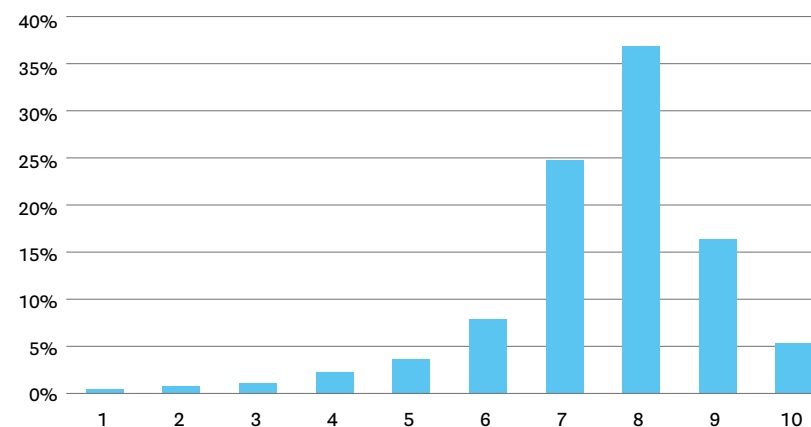
Group differences
First-year PhD students (mean = 7.8, Sd = 1.3) were significantly more satisfied than seniors (mean = 7.3, Sd = 1.5). PhD students from an EEA country (other than the Netherlands) were significantly less satisfied (mean = 7.3 Sd = 1.7) than PhD students with a non-EEA nationality (mean = 7.7, Sd = 1.5) and PhD students with Dutch nationality (mean = 7.4, Sd = 1.2). These group differences are similar to those of 2021.

Table 4 displays satisfaction scores by PhD student type. External PhD students, externally financed PhD students and PhD students with a scholarship from an institution other than UG/UMCG (indicated in green in the table) were significantly more satisfied than employees in a PhD track (indicated in pink).

Table 4   Average satisfaction with PhD trajectory by PhD student type

UNL PhD student type	N	Mean	Sd
1a. Employed PhD student	639	7.4	1.4
1b. Employee in PhD track	37	7.2	1.4
2a. PhD student on UG/UMCG scholarship	180	7.3	1.5
2b. PhD student on other scholarship	268	7.6	1.5
3. Externally financed PhD student	105	7.6	1.5
4. External PhD student	74	7.7	1.8

Note: *Group differences for scores are highlighted in pink (lowest) and green (highest) if the difference between the lowest and highest scores was statistically significant.*

Table 5 displays satisfaction scores by Graduate School. PhD students from the GSP and GSRCS (both with mean = 7.9) were the most satisfied, while PhD students from the GSL were the least satisfied (mean = 7.1); although, a 7 can still be considered as satisfied. Significant differences were present between GSTRS and GSP (indicated in pink in the table) and the Graduate Schools with the three highest scores (indicated in green).

Table 5   Average satisfaction with PhD trajectory by Graduate School

Graduate school	N	Mean	Sd
Behavioural and Social Sciences	118	7.6	1.3
Campus Fryslân	31	7.2	1.6
Economics and Business (SOM)	60	7.3	1.3
Humanities	106	7.2	1.6
Law	52	7.1	1.7
Medical Sciences	431	7.6	1.3
Philosophy	15	7.9	0.9
Science and Engineering	410	7.4	1.6
Spatial Sciences	56	7.6	1.2
Theology and Religious Sciences	21	7.9	1.7

Note: *Group differences for scores are highlighted in pink (lowest) and green (highest) if the difference between the lowest and highest scores was statistically significant.*

Design of the PhD project

PhD students were asked to indicate who designed their project. As presented in Table 6, 35% of the PhD students indicated that they co-designed their project, 36% answered that their supervisor(s) designed the entire, or most of, the project and 17% indicated that they mostly designed the project with help from their supervisor(s). These percentages are comparable to previous surveys.

Table 6   Who designed your PhD project at the beginning of your trajectory?

Answer	N	%
1. My supervisor(s) designed the entire project	195	15
2. My supervisor(s) designed most of the project; my contribution was modest	272	21
3. My supervisor(s) and I co-designed the project	460	35
4. I designed most of the project; my supervisor's/supervisors' contribution was modest	225	17
5. I designed the entire project	103	8
6. My project was designed by a national or international consortium	42	3
7. Other	6	1
Total	1,303	100

Group differences
Differences were examined for PhD student type and Graduate School. Participation in the design of the project differed among PhD student types (see Table 7). For all PhD types, the most prevalent option was co-design (Option 3) but the prevalence was highest for PhD scholarship students (2a: 37%; 2b: 45%), reflecting one of the objectives of the PhD Scholarship Programme of the UG.
Employed PhD students indicated significantly more often than other PhD students that their supervisor designed the entire project (Option 1) while external PhD students indicated more often that they designed the project alone (Option 5). These percentages are comparable to those of the previous survey.

Table 7 Percentages 'Who designed the project' by PhD student type

Answer	1a %	1b %	2a %	2b %	3 %	4 %
1. My supervisor(s) designed the entire project	**23**	8	3	8	12	3
2. My supervisor(s) designed most of the project; my contribution was modest	**25**	**35**	11	**25**	12	4
3. My supervisor(s) and I co-designed the project	**31**	**41**	**37**	**45**	**34**	**34**
4. I designed most of the project; my supervisor's/supervisors' contribution was modest	11	8	**32**	16	**25**	**34**
5. I designed the entire project	4	5	17	5	13	**26**
6. My project was designed by a national or international consortium	6	3	0	0	2	0
7. Other	0	0	1	0	1	0

Note: blue = *percentages > 20%*
Abbreviations: *1a = employed PhD student; 1b = employee in PhD track; 2a = PhD student on UG/UMCG scholarship; 2b = PhD student on other scholarship; 3 = externally funded PhD student; 4 = external PhD student.*

Differences were present with regard to Graduate School (see Table 8). For most Graduate Schools, co-design (Option 3) was most prevalent, except for the GSH, GSL and GSP, where Option 4 was most prevalent (mostly 'self'). A significantly high proportion of PhD students from GSRCS designed the project entirely by themselves (Option 5). Relatively speaking, PhD students from GSSE had the least influence on the design of their project, as over 25% indicated that their supervisor designed the whole project (Option 1).

Table 8 Percentages 'Who designed the project' by Graduate School

Answer	GSBSS %	GSCF %	GSEB %	GSH %	GSL %	GSMS %	GSP %	GSSE %	GSSS %	GSRCS %
1. My supervisor(s) designed the entire project	17	0	2	8	4	12	0	**27**	2	10
2. My supervisor(s) designed most of the project; my contribution was modest	14	10	8	8	10	**30**	**27**	**23**	11	0
3. My supervisor(s) and I co-designed the project	**39**	**39**	**47**	**23**	**25**	**39**	**27**	**34**	**36**	**24**
4. I designed most of the project; my supervisor's/supervisors' contribution was modest	19	**29**	**30**	**32**	**35**	12	33	10	34	29
5. I designed the entire project	7	**23**	13	**26**	**21**	3	13	2	14	**38**
6. My project was designed by a national or international consortium	2	0	0	3	6	3	0	4	4	0
7. Other	2	0	0	1	0	0	0	0	0	0

Note: blue = *percentages > 20%.*
Abbreviations: *GSBSS = Graduate School of Behavioural and Social Sciences; GSCF = Graduate School of Campus Fryslân; GSEB = Graduate School of Economics and Business; GSH = Graduate School of 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.*

Level of freedom in the PhD trajectory

PhD students were asked to indicate their level of freedom in their PhD project by means of six statements rated on a five-point scale (from 1 = completely disagree to 5 = completely agree). The answer option, 'not applicable (yet)', was not included in the analysis. The internal consistency of the scale was good ($\alpha > 0.8$). On average, PhD students agreed most with the statement, 'I have the freedom to choose which courses to take', and agreed least with the statement, 'I have the freedom to choose which journals to publish in'. The results for the other statements are presented in Table 9. The average mean scale score was 4.1 (Sd = 0.6).

Table 9 **Statements about perceived level of freedom**

Statement	N	Mean	Sd
1. In my PhD project, there is much room for my own ideas.	1,297	4.2	0.9
2. I have the freedom to make my own choices about the direction of my project and the methods to be used.	1,296	4.0	0.9
3. I have the freedom to choose which conferences to attend.	1,272	4.1	0.9
4. I have the freedom to choose which courses to take.	1,267	4.3	0.8
5. I have the freedom to choose which journals to publish in.	1,127	3.8	0.9
6. I have the freedom to choose when and where I work.	1,292	4.3	0.9
Mean scale score Freedom (α = 0.82)	1,303	4.1	0.6

Group differences

Group differences in the average scale scores were examined for phase, PhD student type and Graduate School. Contrary to 2021, where starting PhD students reported more freedom than seniors, this year no differences were present with regard to the phase of the project. Starting PhD students (mean = 4.2, Sd = 0.6) did not experience a significantly different level of freedom compared to senior PhD students (mean = 4.1, SD = 0.6). Differences were present between PhD student types (see Table 10) as external PhD students (type 4) experienced significantly more freedom than employed PhD students (type 1a/1b) and PhD students on a scholarship other than from UG/UMCG (type 2b). This difference is somewhat comparable to previous years, where both external and externally funded PhD students reported a high level of freedom compared to the scholarship and employed PhD students. The level of freedom seems to have increased for external PhD students (from 4.3 to 4.5).

Table 10 **Freedom scale score by PhD student type**

PhD student type	N	Mean	Sd
1a. Employed PhD	639	4.1	0.6
1b. Employee in PhD track	37	4.0	0.7
2a. PhD student on UG/UMCG scholarship	180	4.2	0.7
2b. PhD student on other scholarship	268	4.1	0.6
3. Externally funded PhD student	105	4.2	0.6
4. External PhD student	74	4.5	0.7

Differences were also present between the Graduate Schools. As shown in Table 11, PhD students from the GSL and GSP perceived the highest levels of freedom, while PhD students in the GSMS and GSSE perceived the lowest level of freedom. These results are comparable to 2019 and 2021. Contrary to 2021, PhD students from GSBSS reported a higher level of freedom in 2023 (increase from 4.0 to 4.2). The scale scores for GSL, GSP, GSSS, GSH and GSRCS (indicated in green) were significantly higher than those of GSMS and GSSE (indicated in pink).

Table 11 **Freedom scale score by Graduate School**

Graduate School	N	Mean	Sd
Behavioural and Social Sciences	118	4.2	0.6
Campus Fryslân	31	4.2	0.6
Economics and Business (SOM)	60	4.3	0.5
Humanities	106	4.4	0.7
Law	52	4.5	0.6
Medical Sciences	431	4.0	0.6
Philosophy	15	4.5	0.4
Science and Engineering	410	4.1	0.6
Spatial Sciences	56	4.4	0.5
Theology and Religious sciences	21	4.4	0.6

Note: *Group differences for scores are highlighted in pink (lowest) and green (highest) if the difference between the lowest and highest scores was statistically significant.*

Overall satisfaction with supervision

The majority of the PhD students were either satisfied (42%) or very satisfied (36%) with the overall supervision they received. Compared to 2021, the proportion of those who were very satisfied decreased from 41% to 36%.

Group differences

Group differences in the average scale scores were examined for phase, PhD student type and Graduate School. Similarly to the three previous survey years, senior PhD students (mean = 3.9, Sd = 1.1) were significantly less satisfied with the supervision they received than PhD students in their first year (mean = 4.1, Sd = 1.1). While starters' satisfaction with supervision is comparable to previous years, that of seniors seems to have dropped (from 4.2 to 4.1). With regard to PhD student type, differences in satisfaction scores did not reach statistical significance (contrary to 2021, where external PhD students were most satisfied with their supervision and employees in a PhD track were the least satisfied). See Table 12 for an overview of the average satisfaction with supervision for each of the six PhD student types. Similarly to 2021, no differences were present between Graduate Schools (see Table 13).

Table 12 Average satisfaction with supervision by PhD student type

PhD student type	N	Mean	Sd
1a. Employed PhD student	635	4.0	1.1
1b. Employee in PhD track	36	3.9	1.1
2a. PhD student on scholarship from UG/UMCG	179	4.0	1.0
2b. PhD student on another scholarship	265	3.9	1.1
3. Externally financed PhD student	105	3.9	1.3
4. External PhD student	73	4.2	1.2

Table 13 Average satisfaction with supervision by Graduate School

Graduate School	N	Mean	Sd
Behavioural and Social Sciences	118	4.2	0.6
Campus Fryslân	31	4.2	0.6
Economics and Business (SOM)	60	4.3	0.5
Humanities	106	4.4	0.7
Law	52	4.5	0.6
Medical Sciences	431	4.0	0.6
Philosophy	15	4.5	0.4
Science and Engineering	410	4.1	0.6
Spatial Sciences	56	4.4	0.5
Theology and Religious Sciences	21	4.4	0.6

Satisfaction with the Graduate School

PhD students indicated how satisfied they were with different aspects of their Graduate School by scoring eight statements on a five-point scale (from 1 = completely disagree to 5 = completely agree). Proposition 7 was new to the 2023 survey. The internal consistency of the scale was good (α > 0.7). Similarly to 2021, the mean scale score of 3.4 indicated that the satisfaction of PhD students regarding their Graduate School was somewhat better than neutral. Table 14 shows the average agreement for each of the eight propositions.

Table 14 Agreement with propositions regarding satisfaction with the Graduate School

Statement	N	Mean	Sd
1. I know who I can turn to in my Graduate School when I encounter problems in general (e.g. with my supervision or training).	1,265	3.4	1.1
2. I am satisfied with the educational activities provided by my Graduate School.	1,249	3.5	0.9
3. I am satisfied with the way in which my Graduate School monitors and supports the supervision of my PhD project.	1,211	3.2	0.9
4. I am satisfied with the way in which my Graduate School monitors the progress of my PhD project.	1,213	3.2	0.9
5. My Graduate School provides a stimulating study and research environment that facilitates interaction and efficiency.	1,221	3.2	0.9
6. My Graduate School provides me with adequate information (e.g. emails, website, PhD Guide).	1,270	3.7	0.8
7. I am satisfied with the support provided by the PhD coordinator of my Graduate School	1,149	3.5	0.9
8. Overall, I am satisfied with the way in which my Graduate School functions.	1,260	3.5	0.9
Mean scale score Graduate School (α = 0.91)	1,270	3.4	0.9

Group differences

Group differences in the average scale scores were examined for phase, PhD student type and Graduate School. See Appendix K for an overview of the eight proposition scores for each Graduate School. Similar to the three previous survey years, senior PhD students (mean = 3.3, Sd = 0.7) were significantly less satisfied with their Graduate School than starting PhD students (mean = 3.6, Sd = 0.7).

With regard to PhD student type, there were differences in satisfaction scores similar to previous years. See Table 15 for an overview of the average satisfaction scale score by PhD type. External PhD students and those with a scholarship from an institution other than UG/UMCG were most satisfied (mean = 3.6). Employees in a PhD track were least satisfied (mean = 3.0). Pair-wise significant differences were found between the different types. Significant differences were found between type 1b PhD students (indicated in pink in Table 15) and those with the highest score (3.6, indicated in green in Table 15).

Table 15 Graduate School scale scores by PhD student type

PhD student type	N	Mean	Sd
1a. Employed PhD student	633	3.3	0.7
1b. Employee in PhD track	36	3.0	0.9
2a. PhD student on scholarship from UG/UMCG	180	3.3	0.8
2b. PhD student on other scholarship	268	3.6	0.7
3. Externally financed PhD student	103	3.4	0.7
4. External PhD student	70	3.6	0.8

Note: *Group differences for scores are highlighted in pink (lowest) and green (highest) if the difference between the lowest and highest scores was statistically significant.*

As in 2021, differences were present concerning the average scale scores (see Table 16). In 2023, PhD students from GSEB were most satisfied (mean = 3.7, indicated in green in the table), while those from GSBSS were the least satisfied (mean = 3.2, indicated in pink). Significant differences were found between PhD students from GSEB (indicated in green) and those with the two lowest scores (3.2 and 3.4; indicated in pink).

Table 16 Graduate School scale scores by Graduate School

Graduate School	N	Mean	Sd
Behavioural and Social Sciences	116	3.2	0.8
Campus Fryslân	31	3.4	0.8
Economics and Business (SOM)	60	3.7	0.6
Humanities	105	3.5	0.7
Law	50	3.5	0.9
Medical Sciences	428	3.4	0.7
Philosophy	14	3.5	0.9
Science and Engineering	407	3.4	0.7
Spatial Sciences	56	3.4	0.8
Theology and Religious Studies	21	3.5	0.9

Note: *Group differences for scores are highlighted in pink (lowest) and green (highest) if the difference between the lowest and highest scores was statistically significant.*

Figure 3 displays the average scale scores in 2021 and 2023. Some findings deserve mention. GSBSS was one of the lowest scored Graduate Schools in both 2021 and 2023 (mean = 3.1), while PhD students from GSCF were the least satisfied in 2021 (mean = 2.8) but their average score increased to 3.4 in 2023. A significant decrease is present for GSL, with the average satisfaction score dropping from 4.0 in 2021 to 3.5 in 2023.

Figure 3 Graduate School scale scores by Graduate School in 2021 and 2023
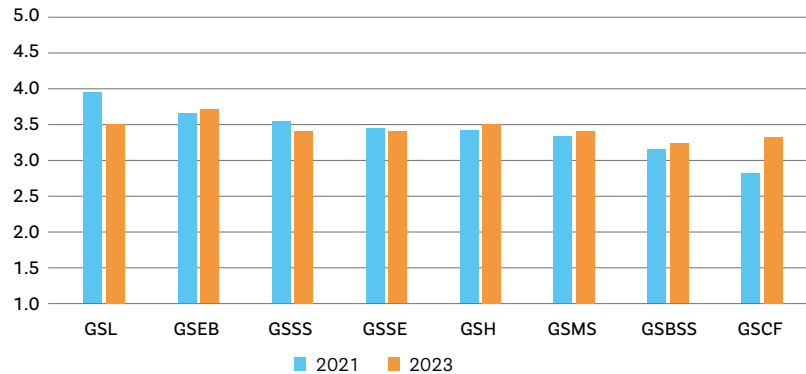
Abbreviations: *GSBSS = Graduate School of Behavioural and Social Sciences; GSCF = Graduate School of Campus Fryslân; GSEB = Graduate School of Economics and Business; GSH = Graduate School of Humanities; GSL = Graduate School of Law; GSMS = Graduate School of Medical Sciences; GSSE = Graduate School of Science and Engineering; GSSS = Graduate School of Spatial Sciences.*

Chapter conclusions

Overall, PhD students were generally satisfied with their PhD trajectory. Comparable to 2021, this overall satisfaction score increased slightly from 7.3 to 7.5. Regarding the overall satisfaction with their supervision, almost 80% were either satisfied or very satisfied, as in 2019 and 2021. Overall, PhD students were moderately satisfied with the tasks, activities and support of their Graduate School. As in 2021, PhD students from GSEB were the most satisfied with their Graduate School.

One-third of the PhD students indicated that they co-designed their PhD project. This percentage was higher for PhD scholarship students, reflecting one of the objectives of the Scholarship Programme. Employed PhD students and PhD students from GSSE indicated significantly more often than those of other groups that their supervisor designed the entire project, while external PhD students stated more frequently that they designed their project alone or almost entirely on their own. These findings are comparable to findings of previous years.

5 Supervision

This chapter describes the composition of the supervisory team, aspects of supervision, satisfaction with supervision and expectations of supervisors. PhD students were asked to answer questions separately for their primary supervisor ('promotor') and daily supervisor. The daily supervisor was defined as the person in the supervisory team with whom the PhD student worked most closely. The role of daily supervisor could also be filled by someone who was not part of the official supervisory team. In the case of more than one person acting in the role of primary supervisor, the primary supervisor was defined as the person with whom the PhD student worked the most. If a PhD student considered the primary supervisor and daily supervisor to be the same person, the PhD student was instructed to ignore the questions for the daily supervisor.

Supervision

Number of supervisors
The [PhD regulations](#) of the University of Groningen[6] stipulate that PhD students must be supervised by more than one supervisor. In 2023, less than 2% of the PhD students indicated that they had only one supervisor. This percentage has dropped compared to previous years (2021: 4%; 2019: 18%). Half (50%) of the PhD students have two supervisors, 36% have three, 10% have four and the remaining 4% have more than four. The average number of supervisors is 2.6 (Sd = 1.2).

Group differences
Differences in the number of supervisors were examined for Graduate School and PhD student type. With regard to PhD student type, no significant difference was found for having either one or more than one supervisor or the average number of supervisors. Table 17 shows the average number of supervisors for each Graduate School. PhD students from the GSMS have the most supervisors, while those of the GSL have the least.

Table 17 **Average number of supervisors by Graduate School**

Graduate School	N	Mean	Sd
Behavioural and Social Sciences	118	2.7	1.1
Campus Fryslân	31	2.5	0.9
Economics and Business (SOM)	60	2.5	0.5
Humanities	106	2.5	0.7
Law	52	2.2	0.5
Medical Sciences	431	3.0	1.4
Philosophy	15	2.9	0.8
Science and Engineering	410	2.4	1.0
Spatial Sciences	56	2.8	0.7
Theology and Religious Studies	21	2.3	0.7
UG sample	1,303	2.6	1.2

Figure 4 shows the division over the five categories of number of supervisor (1, 2, 3, 4 or > 4). In 2021, less than 2% of PhD students from GSEB and GSMS had only one supervisor. This proportion is down to zero in 2023. However, at GSH, the proportion with only one supervisor has increased from 1% in 2021 to 2% in 2023. In 2019 and 2021, a relatively large proportion (approx. 10%) of PhD students from GSSE and GSTRS claimed that they had only one supervisor; these percentages have decreased to 4% in 2023 (but they are still too high).

Figure 4 **Average number of supervisors, percentages displayed by Graduate School**
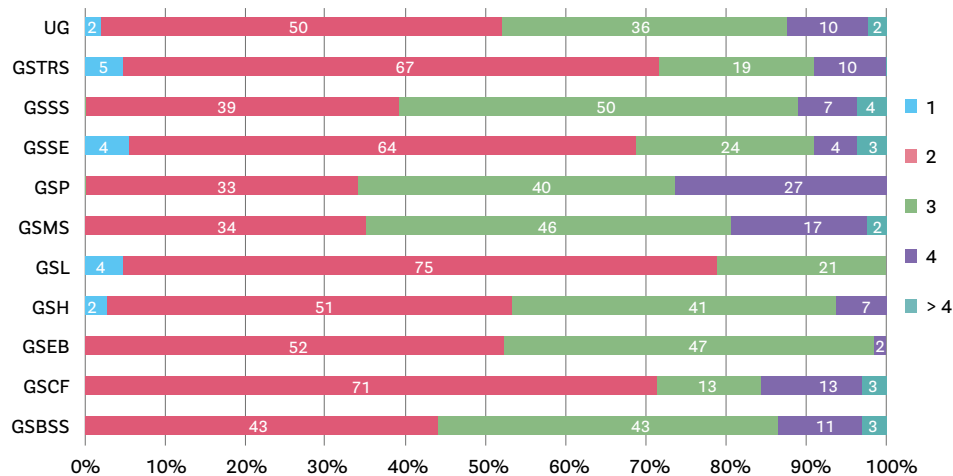
Composition of supervision team

A majority (N = 1,118, 86%) of PhD students indicated that their supervision team is officially documented in Hora Finita. Moreover, almost all PhD students (N = 1,290, 99%) knew who was assigned as their primary supervisor. Subsequently, PhD students were asked whom they considered to be their daily supervisor. This was defined as the supervisor with whom they collaborated most closely. The results are shown in Table 18. The percentage of PhD students who indicated that their primary supervisor (promotor) was their daily supervisor has increased over the years (42% in 2019; 52% in 2021; 57% in 2023).

Table 18 **Who do you consider your daily supervisor?**

Answer	N	%
(One) of my primary supervisor(s)	740	57
(One) of my co-supervisor(s)	479	37
Someone else in my supervision team	31	2
Someone else outside my supervision team	53	4
Total	1,303	100

Fortunately, almost two-thirds (N = 794, 61%) of the PhD students did not experience substantial disagreement within their supervision team, although about 6% reported they had experienced this several times or regularly. See Table 19 for an overview of all responses.

**Table 19** **Have you ever experienced substantial disagreement within your supervision team?**

Answer	N	%
Never	794	61
Once	189	15
A few times	251	19
Several times	49	4
Regularly	20	2
Total	1,303	100

Relationship with the primary and the daily supervisor(s)

PhD students were asked to indicate how they would describe their relationship with their supervisors. One-third described the relationship with their daily supervisor as 'good' (31%) and almost two-thirds (60%) as 'very good' (see Figure 5). Similarly to 2021, 40% described the relationship with their primary supervisor as 'good' and 45% as 'very good'. These percentages are comparable to those of previous years.

Figure 5 Overall, how would you describe your relationship with your supervisors?
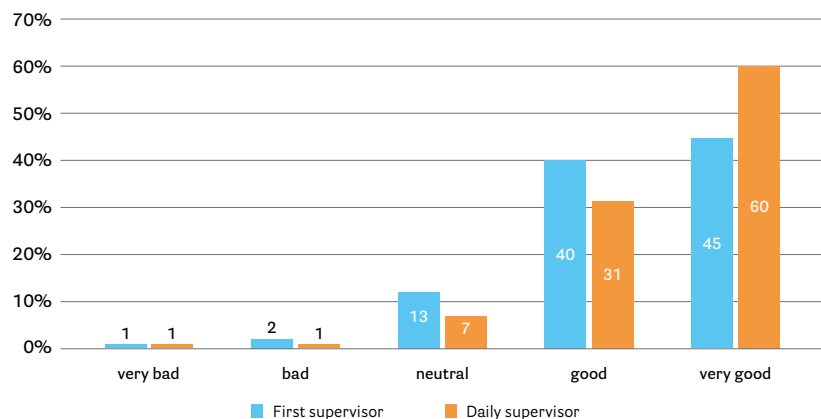
Group differences
No differences were present between Graduate Schools. For phase and type, differences were only present for the relationship with the primary supervisor. While the percentage for 'very good' was similar between starters and seniors (45-46%), a slightly higher proportion of seniors (38%) rated the relationship as neutral compared to starters (44%). External PhD students rated the relationship with their primary supervisor as 'very good' (70%) significantly more often than the other PhD student types (41-50%); see Figure 6).

Figure 6 Overall, how would you describe your relationship with your primary supervisor? Percentages displayed by PhD student type
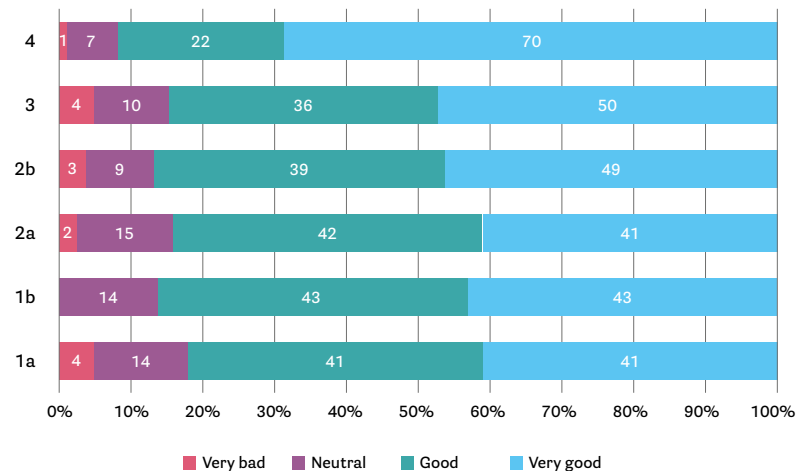
Abbreviations: *1a = employed PhD student; 1b = employee in PhD track; 2a = PhD student on UG/UMCG scholarship; 2b = PhD student on other scholarship; 3 = externally funded PhD student; 4 = external PhD student.*

Hours of supervision

This year, a new question was added to the survey. Considering an average month, PhD students were asked to state the hours of supervision they received from all their supervisors combined. The average number of hours was 7.1 per month. However, the standard deviation was high (Sd = 12.2), indicating substantial differences between individual PhD students.

Group differences
Differences were examined for phase, PhD student type and Graduate School. Differences between starters and seniors were not significant. Table 20 shows the average hours of supervision for each of the six PhD types. Employees in a PhD track reported the lowest hours of supervision (mean = 4.0, indicated in pink), while PhD students on a scholarship from an institution other than UG/UMCG report the most (mean = 9.2, indicated in green).

Table 20 Average monthly hours of supervision by PhD student type

PhD student type	N	Mean	Sd
1a. Employed PhD student	639	6.7	7.9
1b. Employee in PhD track	37	4.0	2.6
2a. PhD student on scholarship from UG/UMCG	180	5.6	4.8
2b. PhD student on another scholarship	268	9.2	19.3
3. Externally financed PhD student	105	8.9	20.4
4. External PhD student	74	6.3	7.3

Note: *Group differences for scores are highlighted in pink (lowest) and green (highest) if the difference between the lowest and highest scores was statistically significant.*

Table 21 shows the average hours of supervision by Graduate School. PhD students from the Graduate School of Sciences and Engineering reported the highest number of hours (indicated in green), while those of Philosophy and Law reported the least (indicated in pink). Please note the high standard deviations between the Graduate Schools. Differences between the highest (green) and lowest (pink) means were statistically significant.

Table 21 Average monthly hours of supervision by Graduate School

Graduate School	N	Mean	Sd
Behavioural and Social Sciences	118	4.7	2.3
Campus Fryslân	31	7.5	17.0
Economics and Business (SOM)	60	5.5	3.1
Humanities	106	4.5	5.6
Law	52	3.7	3.5
Medical Sciences	431	7.8	12.5
Philosophy	15	3.6	2.0
Science and Engineering	410	8.6	14.8
Spatial Sciences	56	7.4	18.2
Theology and Religious Studies	21	4.7	4.3

Note: *Group differences for scores are highlighted in pink (lowest) and green (highest) if the difference between the lowest and highest scores was statistically significant.*

Frequency of meetings

PhD students were asked to indicate how often they had a meeting with their primary and daily supervisors. Over 300 PhD students selected the option 'not applicable' for meetings with their daily supervisor (N = 314, 24%). We can conclude from this that the primary supervisor functions as the daily supervisor. We differentiated the results for PhD students whose primary supervisor functioned as their daily supervisor and for PhD students who answered the question for both their primary and daily supervisors (see Table 22). Less than half a percent (N = 6) of the PhD students selected 'not applicable' for meetings with both their primary and their daily supervisors; this group was not included in the results presented in Table 22.

Table 22 How often do you have an appointment/meeting with your primary and/or daily supervisors?

Supervisor	N	Less than once a quarter	Less than once a month	About once a month	Several times a month	About once a week	Several times a week
		%	%	%	%	%	%
	%						
Primary	952	11	17	27	23	20	3
Daily	983	2	6	14	29	41	9
Primary = Daily	314	1	5	17	26	43	8

Frequency of meetings indicated by PhD students who reported on both their primary and daily supervisors

As found in previous years, PhD students meet with their daily supervisor more often than with their primary supervisor. The proportion that meets with their primary supervisor at least once a week has slightly decreased, from 25% (in 2021) to 20% in 2023. The proportion that meets less than once a quarter has decreased from 14% to 11%. The percentage of PhD students who have a meeting with their daily supervisor at least once a week has increased from 34% to 41%. The proportion that have a meeting less than once a month has slightly increased from 4% to 6%.

Frequency of meetings indicated by PhD students who only reported on one supervisor

For PhD students who indicated only meeting with their primary supervisor (who functions as the daily supervisor), the percentages of meeting frequencies are comparable to the responses of PhD students who reported on both their primary and daily supervisors (see Table 22).

Group differences

In 2023, we analysed the data to compare meetings with supervisors in a different manner than in previous years. We compared percentages of PhD students who have weekly meetings with their daily supervisor and percentages of PhD students who have monthly meetings with their primary supervisor. The percentages for PhD students for whom the primary supervisor functions as the daily supervisor were combined with percentages for PhD students who reported on both the daily and the primary supervisors. Differences were compared for phase, PhD student type, nationality group and Graduate School (see Table 23).

Overall, 41% of the PhD students in the sample meet, on average, once a week with their daily supervisor; 24% of the sample meet, on average, once a month with their primary supervisor. Some noteworthy differences between groups are mentioned below:

– As in previous years, starters have more frequent meetings with their daily supervisors (47%) than senior PhD students (39%).
– A higher percentage of PhD students from outside the EER reported meeting with their daily supervisor (45%) compared to Dutch PhD students (39%).
– A relatively high percentage of Dutch PhD students (30%) meet once a month with their primary supervisor.
– A relatively low proportion of external PhD students (21%) and externally financed PhD students (31%) reported weekly meetings with their daily supervisor.
– A relatively low proportion (7-14%) of PhD students from GSH, GSL, GSP and GSRCS reported meeting their daily supervisor once a week.
– A relatively high proportion (7-14%) of PhD students from GSCF, GSEB and GSSS reported meeting with their primary supervisor once a month.
– The differences between Graduate Schools might be related (partly) to differences in characteristics of PhD students (such as PhD student type and nationality).

Table 23 Percentages of meetings with daily and primary supervisors

Supervisor	Daily supervisor	Primary supervisor
Meeting frequency	Once a week	Once a month
Phase	%	%
Starters	47	26
Seniors	39	27
Graduate School	%	%
GSBSS	47	31
GSCF	35	61
GSEB	25	42
GSH	11	18
GSL	12	27
GSMS	53	25
GSP	7	30
GSSE	46	21
GSSS	23	39
GSTRS	14	29
Nationality group	%	%
Dutch	39	30
EER	37	22
Non-EER	45	26
PhD student type	%	%
1a. Employee	45	27
1b. Employee in track	41	25
2a. Scholarship UG/UMCG	34	27
2b. Scholarship other	46	24
3. Externally financed	31	22
4. External PhD	21	26
UG total	**41**	**24**

Abbreviations: *GSBSS = Graduate School of Behavioural and Social Sciences; GSCF = Graduate School of Campus Fryslân; GSEB = Graduate School of Economics and Business; GSH = Graduate School of 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.*

Statements about supervisors' availability

Using a five-point scale (from 1 = completely disagree to 5 = completely agree), PhD students were asked about the availability of their primary and daily supervisors. Scale scores were calculated on the basis of the scores on the individual statements. A full overview of the item and scale scores is presented in Table 24. The highest item score is indicated in green and the lowest in pink. Differences between the lowest and highest scores were not statistically significant.

Table 24 Agreement with statements about supervisors

Statements for daily supervisor	N	Mean	SD
My supervisor responds to my queries or requests for help within a reasonable time frame.	968	4.5	0.8
My supervisor provides me with prompt feedback whenever I submit written work to him/her.	952	4.3	0.9
My supervisor is available to answer any questions I have.	967	4.5	0.8
Scale score for availability of daily supervisor (α daily = 0.84)	969	4.5	0.7
Statements for primary supervisor	**N**	**Mean**	**SD**
My supervisor responds to my queries or requests for help within a reasonable time frame.	1,229	4.3	0.9
My supervisor provides me with prompt feedback whenever I submit written work to him/her.	1,216	4.1	1.1
My supervisor is available to answer any questions I have.	1,230	4.2	0.9
Scale score for availability of primary supervisor (α primary = 0.87)	1,237	4.2	0.9

Note: *Group differences for scores are highlighted in pink (lowest) and green (highest) if the difference between the lowest and highest scores was statistically significant.*

Statements about support and autonomy

Using a five-point scale (from 1 = completely disagree to 5 = completely agree), PhD students were asked about the academic and personal support they receive from their supervision team, and the extent to which they feel supported on their path to autonomy as a researcher. Scale scores were calculated on the basis of the scores on the individual statements. A full overview of the item and scale scores is presented in Table 25. For each scale, the item with the lowest (pink) and highest (green) score are indicated. Differences between these extremes were statistically significant.

Table 25 Agreement with statements about academic support, personal support and autonomy

Statements on academic support	N	Mean	SD
My supervision team …			
helps me to plan and manage the different research tasks I have to complete.	1,285	3.8	1.0
gives me good, practical advice on how to conduct my research.	1,297	4.1	0.9
gives me guidance in finding relevant literature and research materials.	1,286	3.8	1.0
helps me develop good writing skills (e.g. expression of ideas, grammar, structure of thesis, etc.).	1,254	4.0	1.0
teaches me the technical knowledge and skills that I need to complete my research.	1,263	3.6	1.1
Scale score for academic support (α = 0.97)	1,298	3.9	0.8
Statements on personal support	**N**	**Mean**	**SD**
My supervision team …			
expresses understanding and empathy when I experience difficulties.	1,280	4.2	0.9
comforts and reassures me when I am feeling down.	1,209	4.1	1.08
compliments me and makes me feel good about myself and my work.	1,284	4.1	1.0
shows that they respect and value me.	1,289	4.2	0.9
is interested in my personal situation.	1,280	3.9	1.0
tells me personal things about themselves.	1,279	3.8	1.0
supports me when I have a conflict.	1,028	4.0	1.0
Scale score for personal support (α = 0.93)	1,298	4.0	0.8
Statements on autonomy	**N**	**Mean**	**SD**
My supervision team …			
encourages me to be open about my own ideas and any issues that concern me.	1,291	4.3	0.8
provides me with choices and options.	1,281	4.1	0.9
encourages me to work independently.	1,278	4.4	0.7
never pushes their own point of view.	1,283	3.5	1.1
gives me the main responsibility for my project.	1,292	4.4	0.8
Scale score for autonomy (α = 0.84)	1,298	4.1	0.7

Note: *Group differences for scores are highlighted in pink (lowest) and green (highest) if the difference between the lowest and highest scores was statistically significant.*

Group differences

Significant group differences for the scale scores are summarized below:

– For phase, differences were present for all scale scores: overall, starting PhD students were more positive than senior PhD students, which is similar to results found in previous years.
– With regard to nationality, scale differences were found for availability of primary supervisor (Dutch less than outside EER), academic support (Dutch and EER less than outside EER) and autonomy support (Dutch less than EER). This latter result was also found in 2021.
– Regarding PhD student type, significant group differences were found for availability of the primary supervisor (externally financed PhD students scored lower than external PhD students), autonomy support (external PhD students scored higher than employed PhD students (1a/1b) and academic support, where employees in a PhD track (1b) scored significantly lower compared to PhD students with a scholarship (2a/2b). This latter result was also found in 2021.
– Differences between Graduate Schools were present for personal support (GSSS scored higher compared to GSSE) and autonomy support (GSSS scored higher than GSMS).

Supervisors' expectations

PhD students were asked to indicate to what extent they agreed with statements about the expectations of the supervisory team (scored on a five-point scale from 1 = completely disagree to 5 = completely agree. The scale score is not displayed, as it would be difficult to interpret, because some items can clearly be regarded as 'negative' – such as, 'I feel that my supervisor is pushing me too hard' – while this cannot be concluded for other items – such as, 'My supervisor expects me to publish in high-impact journals'. The item scores are presented in Table 26 and are comparable to those of previous years.

Table 26 Agreement with statements about supervisors' expectations

Statements expectations	N	Mean	Sd
My supervision team …			
expects me to publish in high-impact journals.	1,114	3.7	1.0
expects all of my papers to be published before I submit my thesis.	1,010	2.7	1.1
thinks that courses and seminars are a waste of time.	1,228	2.0	1.0
emphasizes the importance of finishing my PhD in time.	1,199	3.4	1.1
gives me the impression that nothing is good enough for them.	1,268	1.9	1.0
makes me feel that they are pushing me too hard.	1,282	2.0	1.0

Expectations about thesis chapters and publications

New in the survey this year were questions concerning expectations about the number of chapters in the thesis and the number of publications in peer-reviewed journals. Over half of the PhD students (N = 693, 53%) indicated that their supervision team has expressed expectations about the number of chapters. On average, 4.7 chapters (Sd = 1.2) are expected. With regard to publications, just under 40% (N = 493, 38%) reported that publishing is expected of them, while 13% (N = 172) stated they had an obligation to publish. Those expected to publish, mentioned an average of 3.5 (Sd = 1.2) publications. Figure 7 and Figure 8 give an overview of the number of expected chapters and publications.

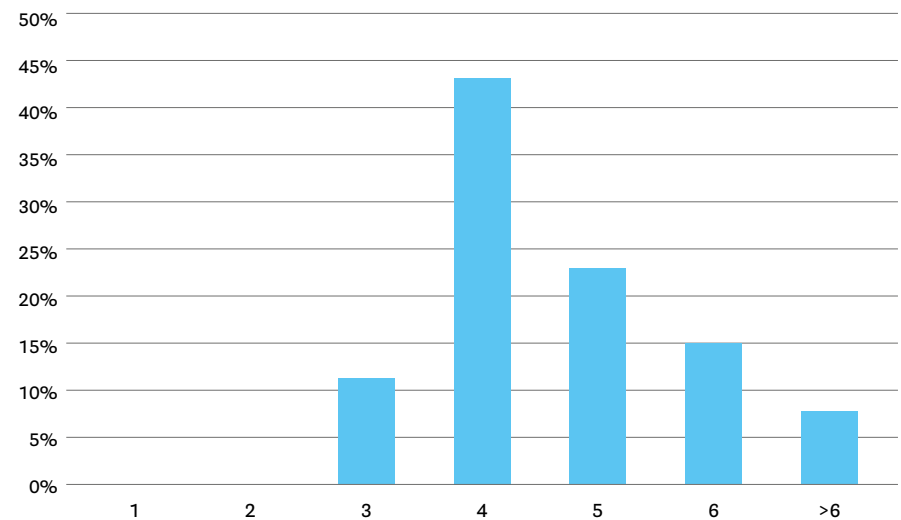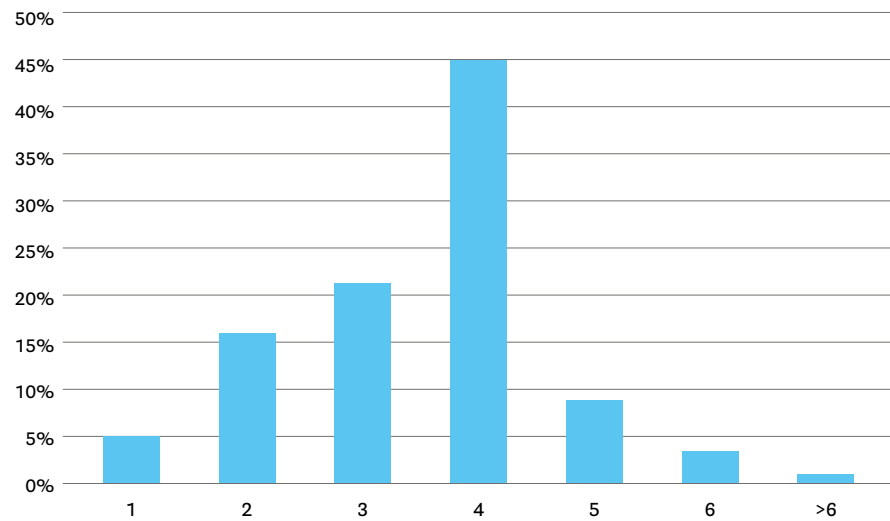**Figure 7** Expected number of chapters

**Figure 8** Expected number of publications

Group differences

Differences in the number of chapters and publications were examined for PhD student type and Graduate School. Employees in a PhD track reported significantly fewer chapters and publications compared to the other five PhD student types. Figure 9 and Figure 10 show the average number (rounded) of chapters and publications for each Graduate School. According to the PhD students, supervision teams of GSL expected the highest number of chapters, while those of GSEB expected the least. For expected publications, GSEB and GSRCS had the lowest number, while supervision teams of GSL, GSMS and GSP expected the most.

Figure 9 Expected number of chapters by Graduate School
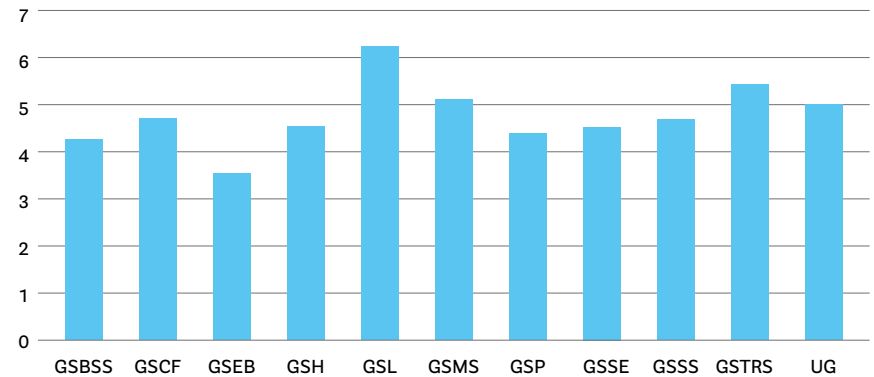
Abbreviations: *GSBSS = Graduate School of Behavioural and Social Sciences; GSCF = Graduate School of Campus Fryslân; GSEB = Graduate School of Economics and Business; GSH = Graduate School of Humanities; GSL = Graduate School of Law; GSMS = Graduate School of Medical Sciences; GSP = Graduate School of Philosophy; GSSE = Graduate School of Science and Engineering; GSSS = Graduate School of Spatial Sciences; GSTRS = Graduate School of Theology and Religious Sciences; UG = University of Groningen.*

Figure 10 Expected number of publications by Graduate School
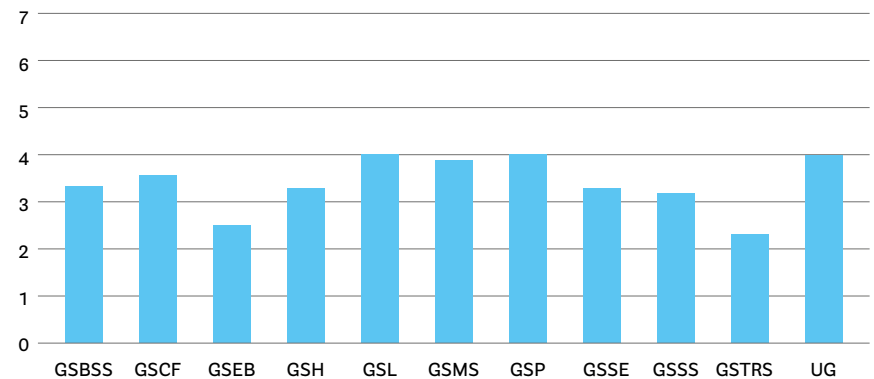
Abbreviations: *GSBSS = Graduate School of Behavioural and Social Sciences; GSCF = Graduate School of Campus Fryslân; GSEB = Graduate School of Economics and Business; GSH = Graduate School of Humanities; GSL = Graduate School of Law; GSMS = Graduate School of Medical Sciences; GSP = Graduate School of Philosophy; GSSE = Graduate School of Science and Engineering; GSSS = Graduate School of Spatial Sciences, GSTRS = Graduate School of Theology and Religious Sciences; UG = University of Groningen.*

Scientific requirements of the thesis

PhD students were asked whether they discussed the scientific requirements (e.g. the content of their thesis, scientific integrity and number of chapters to be submitted to peer-reviewed journals) of their PhD thesis and with whom. Their responses are shown in Table 27. Just over two-thirds (67%) discussed the requirements with someone, most often their supervisor(s), while one-third (36%) did not. The other people mentioned were mostly colleagues.

Table 27 Have you discussed the scientific requirements of your thesis? (for yes, multiple responses allowed)

Answer	N	%
1. Yes, with (one of) my supervisor(s)	807	62
2. Yes, with someone from my Graduate School	41	3
3. Yes, with someone else, namely …	23	2
4. No	473	36
PhD students who selected at least one answer option with 'yes'	820	

Group differences

Seniors more often discussed the requirements than PhD students in their first year (66% vs 58% resp.). Interestingly, external PhD students discussed the requirements significantly more often (81%) than employed PhD students (around 58%). For a graphical representation see Figure 11.

When comparing Graduate Schools, the percentages for discussion of the requirements were highest at GSTRS (81%), GSL (77%), GSH (76%) and GSSS (75%) and the lowest at GSP (40%) (see Figure 12).

Figure 11 Have you discussed the scientific requirements of your PhD thesis? Percentage yes is displayed by PhD student type
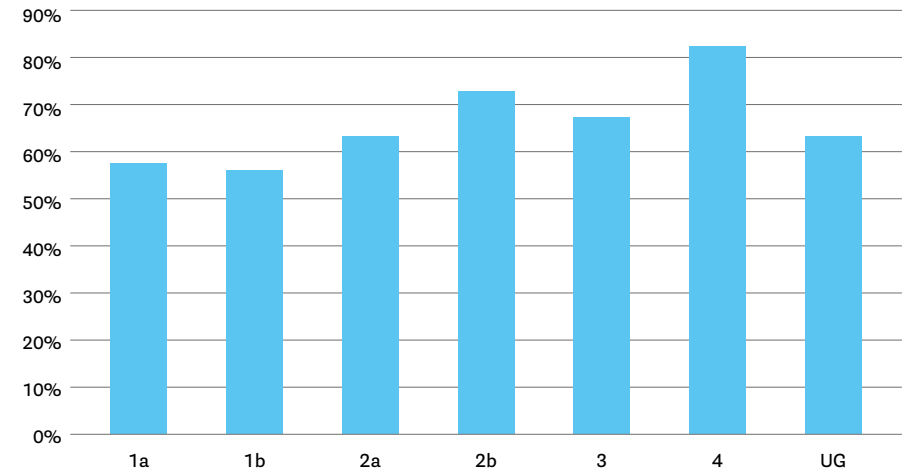
Abbreviations: *1a = employed PhD student; 1b = employee in PhD track; 2a = PhD student on UG/UMCG scholarship; 2b = PhD student on other scholarship; 3 = externally funded PhD student; 4 = external PhD student; UG = University of Groningen.*

Figure 12 Have you discussed the scientific requirements of your PhD thesis? Percentage yes is displayed by Graduate School

Clarity of the requirements

Those who had discussed the scientific requirements (N = 820) were asked whether the scientific requirements of their thesis were clear to them. Table 28 shows that this was the case for the majority; less than 10% of the PhD students reported that the requirements were rather unclear or very unclear. However, it is of note that this latter percentage has increased from 4.5% in 2021 to 9.5% in 2023.

Table 28 Are the scientific requirements of your thesis clear to you?

Answer	N	%
Very unclear	34	4
Rather unclear	44	5
A bit unclear	148	18
Rather clear	426	52
Very clear	168	21
Total	820	100

Group differences
Differences were examined for phase and student type; they were only present for the latter group. A relatively high proportion of employed PhD students (1a and 1b) stated that the requirements were clear, while a relatively high proportion of scholarship PhD students stated that the requirements were unclear.

Furthermore, we asked if the PhD students thought that the requirements were achievable within the amount of time they have for their PhD project. Just under two-thirds (62%) answered yes. See Table 29 for an overview of all three answer options. Seven percent (N = 7) selected the answer 'no, because ...', of which about one-third of the answers could be summarized as, 'No, I am already delayed (mostly due to COVID-19)', while some others mentioned that they did their PhD work in their spare time (so no time frame was discussed), or that they had a 36-month contract which had already expired. No differences were present regarding PhD student types or Graduate Schools.

Table 29 Do you think the scientific requirements are achievable within the amount of time you have for your PhD project?

Answer	N	%
Yes	510	62
I am not sure	252	31
No, because ...	58	7
Total	820	100

Chapter conclusions

The PhD regulations of the University of Groningen stipulate that PhD students must be supervised by more than one supervisor. In 2023, less than 2% of the PhD students indicated that they had only one supervisor. This percentage has decreased compared to previous years. The percentage of PhD students who indicated that their primary supervisor (promotor) was their daily supervisor has increased compared to previous years. Over 85% indicated that their supervisory team is officially documented in Hora Finita. Almost all of the PhD students (99%) knew who was their primary supervisor. Almost two-thirds had never experienced disagreement within their supervision team.

Overall, the relationship with supervisors was valued as good to very good. Similarly to previous years, the relationship with the daily supervisor was valued slightly better than with the primary supervisor.

PhD students received on average about 7 hours of supervision per month, but substantial differences were present regarding phase, PhD student type and Graduate School. The proportion of those who reported meeting at least once a week with their primary supervisor has slightly decreased from 25% (in 2021) to 20%. The proportion that has a meeting less than once a month has decreased from 14% to 11%. The proportion of PhD students that had a meeting with their daily supervisor at least once a week has increased from 34% to 41%. The proportion that had a meeting less than once a month has slightly decreased from 4% to 6%.

Over half of the PhD students (53%) indicated that their supervisory team had expressed expectations about the number of chapters in their thesis. On average, 4.7 chapters are expected. Just under 40% stated they have an obligation to publish; on average, 3.5 publications are expected. The number of chapters and publications differ between Graduate Schools.

Almost two-thirds of the PhD students (62%) discussed the requirements with one of their supervisors. These requirements were clear or rather clear for over 75%, while 62% thought the requirements could be achieved in the time they had left for their PhD project.

6 Integration into scientific communities

This chapter describes how PhD students relate to other researchers and colleagues in their department, and to what extent they feel integrated into several types of scientific communities.

Connections to other PhD students

New in the 2023 survey was the question: 'How connected do you feel to your fellow PhD candidates within your Faculty and/or Graduate School?'. Of the 1,303 PhD students, 24 answered, 'I do not know'. The figures for the remaining 1,279 PhD students are presented in Table 30. About one-third felt very much or much connected, 40% somewhat, and another third little or very little.

Table 30 How connected do you feel to your fellow PhD candidates within your Faculty and/or Graduate School?

Answer	N	%
Very much	127	10
Much	306	24
Somewhat	509	40
Little	173	14
Very little	164	13
Total	1,279	100

Group differences
Differences were present for nationality, PhD student type and Graduate School. About one-third (29-31%) of PhD students with an EER nationality (including Dutch) reported to have little or very little contact with other PhD students compared to PhD students with a non-EER nationality (21%). Employees in a PhD track have the least contact (53%) with other PhD students, followed by externally financed (34%) and external PhD students (43%). With regard to Graduate School, over 20% of PhD students from GSBSS, GSH, GSMS and GSSE reported to have little or very little contact with other PhD students (see Figure 13).

Figure 13 Connection to other PhD students; percentages displayed by Graduate School
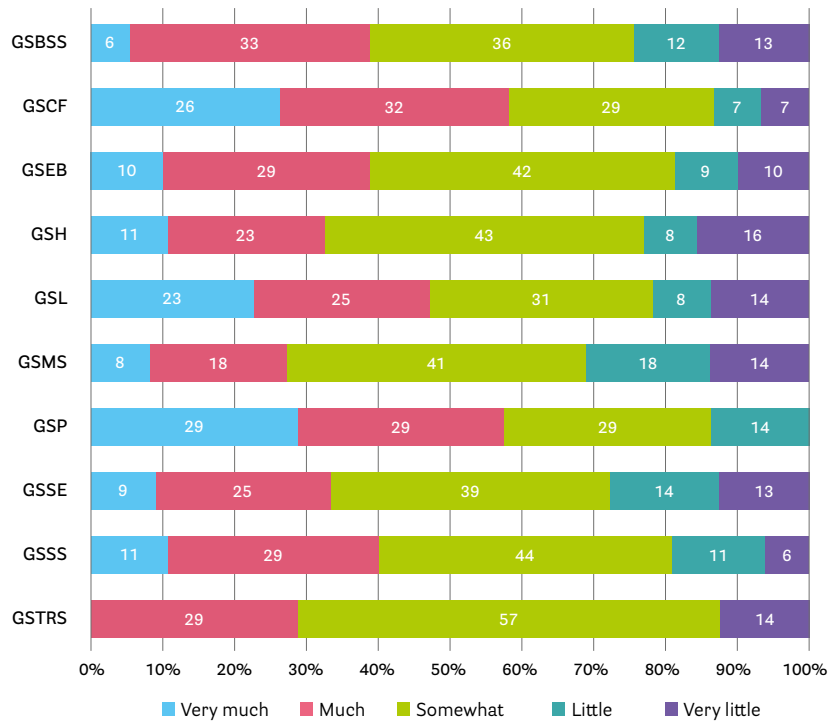
Contact with other researchers

PhD students were asked: 'To what extent do you have contact with other researchers when working on your PhD project?' The responses are presented in Table 31. About half of the PhD students have contact with other researchers at least once a week, while for about one-quarter this occurs on a daily basis.

Table 31 To what extent do you have contact with other researchers when working on your PhD project?

Answers	N	%
Less than once a month	127	10
Once a month	116	9
Several times a month	263	20
Once a week	121	9
Several times a week	271	21
Every day (on workdays)	323	25
Only when I meet my supervisors	66	5
Whenever necessary	5	< 1
Other	11	1
Total	1,303	100

Integration with other research projects

PhD students were asked to what extent their project is integrated with other projects. The responses are shown in Table 32 (multiple answers were allowed). About 40% stated that they were the only one in their department working on their research topic. Another 40% said they worked closely with their supervisor(s), and about 30% reported that their project was related to work of other PhD candidates.

Table 32 Which of the following descriptions best fits your PhD project?

Answer	N	%
My project is a stand-alone project; I am the only one in my department who is working on this topic.	529	41
My project is closely linked to other PhD candidates' projects.	391	30
My project is closely linked to research by a postdoc or other colleagues.	212	16
My project is closely linked to my daily supervisor's and/or my primary supervisor's research.	508	39
My project is part of a national or international consortium.	169	13

Integration into scientific communities

PhD students stated their agreement (on a scale of 1 = totally disagree to 5 = totally agree) with statements regarding their integration into the following four scientific communities: their Graduate School, department, Faculty and institute. Responses are presented in *Table 33*. In general, PhD students felt most integrated into their department.

Table 33 **To what extent do you agree with the following statements?**

I feel integrated into the community of …	N	Mean	Sd
my Graduate School	1,248	3.0	1.1
my department	1,267	3.9	1.0
my Faculty	1,251	3.2	1.1
my institute	1,195	3.4	1.1

Group differences
Differences with regard to integration were present for phase, nationality, Graduate School and PhD student type. In general, starters felt more integrated into all communities compared to seniors.

Graduate School
– Dutch PhD students felt the least, and those from outside the EER, the most integrated into their Graduate School.
– Compared to other types of PhD students, employees in a PhD track felt the least integrated into their Graduate School.
– Scholarship PhD students felt most connected to their Graduate School.
– PhD students from GSBSS felt the least connected to their Graduate School, while those of GSCF and GSP felt the most connected.

Department
– PhD students with a nationality other than from an EER country felt more integrated into their department.
– PhD students from GSP felt the most integrated, and those of feel the least integrated.
– Employed PhD students (both 1a and 1b) felt more connected to their department than other PhD student types.
– External PhD students felt the least connected to their department (often they are not part of one).

Faculty
– PhD students from GSCF, GSL and GSSS felt the most integrated into their Faculty, and those of GSEB felt the least integrated.

Institute
– PhD students of GSEB and GSTRS felt the least integrated into their institute, while those of GSP and GSSE felt the most integrated.

Relationships with colleagues and sense of belonging

PhD students shared their opinions about relationships with colleagues in their department and to what extent they experienced a sense of belonging to their department. This was done by asking them to score a number of statements (scored on a five-point scale from 1 = completely disagree to 5 = completely agree). A distinction was made between formal, work-related relationships (academic relationship scale) and informal, social relationships (informal/social relationship scale). An overview of the item and scale scores is presented in *Table 34*. For each scale, the item with the lowest (pink) and highest (green) scores are indicated. Differences between these extremes were statistically significant.

Overall, sense of belonging and informal relationships received the highest scale scores (mean = 3.7), which is comparable to previous years. Within these two scales, the highest agreement scores were given to the following three statements: 'I get on well with most of the people in my department'; 'I collaborate well with my colleagues'; and 'My interpersonal relationships with my colleagues have a positive influence on my performance'. As in 2021, PhD students agreed less with the statements in the academic relationship scale (mean = 3.5). The highest item score within the academic relationship scale was given to: 'My colleagues are interested in how I am doing'.

Table 34 Agreement with statements about academic relationships, informal relationships and sense of belonging

Academic relationship scale	N	Mean	Sd
Colleagues invite me to work with them on projects or tasks.	1,177	3.2	1.1
It is easy to find colleagues to collaborate with.	1,181	3.2	1.1
In my department, people often work together.	1,201	3.4	1.0
Colleagues approach me to discuss their work.	1,125	3.8	0.8
Colleagues appreciate my feedback.	1,116	3.8	0.8
I collaborate well with my colleagues.	1,214	4.0	0.8
My interpersonal relationships with my colleagues have a positive influence on my performance.	1,240	4.0	0.8
There are people to turn to in my department when I need help.	1,256	3.7	1.0
Scale score for academic relationships (= 0.87)	1,251	3.8	0.9
Informal/social relationships	**N**	**Mean**	**Sd**
I know my colleagues quite well.	1,256	3.7	1.0
My colleagues are interested in how I am doing.	1,251	3.8	0.9
I regularly spend time outside work with my colleagues.	1,240	3.2	1.2
I have close interpersonal relationships with my colleagues.	1,245	3.3	1.1
Scale score for informal relationships (= 0.89)	1,261	3.5	0.9
Sense of belonging	**N**	**Mean**	**Sd**
I feel at home in my department.	1,260	3.6	1.0
I enjoy the atmosphere in my department.	1,254	3.8	1.0
This department is a good place for me to work.	1,245	3.9	0.9
I get on well with most of the people in my department.	1,244	4.1	0.8
I share the same values with most of the people in my department.	1,211	3.7	0.9
Scale score for sense of belonging (= 0.91)	1,267	3.8	0.8

Note: *Group differences for scores are highlighted in pink (lowest) and green (highest) if the difference between the lowest and highest scores was statistically significant.*

Chapter conclusions

With regard to connections with other PhD students, about one-third felt very much or much connected to their fellow PhD students, while 40% felt somewhat connected and another third little or very little. About half of the PhD students had contact with other researchers at least once a week. About one-third worked closely with their supervisor(s) or other PhD students, while another third mainly worked alone.

Regarding integration in to scientific communities, PhD students felt most integrated into their department. Differences for integration were present with regard to phase, nationality, Graduate School and PhD student type. In general, starters felt more integrated into all communities. Scholarship and/or internationals felt more integrated into their Graduate School than other categories of PhD students. In addition, both internationals and employed PhD students felt more integrated into their department than other PhD students.

Compared to previous years, PhD students were moderately satisfied with the academic and informal relationships with colleagues and sense of belonging in their department.

7 Education

This chapter describes the accessibility to, and satisfaction with, courses and other educational activities. Alongside completing their PhD thesis work, PhD students are recommended to earn ECTS[3] by performing educational activities, for example by following courses. For PhD scholarship students (with a full or top-up scholarship from UG/UMCG), following a training programme with a certain number of ECTS is a mandatory requirement to receive the scholarship. Most educational activities that PhD students attend are organized by the Graduate Schools, but other institutes or organizations may also provide educational modules or individual training. We asked PhD students about what kind of activities they could access, if courses were obligatory (and if so, what types of courses) and how satisfied they were with their education.

ECTS to complete the PhD trajectory

If PhD students have a project of four years, they are generally recommended or required to earn 30 ECTS. A little over 900 PhD students (N = 927) answered the question, 'How many ECTS do you need to earn within your PhD project in order to complete it?' About 75% gave an indication about the number of ECTS. Seven percent reported that they were under no obligation to earn ECTS and 18% did not know how many they needed to complete their PhD. These percentages are comparable to previous years.

The average number of ECTS reported to be earned was 30.1 (Sd = 24.6). This average was more than in 2021 (mean = 23.4, Sd = 25.4). ECTS were divided into five categories, of which the percentages are displayed in Table 35. Almost 70% of the PhD students indicated that they must earn 30 ECTS.

Table 35 Number of ECTS to be earned to complete PhD trajectory

ECTS	N	%
< 15	52	5
15-29	182	19
30	658	68
31-45	58	6
> 45	22	2
Total	972	100

Group differences
The numbers of ECTS to be earned were divided into three categories: 1) less than 30 ECTS; 2) 30 ECTS; and 3) more than 30 ECTS. Group differences were compared for PhD student type and Graduate School. Compared to the other types of PhD students, a relatively large proportion of external PhD students and employees in a PhD track indicated that they had to earn less than 30 ECTS. Differences between Graduate Schools are visualized in Figure 14. Compared to the UG average of 68%, a relatively large proportion of PhD students from GSEB, GSMS, GSSS and GSTRS indicated that they had to earn less than 30 ECTS. In addition, a relatively large proportion of PhD students from GSEB also indicated having to earn more than 30 ECTS.

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3   European Credit Transfer and Accumulation System.

Figure 14 Categories of ECTS by Graduate School
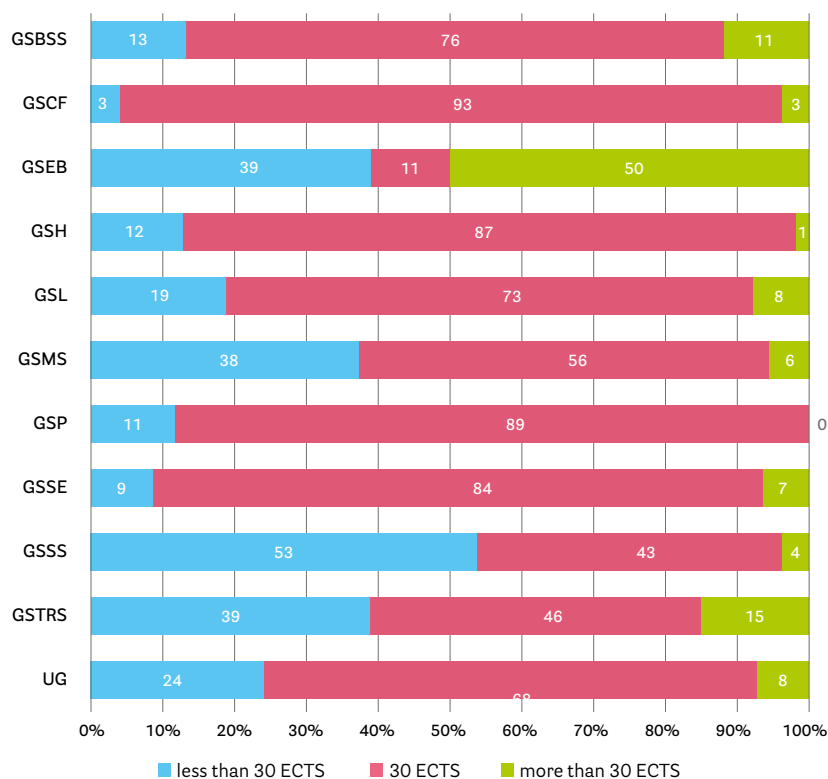
Abbreviations: *GSBSS = Graduate School of Behavioural and Social Sciences; GSCF = Graduate School of Campus Fryslân; GSEB = Graduate School of Economics and Business; GSH = Graduate School of Humanities; GSL = Graduate School of Law; GSMS = Graduate School of Medical Sciences; GSP = Graduate School of Philosophy; GSSE = Graduate School of Science and Engineering; GSSS = Graduate School of Spatial Sciences; GSTRS = Graduate School Theology and Religious Studies.*

Access to educational activities

Table 36 shows that over 90% of the PhD students indicated they had access to educational activities related to general skills (e.g. project management, writing and presentation) and scientific integrity. A small proportion (2%) indicated they had no access to any of the educational activities presented - this mainly concerned external (type 4; 15%) and externally financed PhD students (type 3, 2%). Compared to 2021, the proportion of PhD students with a scholarship from institutions other than UG/UMCG (type 1b) who indicated having no access to educational activities decreased from 5% to 1%.

Table 36 To which education activities do you have access? (indicate all that apply)

Type of course	N	%
General skills courses and workshops	1,176	92
Discipline-specific courses and workshops	873	68
Research data management course	890	70
Scientific integrity course	1,165	91
Seminars and conferences	1,101	86
Teacher training activities	669	52
Career orientation activities	769	60
Other educational activities	492	38
I don't have access to educational activities	23	2
Total	1,303	

Group differences

Differences between PhD student types were most pronounced for teacher training activities and career orientation activities. The proportion of PhD students who indicated having access to teacher training was relatively low among employees in a PhD track (43%), PhD students with a scholarship from an institution other than UG/UMCG (34%), externally financed (40%) and external PhD students (24%). The UG policy is that all PhD students, of any type and Graduate School, should have access to a teacher training programme, but obviously not all PhD students (and perhaps also supervisors) are aware of this.

Regarding career activities, proportions were relatively low for PhD students with a scholarship from an institution other than UMCG/UG (44%), employees in a PhD track (46%) and external PhD students (33%). For the latter two groups, this makes sense as they are trained for a career in health services or are already employed with an external company.

Regarding Graduate Schools, differences were most profound for research data management (RDM), teacher training and career orientation. Compared to the UG average, a relatively low proportion of PhD students from GSEB (43%), GSH (48%) and GSP (27%) reported having access to RDM courses, while a relatively large proportion of PhD students from GSMS (90%) reported having access to these courses. A relatively high proportion of PhD students from GSCF (68%), GSL (65%) and GSP (67%) indicated having access to teacher training activities. Regarding career orientation, a relatively high proportion of PhD students from GSCF (74%), GSL (78%) and GSSS (75%) reported having access to such activities.

Participation in educational activities

Next, participation in obligatory courses (obligations may differ between Graduate Schools) as part of PhD educational training was examined. Almost 85% (N = 1,085, 83%) answered yes to the question of whether any courses were obligatory; almost 13% answered no (N = 166); and 4% (N = 52) did not know. Those who stated that some courses were mandatory, were asked to indicate which type of course this concerned. The results are presented in *Table 37*. Courses that were most mentioned as obligatory were scientific integrity (93%), RDM (48%) and general skills courses (38%).

Table 37 **Please indicate which types of courses are obligatory? (indicate all that apply)**

Type or course	N	%
General skills courses and workshops	407	38
Discipline-specific courses and workshops	172	16
Research data management course	510	48
Scientific integrity course	996	93
Seminars and conferences	157	15
Teacher training activities	510	5
Career orientation activities	41	4
Other education activities	71	7
I don't know	18	2
Total	1,085	

Group differences
Differences according to PhD student type were most pronounced for discipline-specific and RDM courses and career activities. Compared to the UG average, discipline-specific courses were more often mandatory for PhD students with a scholarship from an institution other than UG/UMCG (25%). RDM was relatively more often mandatory for employees in a PhD track (63%), while it was relatively less so for externally financed PhD students (36%). With regard to career orientation activities, a relatively high proportion of UG/UMCG scholarship PhD students indicated that this was mandatory (10%), while none of the PhD track employees or external PhD students reported such an obligation.

Differences between Graduate Schools were present for most type of courses. The most pronounced divergences from the UG average are mentioned. A relatively high proportion of PhD students from GSCF (57%) and GSEB (82%) indicated that general skills courses were mandatory, while this proportion was relatively low for the GSL (16%) and the GSSE (22%). For the RDM course, nearly all PhD students at GSMS reported that following it was obligatory (90%), while only very few among their colleagues at GSH (12%) and GSL (13%) reported the same. For scientific integrity, only 50% of the PhD students from GSP reported that this course was mandatory. A relatively high proportion of PhD students from GSSS (13%) reported that teacher training activities were mandatory. Finally, a relatively high proportion of PhD students from GSCF (18%) reported that career orientation activities were mandatory.

Satisfaction with educational activities

PhD students were asked to indicate how much they agreed (on a five-point scale ranging from 1 = completely disagree to 5 = completely agree) with ten statements regarding the educational activities that are offered. A scale score (α = 0.89) was calculated on the basis of all items. Similarly to two years ago, PhD students were moderately satisfied with the educational activities, as indicated by the average of 3.5 on the education scale. Table 38 shows that PhD students agreed most with the statement: 'In general, I am satisfied with the educational activities that are offered at my university, UMCG and/or the (national) Graduate School'. As in 2021, PhD students agreed less with the statement that they have sufficient time to participate in educational activities. PhD students are also less satisfied with the offer of career preparation activities related to a career outside science/academia.

Table 38 Agreement with statements about educational activities

| Statement	Mean	SD
I have sufficient time to participate in educational activities	3.3	1.1
I am satisfied with the number of educational activities on offer	3.6	0.9
I am satisfied with the quality of the educational activities on offer	3.6	0.9
I am satisfied with the diversity of the educational activities on offer	3.5	1.0
I am satisfied with the information I receive about educational activities	3.6	1.0
The educational activities in which I have participated contribute to the completion of my PhD	3.6	1.0
My supervisory team encourage me to participate in educational activities	3.6	1.0
In general, I am satisfied with the educational activities that are offered at my university, UMCG and/or the (national) Graduate School	3.8	0.9
I am satisfied with the offer of career preparation activities related to a career within science/academia	3.5	1.0
I am satisfied with the offer of career preparation activities related to a career outside science/academia	3.4	1.0
Average scale score for education (α = 0.89)	3.5	0.7

Group differences

Differences in the average scale scores for statements about education were examined for PhD student type and Graduate School. A noteworthy difference for student type is that PhD students with a scholarship from an institution other than UG/UMCG were significantly more satisfied with the educational activities offered than employees in a PhD track and PhD students with a UG/UMCG scholarship (see Table 39).

Table 39 Education scale score by PhD student type

PhD student type	N	Mean	SD
1a Employee	630	3.5	0.7
1b Employee in PhD track	36	3.3	0.9
2a Scholarship UG/UMCG	178	3.4	0.7
2b Scholarship other	264	3.8	0.7
3 Externally financed	96	3.5	0.7
4 External PhD	60	3.6	0.7

Average scores did not differ significantly between Graduate Schools in 2023. Figure 15 shows the average satisfaction scores for 2021[4] and 2023. For GSCF, satisfaction with educational activities increased compared to 2021.

Figure 15 Education scale score by Graduate School in 2021 and 2023
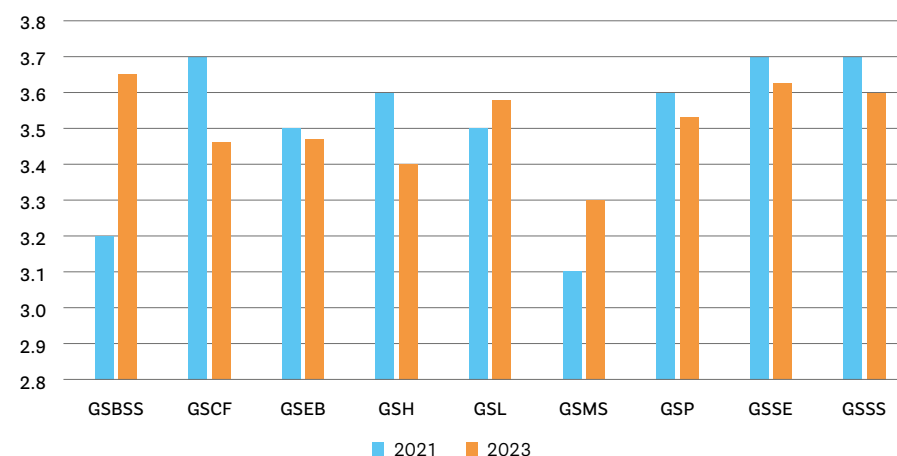
Abbreviations: *GSBSS = Graduate School of Behavioural and Social Sciences; GSCF = Graduate School of Campus Fryslân; GSEB = Graduate School of Economics and Business; GSH = Graduate School of Humanities; GSL = Graduate School of Law; GSMS = Graduate School of Medical Sciences; GSP = Graduate School of Philosophy; GSSE = Graduate School of Science and Engineering; GSSS = Graduate School of Spatial Sciences*

Chapter conclusions

Around 90% of the PhD students have access to general skills courses, conferences and the scientific integrity course. For discipline-related educational activities and the RDM course, around 70% and 60% of the PhD students indicated having access, while a similar percentage reported participating in career orientation activities. Just over half of the PhD students indicated they had access to teacher training activities. A small proportion (2%) indicated they had no access to any of the educational activities presented. Overall, PhD students were moderately satisfied with several aspects of their educational activities (e.g. information provisioning, sufficient time for participation, encouragement by supervisors and satisfaction with the activities). No differences were present between Graduate Schools.

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4   In 2021, the education scale score was based on nine items: satisfaction with career activities was not divided into two items for within and outside academia.

8 Graduate Schools

This chapter concerns the familiarity and satisfaction with several tasks of the Graduate School. According to the regulations, the Graduate Schools help PhD students to acquire dedicated research and generic skills as well as to finish their thesis within the allotted time (3 or 4 years in most cases) and to prevent unnecessary drop-out. The Graduate Schools also prepare doctoral candidates for careers as scientists, both within and outside academia. Finally, their task is also to increase the number of PhD positions and to monitor the quality of the dissertations.

Familiarity with the Graduate School and the PhD coordinator

Over the years, more PhD students are becoming familiar with the Graduate School to which they belong. In 2023, only three PhD students (< 1%) did not know to which Graduate School they belonged (2021: 2%; 2019: 3%). New this year was a question about the familiarity with the PhD coordinator of the Graduate School (see Table 40).

Table 40 Are you familiar with the PhD coordinator of your Graduate School?

Answer	N	%
Yes, we have met	583	45
Yes, but we have not met	461	35
No, I did not know that my Graduate School has a PhD coordinator	259	20
Total	1,303	100

The percentage that was not familiar with the coordinator (20% for the total sample) differed between Graduate Schools (see *Figure 16*). Unfamiliarity was highest at GSBSS (30%) and GSMS (28%), followed by GSP (20%), GSTRS (19%), GSSE (18%) and GSL (15%).

Figure 16 Awareness of the Graduate School coordinator by Graduate School
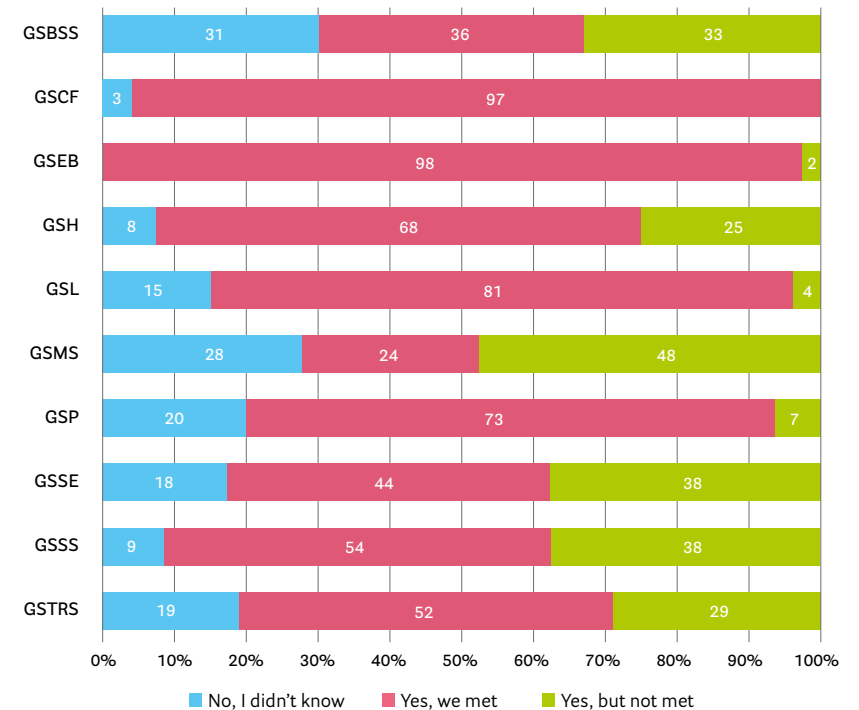
Abbreviations: *GSBSS = Graduate School of Behavioural and Social Sciences; GSCF = Graduate School of Campus Fryslân; GSEB = Graduate School of Economics and Business; GSH = Graduate School of Humanities; GSL = Graduate School of Law; GSMS = Graduate School of Medical Sciences; GSP = Graduate School of Philosophy; GSSE = Graduate School of Science and Engineering; GSSS = Graduate School of Spatial Sciences; GSTRS = Graduate School of Theology and Religious Sciences.*

Participation in the Graduate School introductory event

Almost 40% of the PhD students attended the introductory event on location. Just over one-quarter attended the event online.[5] The attendance differed between Graduate Schools (see Figure 15) and was lowest for PhD students from GSP (20%), GSEB (33%) and GLS (38%)

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5   During the COVID-19 pandemic, the introductory event was held online.

Table 41 Did you attend the PhD introductory event organized by the Groningen Graduate Schools?

Answer	N	%
Yes, at a location	505	39
Yes, online	344	26
No	345	27
I do not remember	61	5
Not applicable to my situation	48	4
Total	1,303	100

Figure 17 Attendance of introductory event (on location/online); percentages displayed by Graduate School

Abbreviations: *GSBSS = Graduate School of Behavioural and Social Sciences; GSCF = Graduate School of Campus Fryslân; GSEB = Graduate School of Economics and Business; GSH = Graduate School of 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 Sciences.*
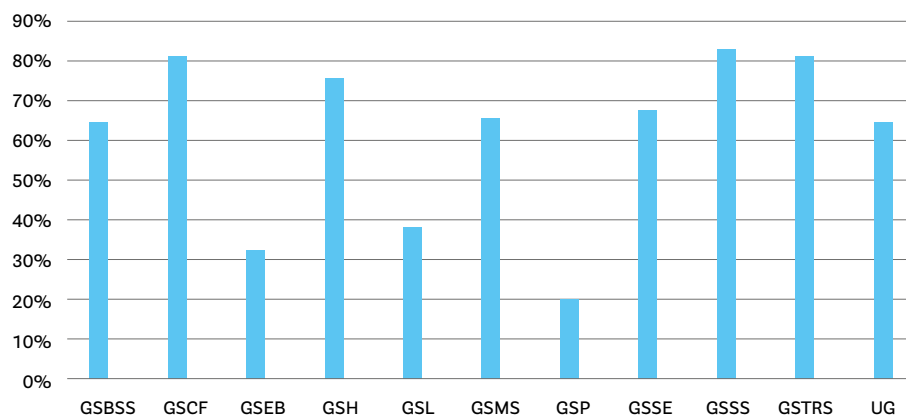
Support from the Graduate School

PhD students indicated how their Graduate School supports them during their PhD trajectory. A total number of 1164 PhD students (89% of the sample) selected one or more aspects in which they felt supported by their Graduate School (see Table 42). As in previous years, it became apparent that PhD students mainly felt supported by the provision of information or by the availability of courses, symposia and workshops. Compared to 2021, two aspects had substantially higher percentages: 'providing information' (up from 68% to 76%) and 'offering courses' (up from 66% to 87%). The percentage of PhD students who answered, 'I don't know', decreased from 16% to 11%.

Table 42 How is your Graduate School supporting you during your PhD trajectory? (indicate all that apply)

Answer	N	%
Providing information	882	76
Keeping track of my progress	378	33
Supporting me in the case of problems (e.g. with my progress, supervisor, funding)	405	35
Offering courses, symposia, workshops, etc.	1,009	87
Other namely:	30	3
No help	13	
Other answer	17	
I don't know (exclusive)	139	11
Number of PhD students who selected at least one option	1,164	

Group differences

The way in which PhD students feel supported by their Graduate School was further detailed to the level of the various Graduate Schools (see Table 43). Differences between Graduate Schools were significant for all statements, except for offering educational activities. A relatively high proportion of PhD students from GSBSS (14%) had no idea how their Graduate School supports them. A relatively large percentage of PhD students from GSCF (90%) and GSEB (92%) indicated that their Graduate School provides them with information. Regarding keeping track of progress, again PhD students from GSEB (63%) reported this more often than PhD students from other Graduate Schools; PhD students from GSBSS agreed the least (14%). With regard to support in the case of problems, compared to the UG average, a relatively high percentage of PhD students from again GSEB (50%) and GSP (60%) agreed.

Table 43 How is your Graduate School supporting you during your PhD trajectory?
Percentages indicated by Graduate School

Answer	GSBSS %	GSCF %	GSEB %	GSH %	GSL %	GSMS %	GSP %	GSSE %	GSSS %	GSTRS %
Providing information	59	90	92	76	65	69	67	59	82	81
Tracking progress	14	32	63	18	33	31	33	27	32	43
Support in the case of problems	22	45	50	29	48	26	60	30	39	57
Offering education	75	90	87	92	77	81	60	70	73	76
I don't know	14	0	2	3	12	8	13	17	7	10

Abbreviations: *GSBSS = Graduate School of Behavioural and Social Sciences; GSCF = Graduate School of Campus Fryslân; GSEB = Graduate School of Economics and Business; GSH = Graduate School of 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 Sciences.*

Satisfaction with the Graduate School

Satisfaction with the Graduate School was examined by means of eight propositions. See Chapter 2 for an overview of the results for the total sample. See Appendix K for a detailed overview of the scores per proposition by Graduate School. Overall, PhD students from GSEB were most satisfied with their Graduate School and PhD students from GSBSS the least.

Chapter conclusions

Fortunately, over the years, we can see an increase in the number of students who know to which Graduate School they belong. Of the PhD students, 80% are familiar with the PhD coordinator of their Graduate School. Unfamiliarity is highest at GSBSS and GSMS. As in previous years, PhD students mainly feel supported by their Graduate School in the provision of information and the availability of courses, symposia and workshops. Compared to the UG average, a relatively high proportion of PhD students from GSBSS did not know how their Graduate School supports them. PhD students from GSEB were most aware of how their Graduate School supports them. PhD students from GSEB were, overall, the most satisfied with their Graduate School, while PhD students from GSBSS were the least satisfied.

9 Wellbeing

PhD students were asked to rate their general wellbeing and the impact of their PhD project on their wellbeing. Aspects of the PhD project that have a positive and negative impact on wellbeing were examined. The results cannot be directly compared with those of 2021 as the questions in 2021 concerned PhD students' mental health rather than wellbeing.

General wellbeing

As indicated in Table 44, almost half (48%) of the PhD students considered their wellbeing as 'good' and 12% as 'very good'. Just over 10% (11%) rated their wellbeing as 'poor' to 'very poor' (15% in 2021) and almost 30% (29%) as 'fair' (31% in 2021).

Table 44 How would you rate your general wellbeing?

Answer	N	%
Very poor	20	2
Poor	111	9
Fair	379	29
Good	629	48
Very good	154	12
I don't know/Prefer not to say	7	1
Total	1,300	100

Group differences
Differences in wellbeing were examined for phase, nationality and PhD student type. Overall, starters rated their wellbeing better compared to seniors (see Figure 18). As indicate in Figure 19, Dutch PhD students considered their wellbeing better than non-Dutch PhD students. No significant differences were present between the six PhD student types.

Figure 18 General wellbeing; percentages displayed by phase
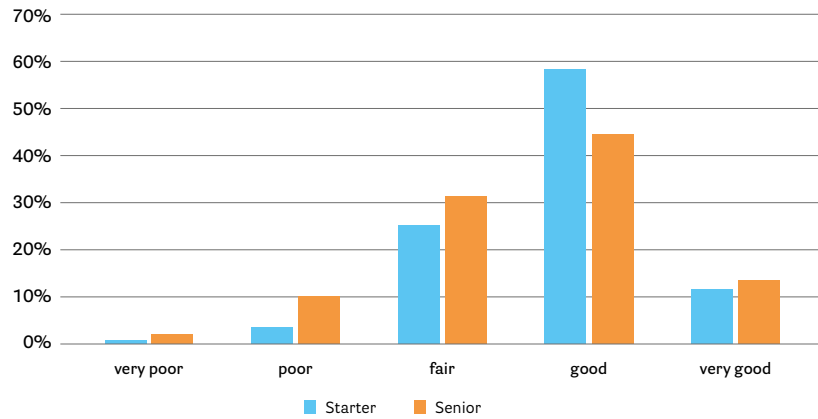
Figure 19 General wellbeing; percentages displayed by nationality group
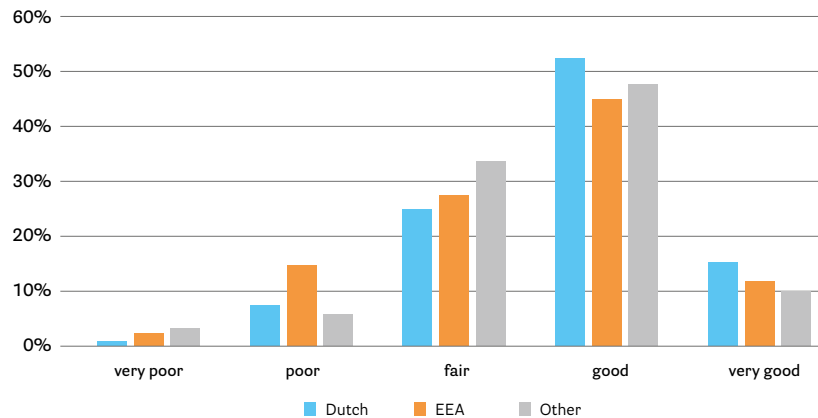
Impact of PhD trajectory on wellbeing

Less than half of the PhD students (43%) indicated that their PhD project had a fairly positive to positive impact on their wellbeing (27% in 2021), while less than one-quarter (24%) stated that their PhD project had a rather negative to negative impact (34% in 2021) (see Table 45). Similarly to 2021, about one-third (31%) selected the answer option 'neutral'.

Table 45 In general, what impact does your PhD project have on your wellbeing?

Answer	N	%
Negative	71	6
Rather negative	237	18
Neutral	408	31
Fairly positive	360	28
Positive	193	15
I don't know/I don't want to answer	31	3
Total	1,300	100

PhD students could indicate the three most important aspects of their PhD project that positively and negatively influenced their wellbeing. Table 46 shows the most mentioned positive effects.

Almost half of the PhD students mentioned interactions with colleagues and their research. About 40% were content with their work-life balance and one-third selected interactions with their daily supervisor. One-quarter selected interactions with the primary supervisor and completing the PhD project. Around 40% selected practical, technical or financial and work-life balance as aspects which negatively impacted their wellbeing, followed by completing the PhD and publications (see Table 47).

Table 46 Areas with a positive impact on wellbeing

Which areas have the most positive impact on your wellbeing? (Tick the three most important ones)	N	%
Interactions with my daily supervisor	409	32
Interactions with my primary supervisor	322	25
Interactions with other colleagues	623	48
My research	642	49
Courses, workshops and symposia I attended	211	16
Teaching and/or supervising students	116	9
My academic performance	158	12
My publications	160	12
My academic recognition by others	89	7
Completing my PhD	296	23
Finding desirable employment after completing my PhD	202	16
My work-life balance	518	40
Practical, technical or financial aspects	109	8
Patient care	22	2
Other reason	26	2

Table 47 Areas with a negative impact on wellbeing

Which areas have the most negative impact on your wellbeing? (Tick the three most important ones)	N	%
Interactions with my daily supervisor	110	8
Interactions with my primary supervisor	135	10
Interactions with other colleagues	110	9
My research	284	22
Courses, workshops and symposia I attended	142	11
Teaching and/or supervising students	138	11
My academic performance	348	27
My publications	391	30
My academic recognition by others	216	17
Completing my PhD	422	33
Finding desirable employment after completing my PhD	394	30
My work-life balance	495	38
Practical, technical or financial aspects	519	40
Patient care	64	5
Other, namely:	122	9
Work pressure/time management	21	
Politics/culture at UG	6	
Unfair management/treatment (e.g. PhD scholarship)	10	
Personal life/circumstances	11	
Health issues	8	
Other reason	49	

Support by the UG

PhD students who rated their wellbeing as 'poor' or 'very poor' (n = 131) were asked if they had discussed their wellbeing with someone. Table 48 shows that almost half of the PhD students discussed their poor wellbeing with their supervisors. About one-quarter did not discuss their wellbeing with anyone.

Table 48 **Have you discussed your wellbeing with someone? (indicate all that apply)**

Answer	N	%
Yes, with my daily supervisor	60	46
Yes, with my primary supervisor (promotor)	60	46
Yes, with someone at my Graduate School	19	15
Yes, with a PhD psychologist	27	21
Yes, with a confidential advisor	16	12
Yes, with a physician affiliated to the University	17	13
Yes, with someone at Human Resources	5	4
Yes, with a Health and Safety Officer ('arbodienst')	12	9
Yes, with someone else	34	26
Prefer not to say	5	4
No, I did not discuss my wellbeing with someone at the UG/UMCG	31	24
Total number of PhD students who selected at least one answer	131	

Awareness of UG support counsellors

PhD students were asked if they were aware that there are counsellors available, who they can go to if they encounter problems, for example related to wellbeing or social safety issues. Almost three-quarters (N = 932, 72%) were aware of the presence of UG counsellors, while 20% (N = 255) were not aware and 8% (N = 115) did not know. Table 49 displays the percentages for familiarity with support counsellors within the UG.

Table 49 **With which counsellors are you familiar? (indicate all that apply)**

Answer	N	%
PhD mentor	304	33
Confidential advisor (UG or Faculty)	489	53
PhD psychologist (UG)	396	43
PhD coordinator (institute or group)	375	40
Graduate School coordinator	359	39
Scientific integrity advisor	153	16
Other	24	3
PhD counsellor at your Faculty (only at FMW and FSE)	337	36
PhD students who selected at least one answer	932	

Group differences
There were no differences in awareness between Graduate Schools, PhD student types or phase but familiarity was lower for EEA (71%) and non-EEA (67%) PhD students compared to those with Dutch nationality (77%). Moreover, compared to the UG average of 72%, awareness of counsellors was lower among PhD students who had not discussed their wellbeing with someone, with only 45% of this group aware of counsellors. Awareness was also lower among PhD students who encountered social safety issues (see Chapter 12) but did not take any action (61%). Moreover, awareness was slightly lower than the UG average among PhD students who experienced a high workload (see Chapter 11) and did not discuss this with someone (68%).

Chapter conclusions

Almost 60% of the PhD students rated their wellbeing as good or very good. Only half of the PhD students who rated their wellbeing as poor or very poor, discussed this with their supervisors. About one-quarter did not discuss their poor wellbeing with anyone. Starting PhD students and PhD students with the Dutch nationality rated their wellbeing significantly higher than seniors or internationals. One-third of the total sample stated that their PhD project had a negative or rather negative influence on their wellbeing. Practical, technical or financial issues and publication pressure were indicated as aspects that have the most negative impact. Work-life balance was mentioned as having both a negative and a positive impact. Interactions with colleagues, the research work itself and interactions with the daily supervisors were

mentioned as having the most positive impact on wellbeing. Almost three-quarters of the respondents were aware of support counsellors within the UG. Actions to increase awareness among PhD students from outside the EEA are recommended.

10 Supervising and teaching students

PhD students were asked about their current involvement in teaching and in the supervision of Bachelor's and/or Master's students. They were asked about training, time investment, balance between teaching and other aspects of their PhD project, and problems encountered while teaching/supervising. As the questions differed from those in 2021, a comparison cannot always be made with previous years.

Involvement in teaching/supervising

Involvement in teaching and supervision is shown in Table 50. Just under 30% were involved in either teaching, supervising or both. This group (N = 780) was asked if teaching and supervising was part of their contract or agreement. This was the case for 44% (N = 343). These percentages are similar to 2021.

Table 50 Do you teach and/or supervise students?

Answer	N	%
Yes, teaching and supervising	339	26
Yes, only teaching	145	11
Yes, only supervising	296	23
No	523	40
Total	1,303	100

Group differences
Involvement in teaching differed between PhD types (see Table 51). As in 2021, employed PhD students (Group 1a) were most often involved in teaching/supervising (74%), while scholarship PhD students (with funding from institutions other than UG/UMCG; Group 2b) and external PhD students were the least involved in these activities (35%). PhD students from the two smallest Graduate Schools were least involved in teaching/supervising (GSP: 27%; GSRCS: 24%), while those from GSSE (80%), GLS (67%) and GSEB (62%) were most involved (see *Table 52*).

Table 51 Involvement in teaching/supervising by PhD student type

UNL PhD student type	N	%
1a. Employed PhD student	429	74
1b. Employee in PhD track	18	70
2a. PhD student on UG/UMCG scholarship	163	54
2b. PhD student on other scholarship	90	35
3. Externally funded PhD student	37	58
4. External PhD student	11	35

Table 52 Involvement in teaching/supervising by Graduate School

Graduate School	N	%
GSBSS	59	50
GSCF	18	58
GSEB	37	62
GSH	49	46
GSL	35	67
GSMS	250	58
GSP	4	27
GSSE	301	73
GSSS	21	38
GSTRS	5	24

Abbreviations: *GSBSS = Graduate School of Behavioural and Social Sciences; GSCF = Graduate School of Campus Fryslân; GSEB = Graduate School of Economics and Business; GSH = Graduate School of 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 Theology and Religious Studies.*

Reasons for not teaching/supervising

PhD students who indicated not being involved in teaching/supervision, were asked for their reasons, which are displayed in Table 53. Less than one-quarter was allowed but did not want to teach/supervise, while almost 20% was not allowed but would like to. About 40% chose 'other, namely'. Their answers were categorized and are reported in the table. As the question differed in the 2023 survey, comparison with previous years cannot be made.

Table 53 Please indicate which of the following situations relating to teaching and supervising applies to you

Answer	N	%
I am allowed to teach/supervise, but I don't want to	120	23
I am not allowed to teach/supervise and that is fine	77	15
I am not allowed to teach/supervise but I would like to	94	18
Not applicable to my situation	30	6
Other, namely …	202	39
Allowed, but no time	9	
Allowed, but no opportunities (yet)	43	
Allowed and I will in the future	95	
Allowed, but not sure if I want to	21	
I am not sure if I can/am allowed	15	
Other reason	18	
Total	523	100

Types of teaching activities

The PhD students who indicated they were involved in teaching (N = 780), were asked about the types of teaching activities they were involved in. They could choose more than one activity; percentages are displayed in Table 54. Compared to 2021, involvement in lectures was lower in 2023, while involvement in workshops, etc. was higher in 2023. The percentages for the other activities are comparable.

Table 54 **What kind of teaching activities have you done during your PhD trajectory?**
(indicate all that apply)

Answer	N	%
Giving lectures	264	34
Giving workshops/seminars/practicals	396	51
Supervising groups of students	290	37
Supervising individual students	599	77
Other, namely	9	1
Number of PhD students who selected at least one option	780	

Time spent on teaching

PhD students were asked how much of their allocated time for their PhD project they spent on teaching or supervising in the last 12 months. On average, PhD students spent 13.4% (N = 428, Sd = 13.3) of their time on teaching and 14.2% (N = 570, Sd = 14.7) on supervising. Comparison with previous years cannot be made due to the different way the question about time investment was posed.

Balance between teaching/supervision and other PhD project-related work

Those involved in teaching/supervising were asked about the balance between teaching/supervising and other work. Over two-thirds (70%) were satisfied with the amount of teaching/supervising (see Table 55). This is a small increase compared to 2021 (66%).

Table 55 **How do you feel about the balance between teaching/supervising and other work related to your PhD project?**

Answer	N	%
I would like to teach/supervise less	117	15
I am satisfied with the amount of time I spend teaching/supervising	544	70
I would like to teach/supervise more	119	15
Total	780	100

Training on teaching/supervising students

PhD students involved in teaching and supervising were asked to indicate which UG courses on these tasks they attended. Just under 70% (N = 539, 69%) selected the answer option, 'I did not attend a course to prepare myself for teaching/supervising'. The answers of the 242 PhD students who did attend at least one course are displayed in Table 56. About 80% attended only one course, 16% attended two and 2% attended three courses.

Table 56 **Please indicate if you have attended one (or more) of the following courses to prepare for teaching and/or supervising (indicate all that apply)**

Answer	N	%
Start to Teach	94	39
Start to Supervise	77	32
Introduction to Teaching	54	22
Other course, namely …	64	26
BKO/UTQ	10	
GSEB PhD teaching training	4	
GSMS Teach the teacher	4	
GSSE Teacher Training for PhDs	16	
Other course	30	
Number of PhD students who selected at least one answer	242	

Those involved in teaching/supervising were asked: 'Do you feel you received sufficient training on how to teach and supervise students?' About 40% answered 'yes'. Another 40% answered 'no' and had not attended a course on teaching/supervising. Of the 77 answers in the category 'other', 30% referred to experience gained in previous appointments. Over the years, the percentage of PhD students who felt they did not receive sufficient training has slowly increased, from 55% in 2015 to 66% in 2019 and 2021. However, in 2023, when we combine both categories of 'no' (8% + 42% = 50%, Table 57), we see a further decrease in the proportion of PhD students who feel unprepared.

Table 57 Do you feel you received sufficient training on how to teach and supervise students?

Answer	N	%
Yes	311	40
No, despite the courses I attended	66	8
No, because I did not attend any courses	326	42
Other	77	10
Total	780	100

Group differences

Contrary to 2021, no differences were present for PhD student type. This is most likely due to differences in the survey questions in 2021 and 2023. Receiving sufficient training differed significantly between Graduate Schools (see Figure 20). Almost three-quarters of the PhD students from GSSS (71%) responded affirmatively, followed by those from GSEB and GSBSS (both 51%), compared to only 25% of PhD students from GSH. Despite following teacher training courses, a relatively high proportion of PhD students from GSCF felt they did not receive sufficient training (28%). More than half of the PhD students from GSMS (53%) did not receive sufficient training, as they did not follow any courses. This proportion is also relatively high for GSSE (42%) and GSH (41%).

Figure 20 Sufficient training on how to supervise/teach students, by Graduate School
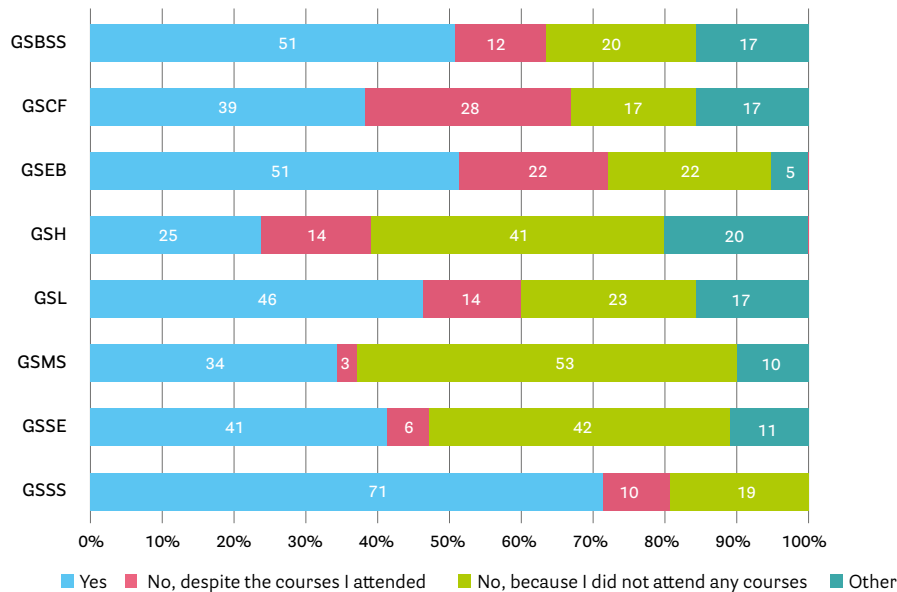
Encountering problems during teaching or supervising

Those involved in teaching/supervising were asked: 'Do/did you encounter problems when teaching/supervising students?' Less than one-quarter answered 'yes' (N = 174, 22%). Those who experienced problems were asked to elaborate in an open answer. The answers of 157 PhD students were divided into categories, which are shown in Table 58. Almost half of the PhD students encountered problems with students. Some examples: 'Some students are not motivated to learn new things; they are only doing internships to improve their CVs'; 'Mainly with students not handing in coursework; how to deal with that'; 'I supervised a student who was not willing to work and I felt [I was] a bad supervisor when he handed in a thesis that barely contained any data'.

Table 58 Overview of categories of open answers of PhD students who encountered problems while teaching/supervising students

Answer category	N	%
Problems with students	76	48
Lack of skills/knowledge in T&S	27	17
Time management/workload	22	14
Motivation issues	17	11
Managing expectations	15	10
Communication issues	14	9
Disrespectful behaviour	13	8
Assessment/grading/feedback	12	8
Organization	12	8
Problems with sup/co-teacher	10	6
Other	10	6
Mental health issues	9	6

Chapter conclusions

Just under 30% of the PhD students were involved in either teaching, supervising or both. Comparable to previous years, involvement in teaching differs between PhD types and Graduate Schools. On average, PhD students spent around 13.5% of their allocated PhD time on teaching and supervising, although percentages differed greatly between individual PhD students. Overall, two-thirds were satisfied with the balance between teaching/supervising and other tasks within their PhD project.

About 80% of PhD students involved in teaching/supervising attended at least one training course. Regarding training, just under 10% affirmed they had received sufficient training in teaching/supervising, while half of the PhD students involved in teaching/supervising did not. However, this is not surprising, as over 40% had not attended any course on teaching or supervision. Compared to previous years, the percentage of PhD students who felt unprepared has decreased (2023: 50%; 2021: 66%; 2019: 66%; 2017: 58%). It seems the increased opportunities for teacher training within the Career Perspectives Series has had an effect.

11 Work hours and workload

This chapter concerns official and actual work hours and workload experienced. We explored reasons for a high or overly high workload and whether PhD students discussed their workload with someone.

Official and actual work hours

PhD students with a contract or scholarship (UNL types 1a, 1b, 2a, 2b and 3) were asked to indicate how many hours a week they *officially* have to work (according to their contract, agreement or Training and Supervision Plan) on their PhD project and how many hours they *actually* work on their project. On average, PhD students (N = 1,122) indicated that they have to work 33.1 hours per week (Sd = 12.2) but they actually worked 39.5 hours (Sd = 10.4). PhD students who work on their project without funding or allocated time (UNL group 4) were only asked how many hours per week they worked on their project. Their average number of working hours per week was lower compared to the other groups, namely 30.0 hours (Sd = 16.7).

Figure 21 Official contract/agreement hours compared to actual working hours; percentages in 2017, 2019, 2021 and 2023
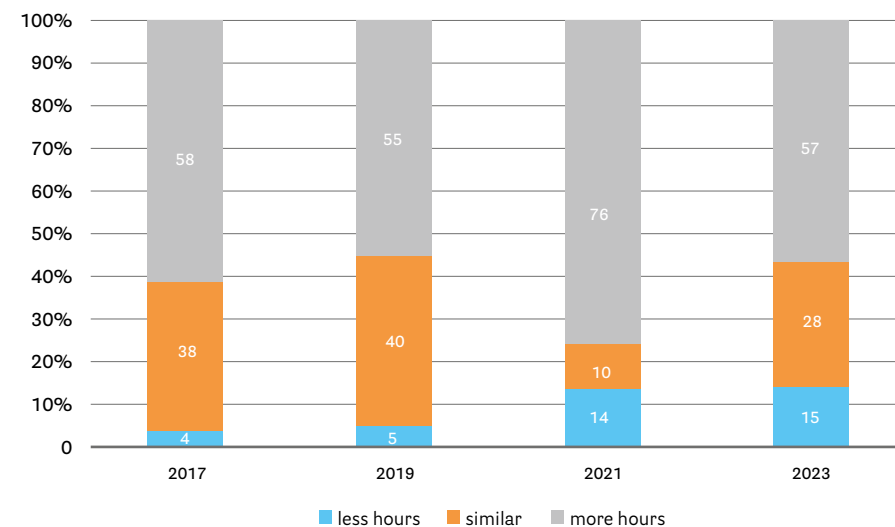
Contract hours versus actual working hours
For the 1,122 PhD students with a contract/agreement with hour specification, the actual working hours and official contract hours were compared. About 28% worked approximately the hours stated in their contract, 15% worked less and 57% worked more. The percentage of PhD students working 'overtime' had decreased compared to 2021 and was similar to 2019 (55%) and 2017 (58%), as shown in Figure 21. The increase in overtime in 2021 was most likely due to COVID-19.

Group differences
Differences in the average number of official and actual working hours were examined for PhD student type (Figure 22) and Graduate School (Figure 23). Employed PhD students reported significantly more official and actual working hours than the other PhD student types.

Figure 22 Official and actual working hours percentages by PhD student type
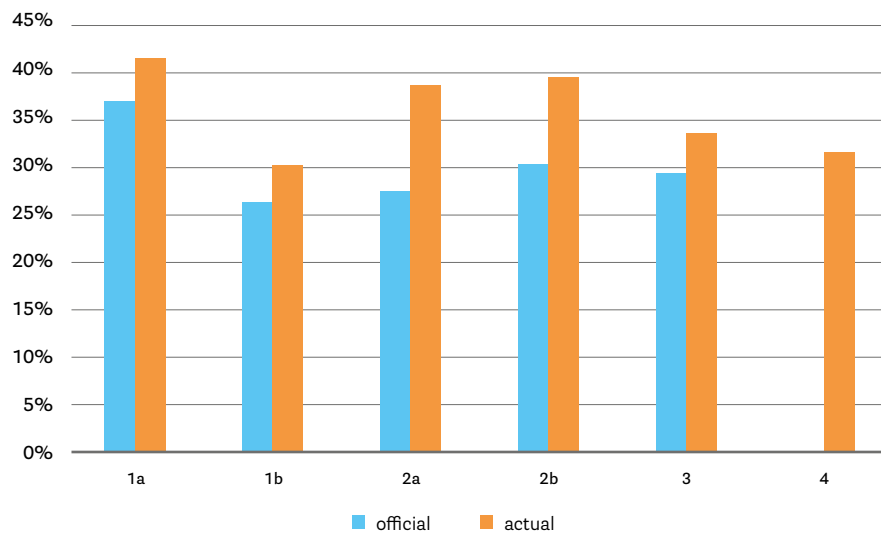

Abbreviations: *1a = employed PhD student; 1b = employee in PhD track; 2a = PhD student on UG/UMCG scholarship; 2b = PhD student on other scholarship; 3 = externally funded PhD student; 4 = external PhD student.*

PhD students from GSSE, GSMS, GSP, GSL and GSEB reported the most official work hours, while those at GSH report the least. PhD students from GSH reported significantly less official working hours compared to PhD students from GSMS and GSSE. Regarding actual working hours, PhD students from GSSE and GSEB reported the highest average number, at more than 40 hours per week, while PhD students from GSBSS, GSSS and GSTRS reported an average of less than 35 hours per week. Significant differences were present between GSBSS and GSEB, between GSBSS and GSMS, and between GSSE and the following four Graduate Schools: GSH, GSL, GSMS and GSSS.

Figure 23 Official and actual working hours percentages by Graduate School
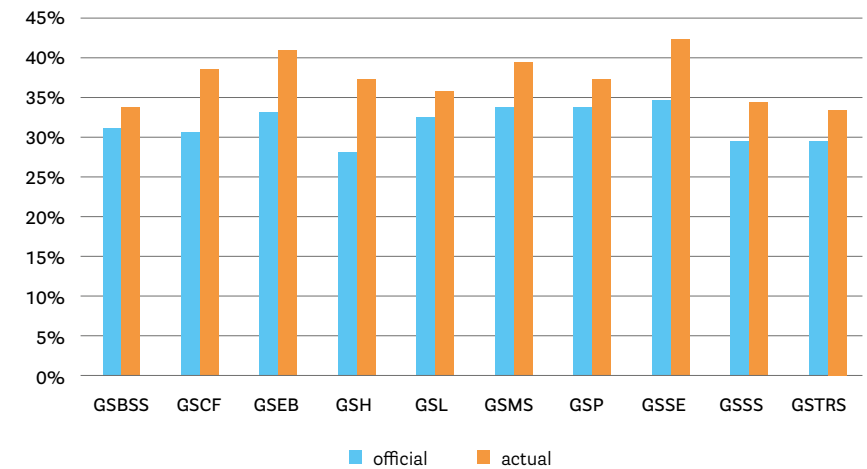
Abbreviations: *GSBSS = Graduate School of Behavioural and Social Sciences; GSCF = Graduate School of Campus Fryslân; GSEB = Graduate School of Economics and Business; GSH = Graduate School of Humanities; GSL = Graduate School of Law; GSMS = Graduate School of Medical Sciences; GSP = Graduate School of Philosophy; GSSE = Graduate School of Science and Engineering; GSSS = Graduate School of Spatial Sciences; GSTRS = Graduate School of Theology and Religious studies.*

Experienced workload

More than half of the PhD students (53%) considered their workload normal (see Table 59). This percentage had increased compared to 2021 (40%). Just over one-third (36%) considered their workload high, while just under 10% (8%) considered it too high (9% in 2021). The percentage of PhD students that considered their workload high has decreased compared to 2021 (49%).

Table 59 Workload

Workload	N	%
Too low	3	< 1
Low	31	2
Normal	690	53
High	471	36
Too high	106	8
Total	1,301	100

Group differences

Differences in workload were examined for PhD student type and Graduate School. Figure 24 shows the division over the answer categories for each PhD student type and the UG average. Lower percentages of external PhD students (UNL type 4) and PhD students with a scholarship from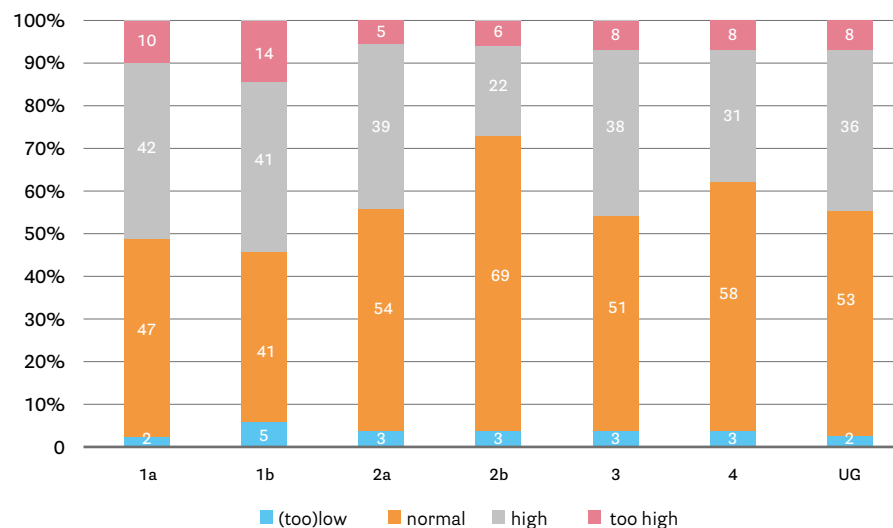 an institution other than UG/UMCG (UNL type 2b) reported a high workload compared to the other groups. The highest percentage of PhD students who reported too high a workload was recorded for employed PhD students. No differences in workload experienced were present between Graduate Schools.

Figure 24 Workload, percentages by PhD student type

Reasons for a high or overly high workload

PhD students who indicated they experienced a high or overly high workload (N = 577) were asked to indicate the reasons for their heavy workload. The results are displayed in Table 60. Amount of work (81%), difficulty of work (53%) and interruptions during work (40%), tight deadlines (36%) and work speed (35%) were mentioned most within the category of project-related reasons. Courses and education (34%) and circumstances in personal life (35%) were also mentioned by one-third of the PhD students. Comparisons with previous years could not be made due to differences in the answer categories.

Table 60 What, or who, is responsible for your high workload? (indicate all that apply)

Reasons for a high/overly high workload	N	%
Part 1. Project-related reasons		
Contact with supervisors	153	27
Contact with colleagues	91	16
Contact with students	88	15
Interruptions during work	233	40
Pressure to publish	181	31
Tight deadlines	206	36
Unavailable equipment	77	13
Amount of work	465	81
Difficulty of work	304	53
Work speed	202	35
Problems due to working with living subjects and/or animals	70	12
Unfavourable working hours	34	6
Part 2. Other activities		
Courses and other educational activities	199	34
Teaching duties and/or student supervision	173	30
Patient care	27	5
Other duties (e.g. job) not related to PhD project	141	24

Part 3. Personal circumstances		
Health problems	98	17
Circumstances in personal life	201	35
Care for others (e.g. children, parents)	82	14
Other reason	12	2
Total number of PhD students who reported a high/overly high workload	577	100

Discussed high/overly high workload

PhD students were asked whether they had discussed their high/overly high workload with someone. Almost half had discussed this with their daily supervisor and almost 40% with their primary supervisor (as well). One-third did not discuss their workload with anyone. See Table 61 for an overview of all responses.

Table 61 **Have you discussed your high workload with someone at the university or UMCG?**
(indicate all that apply)

Discussed high/overly high workload	N	%
Yes, with my daily supervisor	268	46
Yes, with my primary supervisor	222	38
Yes, with someone at my Graduate School	26	5
Yes, with the PhD psychologist	45	8
Yes, with the confidential advisor	22	4
Yes, with a physician affiliated to the UG/UMCG	11	2
No, I did not discuss my workload with someone at the UG/UMCG	204	35
Yes, with someone else, namely:	52	9
Psychologist	14	
Colleague	23	
Someone else	15	
Total number of PhD students who reported a high/overly high workload	577	100

Chapter conclusions

On average, PhD students indicated that they have to work 33 hours per week but actually worked almost 40 hours. External PhD students worked slightly less (30 hours). About 30% worked the hours stated in their contract or agreement. The percentage of PhD students working 'overtime' has decreased compared to 2021 and is similar to the years before Covid-19.

The percentage of PhD students that considered their workload high has decreased compared to 2021. Just over one-third considered their workload high and just under 10% overly high. More than half of the PhD students considered their workload normal. The amount of work, difficulty of work, interruptions during work, tight deadlines, work speed, teaching and personal circumstances were mentioned as most common reasons for a high workload. One-third of PhD students with a high/overly high workload did not discuss this with someone. About half discussed this with their daily supervisor and 40% with their primary supervisor as well).

12 Social safety

Social safety concerns interpersonal relations. In a socially safe learning and working environment, people do not feel threatened by the behaviour of others and can be confident that they can express a different opinion or bring forward new facts without being insulted, humiliated, intimidated or silenced (KNAW report 2022). Questions about social safety were new to the 2023 survey. We asked PhD students if they had experienced undesirable behaviour in the past year. If they did, they were presented with follow-up questions about the frequency and the nature of the behaviour; the relationship to the perpetrator; whether they took action; and whether they felt protected by the University.

Occurrence of undesirable behaviour

The majority (79%) of the PhD students did not experience any undesirable behaviour (see Table 62). Of the group who did (N = 277), the majority (85%) experienced these behaviours sporadically. Just under 10% experienced undesirable behaviour at least monthly.

Table 62 Did you personally experience any undesirable behaviour (e.g. bullying, abuse of power, discrimination, sexual intimidation) in the past year?

Answer	N	% (based on total)	% (based on subtotal)
Sporadically	236	18	85
Monthly	25	2	9
Weekly	10	< 1	4
Daily	6	< 1	2
Sub total	277		100
Never	1,021	79	
Total	1,298	100	

Relationship to the perpetrator

The 277 PhD students who did experience undesirable behaviour were asked what kind of relationship they had with the perpetrator. Of these, 16% (N = 45) did not want to reveal the relationship. The remaining 232 PhD students could select multiple answers (percentages were calculated based on the subtotal). Over one-third (38%) indicated their supervisor(s), while around 21% indicated a colleague, a more senior colleague or a fellow PhD student (see Table 63). Those selecting 'other people' (N = 50) were asked to elaborate on their answer, of which 49 did (N = 16, other university staff; N = 33, people external to the University).

Table 63 What was your relationship to the people involved in the undesirable behaviour? (indicate all that apply)

Answer	N	%
Prefer not to say	45	16
Supervisor(s)	88	38
More senior colleague(s)	50	22
Other colleague(s)	53	23
Fellow PhD candidate(s)	48	21
Other relationship	50	22

Nature of the undesirable behaviour

Table 64 displays the nature of the undesirable behaviour experienced by 277 PhD students. Of these, 7% (N = 19) did not want to elaborate on the nature of the behaviour. The remaining 258 PhD students could select multiple answers (percentages are based on 258 PhD students). Behaviours that were mentioned by more than one-quarter of the PhD students were: abuse of power (38%); discrimination (33%); exclusion (28%); and social intimidation (28%). The answers of the 20 PhD students who selected 'other, namely' could not be categorized into groups larger than N = 5.

Table 64 **What was the nature of the undesirable behaviour you experienced? (indicate all that apply)**

Answer	N	%
Prefer not to say	19	7
Gossip	61	24
Exclusion	72	28
Social intimidation	72	28
Sexual intimidation	18	7
Discrimination	86	33
Abuse of power	98	38
Aggression or violence	35	14
Other behaviour	20	8

Group differences

Regarding the type of undesirable behaviour, no differences were present between Graduate Schools and PhD student types. Senior PhD students more often reported sexual intimidation (9%) compared to starters (0%). Senior PhD students also more often reported abuse of power (42%) compared to starters (22%). Non-Dutch PhD students more often reported discrimination (EEA: 26%; outside EEA: 48%) compared to Dutch PhD students (17%). PhD students from outside the EEA less often reported encounters of social intimidation (20%) compared to PhD students from within the EEA (32%) and Dutch PhD students (35%).

Taking action

One-third (N = 92) of the 277 PhD students did not take any action after experiencing the undesirable behaviour. Another 7% (N = 19) preferred not to answer this question. The remaining 166 PhD students talked with at least one person (see Table 65). Percentages presented in the table were calculated based on the subtotal. More than half (57%) of the PhD students spoke with their supervisor(s), one-third (30%) with someone at their Graduate School and 20% with the confidential advisor. Of the 25 PhD students who selected 'other people', they specified: friends (N = 5) and other colleagues (N = 20). The 92 PhD students who indicated not having taken any actions were asked why. The 68 open answers of 55 PhD students (60%) were categorized and are presented in Table 66.

Table 65 **Did you take any actions after experiencing undesirable behaviour and, if so, which actions did you take? (indicate all that apply)**

Answer	N	%
No, I did not take any actions	92	33
Prefer not to say	19	7
Subtotal	111	
Yes, I spoke to my supervisor(s)	95	57
Yes, I spoke to someone at my Graduate School	50	30
Yes, I spoke to the PhD psychologist	15	9
Yes, I spoke to the confidential advisor of the University	33	20
Yes, I spoke to a physician affiliated to the UG/UMCG	4	2
Yes, I spoke to someone at Human Resources	3	2
Yes, I spoke to the Health and Safety Officer ('arbodienst')	6	4
Yes, I spoke to the perpetrator	30	18
Other	25	15

Table 66 **Reasons for not taking any action**

Answer	N	%
Not worthwhile, wanted to avoid fuss	12	22
No sufficient support structures within UG	11	20
Other reason	11	20
Fear	10	18
Things will not change	9	16
Implement training on social safety	5	9
Behaviour occurred outside UG	5	9
Unaware of (anonymous) contact point	5	9

Feeling protected by the UG/UMCG

We asked the 277 PhD students who experienced undesirable behaviour whether they felt protected by the UG/UMCG. Just over half of this group answered the question (N = 146); 45% (N = 66) answered yes, while 55% (N = 80) answered no. Of the 66 PhD students who felt protected, 40 PhD students explained their responses, which are categorized in Table 67. Of the 80 PhD students who did *not* feel protected, 61 elaborated on their responses, which are categorized in Table 68.

Table 67 Answers of PhD students who DID feel protected

Answer	N	%
Support from supervisor	13	32
Support from colleague	10	24
Received help from UG	14	34
Other	4	10
Total number of PhD students	40	

Table 68 Answers of PhD students who DID NOT feel protected

Answer	N	%
Lack of support	27	44
University is part of the problem	12	20
Supervisor is the problem	11	18
Afraid to ask for help	9	15
Other	7	12
Total number of PhD students	61	

Nature of undesirable behaviour in relation to the perpetrator and taking action

We examined of PhD students are more likely to take action in the case of specific undesirable behaviours and what kind of actions they take. Incidents of aggression and sexual/social intimidation were relatively more often discussed with the supervisor(s), while gossip, discrimination and exclusion were relatively more often discussed with the confidential advisor

(see Table 69). PhD students who experienced gossip mostly took action by talking to the perpetrator.

Table 69 Taking action by several types of undesirable behaviours

Action / Behaviour	Gossip %	Exclusion %	Social intimidation %	Sexual intimidation %	Discrimination %	Abuse of power %	Agression or violence %
I spoke to my...							
Supervisor(s)	61	58	62	67	49	63	66
Graduate School	32	34	40	17	29	29	31
PhD psychologist	18	13	14	0	10	10	14
Confidential advisor	39	32	22	25	29	32	24
Physician UG/UMCG	7	5	6	0	2	4	0
Human Resources	4	0	4	0	2	4	0
Health and Safety Officer ('arbodienst')	4	3	4	0	4	7	3
Perpetrator	36	16	24	25	20	16	0
Other action	4	11	12	0	14	16	10
No actions	48	38	28	22	38	23	14
Prefer not to say	7	10	3	11	5	7	3

We also examined if specific undesirable behaviours were more often acted on by specific people. Supervisors were relatively often mentioned for gossip, abuse of power or social intimidation (see Table 70). Exclusion was relatively more often mentioned for (senior) colleagues and by people from outside the University, while sexual intimidation and aggression were relatively more often reported as undesirable behaviour displayed by fellow PhD students. Finally, people from outside the University were most often mentioned in relation to exclusion, discrimination, aggression and sexual intimidation.

Table 70 Percentage of perpetrator by several types of undesirable behaviours

Perpretator/ Behaviour	Gossip %	Exclusion %	Social intimidation %	Sexual intimidation %	Discrimination %	Abuse of power %	Agression or violence %
Supervisor(s)	48	31	52	29	27	55	36
More senior colleague(s)	29	32	23	18	21	25	21
Other colleague(s)	27	34	17	47	29	15	27
Fellow PhD candidate(s)	38	32	19	24	22	17	33
Other relationship	7	11	22	24	33	23	18
Prefer not to say	8	14	11	6	15	11	6

Chapter conclusion

We found that 20% of the PhD students had experienced at least one incident of undesirable behaviour during the past year. The most common behaviours were abuse of power, discrimination, social intimidation and exclusion. These behaviours were most often exhibited by supervisors and colleagues (including fellow PhD students). One-third of the PhD students who experienced undesirable behaviour did not take any action after experiencing it. More than half spoke with their supervisors, one-third with someone in their Graduate School and one-fifth with the confidential advisor. A little over half of the PhD students who encountered undesirable behaviour did not feel protected by the UG.

13 Evaluation moments

This chapter considers the formal evaluation moments of the go/no go moment (usually between 9-12 months after the start) and the annual evaluation (Results and Development interview).

Formal go/no go interview

Nine months after the start of their PhD project, PhD students should have a go/no go interview. This interview should be preceded by a formal interview at six months, where expectations are aligned between the supervisory team and PhD student. Just over half of the PhD students (54%) indicated that they had their go/no go interview nine months after the start of their PhD project, while 14% had this interview after twelve months. These percentages are comparable to those of 2021; see Table 71 for an overview of all answers.

Table 71 Did you have a formal go/no go interview?

Answer	N	%
1. Yes, nine months after the start of my PhD project	699	54
2. Yes, twelve months after the start of my PhD project	178	14
3. Yes, after another number of months	51	4
4. No, not yet (I am still in my first year)	276	21
5. No	79	6
6. I don't know/I can't remember	5	< 1
7. Other: I had a meeting but this was not official	5	< 1
8. Other: not applicable	9	< 1
Total	1,302	100

Group differences
The answer categories of Table 70 were simplified into three categories ('yes, after nine months'; 'yes, after another number of months'; and 'no (not yet)'. Figure 25 shows the division over these answer categories for starters and seniors. Almost 70% of senior PhD students indicated that they had a go/no go interview at nine months after the start, while 23% had this after another number of months (Figure 25).

Figure 25 Did you have a formal go/no go interview? Percentages displayed by phase
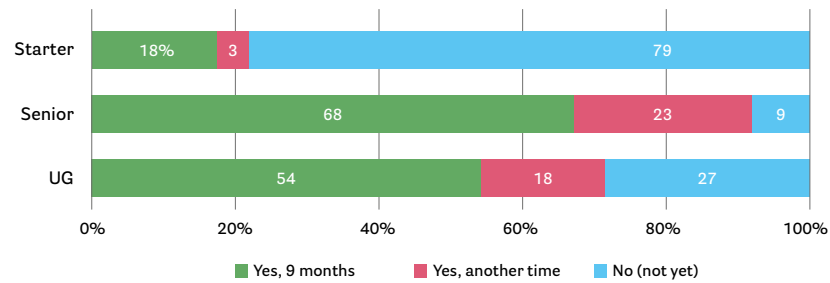
Differences between PhD student types and between Graduate Schools were examined for senior PhD students. Figure 26 shows the distribution over the three categories for the six PhD student types. Similar to previous surveys, employed PhD students (1a) and scholarship PhD students (2a and 2b) most often had their go/no go interview around nine months after the start of their PhD project.

Figure 26 Did you have a formal go/no go interview? Percentages presented by PhD student type

Abbreviations: *1a = employed PhD student; 1b = employee in PhD track; 2a = PhD student on UG/UMCG scholarship; 2b = PhD student on other scholarship; 3 = externally funded PhD student; 4 = external PhD student; UG = University of Groningen.*

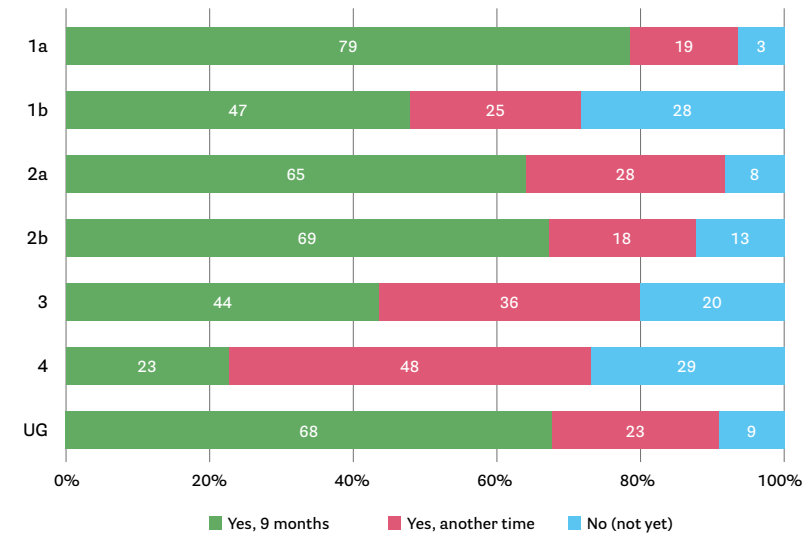Figure 27 shows the distribution by Graduate School. Compared to the UG average of 9% who had not (yet) had a go/no go interview, the following two Graduate Schools had a relatively high percentage of PhD students in this category: GSL (19%) and GSBSS (16%). In 2021, the highest proportion of PhD students who had not had a go/no go interview was also at GSBSS (16%).

Figure 27 Did you have a formal go/no go interview? Percentages presented by Graduate School
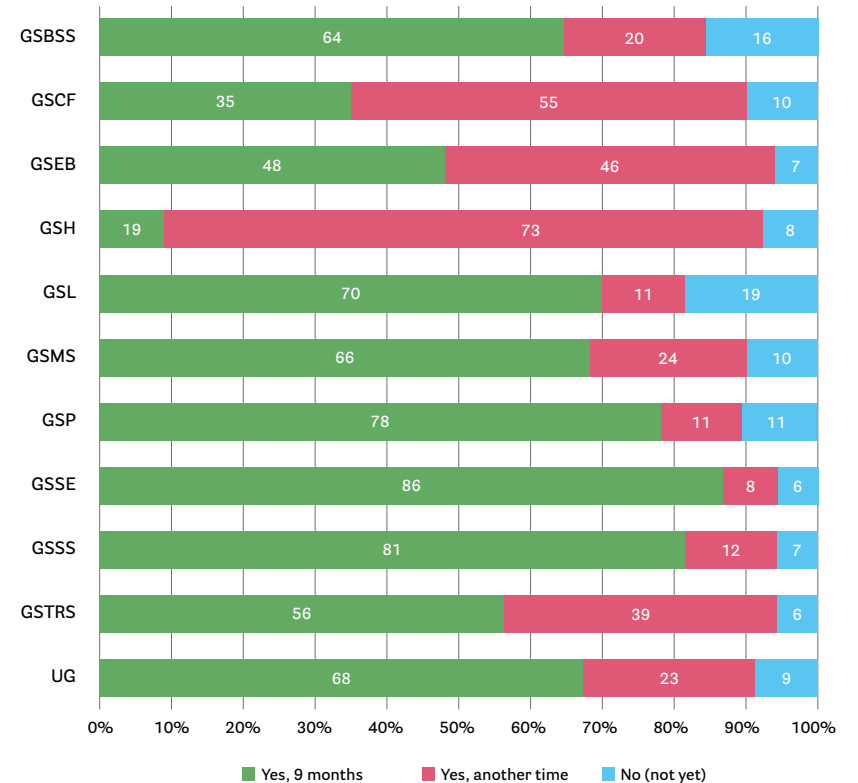
Abbreviations: *GSBSS = Graduate School of Behavioural and Social Sciences; GSCF = Graduate School of Campus Fryslân; GSEB = Graduate School of Economics and Business; GSH = Graduate School of Humanities; GSL = Graduate School of Law; GSMS = Graduate School of Medical Sciences; GSP = Graduate School of Philosophy; GSSE = Graduate School of Science and Engineering; GSSS = Graduate School of Spatial Sciences; GSTRS = Graduate School of Theology and Religious Studies; UG = University of Groningen.*

Attendees at go/no go interview

PhD students who indicated that they had a go/no go interview (N = 928) were asked to indicate who was present (see Table 72); 853 PhD students answered this question. At almost all interviews, the primary supervisor was present (97%) and in those cases where the primary supervisor was absent, the daily supervisor was present. These results are comparable to previous years.

Table 72 **Who was present at your go/no go interview? (indicate all that apply)**

Answer	N	%
Primary supervisor(s)	831	97
Daily supervisor(s)	612	72
Graduate School delegate	144	17
Human Resources representative	10	1
Someone else:	43	5
Director (research) institute/department	16	
Other supervisor	10	
External or independent person	13	
Other	4	
Total number of PhD students who selected at least one answer	853	

Annual Results and Development interview

At least once a year, PhD students should have a progress interview, called a 'Results and Development (R&D) interview'. PhD students who were beyond their first year (seniors) were asked whether they had had this interview. Over three-quarters (80%) indicated that they had, while 15% said they had not and 5% did not know (see Table 73). In 2021, 76% indicated that they had an annual evaluation.

Table 73 **Is your performance evaluated at least once a year by means of a formal interview with your supervision team?**

Answer	N	%
1. Yes	769	80
2. No	146	15
3. I don't know	45	5
Total	960	100

Group differences
Differences were examined for PhD student type and Graduate School. Figure 28 shows the division over the three answer categories for each PhD student type. As in 2021, over 80% of both employed PhD students (1a and 1b) and PhD students with a scholarship from an institution other than UG/UMCG (2b) had attended an annual interview. In 2021, 80% of PhD students with a scholarship from UG/UMCG had attended a progress interview. What caused this decline is not clear. Although the percentage of doctoral candidates who indicated having an annual interview increased by 10% compared to 2021, annual evaluations are still less common among external PhD students (type 4).

Figure 28 **Is your performance evaluated at least once a year? Percentages presented for senior PhD students by PhD student type**
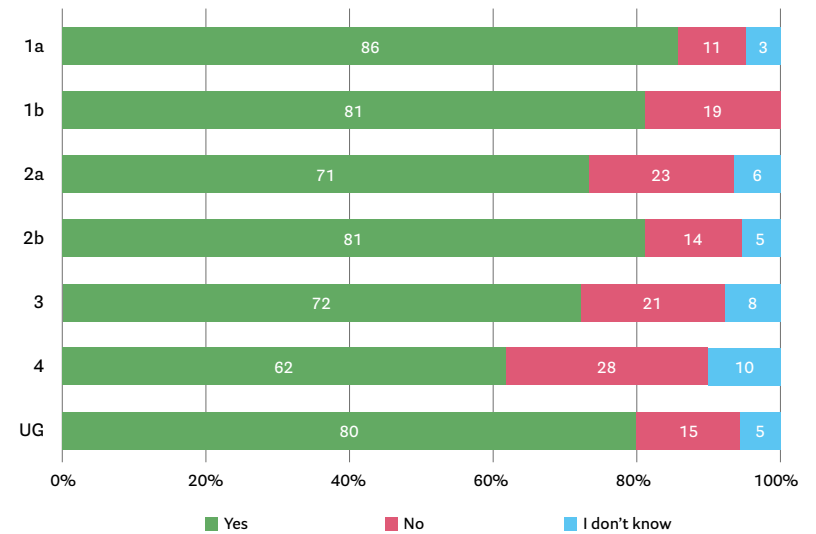
Abbreviations: *1a = employed PhD student; 1b = employee in PhD track; 2a = PhD student on UG/UMCG scholarship; 2b = PhD student on other scholarship; 3 = externally funded PhD student; 4 = external PhD student; UG = University of Groningen.*

Figure 29 displays the distribution over the categories by Graduate School. As in 2021, the GSEB was among the two Graduate Schools where PhD students most often (93%; 80% in 2021) had a regular annual performance interview, with the percentage for the other Graduate School, GSSS, was 100%. In 2019 and 2021, less than 40% of the PhD students from the GSCF and GSH had an annual performance evaluation. In 2023, this percentage increased for PhD students from GSCF (64%). Annual R&D interviews are still not frequently held at GSH, where only less than one-third (32%) of the PhD students indicated having had such an interview.

Figure 29 **Is your performance evaluated at least once a year? Percentages for senior PhD students presented by Graduate School**

Abbreviations: *GSBSS = Graduate School of Behavioural and Social Sciences; GSCF = Graduate School of Campus Fryslân; GSEB = Graduate School of Economics and Business;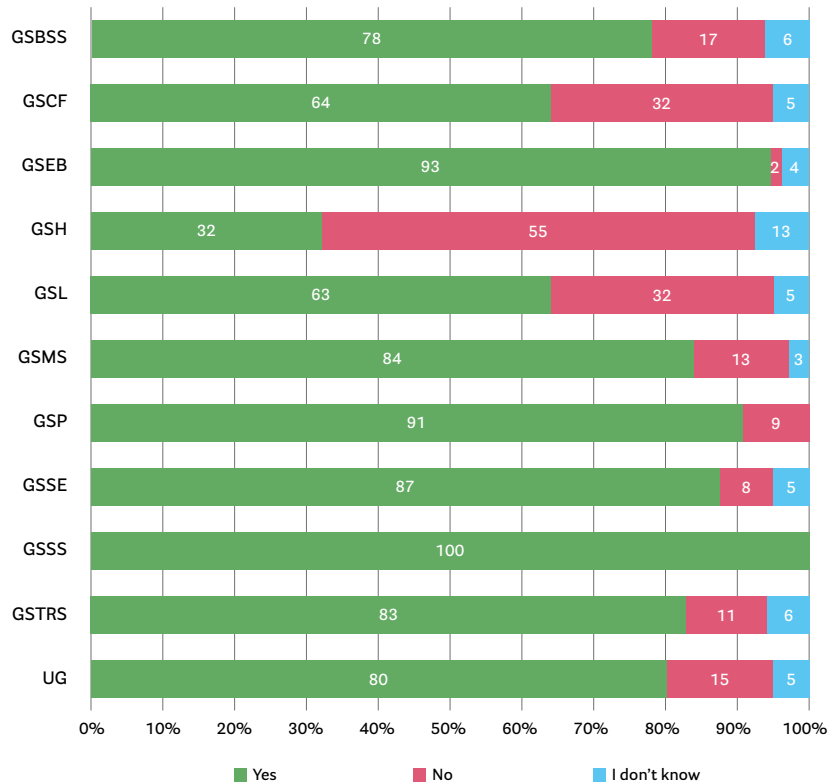 GSH = Graduate School of Humanities; GSL = Graduate School of Law; GSMS = Graduate School of Medical Sciences; GSSE = Graduate School of Science and Engineering; GSSS = Graduate School of Spatial Society; GSTRS = Graduate School of Theology and Social Sciences.*

Attendees at R&D interview

PhD students who indicated having had an annual performance evaluation interview (N = 769) were asked who was present at their latest interview; almost all (N = 766) answered the question. As presented in Table 74, 97% indicated that their primary supervisor was present and 70% indicated that their daily supervisor was present. These percentages increased slightly compared to 2021 (95% and 65%, resp.) and 2019 (91% and 61%, resp.)

Table 74 **Who was present at latest Results and Development (R&D) or annual interview/evaluation? (indicate all that apply)**

Answer	N	%
Primary supervisor(s)	740	97
Daily supervisor(s)	534	70
Graduate School delegate	63	8
Human Resources representative	5	< 1
Someone else:	34	4
Director (research) institute/ department	8	
Other supervisor	6	
External or independent person	14	
Other	6	
Total number of PhD students who selected at least one option	766	

Chapter conclusions

Nine months after the start of their PhD project, PhD students should have a go/no go interview. This interview should be preceded by an interview at six months, where the expectations of the supervisory team and PhD student are aligned. Invitations for these interviews are sent out automatically from Hora Finita. As in 2021, about half (54%) of the PhD students reported having had an evaluation interview around nine months after the start. A timely interview was most common for employed PhD students (1a) and scholarship PhD students (2a and 2b), as found in previous years. A go/no go interview was the least common for PhD students of the GSL and the GSBSS.

At least once a year, PhD students should have a progress interview (R&D interview). Of the senior PhD students, about 80% indicated they had such an interview; this is a slight increase of 4% compared to 2021. As in 2021, employed PhD students (1a and 1b) were those who most often replied affirmatively. The percentage of PhD students with a scholarship from UG/UMCG indicating that they had R&D interviews dropped compared to 2021. Although 10% more external PhD students (type 4) reported that they had R&D interviews compared to 2021, annual evaluations are still less common for this group of doctoral candidates. An annual interview seems to be most common at GSEB and GSSS. In 2019 and 2021, less than 40% of the PhD students belonging to the GSCF and GSH indicated having had an annual performance evaluation. In 2023, this percentage increased for PhD students of GSCF. The respondents reported that annual R&D interviews were still not often held at the GSH.

14 Training and Supervision Plan

Before starting a PhD project, a PhD student and their supervisors should draw up a Training and Supervision Plan (TSP), as stated in the UG PhD regulations (2022). Three months after the start of the PhD programme at the latest, a fully completed TSP should be submitted to the Graduate School.

Presence and formalization date of the TSP

Of the 1,303 PhD students in the sample, 941 answered the question, and of this group, almost 97% (N = 910, 97%) had a TSP. This percentage was slightly increased compared to 2021 (94%). PhD students with a TSP were asked to indicate how many months after the start of their PhD trajectory their TSP was formalized. For approximately 78%, the TSP was formalized within three months (see Table 75), as prescribed by the PhD regulations. For 20% of this group, this was done before the start; for 15%, it was formalized at the start; for 10%, within one month after the start; and for 30%, the TSP was formalized between one and three months after the start. These results are comparable to previous years.

Table 75 **How many months after the start of your PhD was your TSP formalized?**

Answer	N	%
Before start	177	20
At start	139	15
Within one month	117	13
Within three months	271	30
Within one year	131	14
I don't know/remember	75	8
Total	910	100

Group differences

Differences in the presence of a TSP were compared for PhD student type and Graduate School. As shown in Table 75, almost all employed PhD students (1a) and scholarship PhD students (2a and 2b) declared that they had a TSP (indicated in green). This is still less for external PhD students (type 4) or for those who are externally funded (type 3) (both indicated in pink), although the proportion has increased compared to 2021 (see Table 76) and 2019 (both around 60%, not shown in table). For 2023, the differences between the lowest (indicated in pink) and highest (indicated in green) were statistically significant.

Table 76 **Presence of TSP; percentages presented by PhD student type**

PhD student type	2023	2023	2021
	N	%	%
1a. Employee	615	98	95
1b. Employed in PhD track	31	86	88
2a. UG/UMCG scholarship	175	99	97
2b. Other scholarship	261	99	97
3. Externally financed	96	95	89
4. External	61	87	73

Note: *Group differences for scores are highlighted in pink (lowest) and green (highest) if the difference between the lowest and highest scores was statistically significant.*

Table 77 shows the percentage of PhD students that reported having a TSP by Graduate School. For GSBSS and GSH these percentages increased significantly. There was also an increase for GSL, but still the percentage for this Graduate School was still among the lowest, as in 2021. For the 2023 survey, the differences between the lowest (indicated in pink) and highest percentages (indicated in green) were significant. An overview of the presence of a TSP in the survey years of 2015, 2017, 2019, 2021 and 2023 for the larger Graduate Schools is presented in Figure G1 in the Appendix.

Table 77 Presence of TSP by Graduate School

Graduate School	2023	2023	2021
	N	%	%
GSBSS	84	96	88
GSCF	22	100	x
GSEB	44	100	100
GSH	70	97	89
GSL	31	84	78
GSMS	298	96	92
GSP	9	82	x
GSSE	293	99	98
GSSS	41	100	88
GSTRS	17	94	x

Note: *Group differences for scores are highlighted in pink (lowest) and green (highest) if the difference between the lowest and highest scores was statistically significant.*

Elements in TSP

PhD students who declared that they had a TSP were asked what kinds of elements are described in their TSP. Two aspects were new this year: an indication of the number of chapters in the thesis and the number of publications. Over the years, about 10% of the sample could not name any elements in the TSP. Compared to 2021, increases are present for all aspects, except for the PhD requirements, which were mentioned less often in 2023, compared to previous years. Figure G2 in the Appendix presents the different elements of the TSP for the last five biennial PhD surveys.

Table 78 Which of the following elements are included in your TSP? (indicate all that apply)

Answer	N	%
Research content and design	730	88
Planning	757	91
Number of contact hours with your supervisors	365	44
Educational activities	701	84
Teaching activities	435	52
Evaluation moments and appraisal of milestones	412	50
Number of chapters	200	24
Number of publications	141	17
PhD requirements, e.g. the number of papers to be published or submitted	128	15
I don't know/remember	79	9

Regular update of the TSP

PhD students were asked whether their TSP was updated at least once a year. Compared to 2021, the proportion of PhD students that indicated that their TSP was regularly updated increased from 24% in 2021 to 29% in 2023 (see *Table 79*). The percentage that indicated this was not the case dropped from 62% in 2021 to 59% in 2023. For around 8% of the PhD students, a regular update is not (yet) applicable. Table 78 shows the distribution of the answer categories by PhD student type. The percentage of respondents that indicated that their TSP was regularly updated was the highest among employed PhD students (1a), PhD scholarship students (2a) and external PhD students (4) (indicated in green), while it was the lowest for externally financed PhD students (3) (indicated in pink). The differences between these groups were statistically significant.

Table 79 Overview of percentages on regular update of TSP by PhD student type

	Yes		No		Not applicable (yet)	
PhD student type	N	%	N	%	N	%
1a. Employee	158	35	270	60	22	5
1b. Employed in PhD track	8	31	15	58	3	12
2a. UG/UMCG scholarship	50	37	80	58	7	5
2b. Other scholarship	54	30	96	54	29	16
3. Externally financed	18	25	48	67	6	8
4. External	16	35	25	54	5	11
UG	304	33	534	59	72	8

Note: *Group differences for scores are highlighted in pink (lowest) and green (highest) if the difference between the lowest and highest scores was statistically significant.*

Table 80 shows the division over the three answer categories by Graduate School. PhD students from GSTRS and GSSS reported the highest percentage of regular updates (indicated in green). Regular updates of the TSP were the least common at GSL (indicated in pink).

Table 80 Overview of percentages on regular update of TSP by Graduate School

Answer		Yes		No		Not applicable (yet)	
Graduate School	N	%	N	%	N	%
GSBSS	24	29	53	63	7	8
GSCF	9	41	12	55	1	5
GSEB	18	41	25	57	1	2
GSH	16	23	51	73	3	4
GSL	1	3	27	87	3	10
GSMS	116	39	156	52	26	9
GSP	4	44	4	44	1	11
GSSE	84	29	187	64	22	8
GSSS	21	51	15	37	5	12
GSTRS	10	59	4	24	3	18
UG	304	33	534	59	72	8

Note: *Group differences for scores are highlighted in pink (lowest) and green (highest) if the difference between the lowest and highest scores was statistically significant.*

Agreement with statements about the TSP

Table 81 shows to what extent PhD students found the TSP relevant to their PhD trajectory. This was based on six statements that they had to score on a five-point scale (from 1 = completely disagree to 5 = completely agree). The first statement was added to the 2023 survey. PhD students agreed most with the statement: 'Drawing up a TSP helped me to plan my PhD project'. The scores on the separate propositions, as well as the average scale scores, are comparable to previous years.

Table 81 Agreement with statements about the TSP

Statement	N	Mean	Sd
The TSP contributes to the smooth progress of my PhD project*	775	2.9	1.2
My TSP serves as a good guideline for my time as a PhD student	770	3.0	1.2
Drawing up a TSP helped me to plan my PhD project	748	3.7	1.0
I can revise my TSP when necessary	730	2.9	1.3
My TSP is evaluated regularly during my Results & Development or annual interview/evaluation	771	3.3	1.0
Overall, I am satisfied with my TSP	775	2.9	1.2
TSP scale score (α = 0.90)	1,227	3.3	1.0

Note: *new proposition in the 2023 survey*

Group differences
This year, differences were examined for PhD student type and Graduate School. *Table 82* shows the average TSP experience score by PhD student types. External PhD students valued their TSP significantly more than employees in a PhD track. Table 83 displays the average scores for each of the ten Graduate Schools. The difference between GSL and GSRCS is one whole point and statistically significant. Differences in the agreement with the six individual propositions are found in the Appendix (in and in).

Table 82 TSP scale score by PhD student type

PhD student type	N	Mean	Sd
1a Employed PhD student	613	3.2	0.9
1b Employee in PhD track	31	3.0	0.9
2a Scholarship UG/UMCG	173	3.3	0.9
2b Scholarship other	260	3.6	0.8
3 Externally financed	93	3.2	0.9
4 External PhD	57	3.9	0.7

Table 83 TSP scale score by Graduate School

Graduate School	N	Mean	Sd
GSBSS	109	3.2	1.0
GSCF	29	3.5	0.8
GSEB	59	3.2	0.8
GSH	99	3.4	0.9
GSL	45	2.8	1.0
GSMS	403	3.3	0.8
GSP	12	3.4	0.8
GSSE	394	3.4	0.9
GSSS	56	3.6	0.7
GSTRS	19	3.8	0.6

Abbreviations: *GSBSS = Graduate School of Behavioural and Social Sciences; GSCF = Graduate School of Campus Fryslân; GSEB = Graduate School of Economics and Business; GSH = Graduate School of 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.*

Chapter conclusions

A Training and Supervision Plan (TSP) should be drawn up before the start of a PhD project and uploaded to Hora Finita within the first three months. In 2023, almost all PhD students indicated having a TSP (97%), which is a further increase compared to previous years. A TSP was most common for employed PhD students (1a) and PhD students with a scholarship (2a and 2b). In 2021, the presence of a TSP was the lowest at GSBSS, GSH and GSL. For the first two Graduate Schools, the proportion of PhD students who confirmed having a TSP increased significantly; however, for GSL this proportion was still among the lowest. Compared to 2021, the proportion of PhD students that indicated that their TSP was regularly updated slightly increased, from 24% in 2021 to 29% in 2023. Although having a TSP was less common among external PhD students, this group appreciated the value of the TSP.

15 Planning and Delay

This chapter explores planning and delay. PhD students who declared being delayed were asked about the length of the delay, the reasons for the delay and whether agreements about extensions had been made.

Planning and delay

Table 84 presents the responses to the question, 'Are you currently on schedule with your planning?' Almost 60% declared being on schedule. This is more than in previous surveys (around 40%). The percentage of PhD students that declared being delayed (34%) was lower than in 2021 (50%) but still higher than in 2019 (25%). The percentage of PhD students that affirmed not having a schedule or did not know whether they were on schedule is comparable to previous years (around 5%).

Table 84 Are you currently on schedule with your planning?

Answer	N	%
Yes	740	57
No, I have fallen behind schedule	441	34
I don't have a schedule	61	5
I don't know	61	5
Total	1,303	100

Group differences
Group differences were examined for phase, PhD student type and Graduate School. Differences were only present for the two phases. Logically, the percentage of senior PhD students who declared being delayed (42%) was larger than the percentage among PhD students in their first year (12%). Table 30 displays the four answer categories for each phase.

Figure 30 Percentage of PhD students indicating whether they are on schedule by phase
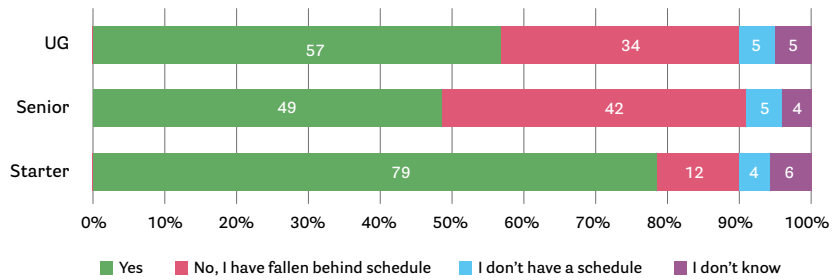

Figure 31 Percentage of PhD students indicating if they are on schedule by Graduate School.
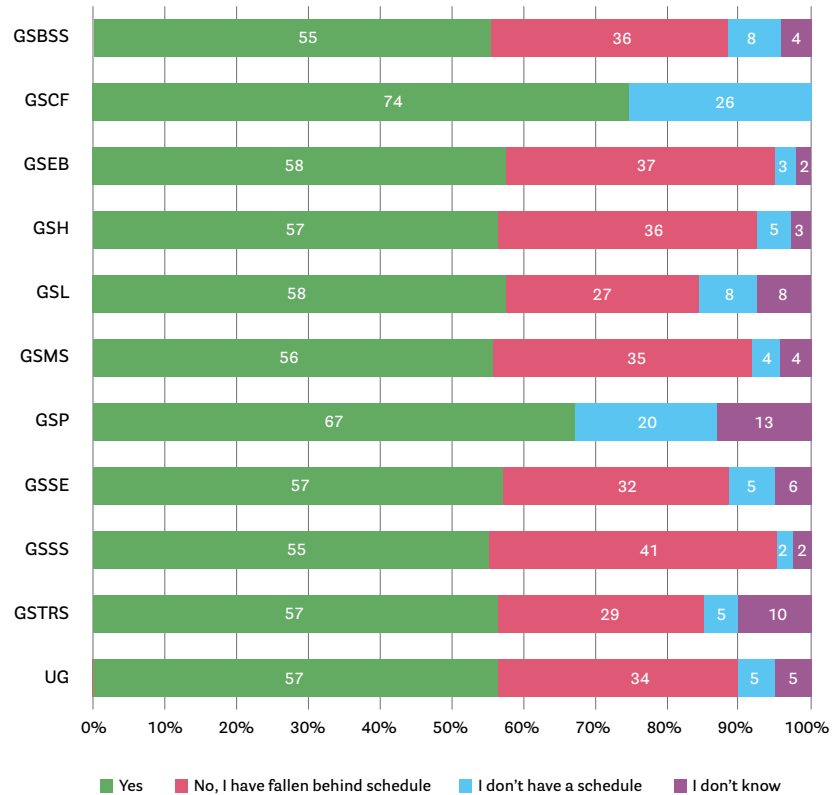
Abbreviations: *GSBSS = Graduate School of Behavioural and Social Sciences; GSCF = Graduate School of Campus Fryslân; GSEB = Graduate School of Economics and Business; GSH = Graduate School of Humanities; GSL = Graduate School of Law; GSMS = Graduate School of Medical Sciences; GSSE = Graduate School of Science and Engineering; GSSS = Graduate School of Spatial Sciences; GSTRS = Graduate School of Theology and Religious Studies.*

Figure 31 shows the differences in division over the answer categories between the larger Graduate Schools. GSCF and GSP have the highest percentage of PhD students that declared being on schedule (74% and 67% resp.); however, a high proportion of the PhD students of these Graduate Schools also reported having no schedule (26% and 20% resp.). The GSSS had the highest proportion of PhD students (41%) who indicated being delayed.

Self-reported expected delay

PhD students who indicated being delayed (N = 441) were asked to estimate their expected delay About 17% expected a delay of less than three months; just over 30% expected a delay of more than three but less than six months; 16% expected a delay of half a year; while 23% expected a delay of nine months or more (see Figure 32). Compared to 2021, there was an increase in the percentage of respondents who expected delays below three months or over nine months (12% and 13% resp.) while there was a decrease in the percentage of those who expected delays between three or nine months (38% and 21 % resp.). Almost 12% did not know how long their delay would be, which was 4% less compared to 2021 (16%).

Figure 32 Self-reported expected delay; percentages displayed by answer category
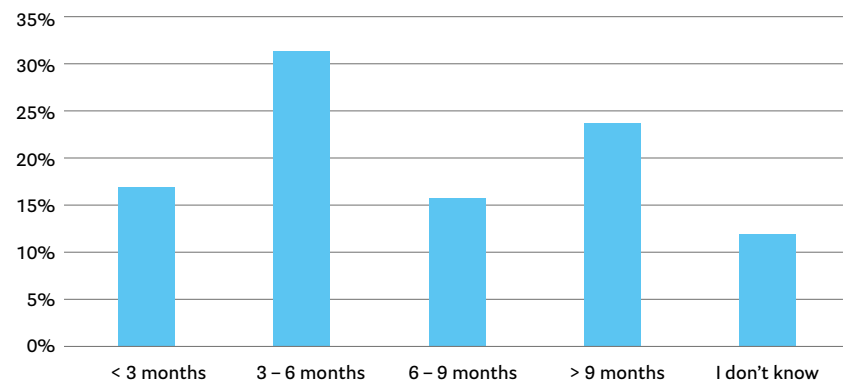
Group differences

No differences were found between Graduate Schools and PhD student types regarding the expected delay.

Reasons for delay

PhD students could indicate the reasons for their delay. The average number of reasons given was 2.9 (Sd = 1.7, minimum = 0, maximum = 16 reasons); this is less than in 2021, when the average number of reasons indicated was 3.3. As reported in Table 85, COVID-19 (55%) was mentioned most often, followed by experiment or data collection (47%), too ambitious a project (35%) and bad time management (30%). These aspects all fall into the category of project-related issues. In the category of personal issues, motivational issues (30%) and mental health problems (29%) were mentioned by about one-third of the delayed PhD students. These reasons were also mentioned most frequently in the 2021 and 2019 surveys.

Table 85 **What are/were the main reasons for your delay? (indicate all that apply)**

Answer	N	%
Part 1. Supervisor-related issues		
Insufficient assistance/supervision	105	24
Adding new research themes by my supervisor(s)	60	14
Unrealistic expectations by my supervisor(s)	72	16
My supervisor(s) did not take my concerns about a possible delay seriously	55	12
Conflict(s) and/or miscommunication with my supervisor(s)	60	14
Part 2. Project-related issues		
Too ambitious a project	154	35
Extra experiment/analysis (on my own initiative)	70	16
Extra experiment/analysis (desired by supervisor)	64	15
Problems with experiment or data collection	208	47
Problems with writing	113	26
Problems with publishing papers	74	17
Bad time management	133	30
Practical, logistical or financial problems	115	26
COVID-19 related problems	242	55

	N	%
Part 3. Other activities		
Extra courses in excess of the normal package	35	8
Extra teaching duties or student supervision	52	12
Other duties (e.g. job) not related to PhD project	103	23
Part 4. Personal circumstances		
Working part-time on PhD project	72	16
Physical health problems	56	13
Mental health problems	129	29
Pregnancy or parenthood	34	8
Home care for family members, neighbours, etc.	49	11
Motivational issues	134	30
Other, namely:	31	7
Death in family	6	1
Other	25	6

Group differences

Differences in the reasons mentioned were examined for phase, PhD student type, Graduate School and nationality. For phase, there were significant differences concerning the following five reasons: 'Problems with experiment or data collection'; 'Problems with publishing papers'; 'COVID-19 related problems'; and 'Pregnancy and parenthood', which were all significantly more often mentioned by seniors; while 'Bad time management' was more often mentioned by starters.

Concerning PhD student type, there were significant differences concerning the following reasons: 'Too ambitious a project' (least often mentioned by 1b; < 15%); 'COVID-19 related problems' (most often cited by 1a, 2a and 2b; > 50%); 'Other duties not related to PhD project' (most often mentioned by 3 and 4; > 50%); 'Working part-time on PhD project' (most frequently cited by 2b and 4; > 60%); Care for family or neighbours' (most often mentioned by 3 and 4; > 20%); and 'Motivational issues' (most frequently cited by 1a, 2a, 2b; > 30%).

For the various Graduate Schools, we saw differences regarding the following reasons: 'Problems with experiment or data collection', 'Problems with writing', 'Bad time management', 'Practical, logistic or financial problem', 'Working part-time on PhD project', 'Mental health problems, 'Home care for family members, neighbours' and 'Motivational issues'. The differences are indicated in *Table 86*. Percentages that are at least 8% higher than the UG average (for a particular issue) are indicated in yellow and bold.

Below, we provide a summary of the most prevalent reasons for delay:
– Problems with experiments and data collection were most often mentioned by GSMS doctoral candidates
– Problems with writing were most frequently mentioned by respondents belonging to GSH, GSL and GSSS
– Bad time management was cited most often by PhD students from GSBSS, GSL and GSSE
– Practical and financial problems were considered most prevalent by respondents from GSL and GSMS
– Working part-time was mentioned most frequently by those from GSBSS
– Mental health problems were most frequently cited by respondents from GSEB and GSL.
– Motivational reasons and home care were most frequently mentioned by PhD students from GSEB.

Table 86 Reasons for being delayed; percentages displayed by Graduate School

Graduate School	UG	GSBSS	GSEB	GSH	GSL	GSMS	GSSE	GSSS
N of PhD students who were delayed	441	42	22	38	14	152	133	23
	%	%	%	%	%	%	%	%
Problems with experiment or data collection	47	33	46	45	7	**55**	50	39
Problems with writing	26	24	27	**34**	**50**	13	30	**39**
Bad time management	30	**38**	23	29	**36**	20	**38**	30
Practical, logistical or financial problems	26	26	14	**47**	7	**34**	17	22
Working part-time on PhD project	16	**29**	9	21	21	21	7	17
Mental health problems	29	33	**41**	34	**50**	20	31	39
Motivational issues	30	21	**46**	32	36	22	39	39
Home care	11	17	**27**	18	21	5	8	17

Note: *yellow and bold: at least 8% higher than the UG average. Results are only shown for Graduate Schools that had at least 10 PhD students who are delayed. The grey line displays the N, the other lines display percentages.*

Altered plans and agreements about extension

A large majority (82%, N = 363) discussed their delay with their supervisory team. Similarly to 2021, half of the delayed PhD students (46%) stated that no agreements about an extension had been made (yet) (see Table 87). Of the students, 60% had discussed the possibility of an extension, and for more than half of this group (36%), it was clear how this extension would be financed. Of the respondents, 20% stated that no agreements had been made to adapt their plan (see Table 88). Almost 80% had discussed a new plan and almost half expected to finish in time.

Table 87 Have agreements been made related to your plan?

Answer	N	%
Yes, we have adapted the plan and I expect to finish in time	129	36
Yes, we have adapted the plan but I have doubts whether I can finish in time	151	42
No, we did not make any agreements	73	20
I don't know	10	3
Total	363	100

Table 88 Have agreements been made about a possible extension of the contract?

Answer	N	%
Yes, we made agreements about an extension and how this will be financed	131	36
Yes, we made agreements about an extension of but not how this might be financed	49	14
No, we did not make any agreements	168	46
I don't know	15	4
Total	363	100
Yes, we made agreements about an extension and how this will be financed	131	36

Group differences
No differences were present between Graduate Schools regarding the discussion of the delay with the supervisory team and agreements about plans and an extension. However, differences were present regarding PhD student type, as employees in a PhD track (58%) and externally financed PhD students (37%) more often reported that agreements regarding the plan had not been made (employed PhD students 20%; bursary PhD students (2a/b) 17%; external PhD students 15%).

Chapter conclusions

The proportion of PhD students who declared being delayed in 2023 (34%) was higher compared to 2019 (25%) but lower compared to 2021 (50%). The effect of COVID-19 that was visible in 2021, seems to have been mitigated. Almost half of the PhD students indicated expecting a delay under six months. Compared to 2021, a higher proportion did not know how long their delay was (12% vs 4%). The most common mentioned reasons for the delay were COVID-19 (55%), data collection (47%), too ambitious a project (35%) and bad time management (30%). These aspects all fell into the category of project-related issues. In the category of personal issues, motivational issues (30%) and mental health problems (29%) were mentioned by about one-third of the PhD students who affirmed being delayed. These results are comparable to those of 2021. Of the delayed PhD students, just over 80% discussed their delay with their supervisory team; 78% made agreements about their plan; and 50% about an extension or possible extension.

16 Impact of COVID-19

This chapter concerns the impact of COVID-19 on the wellbeing of PhD students and progression in their project. In 2021, questions about the impact of the Covid-19 situation were added to the survey. These questions were inspired by Vitae, which performed a large study in the United Kingdom on the impact of COVID-19 on doctoral students and early career research staff.

In the 2023 survey, questions on the impact of COVID-19 were only presented to PhD students who started before March 2022. PhD students were first asked what impact COVID-19 had on their current ability to engage in several activities such as data analysis, discussing results and writing. We also asked about the impact on their mental health, progress and motivation. In 2023, three more aspects were added, namely the connection to their department or research institute and the amount and quality of supervision.

PhD students could choose from the following answer options for all aspects: strongly negative (1), negative (2), no impact (3), positive (4) and strongly positive (5). Depending on the aspect, between 6% (N = 71) and 11% (N = 141) of the PhD students indicated that the aspect did not apply to them.

Figure 33 displays the distribution over the answer categories concerning the question: 'What impact has COVID-19 had on your current ability to engage in the following aspects of your current PhD project?' The answer categories 'positive' and 'strongly positive' were combined. The following aspects had the most strongly negative/negative impact: 'Discussing ideas and findings with colleagues and peers' (67%); and 'Dissemination/sharing research findings with stakeholders/researchers' (58%). Moreover, over half (55%) of the PhD students indicated that their data collection was impacted by the pandemic, whereas only about one-third indicated that it had an impact on data analysis (35%) and writing (33%).

Compared to 2021, for discussing and sharing results, the percentage of PhD students who reported a (strongly) negative impact decreased for all aspects except for writing and data analysis, which stayed the same.

Figure 33 What impact has COVID-19 had on your current ability to engage in the following aspects of your current PhD project?

Strongly negative   Negative   No impact   (Strongly) positive
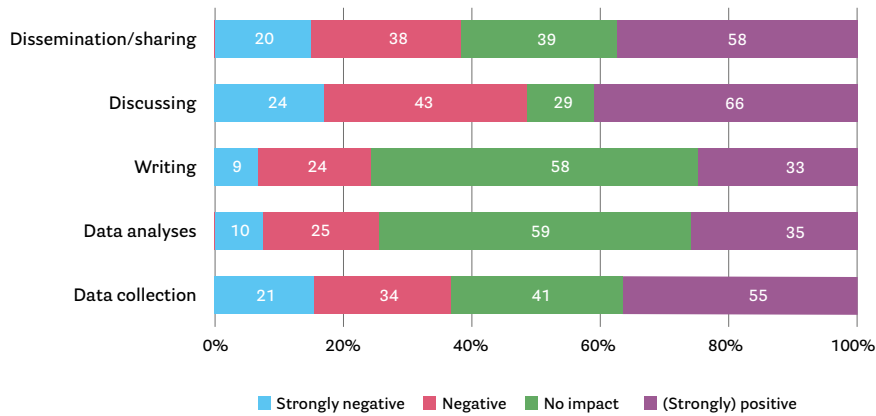
Figure 34 displays the distribution over the answer categories concerning the question: 'What impact has COVID-19 had on *other* aspects of your current PhD project?' Almost 60% of the PhD students indicated that their progress was (strongly) negatively affected and around 50% reported impact on their current mental health and connection to the department. Moreover, an effect on their motivation to work on their project was mentioned by almost 40%. Around 25% reported an impact on their supervision. Just over 20% indicated that the COVID-19 situation had impacted their future career prospects. Compared to 2021, the percentage of PhD students who indicated a (strongly) negative impact decreased for all aspects.

Figure 34 What impact has COVID-19 had on other aspects of your current PhD project?

Strongly negative   Negative   No impact   (Strongly) positive
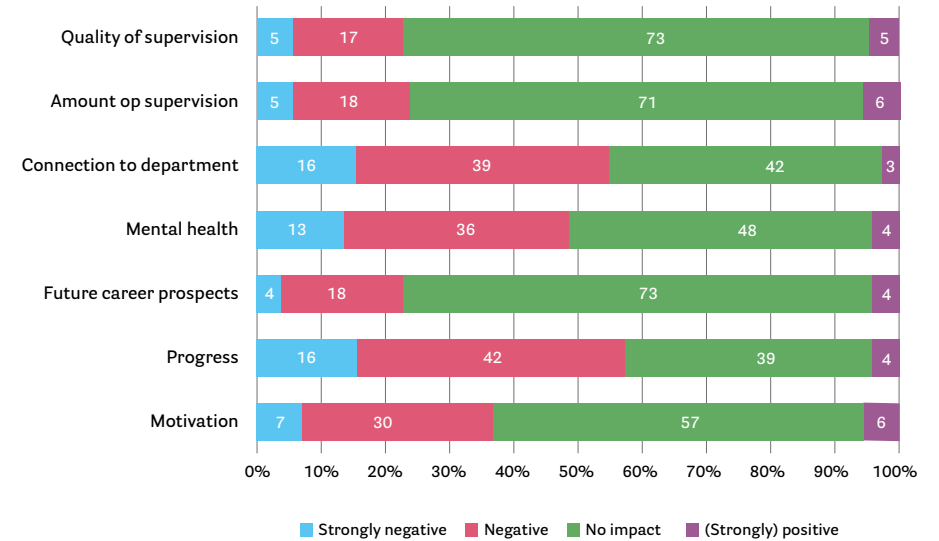
Chapter conclusion

COVID-19 was still perceived as having an impact on the current PhD projects of senior PhD students. This mainly concerned data collection, writing, data-analysis, discussing results, mental health and connection to the department. Compared to 2021, the percentage PhD students who reported a negative impact decreased for all aspects except for writing and data analysis. Our results are consistent with those found by the Vitae follow-up study in the UK: overall researchers reported less in-person contact with research group members and more than half reported poor levels of wellbeing and mental health.

17 Future career: preparation, aspirations and prospects

The UG stimulates PhD students to start exploring their options for their future careers from their first year onwards (Career Perspectives Series). **This chapter concerns, firstly, the role of the UG, the Graduate Schools and supervisors in preparing PhD students for their future careers, either within or outside academia. Secondly, participation in career preparation/orientation activities is presented. Finally, career aspirations and the assessment of prospects within academia are presented.**

Exploring career options

As shown in Table 89, 44% of the PhD students indicated that they have started exploring their career options, while 33% had not done so yet. These percentages are comparable to 2019 and 2021. Clear differences were found depending on the phase of the PhD project. About 50% of the first-year PhD students indicated that they had not yet explored their options for a future career (which is comparable to 2019, but a decrease compared to 2021 [60%]). Half of the senior PhD students reported that they had explored their options (60% in 2021).

Table 89 **Are you currently exploring options for a future career?**

| | | UG | Starter | Senior |
	N	%	N = 342 %	N = 961 %
Answer				
Yes	570	44	26	50
No, not yet	431	33	50	27
No, I already know what I am going to do/ want to do after my PhD	210	16	17	16
No, I'll be/I am working as a medical specialist	41	3	4	3
Not applicable	51	4	3	4
Total	1,303			

Abbreviations: *Abbreviation: UG = University of Groningen*

PhD students, who declared that they had not yet explored their options were asked when they will start doing this. Of the 171 starters, 56% confirmed that they will do this in their second or second to final year and 27% said they would do it in their final year. These percentages are mirrored by the 260 senior PhD students, as 27% said that they will explore their options in the year before their final year and 58% declared that they would do this in their final year. In both groups, about 16-18% answered that they did not know when they would explore their career options.

Medical specialists
Of the 41 PhD students who aspired to work as medical specialists, the majority (71%) declared they wanted a career in a university hospital combining patient care with research. Only 5% said that they aspired to work in a hospital and be primarily involved in patient care. The remaining 25% declared the desire to work in a general hospital and be involved in patient care.

Participation in career preparation activities

PhD students were asked to indicate the type of activities they had participated in as preparation for their future career (multiple answers were allowed). Of the sample (N = 1,303), just over half (54%, N = 656) indicated not to have participated in any of the activities listed, which is comparable to 2021.

The distribution of the 461 PhD students (38%) who participated in at least one activity (80 PhD students did not answer the question) is shown in Table 90. Three-quarters of this group participated in the UG PhD day (new answer option this year). Compared to 2021, participation in career orientation workshops dropped from 63% to 36%. The UG Career Services were also consulted less (10% vs 18% in 2021), job markets/events were attended less (11% vs 28% in 2021) and company/alumni presentations/visits were attended less (14% vs 22% in 2021). The answers of the 15 PhD students who selected the option 'other' could not be categorized into sub-categories of more than 5 students.

Table 90 During your PhD track, did you participate in any of the following career activities? (indicate all that apply)

Answer	N	%
Guidance from the UG Career Services	57	10
The UG PhD day	425	75
Career orientation course(s) and/or workshop(s) (such as job application training or LinkedIn workshop)	203	36
Job market/career event	64	11
Company visit or presentations by companies or alumni	80	14
Other activities	15	3
Total number of PhD students who participated in at least one activity	567	
Not applicable (had not yet participated in activities)	656	54

Awareness of the Career Perspectives Series

The University of Groningen, the Graduate Schools and supervisors aim to prepare PhD students for their future careers, either within or outside academia. The UG offers numerous career preparation courses as part of the Career Perspective Series (CPS). Of the PhD students who declared that they were exploring options for a future career/will do so in the future, the majority (78%, n = 939) indicated that they were aware of the CPS courses.

This awareness differed according to Graduate School, nationality and PhD student type, as shown in *Table 91*. The percentages in the table refer to the percentage of PhD students of that particular group who were aware that the UG offers career training. For example, 91% of the PhD students from the GSBSS were aware, as were 77% of the external PhD students (type 3) and 69% of the PhD students with a nationality from a country outside the EEA. Contrary to 2021, in 2023, no difference in awareness was found between starters and senior PhD students.

As in 2021, PhD scholarship students (2a) were most aware (85% vs 89% in 2021). The latter is to be expected since the Career Perspectives Series was set up for the PhD scholarship students and they are obliged to follow parts of it. The awareness among externally funded and external PhD students (types 3 and 4) increased compared to 2021. The awareness among type 2b PhD students did not increase much (69% vs 68% in 2021). This low percentage is reflected in the difference between nationality groups, where PhD students from outside the EEA were the least aware (69%) compared to those from the EER (79%) and the Netherlands (87%).

Table 91 Do you know that the University of Groningen offers opportunities for career training (e.g. Career Perspectives Series)? Percentage yes is displayed by Graduate School, PhD student type and nationality group

Graduate School	N	% Yes	PhD type	N	% Yes
GSBSS	97	91	1a	479	79
GSCF	30	97	1b	20	80
GSEB	46	82	2a	149	85
GSH	85	86	2b	179	69
GSL	42	81	3	72	77
GSMS	270	71	4	40	76
GSP	13	93	**Nationality**	**N**	**% Yes**
GSSE	294	74	Dutch	381	87
GSSS	46	85	EER	193	79
GSRCS	14	78	Non-EER	356	69

Abbreviations: *GSBSS = Graduate School of Behavioural and Social Sciences; GSCF = Graduate School of Campus Fryslân; GSEB = Graduate School of Economics and Business; GSH = Graduate School of 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; GSRCS = Graduate School of Theology and Religious Sciences, 1a = employed PhD student; 1b = employee in PhD track; 2a = PhD student on UG/UMCG scholarship; 2b = PhD student on other scholarship; 3 = externally funded PhD student; 4 = external PhD student*

As in 2019 and 2021, the lowest awareness of the CPS was found among PhD students from the GSMS (71%). Compared to 2021, awareness seems to have decreased in most Graduate Schools (see Figure 35).

Figure 35 Awareness of CPS by survey year and Graduate School

Legend: ■ 2021 ■ 2023
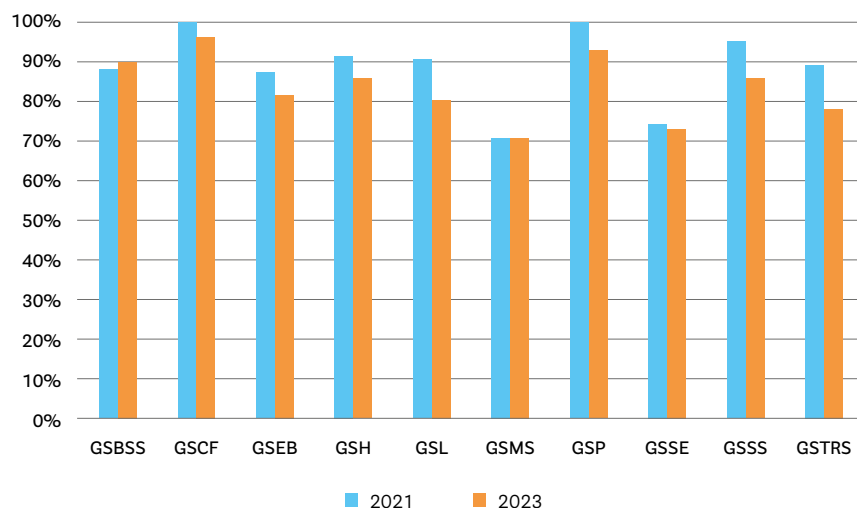
Satisfaction with the Career Perspectives Series
One of the main goals of the PhD Scholarship Programme at the UG was to establish a career orientation component (Career Perspectives Series). PhD scholarship students have the first right to participate in any of these activities (at reduced prices), but if there is still room, other PhD students may also participate. PhD students who indicated they were aware of the CPS were asked to state their agreement with the following proposition: 'The career-orientation activities offered in the Career Perspectives Series (CPS) contribute to preparing me for my future career'. They could rate their agreement on a five-point scale. Of the 486 PhD students, 36% answered 'neutral' (3), 41% agreed (4) and 8% completely agreed (5), while 6% completely disagreed (1) and 10 disagreed (2). The average agreement score was similar to 2021 and just above neutral (mean = 3.3, Sd = 1.0).

Table 92 displays the agreement scores for the total UG sample and by UNL PhD student type (UNL type 1b is not displayed, as less than five PhD students in this group answered the question). Average scores differed significantly between the groups. Type 2b PhD students agreed most, while external PhD students agreed less. Interestingly, type 2a was less satisfied than 2b.

Table 92 Agreement with: 'The career-orientation activities offered in the Career Perspectives Series (CPS) contribute to preparing me for my future career' by PhD student type

UNL type	N	Means	Sd
1a Employee	237	3.3	1.0
2a Scholarship UG/UMCG	72	3.2	1.0
2b Scholarship other	123	3.6	0.8
3 Externally financed	27	3.4	1.0
4 External PhD	23	3.0	1.0
UG	486	3.3	1.0

Support from supervisors and Graduate School in career preparation

PhD students were asked to what extent they agree with statements concerning the role of their supervisor, the University of Groningen and their Graduate School in helping them to prepare for a career within and outside academia. They could rate their agreement on a five-point scale (1 = completely disagree, 3 = neutral, 5 = completely agree). These questions were not presented to PhD students who indicated they were a medical specialist and that career preparation was not applicable to them (see Table 93).

Average agreement scores are displayed in Figure 37. PhD students agreed more with statements regarding a career within academia. Activities focused on careers outside academia (as offered within the Career Perspectives Series) are therefore more useful. As in 2019, PhD students agreed most with the statement: 'My supervisor(s) has/have a useful network that can help me to find a job within academia' (mean = 3.8). PhD students were, on average, neutral in their responses to the statements on encouragement by, and the network of, their supervisors concerning a career outside academia. These results are comparable to those of the surveys held in 2019 and 2021.

Table 93 Agreement with statements about the role of the supervisor, the University of Groningen and the Graduate School in helping the PhD student to prepare for a career

	Inside			Outside		
Statement	**N**	**Mean**	**Sd**	**N**	**Mean**	**Sd**
My supervisor(s) encourage(s) me to orient myself towards a career within/outside academia	1,006	3.4	0.9	964	2.9	0.8
My supervisor(s) has/have a useful network within/outside academia that can help me find a job.	1,055	3.8	0.9	971	3.0	1.0
My Graduate School prepares me well for a career within/outside academia	939	3.1	0.9	891	2.8	0.8
I am satisfied with the guidance that the University offers regarding career preparation within/outside academia.	938	3.2	0.9	906	2.9	0.9

Group differences

Regarding PhD student type, differences were present for two statements: 'My supervisor(s) has/have a useful network within academia that can help me find a job'; and 'I am satisfied with the guidance that the University offers regarding career preparation outside academia'. Differences between the lowest (indicated in pink) and highest (indicated in green) scores were statistically significant (see Table 94).

Table 94 Agreement scores by PhD student type regarding statements about the role of their supervisor, the University of Groningen and their Graduate School in helping them to prepare for a career

	Supervisor useful network within academia			Satisfaction UG guidance outside academia		
UNL type	**N**	**Mean**	**Sd**	**N**	**Mean**	**Sd**
1a	544	3.9	0.9	456	2.8	0.9
1b	23	3.8	0.8	17	3.2	0.8
2a	158	3.8	0.9	141	2.6	0.9
2b	213	3.5	0.9	190	2.9	0.8
3	76	3.7	0.9	54	2.9	1.1
4	41	3.7	0.9	33	2.8	0.9
UG	1,055	3.8	0.9	906	2.9	0.9

Note: *Group differences for scores are highlighted in pink (lowest) and light green (highest) if the difference between the lowest and highest scores was statistically significant.*

Abbreviations: *UG = University of Groningen; 1a = employed PhD student; 1b = employee in PhD track; 2a = PhD student on UG/UMCG scholarship; 2b = PhD student on other scholarship; 3 = externally funded PhD student; 4 = external PhD student*

Regarding Graduate School, differences were present for three of the four statements concerning career preparation *outside* academia: 'My supervisor(s) encourage(s) me to orient myself towards a career outside academia'; 'My supervisor(s) has/have a useful network outside academia that can help me find a job'; and 'I am satisfied with the guidance that the University offers regarding career preparation outside academia'. Differences between the lowest (indicated in pink) and highest (indicated in green) scores were statistically significant (see *Table 95*). Interestingly, no significant differences were present for the statement regarding satisfaction with support from the Graduate School in relation to career preparation.

Table 95 Agreement scores by Graduate School regarding statements about the role of the supervisor, the University of Groningen and the Graduate School in helping the PhD student to prepare for a career

	Supervisor encouragement		Useful network		Satisfaction UG guidance	
	N	**Mean**	**N**	**Mean**	**N**	**Mean**
UG	964	2.9	971	3.0	906	2.9
GSBSS	83	2.7	87	2.9	77	2.8
GSCF	24	3.0	25	3.0	24	2.2
GSEB	45	2.8	45	3.1	42	2.6
GSH	77	2.7	74	2.7	66	2.6
GSL	42	2.8	43	3.5	38	2.7
GSMS	306	3.0	310	3.1	283	2.9
GSP	11	2.5	11	2.3	9	2.7
GSSE	321	3.0	318	3.0	298	2.9
GSSS	37	2.9	40	3.1	37	2.8
GSTRS	16	2.9	16	2.8	16	2.6

Note: *Group differences for scores are highlighted in pink (lowest) and light green (highest) if the difference between the lowest and highest scores was statistically significant.*

Usefulness of PhD topic and acquired skills during PhD trajectory for future career

PhD students were asked to respond to two statements (on a five-point scale ranging from 1 = completely disagree to 5 = completely agree), regarding the usefulness of their PhD topic and acquired skills for their future career. Average scores, presented in Table 96, indicate that PhD students believed their PhD is more useful for a career within academia than for a career outside academia. Compared to 2021, the scores for the statements regarding the usefulness of the PhD topic increased by 0.3 points for usefulness for a career within academia and by 0.2 points for a career outside academia.

Table 96 Agreement with statements about the usefulness of the PhD topic and learned skills for a future career

	Inside			Outside		
Statement	N	Mean	Sd	N	Mean	Sd
The topic of my PhD research is useful for a future career within/outside academia.	1,188	4.1	0.7	1,181	3.6	1.0
The skills I am learning during my PhD trajectory are useful for a future career within/outside academia.	1,189	4.2	0.6	1,178	3.8	0.8

Group differences

Differences were examined for Graduate School and PhD student type. Regarding Graduate School, differences were present only for the following statement: 'The topic of my PhD research is useful for a future career outside academia', while for PhD student type, differences were present for the statement: 'The skills I am learning during my PhD trajectory are useful for a future career outside academia' (see *Table 97*). Differences between the lowest (indicated in pink) and highest (indicated in green) scores were statistically significant.

Table 97 Agreement with statements about the usefulness of the PhD topic and learned skills for a future career by Graduate school and PhD student type

| Graduate School	Usefulness topic career outside		Usefulness skills career outside		
	N	score	Type	N	score
GSBSS	104	3.7	1a	594	3.8
GSCF	31	3.8	1b	25	3.7
GSEB	54	3.7	2a	175	3.7
GSH	98	3.1	2b	248	3.7
GSL	51	4.0	3	88	4.0
GSMS	368	3.6	4	48	4.0
GSP	13	3.2	UG	1,178	3.8
GSSE	390	3.4			
GSSS	52	4.0			
GSTRS	18	3.2			
UG	1,181	3.6			

Note: *Group differences for scores are highlighted in pink (lowest) and glight reen (highest) if the difference between the lowest and highest scores was statistically significant.*

Familiarity with career options within and outside academia

PhD students were asked: 'To what extent are you familiar with the options in your field regarding a career within and outside academia?' About 4% (N = 45) answered, 'I don't know', while 7% (N = 90) did not answer this question. Percentages displayed in *Figure 36* were calculated against the subsample of N = 1,166 (1,303 minus 45 minus 92). As in previous years, PhD students were more familiar with options for a career within academia than for one outside academia (see *Figure 36*).

Figure 36 To what extent are you familiar with the options in your field regarding a career? Group differences
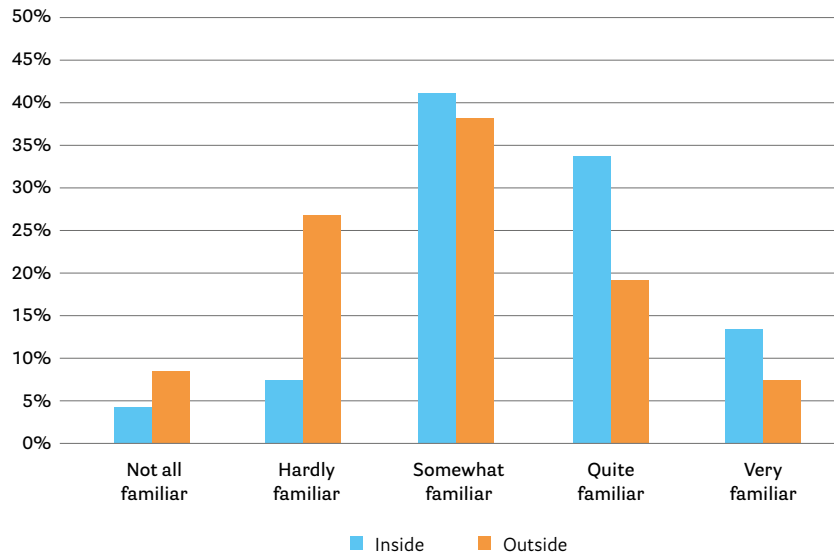
Differences were compared between Graduate Schools and PhD student type. Differences were only found for student type, as presented in Figure 36 Familiarity with job prospects within academia by PhD student type Figure 36 and *Figure 37*. Employed PhD students were the most familiar (quite + very) with their job prospects within academia (53%), while PhD students with a scholarship from an institution other than UG/UMCG (type 2b) were the least familiar with these career prospects (37%). For career prospects outside academia, employees in a PhD track (e.g. medical doctors, teachers) were most familiar (48%), while again PhD students of type 2b were the least familiar (15%).

Figure 37 Familiarity with job prospects within academia by PhD student type
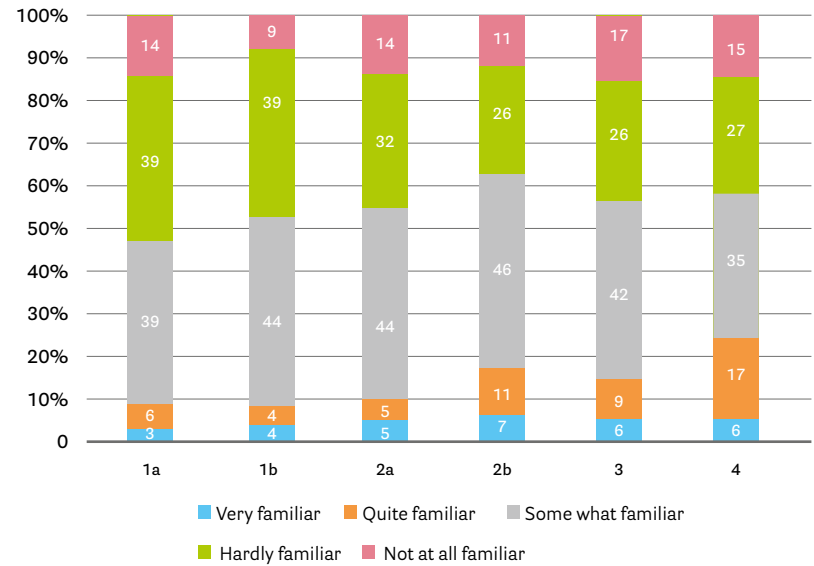
Abbreviations: *1a = employed PhD student; 1b = employee in PhD track; 2a = PhD student on UG/UMCG scholarship; 2b = PhD student on other scholarship; 3 = externally funded PhD student; 4 = external PhD student*

Figure 38 **Familiarity with job prospects outside academia by PhD student type**

Abbreviations: *1a = employed PhD student; 1b = employee in PhD track; 2a = PhD student on UG/UMCG scholarship; 2b = PhD student on other scholarship; 3 = externally funded PhD student; 4 = external PhD student*

Expectations about career prospects

PhD students were asked how they rate their chances on a scale of 0 to 100% of finding a job after completion of their PhD: a) in general, b) at the University of Groningen; and c) as a researcher in academia. The last option (c) was only displayed to PhD students who indicated that they aspired to a job within academia (N = 506) (see the next section).

Responses are displayed in Table 98. Overall, PhD students declared they were confident that they would find a job (average percentage 78%), although the high standard deviation indicates large differences between individuals. PhD students were less positive about their prospects at the UG (average percentage 41%, also with a high standard deviation). Due to differences in the question, the answers from 2021 and 2023 cannot be compared one-on-one. However, in 2021, 40% of the PhD students did not think they would have opportunities at the UG/UMCG, while 20% believed they had. These results reflect a realistic view on career opportunities at UG/UMCG.

PhD students who declared they aspired to a career in research within academia, believe their prospects were positive (70%), but again with large differences between individuals.

Table 98 **What do you think about your job prospects after your PhD in general, and within academia and outside academia? Average percentages displayed on a scale of 0 to 100**

Statement	N	Mean	Sd
How would you rate your chances of finding a job after the completion of your PhD?	1,211	77.6	19.4
How would you rate your chances of finding a job at the University of Groningen after the completion of your PhD?	1,211	41.3	27.7
How would you rate your chances of continuing to do research within academia after your PhD?	506	69.4	23.1

Group differences
Differences were examined for PhD student type and Graduate School. There were only differences between PhD student types for finding a job in general and for finding a job at the UG/UMCG (see Figure 39), but not for finding a job in academia. PhD students of type 1b were most confident about finding a job, both in general and at the UG/UMCG. As in 2021, PhD scholarship students were relatively the least confident.

Figure 39 How would you rate your chances of finding a job after the completion of your PhD in general and at the UG/UMCG? Average percentages displayed on a scale of 0 to 100 by PhD student type
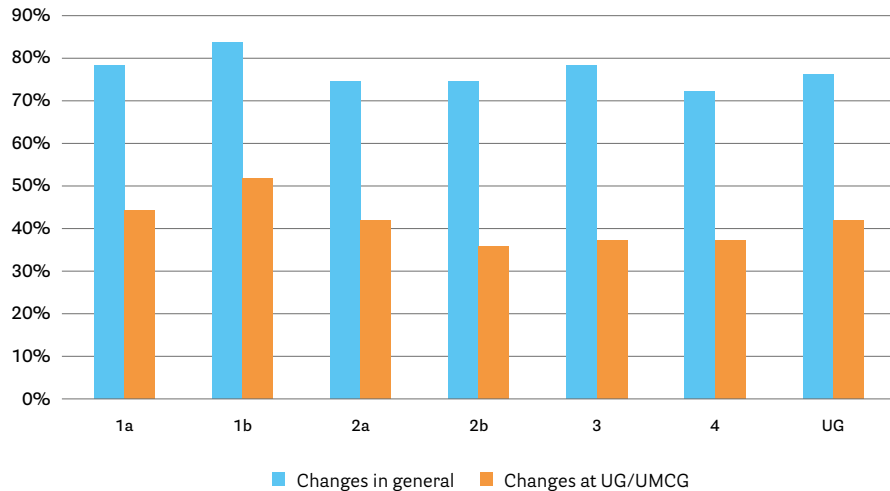
■ Changes in general   ■ Changes at UG/UMCG

Abbreviations: 1a = employed PhD student; 1b = employee in PhD track; 2a = PhD student on UG/UMCG scholarship; 2b = PhD student on other scholarship; 3 = externally funded PhD student; 4 = external PhD student

Differences between PhD populations belonging to different Graduate Schools were present for all three ratings (in general, at the UG/UMCG and within academia). See *Figure 38*. PhD students from GSBSS, GSL, GSMS and GSSS were most confident (around 80%) that they would find a job after completion of their PhD trajectory, while PhD students from GSH and GSP (just under 70%) were the least confident. Regarding finding a job at the UG, PhD students from GSL were most confident (55%), while those from GSP were the least confident (26%). These results are comparable to those of 2021.

A subset of PhD students answered the question about finding a job within academia. Of this subsample (N = 506), PhD students from GSRCS were the most confident (73%), while those from GSH and GPS were the least confident (55%), see *Figure 41*.

Figure 40 How would you rate your chances (0-100%) of finding a job after the completion of your PhD: 1) in general and 2) at the UG/UMCG? Displayed by Graduate School
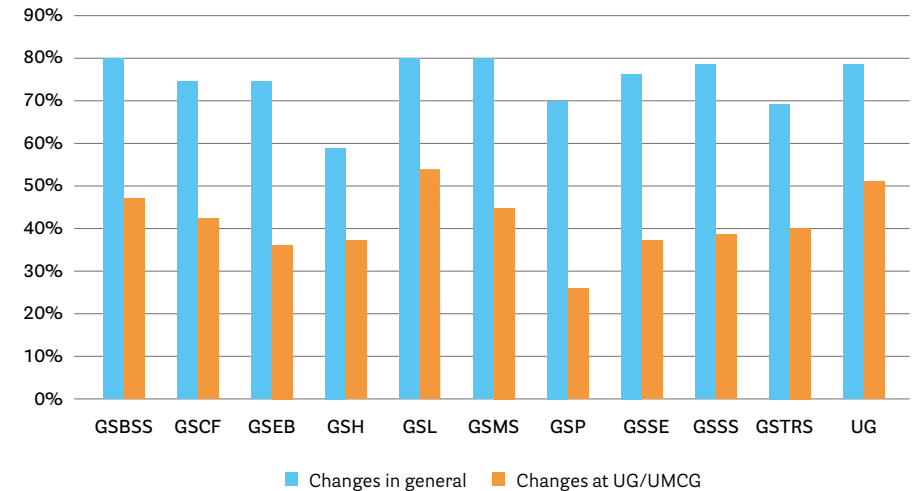
■ Changes in general   ■ Changes at UG/UMCG

Abbreviations: *UG = University of Groningen; GSBSS = Graduate School of Behavioural and Social Sciences; GSCF = Graduate School of Campus Fryslân; GSEB = Graduate School of Economics and Business; GSH = Graduate School of 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.*

Figure 41 How would you rate your chances (0-100%) of finding a job as a researcher within academia? [subsample] by Graduate School
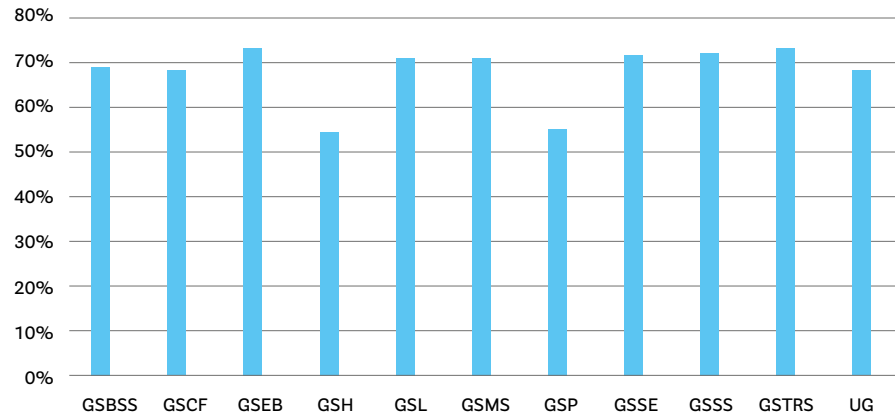
Abbreviations: *UG = University of Groningen; GSBSS = Graduate School of Behavioural and Social Sciences; GSCF = Graduate School of Campus Fryslân; GSEB = Graduate School of Economics and Business; GSH = Graduate School of Humanities; GSL = Graduate School of Law; GSMS = Graduate School of Medical Sciences; 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.*

Preferred jobs after PhD completion

PhD students were asked which career perspective they aspired to the most after graduation. They could choose from the following answer options: 1) as a researcher within academia, 2) as a researcher outside academia, 3) another career perspective, 4) I don't know, 5) not applicable to my situation. Of the sample, 4% (N = 52) did not answer this question. Comparisons with previous years cannot be made, as in 2023 PhD students had to choose between the answer options, while in previous surveys they could select multiple options. Just under two-thirds declared that they aspired to a career as a researcher (40% within and 23% outside academia), while 14% indicated that they aspired to another career and 20% did not know. See *Table 99*.

Table 99 What career perspectives do you aspire most to after graduation?

Answer	N	%
As a researcher within academia	506	40
As a researcher outside academia	288	23
Other career perspective	176	14
I don't know	246	20
Not applicable to my situation	35	3
Total	1,251	100

Group differences
Differences in the percentages of three answer categories were examined for PhD student type and Graduate School, excluding the categories 'I don't know' and 'Not applicable'. Regarding PhD student type, three-quarters of PhD students of type 2b declared they aspired a career as a researcher within academia. This is a significantly higher percentage compared to the other groups (see Figure 42). Moreover, compared to the other types, a relatively high proportion of types 1a and 3 indicated a desire for a career as a researcher outside academia (37% and 38% resp.). Finally, a relatively large proportion of PhD students of types 1b and 4 (31% and 32% resp.) declared they aspired to another career entirely.

Figure 42 What career do you aspire to most after graduation? Percentages displayed by PhD student type
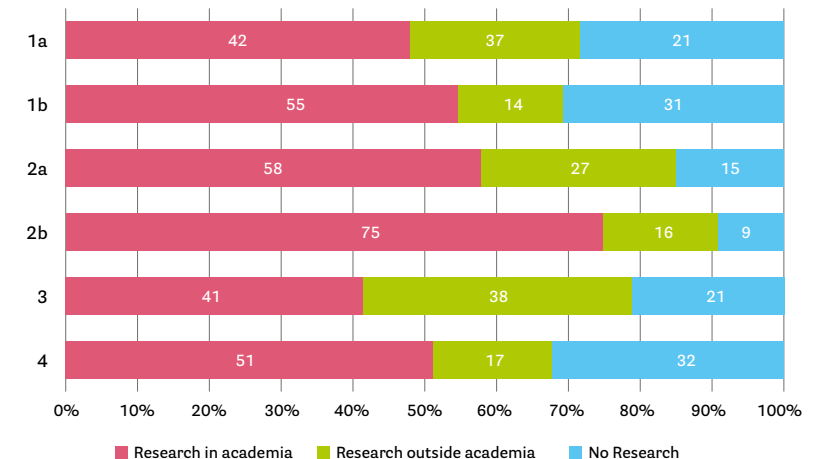
Abbreviations: *1a = employed PhD student; 1b = employee in PhD track; 2a = PhD student on UG/UMCG scholarship; 2b = PhD student on other scholarship; 3 = externally funded PhD student; 4 = external PhD student.*

Differences between Graduate Schools are shown graphically in Figure 43. GSCF, GSP and GSTRS are not displayed, as there were less than five respondents for some answer categories. The highest proportion of PhD students who aspired to a career within academia was found at GSL (71%), while the lowest percentages were found at GSMS (46%) and GSEB (47%). The highest proportion of PhD students who aspired to a research career outside academia was found at GSEB (43%) and the lowest proportion at GSL (11%).

Figure 43 What career do you aspire to most after graduation? Percentages displayed by Graduate School
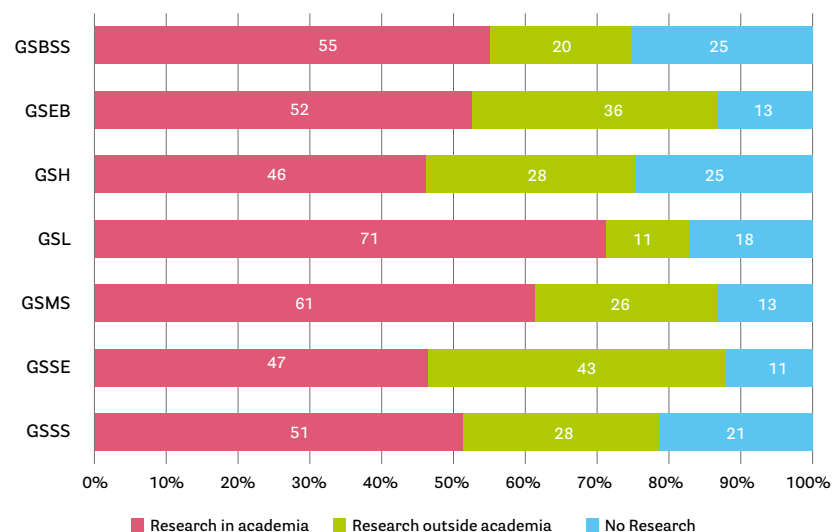
Abbreviations: *GSBSS = Graduate School of Behavioural and Social Sciences; GSCF = Graduate School of Campus Fryslân; GSEB = Graduate School of Economics and Business; GSH = Graduate School of Humanities; GSL = Graduate School of Law; GSMS = Graduate School of Medical Sciences; GSSE = Graduate School of Science and Engineering; GSSS = Graduate School of Spatial Sciences.*

Career aspirations

PhD students were asked to indicate their career aspirations. They could select any option that applied to them. As shown in Table 100, most PhD students aspired to a career as a researcher (65%) and/or a lecturer at the university (42%). Just over half (51%) desired a career as a researcher outside academia. Just over one-third indicated that they aspired to a career in industry (37%) or in a governmental organization (36%). Just under one-third wanted to work at an NGO or a non-profit organization (29%). These percentages are comparable to those of 2021.

Table 100 Where do you aspire to pursue a career after completing your PhD track? (indicate all that apply)

Answer	N	%
Researcher at the university	597	65
Lecturer at the university	386	42
Researcher outside the university	474	52
Own company	123	13
Industry	337	37
Government (national, regional or local)	328	36
NGOs and other non-profit organizations	267	29
Health care	229	25
I don't know	10	1
Other, namely:	27	3
Education other	9	
Education HBO	7	
Other < n = 5	16	
Number of PhD students who selected at least one option	960	

Chapter conclusions

As seen in previous surveys, less than half of the PhD students (44%) had started to explore their career options. For PhD students who had finished their first year, this percentage was larger (50%), but lower than in 2021 (60%). Participation in career activities, such as advice from the UG Career Services, attendance of workshops and job markets has dropped. Three-quarters indicated that they participated in the UG PhD day (new question this survey).

The UG stimulates PhD students to start exploring their options for their future careers from their first year onwards (Career Perspectives Series). Of the PhD students who were exploring options for a future career or will do so in the future, the majority (78%) were aware of the CPS courses. This knowledge was different depending on Graduate School, nationality and PhD student type, but interestingly, not related to phase. Similarly to 2021, PhD scholarship students (type 2a) were most aware (85%) of the CPS programme. Interestingly, satisfaction with the CPS programme was lower among type 2a PhD students than among type 2b. The awareness among externally funded and external PhD students (types 3 and 4) has increased compared to 2021. Awareness is lowest among PhD students from the GSMS.

Regarding the role of the supervisor, the UG and the Graduate School in career orientation, PhD students agreed more with statements regarding support for a career within academia. As in previous years, PhD students were more aware of the career options within academia. Moreover, PhD students indicated that they believed that their PhD project and acquired skills were more useful for a career within academia than for a career outside academia. Activities focusing on careers outside academia (as offered with the Career Perspectives Series) are therefore very useful.

When asked about their chances of finding a job after graduation, PhD students were quite positive, but they were less positive about their prospects at the UG. When PhD students had to select one preferred career option, approximately two-thirds declared they aspired to a career as a researcher (40% within and 23% outside academia). PhD students of type 2b were more likely to strive for a career within academia than other PhD student types. Those of types 1a and 3 more often aspired to a career outside academia, while those of types 1b and 4 more often desired another career altogether. Compared to their colleagues from other Graduate Schools, PhD students belonging to GSL were more inclined to aspire to a career as a researcher within academia, while those from the GSEB mostly aspired to a career as a researcher outside academia. Those who desired a career outside academia reported they would like to work in higher education, industry or health care.

18 Employment and scholarship conditions

The first part of this chapter concerns information provision about employment or scholarship conditions. These questions were only presented to first-year employed PhD students (UNL type 1a) and PhD students on a full or partial scholarship from UG/UMCG (UNL types 2a and 2b). The second part of the chapter concerns the importance of certain rights and benefits associated with employment. These questions were presented to all PhD students, regardless of the phase of the PhD project or PhD student type.

Information about employment/scholarship conditions

First-year PhD students answered a number of questions aimed at helping us to gain insight into how starting PhD students receive information about their employment or scholarship conditions. As shown in Table 101, employed PhD students (N = 171) mostly received this information from an appointment with HRM, during their job interview, from the information package or from the University website. PhD students on a full or partial scholarship from UG/UMCG (N = 123) obtained this information mainly from the PhD Scholarship Desk, the University website or the PhD Guide. These results are similar to those of 2021.

Table 101 How did you find out about your employment/scholarship conditions, such as the monthly payment, work hours, rights and duties?

Employed PhD students (1a)	N	%	PhD scholarship students (2a+2b)	N	%
During my job interview	39	25	At my admission interview	21	20
An appointment with HRM	85	54	At the intake interview at the Graduate School	16	16
From my Graduate School	32	20	From the PhD Scholarship Desk	46	45
From the information package	54	34	From the information package	27	26
From the University's website	52	33	From the University's website	39	38
From my PhD Guide	20	13	From my PhD Guide	32	31
Other	22	14	Other	24	23
I did not receive any information	7	4	I did not receive any information	8	7
I do not remember	6	45	I do not remember	12	10

As in previous years, 79% of the first-year employed PhD students (type 1a) and PhD scholarship students (types 2a and 2b) felt that they were given sufficient information. The 20% who were not satisfied with the information they had received, were asked to elaborate. Employed PhD students mentioned that information was scattered across various sources; others mentioned that they lacked information about their salary. Scholarship PhD students mainly mentioned that they lacked information about the difference between employed and scholarship PhD students.

Problems due to insufficient information

PhD students were asked whether they experienced problems due to inadequate information provision. The majority of both groups (employed 82%, scholarship 78%) experienced no problems. See Table 102 for an overview of all answers by PhD student type. About 3% in both groups experienced major problems. PhD scholarship students mentioned more minor problems compared to employed PhD students.

Table 102 **Have you experienced problems due to the University's provision of information regarding your employment or scholarship conditions?**

Type	Employed PhD students (1a)		PhD scholarship students (2a+2b)	
Answer	N	%	N	%
Yes, major problems	5	3	3	3
Yes, minor problems	26	15	24	20
No	138	82	95	78
Total	169	100	122	100

If there were problems, these mainly concerned unclear/absence of information on administrative obligations (such as holiday or sick leave, 30% tax rule) or delays/problems with the contract. PhD scholarship students mentioned unclear information about health insurance and problems with residence (declaring residence; residence permit). In the 2021 survey, PhD scholarship students, in particular, mentioned insufficient information on the UG scholarship website, but no remarks concerning this website were made in the 2023 survey.

Importance of rights and benefits

All PhD students were asked to share their opinions regarding the importance of, and satisfaction with, certain rights and benefits as a PhD student. The importance of each right or benefit was scored on a five-point scale ranging from 1 = not important at all to 5 = very important. As displayed in Table 103, PhD students indicated that most of the rights and benefits were important to very important to them (indicated by an average score of at least 3.5). As in previous years, having a regular monthly income, having good conditions regarding sick leave and maternity leave, and the freedom to make one's own choices in the project were considered most important. Similarly to responses in 2019 and 2021, sport facilities and the opportunity to undertake an internship at a company or government organization were not considered very important (< 3.5).

Table 103 **Importance of rights and benefits**

Rights and benefits	N	M	Sd
Having a regular monthly income	1,301	4.9	0.5
Having a pay rise every year	1,297	4.4	0.8
Receiving a holiday allowance (i.e. the equivalent of one months pay, paid out in May)	1,298	4.3	0.9
Receiving an end-of-year bonus (i.e. the equivalent of one months pay, paid out in December)	1,296	4.3	0.9
Having good conditions regarding sick leave and maternity leave	1,298	4.7	0.7
Having access to a good range of sport facilities	1,298	3.5	1.2
Having access to a good range of health facilities, including mental health services	1,297	4.1	1.1
Having the freedom to make my own choices in my project	1,300	4.4	0.7
Having flexible working hours	1,298	4.4	0.8
Being allowed to teach and supervise Bachelor's and Master's students	1,296	3.7	1.1
Being able to go abroad to do research at another university	1,299	3.8	1.1
Being able to follow an internship at a company or government organization	1,297	3.4	1.2

Group differences

Table 104 presents the extent to which the types of PhD students differ in their opinions regarding the importance of rights and benefits. For each PhD student type the most important right/benefit is indicated in blue and the least important in yellow. All types found a regular monthly income most important, except for type 4, for whom freedom in the project was of highest importance. For PhD scholarship students of type 2b, being allowed to teach/supervise was of the lowest importance, while sport facilities were valued the lowest by scholarship PhD students of type 2a and external PhD students (type 4). For the other three groups (1a, 1b and 3), internships were the least important.

Table 104 **Importance of rights and benefits by PhD student type**

Right or Benefit	PhD student type						
	1a	1b	2a	2b	3	4	UG
Regular monthly income	4.9	4.9	4.9	4.9	4.9	3.9	4.9
Pay rise every year	4.4	4.1	4.5	4.6	4.1	3.4	4.4
Holiday allowance	4.4	4.4	4.4	4.4	4.3	3.3	4.3
End-of-year bonus	4.3	4.4	4.3	4.4	4.2	3.3	4.3
Sick/maternity leave	4.7	4.8	4.8	4.7	4.6	3.7	4.7
Sport facilities	3.4	3.3	3.3	4.1	3.2	3.0	3.5
Health facilities	4.0	3.7	4.3	4.6	3.9	3.6	4.1
Freedom in project	4.5	4.4	4.3	4.4	4.6	4.4	4.4
Flexible working hours	4.4	4.3	4.2	4.5	4.5	4.3	4.4
Teach and supervise Bachelor's and Master's students	3.7	3.2	3.8	3.8	3.4	3.4	3.7
Research at university abroad	3.8	3.1	4.0	4.1	3.5	3.7	3.8
Internships	3.3	2.5	3.5	3.8	2.9	3.1	3.4

Note: blue: *most important right/benefit,* yellow: *least important right/benefit.*

Abbreviations: *1a = employed PhD student; 1b = employee in PhD track; 2a = PhD student on UG/UMCG scholarship; 2b = PhD student on other scholarship; 3 = externally funded PhD student; 4 = external PhD student; UG = University of Groningen.*

Satisfaction with rights and benefits

PhD students were asked to respond to statements regarding their satisfaction with some of these rights and benefits. The statements were phrased: 'I am satisfied with ...', and the PhD students could respond on a five-point scale ranging from 1 = completely disagree to 5 = completely agree. If a statement was not applicable to them, they could select the answer option 'not applicable'. All eight statements were presented to all PhD students except external and externally funded PhD students (UNL types 3 and 4), who did not need to reflect on income, sick/maternity leave, sport facilities and health services. Average satisfaction scores were calculated for all eight statements. As shown in Table 105, the PhD students were, in general, most satisfied with the topic of their research and the extent to which they could realize their own ideas. These results are similar to those of previous years.

Table 105 **Satisfaction with rights and benefits**

I am satisfied with ...	N	Mean	Sd
my income	1,105	3.7	1.1
conditions regarding sick/maternity leave	949	4.0	0.9
sport facilities	824	3.7	1.0
health facilities	744	3.4	1.0
research budget	1,154	3.7	1.1
topic of PhD research	1,295	4.4	0.8
extent execute own ideas	1,290	4.3	0.8
quality of PhD thesis	1,100	3.9	0.9

Group differences

There were significant differences in average satisfaction scores between the PhD student types regarding all aspects (see Table 106). These differences mainly concerned the groups scoring highest and lowest. For income, leave and health facilities, employees in a PhD track (type 1b) were the most satisfied. As in 2021, PhD students on a scholarship from UG/UMCG (2a) were significantly less satisfied with their income and leave conditions than employed PhD students (1a and 1b). While the first might be related to the fact that they do not receive bonuses and pension contributions, the perception about leave is an interesting finding, as the conditions regarding sick leave and maternity leave are exactly the same for all groups (Jongbloed et al. 2019). Apparently, the provision of information on these aspects is still not sufficient. Compared to other PhD types, employed PhD students (type 1a) and externally

financed PhD students (type 3) were most satisfied with their research budget, while external PhD students (type 4) were the least satisfied with that aspect, as also seen in the previous two surveys. Compared to PhD students who are financed by the UG/UMCG (types 1a, 1b and 2a), external PhD students (type 4) were the most satisfied with their topic, the extent to which they could execute their own ideas and the quality of their thesis. Moreover, as in 2021, we see that scholarship PhD students of type 2b were the least satisfied with the topic of their PhD research.

Table 106 **Satisfaction score on rights and benefits by PhD student type**

I am satisfied with …	1a	1b	2a	2b	3	4	UG
my income	3.9	4.2	2.9	3.5			3.7
sick/maternity leave	4.2	4.4	3.5	3.8			4.0
the sport facilities	3.6	3.7	3.67	3.9			3.7
the health facilities	3.4	3.8	3.2	3.5			3.4
the research budget	3.9	3.6	3.5	3.5	3.8	2.8	3.7
the topic of my PhD research	4.4	4.5	4.5	4.3	4.5	4.7	4.4
extent to which I can execute my own ideas	4.2	4.0	4.3	4.2	4.4	4.5	4.3
the quality of my thesis	3.8	3.8	3.8	4.0	4.07	4.1	3.9

Abbreviations: *1a = employed PhD student; 1b = employee in PhD track; 2a = PhD student on UG/UMCG scholarship; 2b = PhD student on other scholarship; 3 = externally funded PhD student; 4 = external PhD student; UG = University of Groningen.*

Chapter conclusions

Questions about information provision concerning employment/scholarship conditions were only presented to first-year employed PhD students (1a) and PhD scholarship students (type 2a). Most employed PhD students declared that they received relevant information at their HRM appointment or job interview, while most PhD scholarship students mentioned the PhD Scholarship Desk for this. The majority (80%) of both groups felt sufficiently informed.

All PhD students answered questions about the importance of, and satisfaction with, their rights and benefits. As in previous surveys, having a regular monthly income, good conditions regarding sick leave and maternity leave, and the freedom to make their own choices in the project were considered most important. In general, PhD students were moderately to highly satisfied with their conditions.

As in the 2021 survey, PhD scholarship students (type 2a) were significantly less satisfied with their income and conditions concerning sick/maternity leave, while PhD scholarship students of type 2b were the least satisfied with the topic of their PhD research. Although external PhD students (type 4) were the least satisfied with their research budget, they were very satisfied with the topic of their PhD research, the extent to which they could execute their own ideas and the quality of their thesis.

19 The final phase of the PhD project

This chapter concerns several questions about information provision during the final stage of the PhD project and whether this information was clear. Differences according to phase, PhD student type and Graduate School are examined.

Agreement on a formal completion date

To the question, 'Has an official completion date for your thesis been formalized?', just over one-quarter (27%) answered yes, while 72% answered no. One percent answered 'other' and mentioned remarks that can be summarized as 'my contract has ended'.

Group differences
Interestingly, when splitting the question for phase, more starters (29%) than seniors (26%) answered 'yes'. When examining differences by PhD student type, we see that employed PhD students were least often aware of their formal completion date (25%), while externally employed PhD students were the most aware (31%) (see *Figure 44*).

Figure 44 Has an official completion date for your thesis been formalized? Percentage 'yes' is displayed by PhD student type.
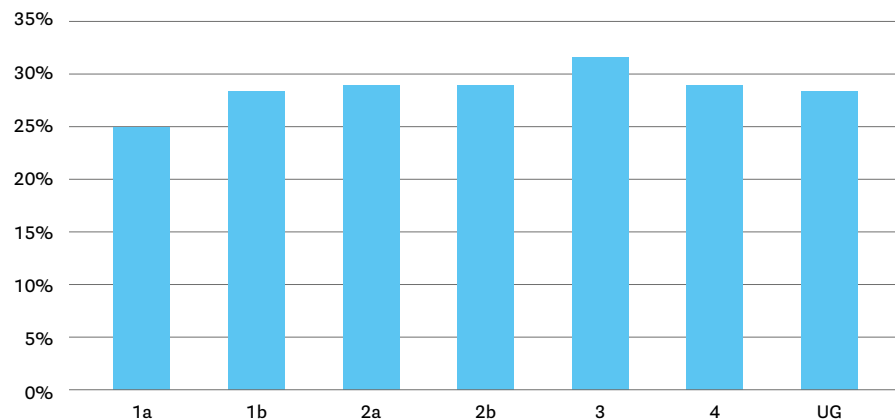
When comparing the percentage between PhD students belonging to different Graduate Schools, we saw that the highest percentages of respondents answering 'yes' (around one-third) were those of GSBSS, GSCF, GSEB, GSH, GSL and GSTRS (see Figure 45). Three Graduate Schools were below the UG average of 27%: GSMS, GSSS and GSSE, while exactly 27% of the PhD students from GSP stated positively that a formal completion date had been formalized.

Figure 45 Has an official completion date for your thesis been formalized? Percentage 'yes' is displayed by Graduate School

A follow-up question was posed to those who answered 'yes': 'With whom did you decide on the completion date?' The answers are displayed in Table 107. Just under three-quarters made the decision with the primary supervisor, one-quarter mentioned their employer and about 13% selected the answer option 'someone else'.

Table 107 With whom did you decide on the completion date?
(indicate all that apply)

Time period	N	%
Primary supervisor	254	73
Employer	87	25
Someone else, namely:	46	13
End-of-contract date	11	
Daily supervisor	8	
Total number of PhD students who answered the question	349	

Information about the thesis defence

Senior PhD students were asked whether and where they searched for information about the procedures and requirements for their thesis defence. As shown in Table 108, almost one-third declared they had, and of this group 4% could not find the information. These percentages are comparable to the 2021 survey.

Table 108 Have you searched for information about the procedures and requirements for your thesis defence?

Answer	N	%
Yes, I found it	251	26
Yes, but I could not find it	36	4
No, but I will do this soon	363	38
No, this is not yet relevant to me	303	32
Total	953	100

A follow-up question was presented to those PhD students who found information about the thesis defence (N = 251). As in the 2021 survey, almost three-quarters (72%) stated that the information was rather clear/very clear to them (see Table 109). There were no differences with regard to PhD student type or Graduate School.

Table 109 Are the procedures and requirements for your thesis defence clear to you?

Answer	N	%
Very unclear	4	2
Rather unclear	13	5
A bit clear	53	21
Rather clear	137	55
Very clear	43	17
Total	250	100

Another follow-up question was presented: 'Where did you search for information, or whom did you ask about the procedures and requirements for the thesis defence?' As shown in Figure 46, the most important sources of information were fellow PhD students (56%), PhD regulations on the UG website (54%), supervisors (46%), the PhD Guide (42%) and the Graduate School website (39%). These results were similar to previous surveys. Eight students selected the option 'other, namely', where the following workshops were mentioned: 'Defence in sight', organized by SHARE; 'Preparing for the defence', organized by the Graduate School of Humanities; and the 'End of the journey', organized by the Graduate School of Law.

Figure 46 Where did you search for information, or whom did you ask about the procedures and requirements for the thesis defence? Percentages are displayed
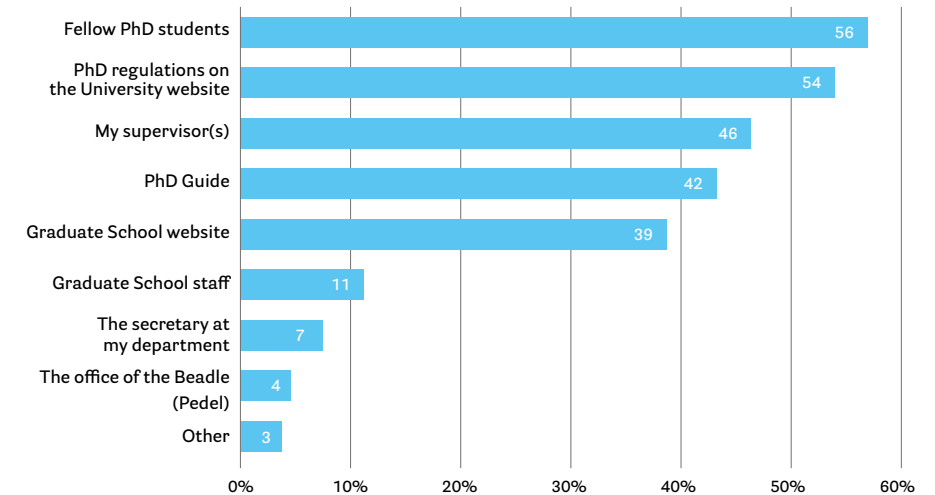
Chapter conclusions

Almost three-quarters of the PhD students had not discussed the formal completion date for their thesis. There were differences between Graduate Schools and PhD student types. Over one-third declared they had not discussed the scientific requirements of the thesis. Those who had discussed the requirements, mainly did this with their supervisor. Just under two-thirds declared being confident that the scientific requirements were achievable in the amount of time, while one-third was not sure and 7% stated that meeting the requirements in the allotted time was not feasible. Of those who discussed the scientific requirements of their thesis and read the requirements for the defence, almost three-quarters (73%) stated that both requirements were clear or rather clear.

20 Final conclusions and recommendations conditions

The aim of the biennial PhD surveys, as reflected by the results presented, is to monitor the effect of UG policies regarding PhD students and the actual outcomes in daily practice. The previous chapters have shown that, overall, PhD students are quite satisfied with their PhD trajectories. This can be concluded from the overall score of 7.5 on a ten-point scale, and from the scores on most of the more specific aspects of the PhD trajectory. However, there is also room for improvement concerning several of these aspects. For example, PhD students were only moderately satisfied with the tasks, activities and support of their Graduate School.

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

1. Continuing attention to wellbeing, workload and social safety
2. Increasing awareness of support structures
3. Decreasing the PhD finishing time
4. Helping all PhD students to use a Training and Supervision Plan
5. Training for teaching and supervising students
6. Improving familiarity with the role of the Graduate Schools
7. Broadening career-orientation opportunities towards careers outside academia

Continuing attention to wellbeing, workload and social safety

Just over 10% of UG PhD students rated their wellbeing as poor to very poor. About one-quarter stated that their PhD project had a negative to rather negative impact on their wellbeing. These results are not exclusive to the UG, with findings from the national PhD survey showing similar percentages. Practical, technical or financial issues and publication pressure were indicated as aspects that have the most negative impact. PhD students from outside the Netherlands and those in the last phase of their PhD project rated their wellbeing lower compared to Dutch and more junior PhD students, which is similar to findings from 2021. More attention needs to be paid to wellbeing, especially for the above-mentioned groups.

Sense of belonging

De Rooij et al. (2019) showed that sense of belonging is positively related to satisfaction with the PhD trajectory. In 2023, we found that informal relationships with colleagues and sense of belonging to the department scored moderately, but had slightly increased compared to 2021. Stimulating a sense of belonging in the department can decrease the risk of mental health problems and increase satisfaction with the PhD trajectory.

Workload

High workload is an significant cause of mental health problems (WHO). Moreover, high workload was found to be related to intention to quit and decreased satisfaction with the PhD trajectory (de Rooij et al. 2019). About one-third of the UG sample considered their workload high and just under 10% overly high. Both percentages have decreased compared to 2021. Similar to previous years, the most often mentioned reasons for a high workload were the amount and complexity of the PhD work, tight deadlines and publication pressure. Problems related to COVID-19 were mentioned less than in 2021, while teaching, interruptions during work and personal circumstances were mentioned more often. The percentage of PhD students working 'overtime' has decreased compared to 2021 and is similar to the years before the COVID-19 pandemic.

Impact of COVID-19

However, COVID-19 was still perceived as having a negative impact on the current PhD projects of senior PhD students. This mainly concerned data collection, discussion of results, connection to the department, progress, mental health and motivation. It was found that several physical and mental health issues were mainly due to overwork and isolation (Heo et al. 2022). Our results are consistent with those found by other national and international studies (KNAW report; Vitae studies UK).

Social safety

The University of Groningen aims to offer a study and work environment where everyone feels respected and safe. A socially safe climate contributes to a healthy work atmosphere and a pleasant study environment where everyone can flourish and perform optimally, and it improves the quality of our teaching and research. One-fifth of the PhD students who filled out the survey had experienced inappropriate behaviour. The most mentioned behaviours were abuse of power, discrimination, social intimidation and exclusion. Fortunately, the majority experienced this sporadically, but around 10% had experienced this at least monthly. In 40% of the incidences, the behaviour was displayed by supervisors and in 20% by other colleagues. It is too early to see the effects of the UG measures to increase social safety and support for victims. This will be monitored in the coming years. Our findings are comparable to those found in the National PhD survey of 2023.

Positive effect of PhD trajectory on wellbeing

Although we found that the PhD trajectory can cause stress and lower levels of wellbeing for some PhD students, 43% of the UG sample indicated that their project had a positive or fairly positive impact. Compared to the survey of 2021, the proportion of PhD students with poor to very poor wellbeing and for whom their PhD project negatively or rather negatively impacted their wellbeing had more than halved (down to 15% from 34% in 2021). We hope this positive trend will continue. Work-life balance was mentioned as having both a negative and a positive impact. Interactions with colleagues, the research work itself and interactions with daily supervisors were mentioned as having the most positive impact on wellbeing. The UG offers several avenues of support to PhD students. We hope our workshops and counselling have improved PhD students' wellbeing and positive experiences during their PhD.

Increasing awareness of support structures

While almost three-quarters of the respondents were aware of counsellors within the UG who can support them in the case of problems, this awareness was much lower among non-Dutch PhD students. In addition, about one-quarter of the PhD students who rated their wellbeing as poor or very poor had not discussed this with someone. Moreover, one-third of PhD students with a high/overly high workload had not discussed this and one-third who encountered undesirable behaviour had not taken action. More information is needed to assess whether these PhD students were unaware they could discuss these issues with either their supervisors or a PhD psychologist or counsellor. Actions to increase awareness among PhD students, especially for international students, are recommended.

Decreasing the PhD finishing time

In 2018, the nationwide average time to complete a PhD was 61 months; thus, five years on average. The average for the UG was a little over five years (62 months in 2017). As the majority of PhD students have a contract for four years, this means that many PhD students do not finish their PhD within the allocated period. The proportion of PhD students who said that they were delayed has decreased compared to 2021, but it is still higher than in 2019 (when it was 25%; 50% in 2021; 34% in 2023). Almost half of the PhD students expected a delay under six months. Although the major effect of COVID-19 that was seen in 2021 had decreased, COVID-19 was mentioned as one of the common reasons for being delayed, combined with problems due to data-collection, an overly ambitious project and bad time management. Also mentioned were health problems and lack of motivation. The majority of delayed PhD students had discussed their delay with their supervisory team to adjust their planning; for only half was an extension or possible extension part of these conversations.

Evaluation moments

Van de Schoot, Yerkes, Mouw and Sonneveld (2013) indicated that minimizing PhD delay could be facilitated by ensuring that PhD planning is undertaken within a reasonable period and by systematically evaluating the progress of PhD students. Although most PhD students at the UG have a training and supervision plan finalized within three months after the start of their PhD, 61% of the respondents indicated that their TSP was not annually updated, which is comparable to previous surveys. The importance of a regular update should not be under-estimated. About half of the PhD students reported having had an evaluation interview around nine months after the start. Of the PhD students beyond their first year, about 80% indicated they had attended the annual progress (Results and Development, R&D) interview. By ensuring that the plan remains feasible for the PhD student, unexpected practical setbacks and possible delays might be mitigated. If the PhD student and supervisor succeed in maintaining a realistic plan, the perceived workload of the PhD student might also change. Moreover, in the case of a delay, the possibility or not of an extension needs to be discussed more often. Having more time to finish the PhD project might have beneficial effects on wellbeing due to a decrease in workload and associated stress.

Selection in the first year

Among other courses for supervisors, the UG has developed the MOOC (Massive Open Online Course) 'Successful PhD Supervision: A Shared Journey' to train supervisors in better supervision, but also in better selection in the first year, so that PhD students who are not capable of finishing are not selected in the first place or they are not permitted to continue after the first year. Nine months after the start of their PhD project, PhD students should have a go/no-go interview. This interview should be preceded by an interview at six months, where the expectations of the supervisory team and PhD student are aligned. Despite the fact that invitations to these interviews are sent out automatically by Hora Finita, not all PhD students have had this interview. We encourage all supervisors to follow the MOOC and other courses on PhD supervision. Moreover, we advise that PhD students in their first year have a timely go/no-go interview.

Supervision

The 'match', both personally and academically, between PhD candidates and the supervisor is crucial for PhD success (de Rooij et al., 2019). Overall, UG PhD students were generally very satisfied with the supervision they received, although this satisfaction decreased with phase – a pattern seen in previous surveys. The relationship with the daily supervisor was considered good to very good and slightly better than with the primary supervisor. In general, PhD students agree with statements on their supervisor' academic and personal support and the autonomy and freedom they have in their project. About 40% of the PhD students were the only person in the department working on their particular topic. For another 40%, the topic of the research was closely linked to that of the supervisors' research.

Supervisors are encouraged to discuss their PhD students' wellbeing and motivation and regularly discuss the feasibility of the planning (by using the elements in the TSP). Moreover, supervisors need to be aware of the support structures and courses for both PhD students and supervisors that are available within the UG. This knowledge will assist them in advising PhD students adequately in the case of problems, but also in avoiding problems, for example by advising them to take a workshop on procrastination, project planning or how to deal with stress.

Helping all PhD students to use a Training and Supervision Plan

This year, 97% of the PhD students reported having a TSP. For just under 80%, the TSP was formalized within three months after the start of their project. Similar to previous years, a TSP is still less often present for employees in a PhD track, externally financed PhD students and external PhD students. Some efforts are still required to achieve the goal of every PhD student having a TSP, especially in the Graduate School of Law. Of the PhD students, 30% indicated that the content of their TSP was regularly updated, which is an increase of 5% compared to the previous survey.

Familiarity with elements in TSP

Over the years, about 10% of the respondents have not been able to name any of the elements described in the TSP. According to the PhD students, in most TSPs, educational activities, a work plan and the research content are specified, but the PhD requirements, number of chapters and publications, evaluation moments, teaching activities and the number of contact hours are less often mentioned. The elements in the TSP differ between Graduate Schools because no standardized format is available. For the TSP to be a genuinely helpful instrument in the PhD trajectory, it is important to include all of the elements in all TSPs and update the TSP regularly.

Use TSP in project planning

In accord with the above findings, PhD students did not agree to a large extent with the idea that their current TSP was a good guideline for their project or that it assisted them with their overall planning. However, the latter could be an important goal of a TSP, which could be used as such in relation to delay, as described in the first part of this chapter. While planning and progress are discussed during the R&D evaluation moments, alterations are not always incorporated into the TSP. We encourage both PhD students and supervisors to record the changes discussed in their TSP.

Improving familiarity with the role of the Graduate Schools

Nearly all of the PhD students knew to which Graduate School they belonged. About 20% of the PhD students were not familiar with their PhD coordinator; of the 80% who were familiar, over half had met their coordinator. As in previous years, the two most often mentioned types of support that PhD students receive from their Graduate School were the provision of information and courses/workshops. Both types of support were mentioned by over two-thirds of the PhD students, which is an increase of about 10-15% compared to the results of two years ago. The other two roles – keeping track of progress and supporting PhD students in the case of problems – were mentioned by around one-third of the respondents, similar to 2019 and 2021.

PhD students' familiarity with the roles of their Graduate School differed between Graduate Schools. It was not only in terms of the kind of support that PhD students received from their Graduate School that there were differences, as satisfaction also differed considerably between Graduate Schools. Considering all aspects, PhD students from the Graduate School of Economics and Business were the most satisfied with their Graduate School, while those from Behavioural and Social Sciences and Campus Fryslân often scored below average. Clearly, there are points for improvement for at least some Graduate Schools. In general, for most aspects, and for most Graduate Schools, satisfaction had improved compared to previous surveys.

Training for teaching and supervising

Just under 30% of the PhD students stated that they were involved in either teaching, supervising or both. On average, PhD students spent around 15% of their allocated PhD time on teaching and supervising, although percentages differed greatly between individual PhD students. Two-thirds were satisfied with the balance between teaching/supervising and other tasks within their PhD project. Of those involved in teaching, only one-third attended at least one training course. Half of the PhD students indicated feeling insufficiently prepared, but they were for the most part PhD students who had not participated in any training. The percentage of students who feel unprepared has decreased over the years (2021: 66%; 2019: 66%; 2017: 58%), so it seems that increased opportunities for teacher training within the Career Perspectives Series have had an effect. Attending one or more courses helps PhD students feel more confident in teaching and guiding undergraduate students. While the courses available are clearly presented on the website, apparently both supervisors and PhD students need to be made more aware of them.

Broadening career-orientation opportunities

The UG aims to stimulate PhD students to start exploring their options for a future career as early as the first year of their PhD. The reason for this is that only 25% will ultimately pursue an academic career, and thus an early orientation towards career options outside academia is important. In this report, it was found that only half of the PhD students who were beyond their first year engaged in such activities. In general, PhD students still feel more familiar with, and better prepared for, a career within rather than outside academia. They feel that the topic of their PhD and the skills they have learned, as well as the network of their supervisors, are more useful for a career within academia. Although around 80% of the PhD students were aware of the opportunities that the UG offers regarding career training (e.g. the Career Perspectives Series), only half agreed with the usefulness of the Career Perspective Series (CPS), so there is still work to be done to convince more PhD students to start exploring their options early in their PhD trajectory. Although only one-quarter of PhD graduates will have an academic career, around 40% still aspire to a job as a researcher at a university. This percentage is higher at the UG compared to findings from the national PhD survey, where the figure was 34%. When asked about their chances of finding a job after graduation, PhD students were quite positive, but they were less positive about their prospects at the UG. Informing PhD students about realistic job prospects at the UG and within and outside academia more generally is still of great importance.

References
– **van de Schoot R, Yerkes MA, Mouw JM, Sonneveld H** (2013) What Took Them So Long? Explaining PhD Delays among Doctoral Candidates. PLoS ONE 8(7): e68839. https://doi.org/10.1371/journal.pone.0068839
– **van Rooij E, Fokkens-Bruinsma M, Jansen E** (2021) Factors that influence PhD candidates' success: the importance of PhD project characteristics, Studies in Continuing Education, 43: 1, 48-67. DOI: 10.1080/0158037X.2019.1652158
– **Heo S, Chan AY, Diaz Peralta P, Jin L, Pereira Nunes CR, Bell ML** (2022) Impacts of the COVID-19 pandemic on scientists' productivity in science, technology, engineering, mathematics (STEM), and medicine fields. Humanit Soc Sci Commun. 9(1): 434. DOI: 10.1057/s41599-022-01466-0

Appendices

Informed consent

Table A1 Informed consent by data collection goal

Informed consent by data collection goal	N	% of 1.307
1) To improve PhD programmes at the University of Groningen	1,303	99.7
2) To gain insight into the experiences of PhD students at the national level	1,297	99.2

Appendix B
Statistical testing for group differences

Comparisons between Graduate Schools and PhD student type were tested with non-parametric Kruskal-Wallis tests, as the groups differed to a large extent, and the normality of the Likert scale data could not be assumed for the small groups. Comparisons between nationality groups and phase were examined with one-way Anova or Pearson Chi-square tests. The minimum number of respondents in a group was set at N = 15 in order to have sufficient weight for statistical testing. The significance level for each test was p = .05. See Table B1 for an overview of the tests that were used for each group comparison.

Table B1 *Overview of groups and their categories*

Groups	Category	Analysis
Nationality	Dutch	One-way Anova Pearson Chi-square
	EER, but non Dutch	
	Non-EER	
Phase	Starter	One-way Anova Pearson Chi-square
	Senior	
PhD student type	1a. Employed PhD student	Kruskal-Wallis
	1b. Employee in PhD track	
	2a. PhD student on UG/UMCG scholarship	
	2b. PhD student on other scholarship	
	3. Externally financed PhD student	
	4. External PhD student	
Graduate School	Behavioural and Social Sciences	Kruskal-Wallis
	Campus Fryslân	
	Economics and Business (SOM)	
	Humanities	
	Medical Sciences	
	Law	
	Philosophy	
	Science and Engineering	
	Spatial Sciences	
	Theology and Religious Sciences	

Appendix C
Questions to assess PhD student type

To assign each PhD student to a UNL PhD type, PhD students answered three questions that assessed how they were affiliated to the UG (or UMCG). Figure C1 displays a flow chart of the three questions to assess UNL PhD student type.

1) *'Do you presently receive a salary, funding and/or designated hours to conduct doctoral research'?*
– 'Yes'
– 'No, not presently as my contract or funding has ended'
– 'No, I never received a salary, funding or designated hours; I work on my PhD project in my spare time'.

Those who selected option 3 were considered UNL PhD student type 4 (External PhD student – 'buitenpromovendus').

PhD students who chose option 1 or 2 were presented with a follow-up question:

2) 'Which situation is most applicable to you?'
– 'I am employed as a PhD candidate by the University of Groningen/UMCG'
– 'I am employed by the UG/UMCG and have made arrangements to do a PhD but my UFO code (academic job classification) is not 'PhD candidate'
– 'I am employed as a PhD candidate by NWO I (formerly FOM), ASTRON or SRON'
– 'I am employed by an external organization (e.g. University of Applied Sciences)'
– 'I am a PhD scholarship candidate ('promotie-student'), with a full or top-up scholarship, from UG/UMCG'.

PhD students who chose option 1 were considered UNL PhD student type 1a (employed PhD student – 'werknemer-promovendus'), those who chose option 2 were considered UNL type 1b (employee in a PhD track – 'promoverend medewerker'). Those who either chose option 3 or 4 were considered UNL type 3 (externally financed PhD student – 'extern gefinancierde promovendus') and those who chose option 5 were considered UNL type 2a/2b (PhD student on a scholarship – 'beurspromovendus'). This last group was presented with a third question to assess the nature of their scholarship.

3) You are a PhD scholarship student. Which situation is (or was) applicable to you?'
– 'I have a full (or part-time) scholarship from UG/UMCG' (n = 180)
– 'I have a scholarship from my own country and a top-up scholarship from UG/UMCG' (n = 228)
– 'I had a scholarship from my own country and a top-up scholarship from UG/UMCG, but now I have an extension with a full scholarship from UG/UMCG' (n = 25)
– 'Other situation, namely...' (n = 15)

Those who selected option 1 were considered UNL PhD student type 2a (scholarship UG/UMCG), while those selecting answer options 2 or 3 were considered PhD student type 2b (other scholarship than from UG/UMCG). Answers given by 'other, namely' mainly concerned sandwich constructions or double degrees.

Figure C1 Flowchart questions to assess UNL PhD student type
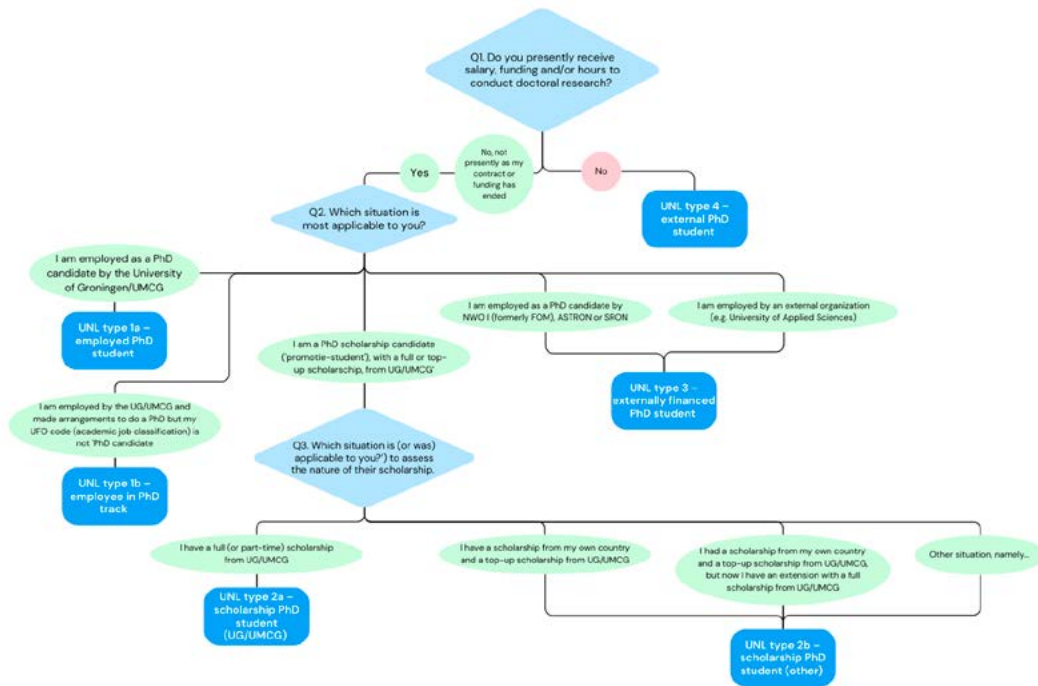
Educational background

Table D1 What was the official duration of your Master's programme?

Answer	N	%
One year	186	14
Two years	710	55
More than two years	280	22
I don't know / can't remember	27	2
Other	100	8
Total	1,303	100

Table D2 Can the final year of your Master's or Research Master's degree be considered part of your PhD project? (e.g. you wrote your PhD research proposal during your Master's degree programme, or your Master's thesis is closely related to your present PhD research)

Answer	N	%
Yes	308	25
No	902	75
Total	1,210	100

Research domain and research institute

Contrary to the 2021 survey, research domains were indicated by HOOP research domains instead of ISCED (International Standard Classification of Education) categories. The domains with an asterisk (*) are not official HOOP research domains but were added to the UG survey.

Table E1 Overview of research domains

Research domain	N	%
Agricultural (Life) Sciences (Landbouw)	9	< 1
Behavioural and Social Sciences (Gedrag en Maatschappij)	147	11
Economics (Economie)	56	4
Education Sciences (Onderwijs)	12	< 1
Engineering (Techniek)	92	7
Humanities and Linguistics (Taal en Cultuur)	123	9
Law (Rechten)	51	4
Medical Sciences (Gezondheid)	465	36
Natural Sciences (Natuur)	222	17
Other, namely:	2	< 1
I don't know	2	< 1
Mathematics and Informatics (Wiskunde en Informatica)*	51	4
Spatial Sciences (Ruimtelijke Wetenschappen)*	53	4
Theology and Religious Studies (Godsdienst Wetenschappen)*	18	1
Total	1,303	100

Note: *The research domains indicated with an asterisk (*) are not official HOOP research domains.*

Table E2a Are you part of a UG/UMCG research institute?

Answer	N	%
Yes	802	62
No	499	38
Total	1,301	100

Table E2b What is the name of your research institute?

Research Institute	N	%
Brain and Cognition	26	3
Bernoulli	34	4
CLCG	14	2
CRCG	61	8
ENTEG	34	4
ESRIG	19	2
GBB	32	4
GELIFES	32	4
GIA	13	2
GRIP	35	4
GUIDE	121	15
Het Heymans Instituut (Psychologie)	19	2
Het Nieuwenhuis Instituut (Pedagogische Wetenschappen en Lerarenopleiding)	11	1
ICOG	33	4
ISEC	1	< 1
Kapteyn Institute	15	2
W.J. Kolff Institute	55	7
KVI	1	< 1
Research Institute Campus Fryslân	1	< 1
SHARE	104	13
SOM	5	< 1
Stratingh Institute	16	2
URSI	20	3
Van Swinderen Institute	9	1
Zernike Institute for Advanced Materials	58	7
Other	15	2
I do not know	15	2
Subtotal	799	100
Missing	3	
Total (see Table E2a)	802	

Table E3a Apart from the Groningen Graduate School, are you involved in another national or international Graduate School or research school? (e.g. BCN)

Answer	N	%
Yes	309	24
No	944	76
Total	1,301	100

Table E3b What is the name of your national or international Graduate School or research school?

Name	N	%
ARCHON	6	2
BCN	96	31
EPP	5	2
GSMS	6	2
GUIDE	8	3
Huizinga institute	7	2
ICO	7	2
ICS	8	3
KLI	10	3
OIKOS	5	2
SHARE	5	2
UNAM	10	3
Subtotal	173	56
Other	136	44
Total (see Table E3a)	309	100

Table E4 Are you familiar with the Federation of Graduate Schools in Social Sciences and Humanities?

This question was only displayed to PhD students from the following Graduate Schools: Behavioural and Social Sciences, Economics and Business, Humanities, Law, Philosophy, Spatial Sciences, and Theology and Religious Sciences.

Answer	N	%
Yes	124	29
No	304	71
Total	428	100

Application

Table F1 How did you find out about your PhD project?

This question was only displayed to employed PhD students (UNL type 1a) who were in their first year

Answer	N	%
I saw a vacancy for a PhD project	77	36
Someone from the University told me and asked me to apply for an existing vacancy or project	31	14
I was offered a PhD position	38	18
I applied with my own proposal	64	29
Other	6	3
Total	216	100

Table F2 How did you find out about your PhD Scholarship Programme?

This question was only displayed to PhD Scholarship Programme students (UNL type 2a) who were in their first year

Answer	N	%
I did a Research Master's degree at the UG and they told me about it at the department	13	12
I saw the information on the UG website	20	16
Via my funding agency that awarded my scholarship	18	15
Via (one of my) supervisors	31	25
During/after my application interview	20	16
Other	20	16
Total	122	100

Table F3 Which of the following aspects were part of your application process? (multiple answers possible)

This question was only displayed to first-year PhD students (UNL types 1a and 2a)

My application process consisted of …	N	%
one (or more) formal interviews	259	59
a presentation	151	81
an assignment	43	47
I wrote my own proposal	188	13
I was offered a PhD position without a formal application interview	28	9
Number of PhD students who answered the question	321	

Table F4 Who was on the selection committee? (multiple answers possible)

This question was only displayed to first-year PhD students (UNL types 1a and 2a)

Answer	N	%
My supervisor(s)	248	73
Other people from the department in which I currently work	97	28
Someone from HRM or the Graduate School	67	20
Someone from a funding agency	37	11
I do not know	6	2
Someone else	32	9
Total number of PhD students in first year (starters)	342	

Table F5 **How did you come into contact with your primary supervisor? (multiple answers possible)**

This question was only displayed to external PhD students (UNL type 4).

Answer	N	%
I approached him/her myself and asked him/her to act as my supervisor	44	60
I submitted a PhD application to him/her	15	20
I already knew him/her, and this led to the idea of him/her acting as my supervisor	31	42
He/she was assigned to me	8	11
In another way	6	8
Total number of external PhD students	74	

Presence of Training and Supervision Plan

Figure G1 **Percentage of PhD students with a TSP in 2015, 2017, 2019, 2021 and 2023 by Graduate School**
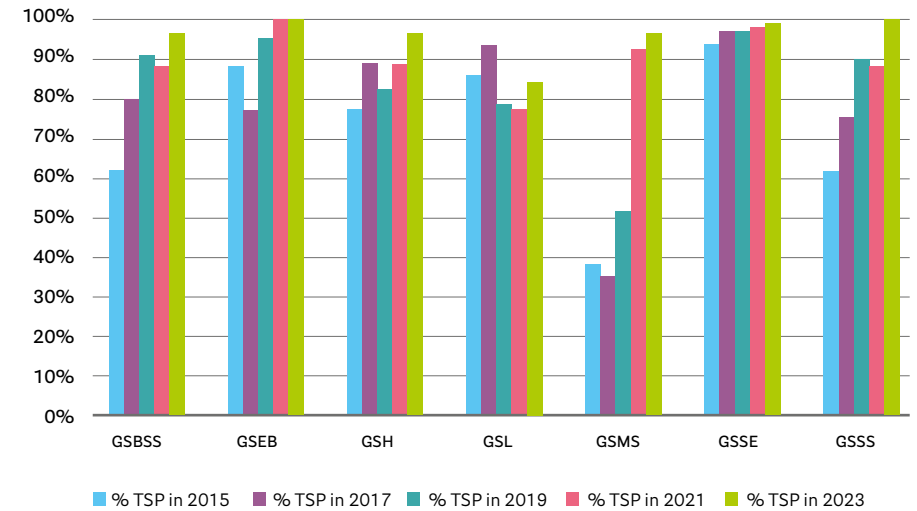
Abbreviations: *GSBSS = Graduate School of Behavioural and Social Sciences; GSEB = Graduate School of Economics and Business; GSH = Graduate School of Humanities; GSL = Graduate School of Law; GSMS = Graduate School of Medical Sciences; GSSE = Graduate School of Science and Engineering; GSSS = Graduate School of Spatial Society. Note: Only the larger Graduate Schools are included in the graph.*

Figure G2 Elements in the TSP, percentages mentioned by PhD students in survey years 2015, 2017, 2019, 2021 and 2023
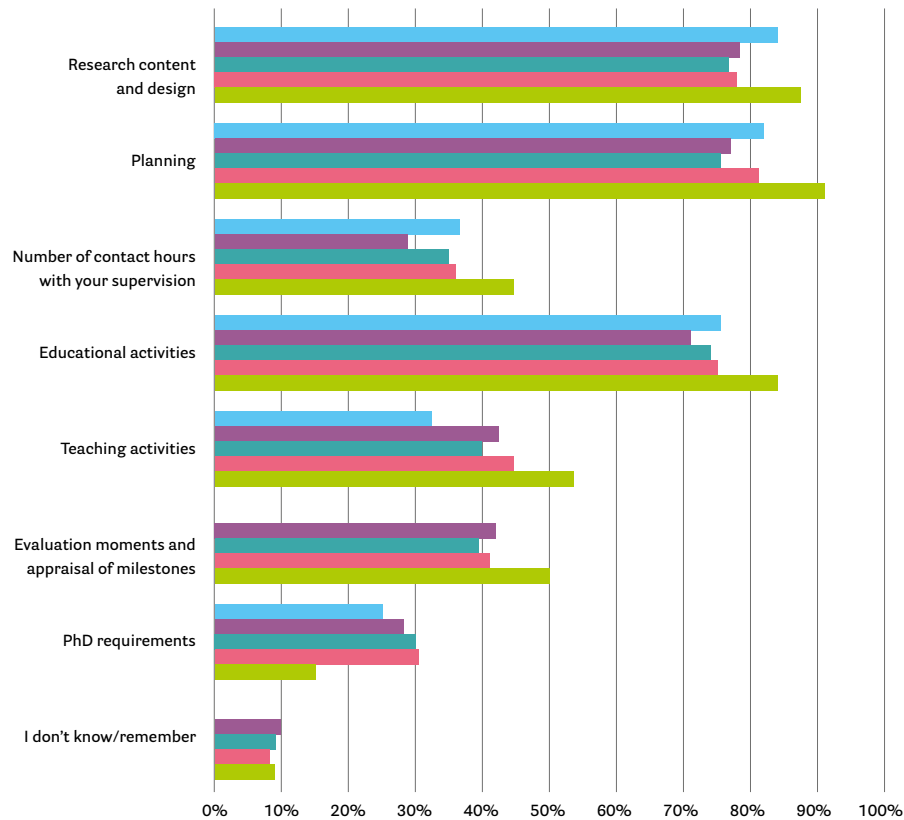
Table G3 Average agreement with propositions about the TSP by PhD student type

Type/Proposition	1a	1b	2a	2b	3	4
The TSP contributes to the smooth progress of my PhD project.	2.9	2.8	2.9	3.5	3.1	3.8
My TSP serves as a good guideline for my time as a PhD candidate.	3.0	2.8	3.0	3.6	3.1	3.8
Drawing up a TSP helped me to plan my PhD project.	3.1	3.0	3.4	3.6	3.3	4.0
I can revise my TSP when necessary.	3.7	3.8	4.0	3.9	3.7	4.1
My TSP is evaluated regularly during my R&D or annual interview/evaluation	3.2	2.9	3.2	3.5	2.9	3.7
Overall, I am satisfied with my TSP.	3.3	3.0	3.4	3.7	3.5	3.9
TSP scale score	3.2	3.0	3.3	3.6	3.2	3.9

Note: *Group differences for scores are highlighted in pink (lowest) and green (highest) if the difference between the lowest and highest scores was statistically significant.*

Abbreviations: *1a = employed PhD student; 1b = employee in PhD track; 2a = PhD student on UG/UMCG scholarship; 2b = PhD student on other scholarship; 3 = externally funded PhD student; 4 = external PhD student.*

Table G4 Average agreement with propositions about the TSP by Graduate School

GS/Proposition	GSBSS	GSCF	GSEB	GSH	GSL	GSMS	GSP	GSSS	GSTRS
The TSP contributes to the smooth progress of my PhD project.	2.9	3.1	3.1	3.2	2.6	3.0	3.0	3.3	3.6
My TSP serves as a good guideline for my time as a PhD candidate.	2.9	3.3	3.0	3.2	2.7	3.1	3.0	3.5	3.8
Drawing up a TSP helped me to plan my PhD project.	3.2	3.8	3.0	3.7	2.8	3.1	3.5	3.7	4.0
I can revise my TSP when necessary.	3.8	4.1	3.7	4.1	3.7	3.7	4.1	4.1	4.2
My TSP is evaluated regularly during my R&D or annual interview/ evaluation.	3.1	3.4	3.1	2.8	2.6	3.3	3.4	3.7	3.7
Overall, I am satisfied with my TSP.	3.5	3.4	3.6	3.5	3.0	3.3	3.3	3.6	3.7
TSP scale score	3.2	3.5	3.3	3.4	2.8	3.3	3.4	3.6	3.8

Note: *Group differences for scores are highlighted in pink (lowest) and green (highest) if the difference between the lowest and highest scores was statistically significant. Only Graduate Schools with at least 15 respondents were included in the table.*

Abbreviations: *GSBSS = Graduate School of Behavioural and Social Sciences; GSCF = Graduate School of Campus Fryslân; GSEB = Graduate School of Economics and Business; GSH = Graduate School of Humanities; GSL = Graduate School of Law; GSMS = Graduate School of Medical Sciences; GSSE = Graduate School of Science and Engineering; GSSS = Graduate School of Spatial Sciences; GSTRS = Graduate School of Theology and Religious Studies.*

Research facilities

Table H1 How satisfied are you with the following facilities?

	Workplace		Computer and software		Research facilities (e.g. lab, instruments, fieldwork, databases)	
Answer	N	%	N	%	N	%
Very Dissatisfied	26	2	43	3	22	2
Dissatisfied	93	8	152	12	59	5
Neither Satisfied nor Dissatisfied	192	15	242	19	238	22
Satisfied	619	50	559	45	549	50
Very Satisfied	315	25	257	21	225	21
Subtotal	1,245	100	1,253	100	1,093	100
I have no access to this facility	26		41		201	

	Access to library (e.g. journals, books and other resources)		Technical support in your own research group/ institute		Research support services (e.g. Research Data Office, GeoServices, High Performance Computing)	
Answer	N	%	N	%	N	%
Very Dissatisfied	8	<1	20	2	9	<1
Dissatisfied	34	3	100	8	52	5
Neither Satisfied nor Dissatisfied	141	11	261	21	353	33
Satisfied	669	52	613	49	481	45
Very Satisfied	436	34	245	20	186	17
Subtotal	1,288	100	1,239	100	1,081	100
I have no access to this facility	15		55		213	

Appendix I
Language difficulties

Table I1 **Please indicate whether you have ever experienced any of the following language difficulties (multiple answers possible)**

Answer	N	%
Problems with writing and presenting in academic English	322	49
Problems with writing and presenting in academic Dutch	106	16
Problems with general communication in the workplace due to being a non-native English speaker	200	30
Problems with general communication in the workplace due to being a non-native Dutch speaker	166	25
Problems due to colleagues being non-native English speakers	176	26
Something else	34	5
Subtotal problems	670	51
None of the above	633	49
Total	1,303	

Appendix J
Group differences for supervisors' availability and support scales

Availability

Table J1 shows the average scale scores for supervisors' availability. Starting PhD students were more satisfied compared to senior PhD students. As in 2021, PhD students from GSCF were significantly the least satisfied with the availability of their primary supervisor, while those from GSSS were the most satisfied.

Table J1 **Mean scale scores per phase, affiliation and Graduate School for primary supervisor and daily supervisor on the availability scale**

		Primary supervisor			Daily supervisor		
Availability		N	Scale	Sd	N	Scale	Sd
Phase	Starter	320	4.4	0.7	263	4.6	0.6
	Senior	917	4.1	0.9	706	4.4	0.7
PhD student type	1a	605	4.2	0.9	464	4.5	0.7
	1b	37	4.1	0.9	32	4.6	0.6
	2a	173	4.2	0.8	134	4.4	0.7
	2b	255	4.3	0.8	196	4.4	0.7
		3		97		4.1	1.0
	4	70	4.5	0.7	59	4.5	0.8
Graduate School	GBSS	114	4.3	0.7	95	4.5	0.7
	GSCF	30	3.9	1.1	28	4.4	0.7
	GSEB	60	4.3	0.7	53	4.5	0.6
	GSH	99	4.2	0.9	92	4.6	0.6
	GSL	52	4.2	1.0	31	4.3	1.0
	GSMS	422	4.2	0.8	336	4.5	0.6
	GSP	15	3.9	1.2	9	4.5	0.6
	GSSE	373	4.1	0.9	257	4.4	0.8
	GSSS	54	4.5	0.6	50	4.6	0.5
	GSTRS	16	4.3	0.6	17	4.5	0.6

Note: *Group differences for scores are highlighted in pink (lowest) and green (highest) if the difference between the lowest and highest scores was statistically significant within a group.*

Abbreviations: *1a = employed PhD student; 1b = employee in PhD track; 2a = PhD student on UG/UMCG scholarship; 2b = PhD student on other scholarship; 3 = externally funded PhD student; 4 = external PhD student; GSBSS = Graduate School of Behavioural and Social Sciences; GSCF = Graduate School of Campus Fryslân; GSEB = Graduate School of Economics and Business; GSH = Graduate School of Humanities; GSL = Graduate School of Law; GSMS = Graduate School of Medical Sciences; GSSE = Graduate School of Science and Engineering; GSSS = Graduate School of Spatial Sciences; GSTRS = Graduate School of Theology and Religious Studies.*

Academic support scale

Table J2 shows the average scale scores for the supervisory team's academic support. Starters were significantly more satisfied than senior PhD students. External PhD students were significantly more satisfied than employees in a PhD track. No significant differences were present between Graduate Schools.

Table J2 **Mean scale scores with respect to the perceived academic support from the supervisory team, as subdivided for PhD student's phase, affiliation and Graduate School**

Academic support		N	Scale	Sd
Phase	Starter	340	4.1	0.7
	Senior	958	3.8	0.8
PhD student type	1a	635	3.8	0.8
	1b	37	3.7	0.8
	2a	180	3.8	0.8
	2b	268	4.0	0.8
	3	104	3.9	0.9
	4	74	4.2	0.8
Graduate School	GBSS	118	3.9	0.8
	GSCF	31	3.8	0.8
	GSEB	60	3.9	0.8
	GSH	106	3.9	0.9
	GSL	52	3.8	0.9
	GSMS	431	3.9	0.8
	GSP	14	3.8	0.9
	GSSE	408	3.8	0.9
	GSSS	55	4.1	0.6
	GSTRS	21	4.1	0.7

Note: *Group differences for scores are highlighted in pink (lowest) and green (highest) if the difference between the lowest and highest scores was statistically significant within a group.*

Abbreviations: *1a = employed PhD student; 1b = employee in PhD track; 2a = PhD student on UG/UMCG scholarship; 2b = PhD student on other scholarship; 3 = externally funded PhD student; 4 = external PhD student; GSBSS = Graduate School of Behavioural and Social Sciences; GSCF = Graduate School of Campus Fryslân; GSEB = Graduate School of Economics and Business; GSH = Graduate School of Humanities; GSL = Graduate School of Law; GSMS = Graduate School of Medical Sciences; GSSE = Graduate School of Science and Engineering; GSSS = Graduate School of Spatial Sciences; GSTRS = Graduate School of Theology and Religious Studies.*

Personal support scale

Table J3 shows the average scale scores for supervisory team's personal support. Again, starters were more satisfied than seniors. PhD students from the GSSE were the least positive about the personal support of their supervisory team, while those from GSSS and GSRCS were the most positive.

Table J3 **Mean scale scores with respect to personal support from the supervisory team, as subdivided for PhD student's phase, affiliation and Graduate School**

Personal support		N	Scale	Sd
Phase	Starter	341	4.1	0.7
	Senior	957	4.0	0.8
PhD student type	1a	637	4.0	0.8
	1b	37	4.2	0.7
	2a	180	4.1	0.8
	2b	267	4.0	0.8
	3	103	4.1	0.8
	4	74	4.2	0.8
Graduate School	GBSS	117	4.1	0.8
	GSCF	31	4.2	0.6
	GSEB	60	4.0	0.7
	GSH	106	4.1	0.9
	GSL	52	4.1	0.9
	GSMS	431	4.0	0.8
	GSP	14	4.2	0.6
	GSSE	408	3.9	0.8
	GSSS	56	4.3	0.7
	GSTRS	21	4.3	0.7

Note: *Group differences for scores are highlighted in pink (lowest) and green (highest) if the difference between the lowest and highest scores was statistically significant within a group.*

Abbreviations: *1a = employed PhD student; 1b = employee in PhD track; 2a = PhD student on UG/UMCG scholarship; 2b = PhD student on other scholarship; 3 = externally funded PhD student; 4 = external PhD student; GSBSS = Graduate School of Behavioural and Social Sciences; GSCF = Graduate School of Campus Fryslân; GSEB = Graduate School of Economics and Business; GSH = Graduate School of Humanities; GSL = Graduate School of Law; GSMS = Graduate School of Medical Sciences; GSSE = Graduate School of Science and Engineering; GSSS = Graduate School of Spatial Sciences; GSTRS = Graduate School of Theology and Religious Studies.*

Autonomy scale

Table J4 shows the average scale scores for the supervisory team's autonomy support. As for the other scales, starters were slightly but significantly more positive than seniors. Again, external PhD students were more satisfied with the autonomy support provided by their supervision team compared to employees in a PhD track. Regarding Graduate Schools, PhD students from GSSS experienced the most autonomy support, while this was less at GSMS and GSSE. GSSE also scored the lowest in 2021.

Table J4 **Mean scale scores with respect to autonomy from the supervisory team, as subdivided for PhD student's phase, affiliation and Graduate School**

Autonomy		N	Scale	Sd
Phase	Starter	340	4.2	0.6
	Senior	958	4.1	0.7
PhD student type	1a	635	4.1	0.7
	1b	37	3.9	0.7
	2a	180	4.2	0.7
	2b	268	4.2	0.7
	3	104	4.2	0.7
	4	74	4.4	0.7
Graduate School	GBSS	118	4.1	0.8
	GSCF	31	4.2	0.7
	GSEB	60	4.2	0.7
	GSH	106	4.3	0.7
	GSL	52	4.2	0.8
	GSMS	430	4.1	0.6
	GSP	14	4.2	0.4
	GSSE	408	4.1	0.7
	GSSS	56	4.4	0.6
	GSTRS	21	4.2	0.9

Note: *Group differences for scores are highlighted in pink (lowest) and green (highest) if the difference between the lowest and highest scores was statistically significant within a group.*

Abbreviations: *1a = employed PhD student; 1b = employee in PhD track; 2a = PhD student on UG/UMCG scholarship; 2b = PhD student on other scholarship; 3 = externally funded PhD student; 4 = external PhD student; GSBSS = Graduate School of Behavioural and Social Sciences; GSCF = Graduate School of Campus Fryslân; GSEB = Graduate School of Economics and Business; GSH = Graduate School of Humanities; GSL = Graduate School of Law; GSMS = Graduate School of Medical Sciences; GSSE = Graduate School of Science and Engineering; GSSS = Graduate School of Spatial Sciences; GSTRS = Graduate School of Theology and Religious Studies.*

Relationship scales

Table J5 displays the average relationship scale scores (academic and informal relationships and sense of belonging) across groups. Contrary to 2021, where seniors were more satisfied, no differences were present according to phase.

As in previous years, external and externally financed PhD students felt the least connected with their colleagues and department. This is most likely due to the fact that these PhD students work elsewhere (or from home) and are not very integrated into the University or UMCG.

The table shows differences between Graduate Schools; no clear pattern for a specific Graduate School could be identified. In 2021, PhD students from GSEB reported the lowest average scale score for all three relationship scales.

Table J5 Mean scale scores with respect to the academic relationship scale, informal/social relationship scale and sense of belonging scale, as subdivided for PhD student's phase, affiliation and Graduate School

		Academic relationship			Informal relationship			Sense of belonging		
		N	Scale	Sd	N	Scale	Sd	N	Scale	Sd
Phase	Starter	338	3.7	0.7	338	3.4	0.9	337	3.8	0.7
	Senior	931	3.6	0.7	923	3.5	0.9	930	3.8	0.8
PhD student type	1a	631	3.7	0.7	631	3.6	0.9	630	3.9	0.8
	1b	36	3.7	0.7	36	3.6	0.8	37	3.9	0.9
	2a	179	3.5	0.7	180	3.6	0.9	180	3.8	0.8
	2b	266	3.5	0.7	267	3.3	0.8	268	3.7	0.7
	3	95	3.5	0.9	93	3.1	1.0	91	3.6	0.9
	4	62	3.6	0.9	54	3.0	1.0	61	3.6	0.8
Graduate School	GBSS	111	3.5	0.8	108	3.3	0.9	111	3.8	0.9
	GSCF	30	3.2	0.7	31	3.5	0.8	31	3.6	0.8
	GSEB	59	3.4	0.7	57	3.2	1.0	57	3.5	0.7
	GSH	99	3.4	0.9	94	3.3	1.1	97	3.8	0.8
	GSL	51	3.7	0.8	51	3.6	1.0	51	3.9	0.8
	GSMS	426	3.7	0.7	425	3.5	0.9	424	3.8	0.7
	GSP	13	3.7	0.6	13	3.9	0.9	14	4.0	0.7
	GSSE	405	3.6	0.7	407	3.5	0.9	406	3.9	0.8
	GSSS	52	3.5	0.8	52	3.4	0.8	53	3.8	0.7
	GSRCS	21	3.5	0.7	20	2.8	1.0	21	3.6	0.9

Note: *Group differences for scores are highlighted in pink (lowest) and green (highest) if the difference between the lowest and highest scores was statistically significant within a group.*

Abbreviations: *1a = employed PhD student; 1b = employee in PhD track; 2a = PhD student on UG/UMCG scholarship; 2b = PhD student on other scholarship; 3 = externally funded PhD student; 4 = external PhD student; GSBSS = Graduate School of Behavioural and Social Sciences; GSCF = Graduate School of Campus Fryslân; GSEB = Graduate School of Economics and Business; GSH = Graduate School of Humanities; GSL = Graduate School of Law; GSMS = Graduate School of Medical Sciences; GSSE = Graduate School of Science and Engineering; GSSS = Graduate School of Spatial Sciences; GSTRS = Graduate School of Theology and Religious Studies.*

Satisfaction with the Graduate School

Table K1 Mean scores by Graduate School for items regarding satisfaction with the Graduate School

**1.
I know whom I can turn to in my GS when I encounter problems in general.**

	N	M	Sd
UG	1,265	3.4	1.1
GSBSS	115	3.2	1.2
GSCF	31	4.2	0.9
GSEB	59	3.9	0.9
GSH	102	3.6	1.1
GSL	50	3.8	1.2
GSMS	420	3.3	1.0
GSP	13	4.0	0.8
GSSE	397	3.3	1.1
GSSS	55	3.6	1.0
GSTRS	21	3.5	1.4

**2.
I am satisfied with the educational activities provided by my Graduate School.**

	N	M	Sd
UG	1,249	3.5	0.9
GSBSS	111	3.4	0.9
GSCF	31	3.0	1.2
GSEB	58	3.6	0.8
GSH	102	3.5	0.9
GSL	46	3.6	1.0
GSMS	422	3.6	0.9
GSP	14	3.4	0.8
GSSE	388	3.5	0.9
GSSS	54	3.4	1.1
GSTRS	21	3.3	1.1

**3.
I am satisfied with the way in which my Graduate School monitors and supports the supervision of my PhD project.**

	N	M	Sd
UG	1,211	3.2	0.9
GSBSS	106	3.0	0.9
GSCF	30	3.1	1.0
GSEB	60	3.5	1.0
GSH	99	3.2	0.9
GSL	44	3.3	1.1
GSMS	410	3.2	0.9
GSP	12	3.0	1.1
GSSE	374	3.3	1.0
GSSS	54	3.3	1.1
GSTRS	20	3.4	1.2

**4.
I am satisfied with the way in which my Graduate School monitors the progress of my PhD project.**

	N	M	Sd
UG	1,213	3.2	0.9
GSBSS	106	3.0	0.9
GSCF	29	3.1	1.0
GSEB	60	3.5	0.9
GSH	98	3.1	0.9
GSL	46	3.3	1.0
GSMS	412	3.3	0.9
GSP	12	3.1	1.1
GSSE	373	3.3	0.9
GSSS	55	3.3	0.9
GSTRS	20	3.3	1.2

**5.
My Graduate School provides a stimulating environment that facilitates interaction and efficiency.**

	N	M	Sd
UG	1,221	3.2	0.9
GSBSS	105	3.0	0.9
GSCF	30	3.1	1.2
GSEB	58	3.5	0.9
GSH	101	3.2	1.0
GSL	46	3.2	1.1
GSMS	413	3.2	0.9
GSP	11	3.4	1.1
GSSE	378	3.2	0.9
GSSS	56	3.2	1.0
GSTRS	21	3.5	1.1

**6.
My Graduate School provides me with adequate information (e.g. e-mails, website, PhD guide).**

	N	M	Sd
UG	1,270	3.7	0.8
GSBSS	114	3.6	0.8
GSCF	31	3.6	1.1
GSEB	60	4.0	0.8
GSH	104	3.8	0.9
GSL	47	3.9	0.9
GSMS	425	3.6	0.8
GSP	12	3.8	1.1
GSSE	399	3.6	0.8
GSSS	55	3.8	0.8
GSTRS	21	4.0	0.9

7. **My Graduate School provides me with adequate information (e.g. e-mails, website, PhD guide).**			
	N	M	Sd
UG	1,149	3.5	0.9
GSBSS	94	3.2	1.0
GSCF	31	3.6	1.1
GSEB	60	4.1	0.7
GSH	99	3.9	0.9
GSL	44	3.9	0.9
GSMS	377	3.3	0.8
GSP	11	3.6	1.4
GSSE	358	3.4	0.9
GSSS	53	3.5	1.0
GSTRS	20	3.6	0.9

8. **Overall, I am satisfied with the way in which my Graduate School functions.**			
	N	M	Sd
UG	1,260	3.5	0.9
GSBSS	112	3.4	0.9
GSCF	31	3.3	1.1
GSEB	60	3.8	0.8
GSH	104	3.6	0.8
GSL	47	3.5	1.0
GSMS	422	3.5	0.8
GSP	12	3.6	1.4
GSSE	394	3.5	0.8
GSSS	55	3.5	1.0
GSTRS	21	3.7	1.0

Note: *Group differences for scores are highlighted in pink (lowest) and green (highest) if the difference between the lowest and highest scores was statistically significant within a group.*

Abbreviations: *UG = University of Groningen, GSBSS = Graduate School of Behavioural and Social Sciences; GSCF = Graduate School of Campus Fryslân; GSEB = Graduate School of Economics and Business; GSH = Graduate School of Humanities; GSL = Graduate School of Law; GSMS = Graduate School of Medical Sciences; GSSE = Graduate School of Science and Engineering; GSSS = Graduate School of Spatial Sciences; GSTRS = Graduate School of Theology and Religious Studies.*

Appendix L
Output

Table L3 What output have you produced so far? (multiple answers possible)

Answer	N	%
Finalized my research plan	873	67
Collected (some) data	1007	77
Presented my work at a conference	820	63
Written one or more articles (or chapters for my thesis)	806	62
Published one or more articles	502	39
Other, namely:	80	6
Submitted abstract for conference	6	
Developed model/method/ethical approval	15	
Presenting work other than at a conference	8	
Teaching/supervising	5	
Completed thesis	19	
Other (not categorized)	27	
Total number of PhD students	1,303	

Appendix M
About your Graduate School and PhD organizations

Table M1   Are you familiar with the University's PhD registration system Hora Finita?

Answer	N	%
Yes, I have logged on	1,241	95
Yes, but I have not yet logged on	55	4
No, I have not heard of this system	7	< 1
Total	1,119	100

Table M2   Did you attend the PhD introductory event organized by the Groningen Graduate Schools? In most cases this was a two-day event with the first day held at a location outside the city of Groningen. During the COVID-19 pandemic these events were held online.

Answer	N	%
Yes, at a location	345	39
Yes, online	344	26
No	345	26
I do not remember	61	5
Not applicable to my situation	48	4
Total	1,303	100

Table M3   Please indicate with which of the following PhD organizations you are familiar? (multiple answers possible)

Answer	N	%
GOPHER (Groningen Organization for PhD Education and Recreation)	783	93
GRIN (Groningen Graduate Interest Network)	235	28
PhD council of your Graduate School	853	100
PNN (Promovendi Netwerk Nederland)	191	23
Other	13	2
PhD students who selected at least one organization	845	
I do not know any of these organizations	224	21
Subtotal	1,069	
Missing	234	
Total	1,303	

Table M4   Do you often participate in activities organized by Gopher, GRIN or the PhD council of your Graduate School?

Answer	N	%
Yes, I regularly participate in activities they organize	264	25
No, I do not often take part in activities	805	75
Total	1,069	100

Table M5 **Do you think the PhD organizations in Groningen offer sufficient activities and services for PhD students?**

Answer	N	%
Yes	624	59
No, I would like to see more of the following activities/ services:	54	5
I don't know	389	36
Total	1,067	100

Note: *Activities mentioned by more than one PhD student: social activities (15); for internationals (2); for external/older PhD students (3); buddies for internationals (1); for PhD students who do not live in Groningen (4); meeting other Dutch PhD students (2); about practical skills (3); and career opportunities (3).*

Table M6 **To what extent do you feel the activities organized by the PhD council of the Graduate School of Law contribute to your connection with other PhD candidates?**

This question was only displayed to PhD students from the Graduate School of Law

Answer	N	%
Very much	12	24
Much	12	24
Somewhat	12	23
Little	4	8
Very little	1	2
I don't know/I can't answer	10	19
Total	51	100

PhD competence model GSMS

The following question was only displayed to PhD students of the Graduate School of Medical Sciences.

Table N1 **To what extent do you agree (or disagree) with the following statements regarding the usefulness of the PhD competence model?**

I find the PhD competence model useful to…	...draft my Training and Supervision Plan		...test the competences I would like to strenghten or improve		...broaden my personal and professional interests		...find courses within the UMCG/ UG/GSMS targeting specific competences		...use in conversations with my supervisor(s), e.g. R&D meetings	
Agreement	N	%	N	%	N	%	N	%	N	%
Completely disagree	19	5	22	6	23	7	28	8	40	12
Disagree	63	18	59	17	73	21	64	18	72	21
Neutral	103	29	91	26	109	31	89	25	97	28
Agree	148	42	156	44	125	36	138	39	116	34
Completely agree	19	5	24	7	21	6	34	10	21	6
Subtotal	352	100	352	100	351	100	353	100	346	100
Missing	79		79		80		78		85	
Total N (average score (Sd)	431	3.2 (0.9)	431	3.3 (1.0)	431	3.1 (1.0)	431	3.2 (1.1)	431	3.0 (1.1)