Being a Doctoral Researcher in the Leibniz Association: 2021 Leibniz PhD Network Survey Report

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Veröffentlichungsversion / Published Version
Verzeichnis, Liste, Dokumentation / list

Empfohlene Zitierung / Suggested Citation:
Delgado-Osorio, X., Gierke, M., Jaen, J., Kansiime, J., Lonken, D., Pérez-Bosch Quesada, E., ... Saxena, P. (2023). *Being a Doctoral Researcher in the Leibniz Association: 2021 Leibniz PhD Network Survey Report.*. https://nbn-resolving.org/urn:nbn:de:0168-ssoar-89848-5

Being a Doctoral Researcher in the Leibniz Association

2021 Leibniz PhD Network Survey Report

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on behalf of the Leibniz PhD Network

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The Leibniz PhD Network received funding by:

Leibniz Association

Contents

1 Preamble

The Leibniz PhD Network

The Leibniz PhD Network was founded in 2016 by a group of doctoral researchers as an initiative to build a platform for cross-disciplinary exchange among all doctoral researchers in the Leibniz Association and to represent their interests towards the Leibniz Association. One of the aims of the Leibniz PhD Network is to work towards common standards of working conditions for doctoral researchers within the Leibniz Association and help create greater transparency regarding careers within and outside of academia.

The network is organized in a Steering Committee and Working Groups, which cooperate to produce supportive material for the PhD phase, events and online seminars. The Steering Committee is elected on an annual basis by the elected PhD representatives of the Leibniz Institutes. For more information on the Leibniz PhD Network visit https://leibniz-phd.net.

The Leibniz Association is a German non-university research association that currently connects 97 independent research institutions divided into five sections. [Fig. 1.1]

Section A
Humanities and Educational Research

Section B
Economics, Social Sciences, Spatial Research

Section C
Life Sciences

Section D
Mathematics, Natural Sciences, Engineering

Section E
Environmental Research

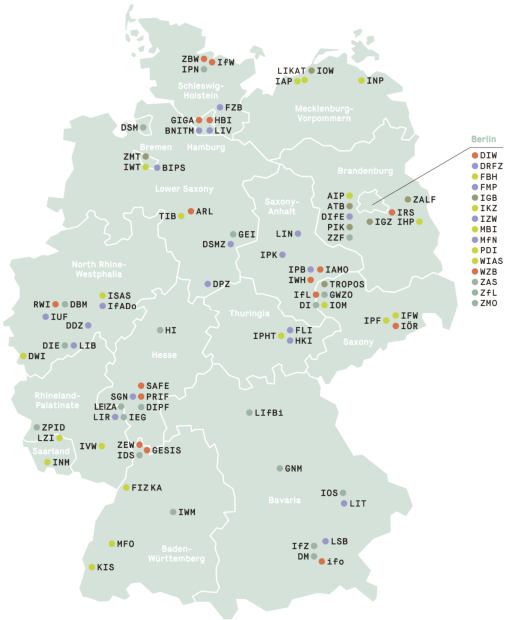


Figure 1.1: *Distribution of Leibniz Institutes in Germany coloured by sections.*

This report presents the results of the third Leibniz PhD Survey, developed and conducted by the Leibniz PhD Network in collaboration with members of the Helmholtz Juniors and the Max Planck PhDnet. From September until December 2021, all doctoral researchers (DRs) working at Leibniz Institutes were invited to take part in the online survey. 829 DRs working at 81 out of 97 Leibniz Institutes followed this invitation and took part in the survey. This report includes information from 85% of all Leibniz Institutes and the number of respondents accounts for approximately a third of all DRs in the Leibniz Association. It does not focus on the situation of DRs in single institutes, but on the overall situation of Leibniz DRs and whether this situation differs among the five Leibniz Sections.

Data from the 2021 Leibniz PhD Survey, as well as demographic data provided by the Leibniz Head Office allow us, in addition to the very good response rate, to assess the quality of the survey data and to ensure representative results. Key variables like *gender*, *age*, affiliation to *Leibniz Sections*, *nationality*, and *types of payment* are in line with other Leibniz data sources, not showing any implausible distortions.

Chapter 4 presents further information on the assessment of data quality.

The report starts with an **Executive Summary** in which the main findings and our conclusions are presented together. The chapters of the report group the main topics defined during the survey design process. Each chapter presents its main findings in the beginning (grey box) to then give way to the detailed analysis of the questions. In addition to the main topics, this survey especially addresses how and to what extent the COVID-19 pandemic affected the DRs. In particular, the surveys focused on the effects on the mental health of the DRs, their perception of how much the security measures impacted their projects, and the effectiveness of the institutional efforts to support them.

We think a number of different readers might find this report interesting: Firstly, the report naturally addresses individual DRs, PhD representatives, and their network, the Leibniz PhD Network. Secondly, the Leibniz Association, namely the Leibniz Head Office and the management and administration of every single Leibniz Institute are another important target group. Last but not least, this report, as well as reports published by our partner networks working in the Max Planck Society and the Helmholtz Association, are relevant for the broader political sphere concerned with science policies in Germany. We hope that many of those recipients pick up some of the fields of action (Executive Summary) we identified in this report on different intervention levels and help to work on constant improvements for the benefit of DRs in the Leibniz Association and beyond.

We want to inform decision-making structures of the Leibniz Association to nurture our shared goal of producing excellent science. A necessary common ground for this is the belief that for excellent science, excellent conditions must prevail for all parties involved - including doctoral researchers. With this assumption, any improvement in the conditions for doctoral researchers will improve the quality of research and thus contribute to the overall goal. Excellent conditions retain young researchers, attract them, and nourish the research system from the bottom up.

Acknowledgements

This report and the underlying survey are the products of a collaborative process within the Survey Working Group of the Leibniz PhD Network. The survey was developed, conducted and analyzed by DRs in various Leibniz Institutes in close collaboration with our partner PhD networks, the Helmholtz Juniors, the Max Planck PhDnet and the International PhD Programme at the Institute of Molecular Biology. We would like to thank our partner networks for their constant and ongoing support, as well as the Leibniz Head Office, the representation of the works councils, individual non-university research institutes, namely GESIS - Leibniz Institute for the Social Sciences, and the German Centre for Higher Education Research and Science Studies (DZHW) for their important feedback on the questionnaire. We would also like to thank Saida Díaz and Eframir Franco-Díaz for their support as Spokespersons of the Leibniz PhD Network for the term 2022/2023. The authors of this report would like to thank their colleagues Björn Rohr, Paula Herrera, Nathalie John, Jacob Gorenflos and Irene Broer for their contribution in the development of this report. We also would like to thank Leibniz President Martina Brockmeier, Secretary General Bettina Böhm and Marvin Bähr for their support and valuable input on behalf of the Leibniz Association and the Leibniz Head Office. Last but not least, we want to thank Anna Lina Orsin for setting up and illustrating the page "Graphical Summary of the 2021 Leibniz PhD Network Survey“, Jan-Lucas Schanze for supporting us with the publication of this report and all the committed and interested PhD representatives who worked with us on the topics addressed in this report during the various General Assemblies of the Leibniz PhD Network.

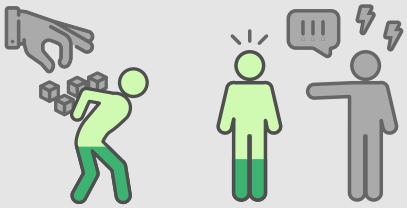
Graphical Summary of the 2021 Leibniz PhD Network Survey

Selected findings from different key topics. For more information see the respective chapter.

mental health

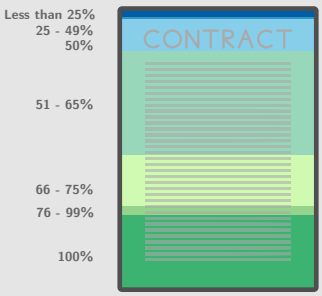
32% of DRs working more than 50 hours/ week suffer from moderate to severe depression and 70% of DRs working at least three times a month during holidays or weekends suffer from high levels of anxiety.

power abuse



22% of DRs suffer from bullying, out of which 38% suffer from pressured work and 27% suffer from verbal harassment.

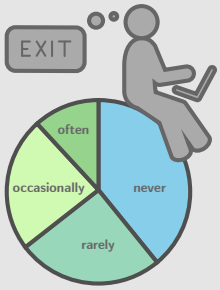
working conditions



Only 26% of DRs hold a 100% (full time) contract.

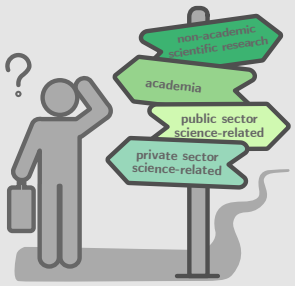
Leibniz PhD Network

satisfaction



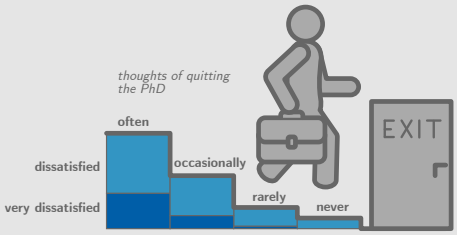
36% of DRs have often or occasionally thoughts of quitting.

career developement



DRs want to continue working in science related jobs, academia is not the preferred career option.

supervision and satisfaction



DRs not satisfied with their supervisor tend to have more thoughts of quitting their PhD.

829 participants
from 81 out of 97 Leibniz institutes
39% of DRs hold a non-German citizenship

2 Executive Summary

With this summary we would like to give an overview of the most important results of the respective chapters and possible fields of action. Further elaboration and additional analyses can be found in the respective chapters.

2.1 Demographics

Of the 829 analysed participants (see chapter 3.3) in the survey, 57% of the participants identify as female and 43% as male, which is similar to the distribution of the 2019 Survey. The Leibniz Association's DRs continue being a highly international community, with 39% being non-German citizens and 25% non-EU citizens. This is a slight increase in the internationality of the respondents compared to the previous survey (35% non-German citizens and 23% non-EU citizens). The average age is again as in the last report 29.1 years. 58% of the respondents are between 26 and 30 years. Lastly, the average estimated PhD duration for all respondents is 3.8 years.

2.2 Working Conditions

If an employment contract is in place, the largest percentage of respondents (about 60%) report that their longest contract was 25-36 months (2-3 years). Around one-fifth of DRs report having a contract length of more than 3 years. 44% of participants got contract extensions after their initial contract. From these participants, around 44% of all respondents state having received at least one contract extension. The percentage of respondents who state that they are publicly employed via a contract (TV-L, TVöd, etc.) has decreased to 75.7% compared to the 2019 Survey (nearly 83%). The share of guest contracts, on the other hand, increased dramatically from about 2% to 10% compared to the 2019 report. 9.2% of the respondents reported being funded by a stipend, 2.6% stated that their PhD studies were being financed through a combination of a stipend and a contract and 2% of the respondents stated not receiving any form of payment. On average, stipend recipients earn substantially less than DRs with a contract looking at the net income. When it comes to stipends, respondents from non-EU countries are more often financed by stipends (20%) than Germans (5%) and other EU-citizens (7%). Regarding the type of financing of stipends, it is evident that non-German stipend recipients are much more likely to receive internal stipends (from the institutes) than the German ones. For the level of payment of contracts for DRs, the 2021 Leibniz PhD Survey shows that the majority of respondents get between 51–65% of E13 TV-L. Though, substantial differences between the Leibniz Sections can be observed: While 37% of the respondents in Section D report having a 100% contract, this percentage is only 8% in Section A. At the same time, Section D has the largest share of 50% contracts (20%), which is about twice as high as for the other sections. [Figure 2.2]

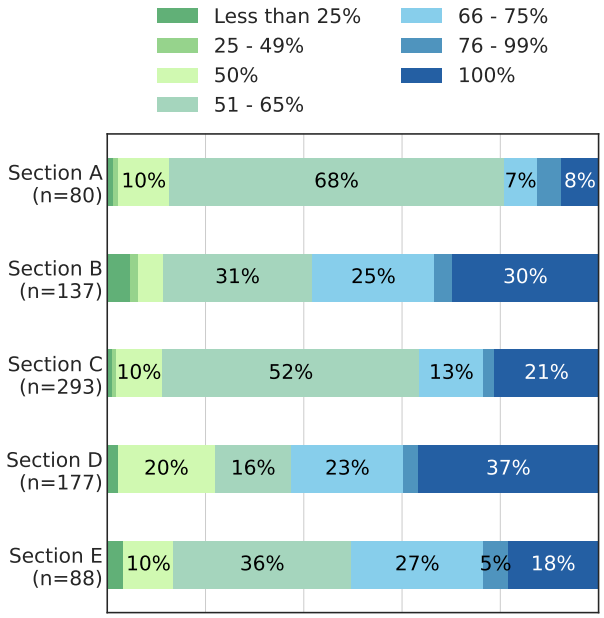


Figure 2.2: *Level of payment by section.*

Overall, the average income of all DRs with Leibniz contracts is 1.865€ per month (rough estimate due to income brackets as answer options). The overall net income query shows that about 7% earn less than 1.000€ per month. Without potential financial support from family or partner, this share is officially considered as relatively poor according to the German Federal Office of Statistics (<1.200€ per month). Considering the employment contracts and the determined income, the difference in the reported working hours per week is striking. The largest share of respondents (40%) states that they work 40-50 hours, and nearly 15% state that they work more than 50 hours per week. Still, 38.8% report working 30-40 and only 6.6% report working less than 30 hours hours per week. Thus, at least half of all DRs report working hours that typically count as a full-time job while the percentage of 100% contracts is only about one-third. Based on the responses, an average of one-third of the work time is spent on non-PhD related activities. 77% of respondents report having taken less than 30 vacation days in the past year. About one-third of DRs express that they do not feel free to take vacation days for a variety of reasons, among them *workload* and *pressure from their supervisor* as the most reported ones.

Fields of Action:

- Implement a initial contract duration of at least 4 years.
- Provide contracts rather than stipends – with special attention to non-German DRs.
- 100% pay for 100% work.
- Ensure that DRs feel free to take vacation days according to their contract.
- Ensure that DRs also have enough time within their official working hours to devote to their PhD research.

2.3 Satisfaction

The participants were asked about their satisfaction with different aspects of their situation as DRs. The three lowest satisfaction scores are reported for *psychological support* (23% general satisfaction score), *career development* (43%) and *workload* (48%). The best scores are seen in *vacation days* (84%) and *work environment and atmosphere* (73%). Supervision scores at

65%, a deterioration of 5% compared to the 2019 Survey, which also applies to *workshops and training skills*. The biggest deterioration compared to the 2019 survey is revealed for *social life at the institute* (-10%), *scientific support* (-6%) and *office equipment* (-6%). The greatest improvement can be reported for *science communication and outreach* (+8%), *bureaucracy and administrative support* (+4%) and *career development* (+4%). However, with a general satisfaction score of 43% for *career development*, for example, there is potential for further improvement. An important general indicator is the question of *thoughts of quitting*, which is related to potentially influencing variables in numerous chapters. 39% of the DRs stated that they *never* considered quitting their PhD. [Figure 2.3] The three most frequently given reasons for this are: *do not feel qualified enough*, *career perspectives are unattractive* and *cannot cope with the high workload*.

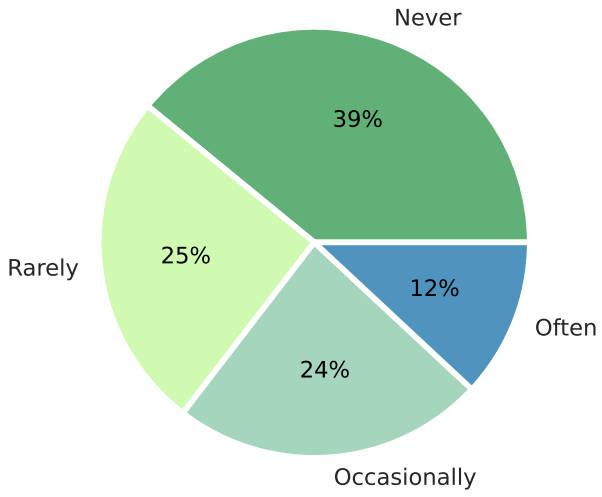


Figure 2.3: *"Have you ever considered quitting your PhD?" (n = 820).*

When asked how they generally rate various aspects of an academic career, being 1 very unattractive and 5 very attractive. The three ranked lowest in average are *workload* (2.55), *applying and getting funding* (2.41) and *salary* (2.75). This, again, highlights the discrepancy between workload and pay. With the best ratings for *interesting work* (4.41), *skill development* (4.13) and *diversity of work* (4.04), it is clear that the career is rated as enriching related to the professional content in contrast to the 'formal' or contractual working conditions.

Fields of Action:

- Reduce the workload per DR.
- Improve DRs' supervision.
- Offer more psychological support and career development opportunities.
- Adjust salary according to actual working hours.

2.4 Supervision

In 2021, 65% stated that they are mostly satisfied with the supervision they receive; in 2019, this share is 77%. For supervision, there is a clear impact on various aspects of the doctorate. This is reflected, among other things, in the reported *satisfaction with supervision* and the frequency of *thoughts of quitting*: Among DRs who report *never* thinking about quitting their PhD, 80% are somehow satisfied with

their supervision (*very satisfied*, *satisfied*). In contrast, among DRs who think about it *often*, only 25% state that they are somehow satisfied with their supervision. [Figure 2.4]

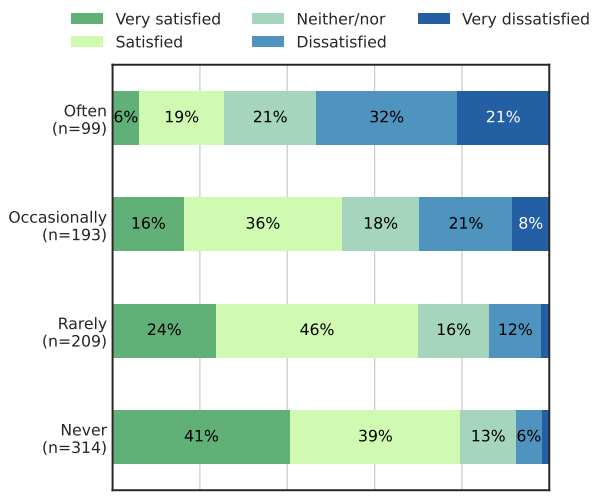


Figure 2.4: *Satisfaction supervision by "Have you ever considered quitting your PhD?".*

Overall, 65% of the respondents express that they would like to see an improvement in PhD supervision. Based on the question of how the respondents rate various aspects of PhD supervision, especially the areas *leadership skills*, *support of professional development*, *constructive feedback* and *level of information on the current state of PhD project* show most potential for further improvement. When asked about specific problems with the provided supervision, problems that emerge as most relevant are the *frequency* and *regularity* of meetings. In this respect, it is also consistent that there is a link between the *frequency of interaction* and *satisfaction with supervision*. For illustration purposes, the percentage of *very satisfied* with regard to supervision and the frequency of interaction with the supervisor about the doctoral project are listed:

- Almost daily: 49%
- Weekly: 33%
- Every second week: 25%
- Monthly: 12%
- Quarterly: 8%

There is a decrease in meeting frequency over the course of the PhD, which is in line with the reported preferred meeting frequency. Apparently, DRs have less need for frequent meetings as the PhD progresses. This survey also asked about the existence of various forms of institutionalized supervision arrangements. On average, a *supervision agreement* is most common (74%); a *written training plan* is least common (15%). The greatest differences by Leibniz Sections are seen in the *thesis advisory committee* (TAC): While in Sections C and E about 50% of DRs report having one, this proportion is about 25% in Sections A, B, and D. In a deeper examination, it seems that supervision agreement and TAC have a positive impact on *satisfaction with supervision*, *thoughts of quitting* and *estimated time for PhD*.

Fields of Action:

- Facilitate frequent meetings for discussing the PhD project.
- Offer supervision training for supervisors, covering topics like clear communication, leadership skills and feedback techniques.
- Promote institutionalized implementation of supervision arrangements such as supervision agreements and thesis advisory committees.

2.5 Integration

With 39% of respondents not having German citizenship, there is a large proportion of DRs in the Leibniz Association who are in potential need of integration assistance. Therefore, a variety of services offered by the institutes can be helpful. When asked which kinds of support services are offered by their institute, *university enrollment* (59% *yes*) and *application to graduate school* (47% *yes*) are the most frequent ones. The services least reported are the *translation of working contracts and relevant documents* (17%) and an *immigration office at the institute* (19%). [Figure 2.5]

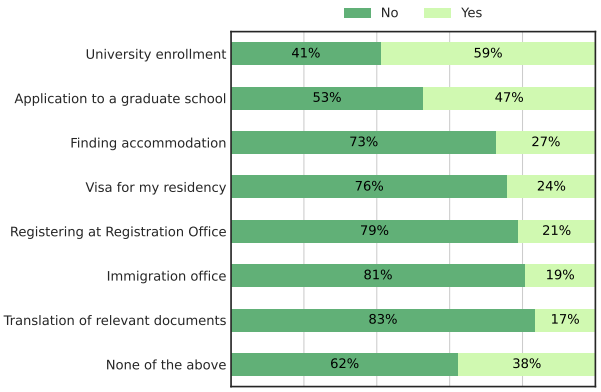


Figure 2.5: *"For which of the following aspects did you receive support from your institute/center/unit?"*

Nearly half of the non-German DRs report that not knowing the German language is an obstacle to communicate with their colleagues. The results of the survey indicate that this problem increases with the length of the year of the PhD. While in the first year of the PhD the proportion of *not at all* is still 39%, this proportion decreases to 18% in the fourth or later year. This contrasts with the reverse reported trend in German language skills. 57% of the respondents state that their institute offers German courses and 32% report that their institute offers financial support for external language courses. When asked whether, at their institute, all important information is available in a language they can understand, only a total of 23% of the respondents fully confirm this. 44% of the DRs state that most of the information is available and 30% that *some* of the information is available in a language they understand, leaving 3% reporting that

none of the information is available in this regard. Compared to the last survey in 2019, the proportion of *none* (20%) has thus fallen substantially.

Fields of Action:

- Increase the offer of integration services, especially the translation of working contracts and relevant documents and access to an immigration office.
- Offer opportunities to improve German skills, thus promoting exchange between all employees.
- Make sure that all relevant information at the institute is available in English.

2.6 Career Development

When asked what field they would like to work in after their PhD, the majority of DRs indicate that they would like to continue working with a research focus. *Non-academic scientific research* is the most preferred (78%), followed by *academia* (55%), *public sector science-related job* (48%) and a *private sector science-related job* (46%). 25% indicate they would prefer to work in a *non-science related job*, while as many as 27% report wanting to *take an extended break* after completing their PhD. 17% of the respondents consider *starting their own business*. [Figure 2.6] It can thus be concluded that academia is not the most preferred field after completing the PhD. This is consistent with the findings from the 2019 Survey. Differentiated by Leibniz Sections, Section A (67%) and Section E (68%) are those with the highest rate of DRs willing to stay in academia and Section C (47%) and Section D (50%) are the ones with the lowest.

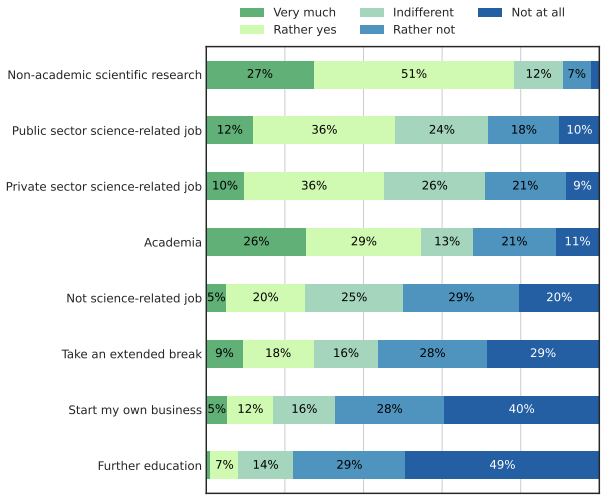


Figure 2.6: *"Which field would you like to work in after completing your PhD?"*

75% of respondents report feeling prepared to some degree for a job in science or academia, whereas 36% state that they feel prepared to some extent for a job outside of science or academia. The measures for career development that are most supported by institutes are *mobility period* (84%), *soft skill courses* (82%) and *practical courses* (77%). The least supported ones are *mentoring* (68%), *transition to a non-academic career* (53%), and *career development office* (46%). Compared to the 2019 Survey, no substantial changes can be found.

Fields of Action:

- Create more jobs in academia with competitive compensation, benefits and security.
- Provide more career development measures for jobs outside of academia/science.
- Establish a career development office.

2.7 Family

10% of the respondents report having or expecting children. This share is more or less stable compared to the 2019 Survey. 86% of the respondents state that they currently do not have (or want to have) children and only 4% report that they are planning to have children during their PhD. Among the reasons identified for this are: working conditions are not family-friendly (17%), fear of jeopardizing their career (16%) and fear of not being able to afford a child (11%). Compared to the answers from 2019, the amount of DRs not having children due to non-family friendly working conditions halved (17% vs. 34% respectively), the financial insecurity reduced by two-thirds (11% vs. 32% respectively) and the ones in fear of jeopardizing their careers halved with (15.7% vs. 30% respectively). When asked if enough support (organizational or financial) is offered by the institute for respondents who report having or expecting children, 35% stated *yes* and 28% *no*. At 38%, the proportion of *I don't know* answers is higher than the *yes* share, thus indicating a potential lack of information. [Figure 2.7] When comparing the different Leibniz Sections, substantial differences can be observed. While 51% of DRs in Section B think the support for children is sufficient, only 21% of DRs in Section C agree. The other sections distributed themselves between those two values. It should be noted that the total number of responses to this question was rather small per section.

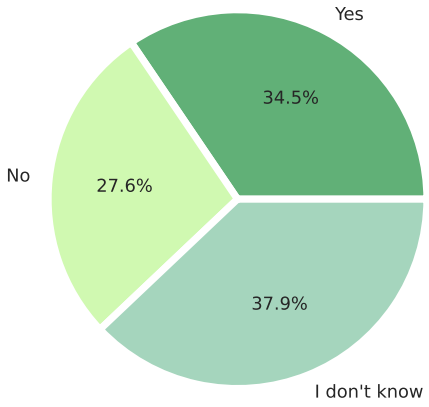


Figure 2.7: *"Do you feel there is sufficient support (financial and organizational) from your center/institute/unit for raising/caring for a child?" (n = 113).*

In terms of specific support services, *home office / mobile work* is reported the most (44%). 24% report a *family-friendly environment* and 12% that *access to daycare* is offered. *Financial support for daycare* and *reimbursements for daycare during business travel* is rarely mentioned (<5%). Compared to the 2019 Survey, *home office / mobile work* increased by 12% which can be as a result of the COVID-19 pandemic. No substantial changes can be observed for other services. 10% of respondents reported having

care responsibilities apart from their children. Of these respondents, 16% of them state feeling supported by their institute with these responsibilities, 57% not feeling supported and 27% don't know.

Fields of Action:

- Promote the support services offered by the institute.
- Expand support services for care responsibilities, especially with regard to daycare.

2.8 Power Abuse

For an explanation of how power abuse is defined in this survey, please see the respective chapter. Of all respondents, a total of 22% claim to have been subjected to bullying from a superior. The most common form of bullying reported is *pressured overwork* (38%), followed by *indirect bullying* (37%), *destabilization* (36%), *verbal harassment* (27%), *threat to professional status* (25%) and *social isolation* (22%). [Figure 2.8] In terms of how frequently they have been subjected to bullying, 61% indicate *occasionally*, 22% *once*, 9% *monthly*, 6% *weekly* and 2% *daily*. Compared to the 2019 Survey, the share of respondents indicating being subjected to bullying from a superior doubled (22% vs. 10%). Thus, bullying appears to be more of an occasional matter instead of a single event. Witnessing bullying by a superior towards a colleague was reported by 24% of the respondents. The distribution of the frequency is quite similar to being subjected to bullying by a superior. Please note that bullying can be carried out not only by superiors but also by other scientific staff, fellow DRs and other non-scientific staff.

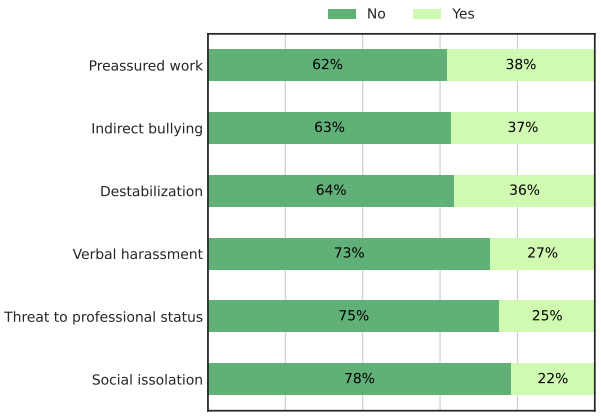


Figure 2.8: *"Have you been subject to any of these forms of bullying?"*

When it comes to discrimination, the majority of the respondents report not being subjected to any form of discrimination (76%). For the reported discrimination *nationality* (29%) and *gender* (26%) are the most common basis. 20% of the respondents indicate not knowing whether they faced any discrimination in the workplace. This indicates that the definition and meaning of what discrimination is needs to be well established. When asked whether the DRs experienced unwanted behavior that you would call sexual harassment from a superior, about 10% state that they have experienced it to some extent. Among those who have experienced this behavior, more female respondents report being subjected to *unwanted physical contact, messages and calls*. Approximately half of the male respondents who experienced unwanted sexual behavior did not provide information about the specific type of sexual behavior. Both

genders report that they have been subjected to *unwanted verbal harassment and intrusive approaches*. Looking at the frequency of sexual harassment, 47% report *occasionally*, 30% *once* and 11% *prefer not to answer*. Not being the target of sexual harassment themselves, 92% of the respondents state never having witnessed sexual harassment towards colleagues. Institutes and the Leibniz Association offer various bodies/mechanisms to provide support in the event of conflicts. When asked about the awareness of those bodies/mechanisms (*PhD representatives, ombudsperson, works council, equal opportunity officer, human resources, graduate school, medical services and counseling, security service*) only 10% of the respondents report not being aware of any of these. It is important to note that there is variation depending on citizenship. For some bodies/mechanisms, the reported awareness of Germans is 20% higher than for non-Germans. Of all the respondents, 7% state that they have had a conflict with a superior and reported it, and 5% that they have had such a conflict but decided not to report it. Compared to the 2019 Survey, the share of DRs experiencing but not reporting a conflict (10%) thus declined by 5%. When asked how satisfied they were with the outcome of the report, the picture is mixed:

- Very satisfied: 13%
- Satisfied: 20%
- Neither/nor: 28%
- Dissatisfied: 19%
- Very dissatisfied: 14%
- Still ongoing: 5%

Based on the data, a negative impact of power abuse on the thoughts of quitting and mental health can be identified.

Fields of Action:

- Promote positions/mechanisms available for cases of conflict and power abuse.
- Make sure that information about such bodies/mechanisms is accessible to non-Germans.
- Provide information on the forms of discrimination, bullying, and sexual harassment.
- Motivate DRs to report cases of power abuse.

2.9 Mental Health

The World Health Organization (WHO) states that health is a state of complete physical, mental, and social well-being, not merely the absence of disease. For this report, three measurement tools were used to survey mental health issues: *state anxiety*, *trait anxiety* and *depression symptoms*. For more information on their design, see chapter 3.3.

In the big picture, around half of DRs suffer from mild to severe depression. Compared to the 2019 Survey, no substantial changes can be identified in depression levels. About two-thirds of DRs report moderate to high levels of state and trait anxiety. There is a modest increase in anxiety levels. This is a very important result, as the COVID-19 pandemic seems to have no

considerable impact on depressive symptoms in DRs, but does show an increase in anxiety levels. Compared to the 2019 results, high state anxiety increased by 4% and high trait anxiety by 9%.

- No or low state anxiety: 35%
- Moderate state anxiety: 17%
- High state anxiety: 48%

An impact on these measurements is suggested by the survey data for *year of PhD*, *working hours*, *meeting frequency with direct supervisor*, *feeling free to take days off*, *social life at the institute* and *working during the holidays or weekends* (for further details see chapter 12). When analyzing the mental health by citizenship, 60% of non-European DRs experience mild to high depression and around 74% suffer from anxiety. A cause for this might be the fact that non-EU respondents do not have immediate family settings nearby and the impossibility of not being able to visit their family during the time of COVID-19 due to travel restrictions. When comparing depressive symptoms with the frequency of working during holidays or weekends, the following relation is found. DRs who report never working on holidays or weekends show a 60% share for *no to minimal depression*. This halves to 30% for DRs who report working weekends three or four times a month. [Figure 2.9]

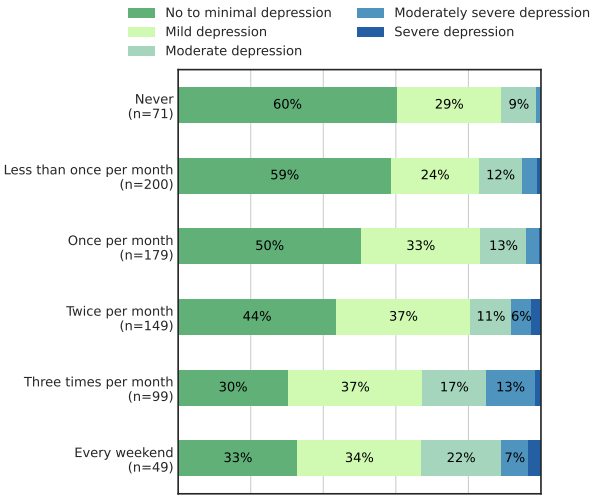


Figure 2.9: *Distribution of depressive symptoms across frequency of working during the holidays or weekends.*

When it comes to taking time off, DRs who report not feeling free to take time off were asked about the reasons. Looking at state anxiety, no negative impact can be found for DRs who are not feeling free to take time off *saving for a longer vacation*. If *workload* is specified as a reason, the share of high anxiety is 65%. For DRs who indicate *pressure from supervisor* as a reason, the percentage of high anxiety is 75%.

Mental health guidelines from the Leibniz Association emphasize on providing mental health 'first-aid' resources for DRs. When asked if they are aware of such mental health resources, 60% of the respondents state that they are not aware of any, 34% that they are aware but never used them, 3.6% that they used resources but were not satisfied and 2.6% that they used resources and were satisfied. Lastly, poor social life at the institute result in higher anxiety levels and depression symptoms in

DRs. Promoting social activities in the institute improves the mental health of DRs. It creates a support network specially for those who are away from home.

Fields of Action:

- Distribute information about psychological counseling in the welcome packages for onboarding DRs.
- Promote staff from institutes to participate in Mental Health First Aid courses.
- Monitor the working hours and including direct supervisors in an open discussion about the expectations.
- Promote the health relevance of time off granted by law during weekends and official vacations.
- Creating and promoting social events at institutes decrease the thoughts of DRs quitting their PhD.

2.10 COVID-19

For a more detailed description of the pandemic and its consequences for DRs, see chapter 13. Overall, 74% of respondents report being somehow satisfied with how their institute handled the pandemic. A minority of DRs (9%) expresses that they are somehow dissatisfied. Nevertheless, when asked how the pandemic affected certain factors of professional life, *networking opportunities* (81% *negatively / very negatively*) and *career development* (56% *negatively / very negatively*) are indicated as the most negatively impacted areas. Regarding all other aspects (*accessibility to equipment/data/methods, supervision, available time to spend on my research project, general working productivity, work environment, workload*) negative shares of at least one-third are found for all of them. Given various limitations during this time, especially for DRs with field research, it was asked if a delay in the PhD was expected. Most respondents indicate *yes* (38%), followed closely by *no* (37%), while 25% indicate they *do not know* (25%). [Figure 2.10]

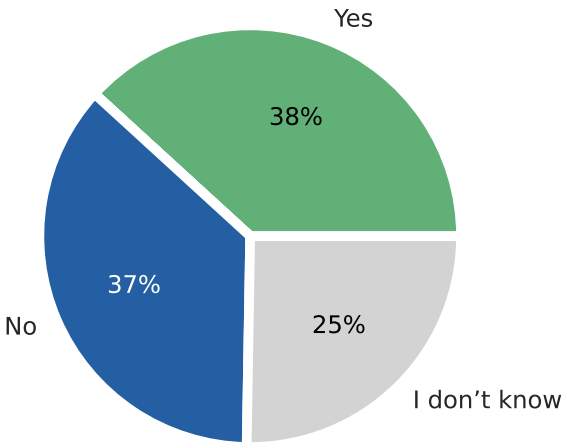


Figure 2.10: *"Are you expecting any delay in your PhD due to COVID-19?" (n = 826).*

In addition to questions about constraints and burdens, the survey also asked which work options fostered by the shelter-in-place policies the DRs would like to keep. The percentage of *very much* is highest for *flexible working hours*

(69%), followed by *work from home* (52%), *video calls/ meetings* (30%), *fewer people in the lab/office* (23%) and *online conferences* (20%). At the same time, substantial shares of refusal are given for *fewer people in the lab/office* (47% *rather not* / *not at all*) and *online conferences* (40% *rather not* / *not at all*).

Fields of Action:

- Offer contract extensions for DRs whose research was delayed, because of the pandemic.
- Facilitate flexible working hours and work from home permanently.
- Support networking and career development opportunities (e.g. travel funds).

3 Methods

3.1 Survey

The survey was conducted by the Survey Working Groups of N^2 - The Network of Networks, which includes the Leibniz PhD Network, Max Planck PhDnet and Helmholtz Juniors. The questionnaire for the survey was developed by the Survey Working Groups, who used previous questionnaires from the three networks as starting points. The group discussed adaptations, additions, and deletions within an overarching survey working group.

The complete questionnaire is attached to this report in the Appendix. The language of the questionnaire is English. Like in the previous Leibniz PhD Survey in 2019, it is important to note that the survey was not based on a probability-based random sample of DRs at Leibniz Institutes.

It is worth noting that the 2021 Leibniz PhD Survey is not the first of its kind. Similar surveys were conducted in 2017 and 2019, and by comparing the results of previous surveys it is possible to identify changes, progress, or challenges over time. The survey data and results will be used to provide insights into DRs' experiences, needs, and expectations, and to inform decision-making at the Leibniz Association.

3.2 Fieldwork

To conduct the survey, a generic link to access the questionnaire was shared among all the approximately 3.492 DRs in the Leibniz Association in October 2021. The invitation email was sent to PhD representatives in all Leibniz Institutes, as well as to the Leibniz works councils and other contact persons at Leibniz Institutes. During the fieldwork period, two reminders were sent to the DRs through the channels mentioned above to encourage DRs' participation in the survey.

3.3 Data Processing and Weighting

After the data collection, the Leibniz PhD Network Survey Working Group reviewed and processed the information. The participants who preferred not to answer the gender or affiliation questions were excluded from the analyses (around 1% of the respondents). Since only 0.91% of the participants disclosed their gender as gender diverse (gender fluid), non-binary or other, we did not include them in the analyses to preserve their anonymity. Afterwards, gender distortion, as well as respondents' affiliation, were corrected by weighting the results to make survey estimates meet the Leibniz data retrieval on average. Specifically, simple post-stratification population weights were

created using official data from Section affiliations and gender distributions. The use of weighting improves the representativeness of the data, especially when drawing conclusions about the Leibniz Association as a whole. Each group of respondents received a specific weight based on their section affiliation and gender.

3.4 Course of Analysis

The data analyses consisted of various steps. The first step consisted of producing graphs and tables for single variables (e.g., pie charts). The second step included cross-tabulation or bivariate analyses, which resulted in bivariate descriptive analysis. The type of analyses varied in each chapter according to the selected variables that were considered relevant to each topic.

It is worth noting that participants who answered *I don't know* or *I don't want to answer this question* were usually excluded from the corresponding analysed responses. This was done in order to facilitate the interpretation of the results. Taking this into account, the number of participants (*n*) in each question was included in the reported analyses.

3.5 Measures

PhD Duration

To calculate the current PhD duration at the time of the survey, we used participants' reported year in which they started their PhD. It is important to note that this time may not necessarily align with the start of their initial contract at the Leibniz Institute, as some respondents may have enrolled in university before getting a contract. In addition, we also calculated the estimated total duration of the PhD using the participants' responses about the expected PhD completion.

Level of Payment

The level of payment corresponds to the working contract percentage, which is the public payment scheme that applies in the German academic system. This percentage was calculated using participants' reported hours per week that they are expected to work according to their contract. Concretely, six percentages ranges were created: *less than 25%, 25-50%, 51-65%, 66-74%, 75-99%*, and *100%*; taking 40 hours per week as the 100% standard. In the following, this is often referred to as "contract volume" for clarification purposes.

Mental Health

The mental health of DRs was evaluated using validated short versions of measurement instruments: the Patient-Health-Questionnaire 8 (PHQ-9) [1] for depressive symptoms, and the State and Trait Anxiety Inventories (STAI) [2] for anxiety.

The depression scale from the Patient Health Questionnaire (PHQ-9) has been widely used in clinical research and practice [3, 4, 5]. It consists of eight questions with a 4-point Likert scale from *Not at all* to *Nearly every day*, and it distinguishes between *mild, moderate, moderately severe,* and *severe* levels of depressive symptoms in the last two weeks. The last question of the PHQ-9, which addresses suicidal thoughts, was excluded from the survey, and an additional option of *I do not want to answer this question* was included. Each question was assigned a score based on the response options (0: *Not at all*, 1: *Several days*, 2: *More than half the days*, 3: *Nearly every day*). The scores for all questions were added to generate a total score, which was then used to place participants into different categories based on the severity of their depressive symptoms. Since one question was excluded from the original PHQ-9, the maximum possible score was adjusted from 27 to 24 points. Thus, the final categories with different levels of depressive symptoms corresponded to: *no to minimal depression* (0-4 points), *mild depression* (5-9 points), *moderate depression* (10-14 points), *moderately severe depression* (15-19 points), and *severe depression* (20-24 points). The scale showed high internal consistency (α = 0.85).

Anxiety was measured using the STAI [2], which are validated and reliable measures of anxiety used in applied psychological research. The STAI differentiates between *high*, *moderate*, and *no or low* levels of anxiety using a 4-point Likert scale from *Not at all* to *Very much*. The shorter version of the STAI consists of six questions that assess the current emotional state (state anxiety), while the shorter version of the trait anxiety inventory consists of eight questions that focus on anxiety at a general level (trait anxiety). The survey included an additional option of *I don't want to answer this question* for both state and trait anxiety questions. Similarly that with the depression scale, each question was assigned a score based on the response options (0: *Not at all*, 1: *Somewhat*, 2: *Moderately*, 3: *Very much*), and all the scores were added to generate a total score, which was then used to place participants into different categories according to their levels of anxiety: *no or low anxiety* (0-37 points), *moderate anxiety* (38-44 points), and *high anxiety* (45-80 points). Both scales, state anxiety (α = 0.87) and trait anxiety (α = 0.83), showed high internal consistency.

This survey aimed to provide a basic understanding of the current mental health status of doctoral researchers and did not aim to cover all potential factors that could contribute to mental health. Since most of the analyses were descriptive, it is possible that general awareness of mental health problems influenced the results. In addition, the results should not be considered a clinical diagnosis, as they were obtained by using respondents' self-reports. As a result, caution is advised when interpreting the results. Despite this, the survey provides an essential first impression of

the mental health situation of doctoral researchers in Leibniz institutes. The findings can be used to design targeted interventions and implement structural changes to improve the conditions that promote mental health among doctoral researchers.

Satisfaction Score

The overall satisfaction score included results from questions regarding the level of satisfaction among different aspects, such as *supervision*, *salary*, *vacation days*, *career development*, *psychological support*, *laboratory and office equipment*, *family support*, *work environment*, and *social life*, among others. Participants rated each aspect using a 5-point Likert scale. The results from all satisfaction aspects were converted to a scale from 1 to 5 (5: *Very satisfied*, 1: *Very dissatisfied*), and the average was calculated and rounded to the nearest integer value to obtain an overall score. The resulting integer score was then converted back to the original satisfaction scale. The scale consisted of 20 items and showed excellent internal consistency ($\alpha = 0.90$).

Other Measures

Concerning the other variables analyzed in the current report, they were created based on the responses to specific questions. Therefore, no further data preparation was done regarding other reported measures. Nevertheless, the corresponding questions were reported accordingly throughout the report.

4 Demographics

Main findings from the following chapter:

- In 2021, 829 DRs (23.7%) in the Leibniz Association participated in the third Leibniz PhD Survey. This is a lower response rate than in the 2019 Survey (33%).
- Demographic indicators such as *gender* and *age* were relatively consistent with the 2019 Survey, which supports the stability of the sample and quality of the collected data.
- More than a third of DRs in the Leibniz Association are international with an increase of non-German DRs (39%) compared to the 2019 Survey (35%).
- The average estimated PhD duration is 3.8 years which is consistent with the 2019 Survey. However, a vast majority of participants (91%) estimated a duration from 3 to 5 years, which is a substantial increase compared to the 2019 Survey (69%).

This first chapter presents the description and basic facts of the DRs at the Leibniz Institutes that participated in the Leibniz 2021 PhD Survey, mainly their affiliation to the 97 Leibniz Institutes and some socio-demographic characteristics.

Respondents were asked about their *affiliation* to the Leibniz Institutes, *type of work*, *year of birth*, *gender identity*, *nationality*, *start of their PhD* and the *estimated PhD duration*.

The affiliation of respondents was used to inspect the quality of the survey data and gather statistical results at the level of individual Leibniz Institutes, providing information about the representativeness of the collected data. In this report, we only analyse data at the aggregate level of the five different sections of the Leibniz Association. [Table 4.1]

Table 4.1: *The sections of the Leibniz Association*

Section	Description
A	Humanities and Educational Research
B	Economics, Social Sciences, Spatial Research
C	Life Sciences
D	Mathematics; Natural Sciences, Engineering
E	Environmental Sciences

In total, 829 DRs participated in the 2021 Leibniz PhD Survey. Using the 2021 Leibniz data retrieval results[1] as a benchmark, our survey achieves a response rate of 23.7% of all eligible DRs at Leibniz Institutes. This response rate is lower than in the previous Leibniz PhD Survey in 2019 (33%). In addition, concerning participation in the 2019 Survey, 20% of the respondents reported that they also participated in 2019, 24% were unsure.

4.1 Sections

From the 97 Leibniz Institutes, DRs from 81 institutes participated in this survey. Although the participation from the institutes dropped compared to the 2019 Survey (88 institutes), the participation rate of 85% is a good indication for the representativeness and distribution of the survey data. According to their institute affiliation, we grouped each respondent in one of the five Leibniz Sections. The response rate per section is similar to the distribution from the 2019 Survey and it differs very little across most Leibniz Sections. [Figure 4.1] The highest response rates were reached in Section C (27.5%) and Section E (26%), whereas Sections A, B, and D had response rates of around 21%.

[1]The Leibniz data retrieval is an annual survey among the Leibniz Institutes to receive information on various aspects of the research situation and output. Results are the basis for the yearly report “Pakt für Forschung und Innovation Monitoring-Bericht”.

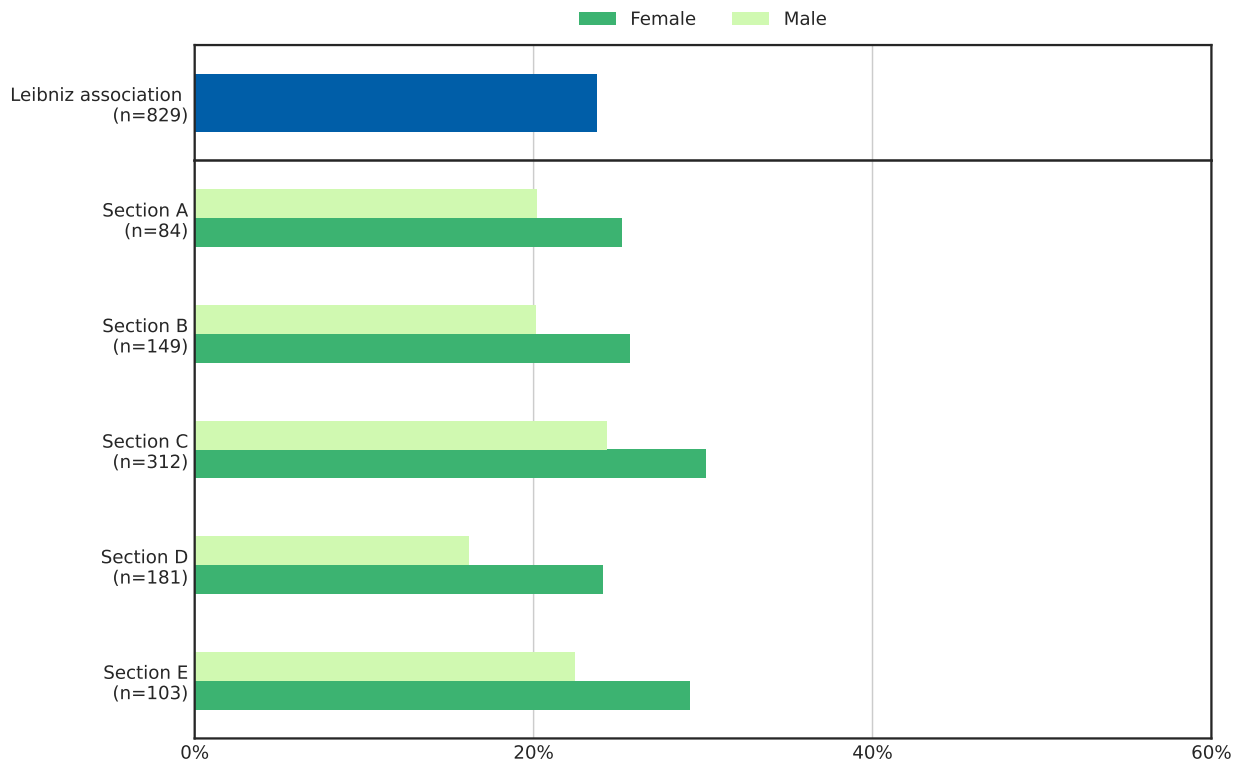


Figure 4.1: *Response rates by section.*

To account for the slight differences in under- and over-representation, we applied a weighting procedure and adjusted it according to gender distributions within the Leibniz Sections. The weights do not substantially affect the results but help to increase the representativeness.

4.2 Type of Work

In addition, respondents were asked what type of work they were predominantly doing for their research. The majority of DRs were working in the *laboratory* (45%), followed by *computational work* (27%) and *theoretical/methodological work* (17%). On the other side, the minority of DRs were doing *fieldwork* (6%) or *library/chronicle work* (2%). However, there were differences in the distribution of the type of work among the five sections. [Figure 4.2]

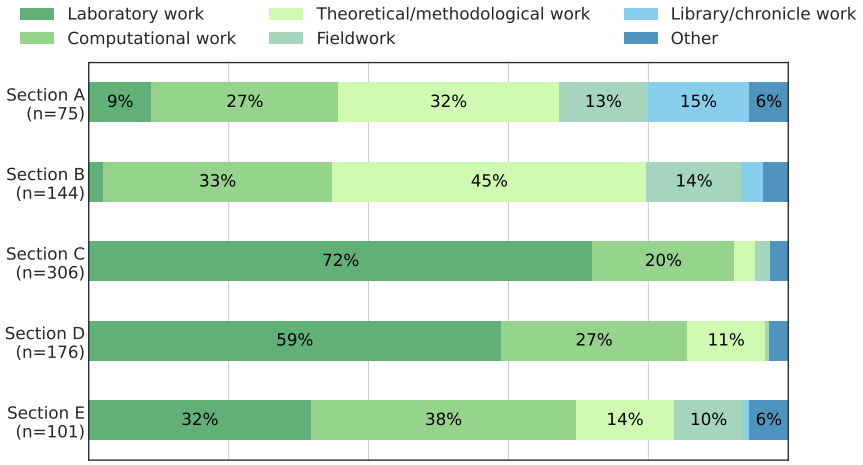


Figure 4.2: *"My overall work is predominantly" by section.*

4.3 Demographics

Gender

At the time of the 2021 Leibniz PhD Survey, 57% of the respondents identified as female and 43% as male. This is almost consistent with the gender distribution among DRs according to data from the Leibniz Head Office (50.7% females; 49.3% males). In addition, the survey data is relatively balanced within the respondents' sample size and is steady with the results of the 2019 Survey.

Gender distribution within Leibniz Sections was less balanced than within the Leibniz Association average, which reflects a variation in gender rates across scientific disciplines and response rates. At the Leibniz Sections, there was a majority of females in Section A (65.7%) and a majority of males in Section D (66.6%), consistent with the response rates of this survey. In the rest of Sections B, C, and E, the gender distribution of the response rates was relatively balanced. [Figure 4.3]

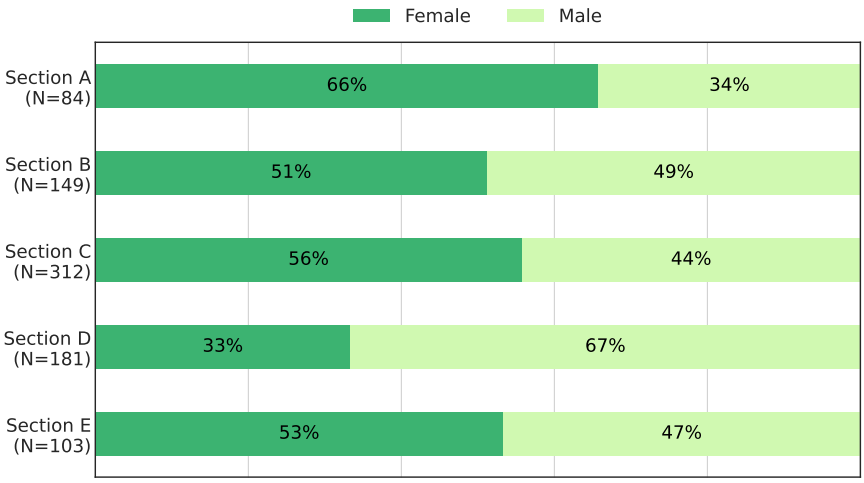


Figure 4.3: *Respondents' gender by section (unweighted results).*

Similarly to the 2019 Survey, a higher propensity of female DRs to participate in the survey was apparent. Gender distortion, as well as respondents' affiliation (section), were corrected by weighting the results to make survey estimates meet the Leibniz data retrieval on average. Consequently, the analyses in the current report used the weighted results.

Age

The respondents' average age was 29.1 years, which is consistent with the 2019 Survey. Of all respondents, 11% were 25 years old or younger. Most DRs (58%) were between 26 and 30 years old, while 29% were 31 years old or older. [Figure 4.4] The average age differed slightly across the five sections, varying from 28.5 years in Section C to 30 years in Section A.

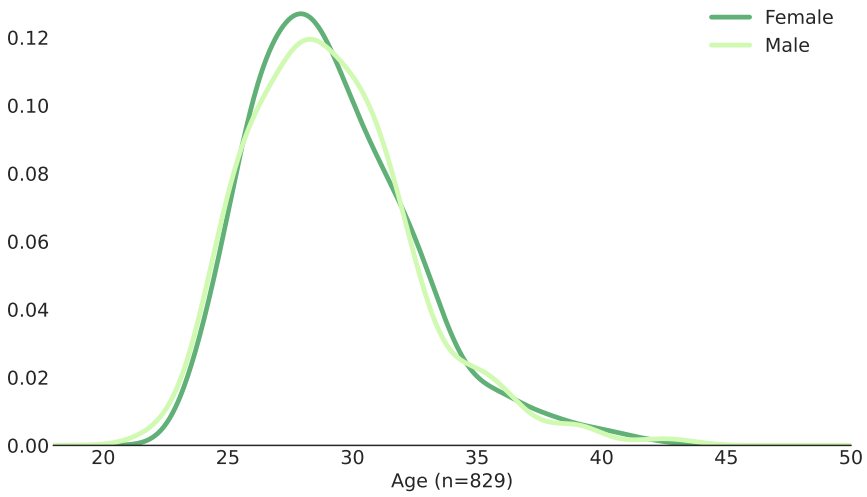


Figure 4.4: *Age distribution by gender.*

4.4 Citizenship

DRs working at Leibniz Institutes are very international. More than a third of the respondents indicated not having a German citizenship: 14% held citizenship of another EU country while 25% of a non-EU country. The share of international DRs was slightly larger than the 2019 Survey (35%), which confirms that the involvement of international DRs continues to grow.

The Leibniz Sections varied in the proportion of international DRs: Section A has the lowest percentage of international DRs (20%), even though it has increased compared to the 2019 Survey (15%). The most international sections were Section D (51%) and Section E (48%). The other sections, Section B and Section C, had a share of international DRs of 25% and 39% respectively. [Figure 4.5]

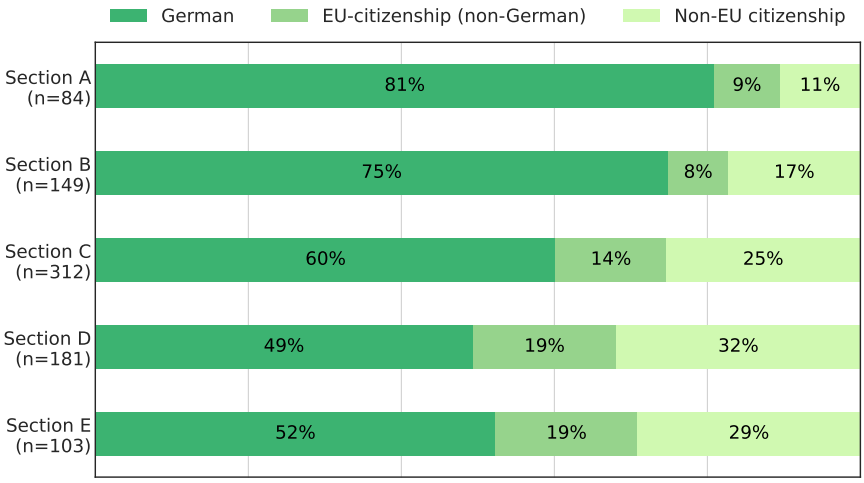


Figure 4.5: *"What is your citizenship?" by section.*

In addition, non-German respondents were asked about their self-perceived German language skills. Around 5% of the international DRs were native speakers which is 2 percentage points less compared to the 2019 Survey. On the other hand, 19% of the DRs indicated not having any German skills. This is 2 percentage points greater than the 2019 Survey. Nearly a third (33%) of the international DRs in the Leibniz Institutes reported a *beginner level skill* (*A1* or *A2*) and another 30% reported an *intermediate level* (*B1* or *B2*). Around 13% of the respondents spoke German *fluently* (*C1* or *C2*). [Figure 4.6]

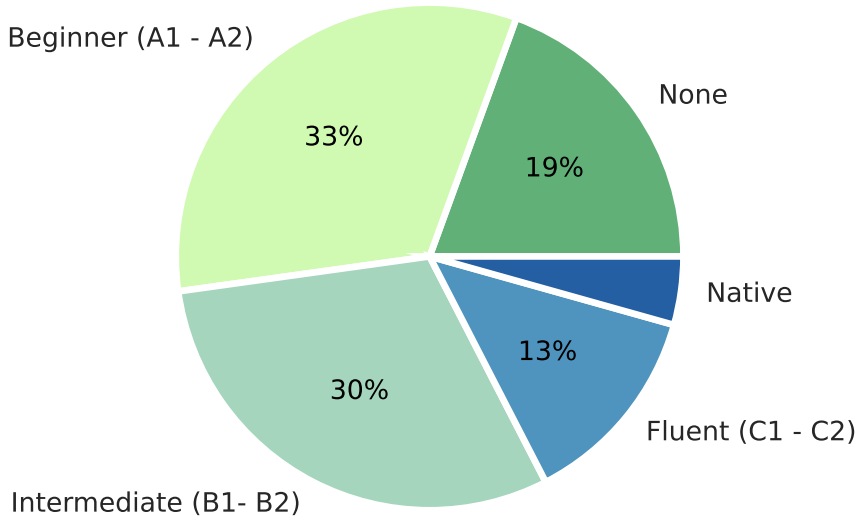


Figure 4.6: *"Do you speak German?" (n = 329).*

4.5 PhD Duration

Year of PhD

In order to calculate the respondents' year of PhD, they were asked in which year they started their PhD. Note that this time might not always correspond to the beginning of their first contract at their Leibniz Institute, since some respondents might have enrolled at the university before getting a contract. During the data collection phase, 22% of the respondents were in their *first* year of PhD, while 26% were in their *second* year. Another 20% and 16% of respondents were in their *third* and *fourth* years, respectively. 15% were in their *fifth* year or more. [Figure 4.7]

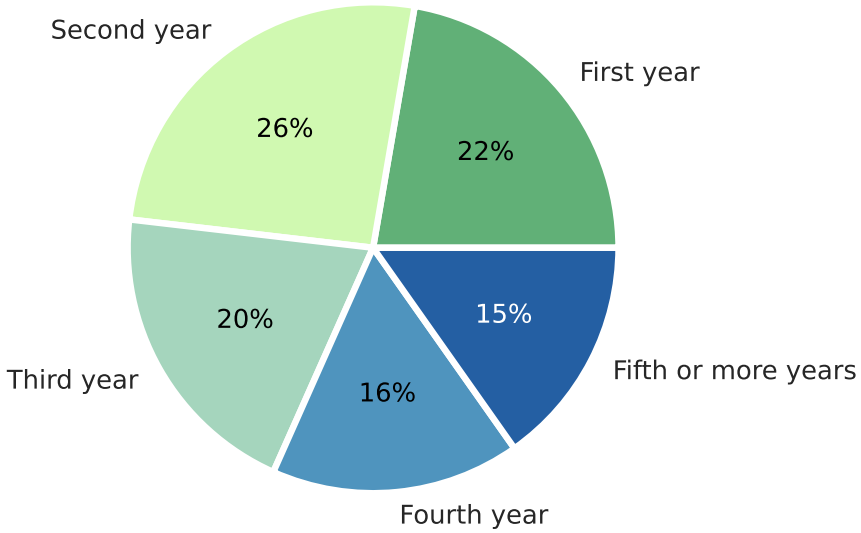


Figure 4.7: *Estimated year of PhD (n = 829).*

Estimated PhD Duration

In order to calculate the estimated PhD duration, respondents were asked when they expected to finish their PhD. On average, DRs in the Leibniz Association estimated that their PhD will take 3.8 years, which is the same average as in the 2019 Survey. However, the percentage of DRs estimatong to finish their PhD in 3 to 5 years substantially increased (91%) compared to the 2019 Survey (69%).

Regarding the differences among sections, Section B respondents reported the longest expected average PhD duration (4.2 years), 38% expected that their PhD would take *5 years or more* to complete. On the other hand, Section E DRs reported the shortest estimated PhD duration (3.6 years), with 56% expecting *3 years or less*. [Figure 4.8]

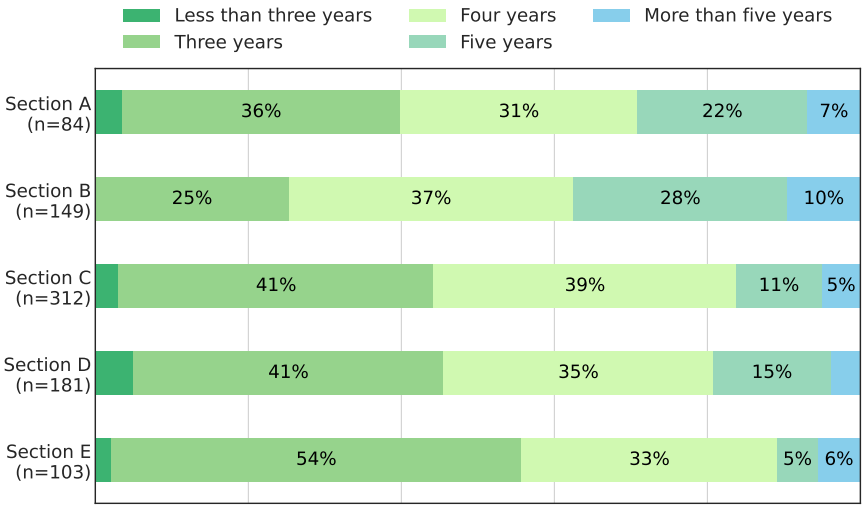


Figure 4.8: *Estimated PhD duration by section.*

5 Working Conditions

Main findings from the following chapter:

- Non-EU DRs are significantly more often financed by stipends (20%) than German DRs (5%) and EU DRs (non-German) (7%).
- On average stipend recipients are paid less than DRs with a contract or mixed type of payment (stipend and contract).
- The number of DRs receiving a monthly net income higher than 2000€ increased compared to the 2019 Survey. The share of female DRs in this income bracket has doubled compared to the 2019 Survey.
- There is a discrepancy on the level of payment ('contract volume') across different Leibniz Sections. Nearly one-third of DRs from Section B (30%) and D (37%)receive a 100% salary compared to just one-fifth in Section C (21%) and E(18%) and only 8% of the respondents in Section A receive full salary.
- More than half of the DRs work more than 40 hours per week.

This chapter focuses on various mostly contractual aspects of a doctorate such as *type of payment*, *monthly net income*, *contract duration* and *extensions* granted. To conclude the chapter, an overview pertaining to the *vacation days* and *working hours* of DRs is given.

5.1 Type of Payment

When asked how their doctorate was being financed, 75.7% reported being paid by a *contract* of the public German payment system (such as TV-L, TVöD, among others) – which is lower than in the 2019 Survey. In addition, 9.2% of the respondents reported being financed by a *stipend*, which is slightly lower compared to the 11% reported in the 2019 Survey. Another 2.6% stated that their doctorate was being financed through a *combination of a stipend and paid contracts*, which is slightly higher compared to the 2% reported in 2019. 2% of the respondents indicated *not receiving any form of payment* (unpaid), which is consistent with the percentage reported in the 2019 Survey. Typically, this phenomenon of being unpaid occurs towards the conclusion of the

doctorate in order to provide an option to the DRs to complete their research without any payment, still having access to the institute's resources. Finally, the number of respondents who stated that they were being funded by a *guest contract* was 10%, which is substantially higher than the 2% reported in the 2019 Survey.

Sections

The type of payment differed across the Leibniz Sections: Section A (81%), B (79%), and D (80%) had a relatively high proportion of DRs being funded by *contracts*, while Section C was somewhere in between (74%), and Section E was on the lower end (66%). The percentage of DRs being funded by *stipends* varied between 6 and 13 % across different Leibniz Sections. The number of DRs being funded by a *combination of contracts and stipends* also varied. In Section E, this mixed funding was the highest at 5%, whereas Section B and C had the lowest at 3% each. Sections A and D had the lowest proportion of mixed funding, with 1% each. *Guest contracts* seemed to be somehow common in almost every section, with percentages ranging from 13% and 12% in Section D and C to 10% and 9% in Section E and A respectively – only Section B had an outstanding low share of 1%. This is a significant shift from the 2019 Survey, where guest contracts were only present in Section D, E and C. Lastly, an *unpaid* doctorate was only reported in Sections B (2%), C (3%), and E (6%), with no occurrences in Section A and D. The percentage of DRs with a contract is lower than in the 2019 Survey, except in Section E. [Figure 5.1]

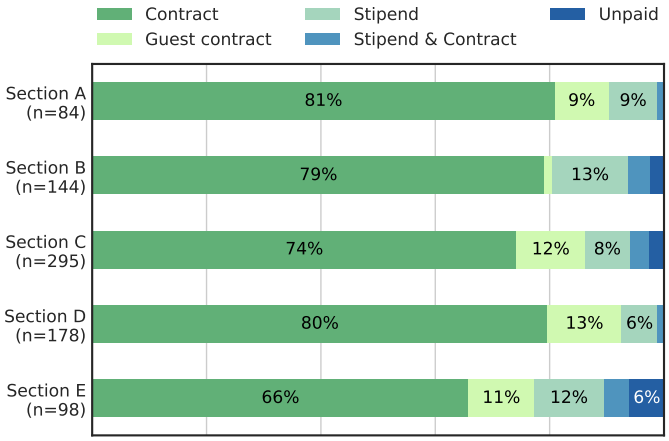


Figure 5.1: *"How is your doctoral research currently financed" (type of payment) by section.*

Citizenship

Regarding *contracts*, for respondents with a German citizenship a share of 83% was reported, for EU DRs (non-German) a share of 73% and for non-EU DRs a share of 61%. A substantial proportion of non-EU respondents stated being funded by a *stipend* (20%), which was less common for German DRs (5%) and EU DRs (non-German) (7%). However, the difference in the proportion of stipends between German and non-EU DRs has decreased since 2019 (15% vs. 22%). The highest share of *guest contracts* was reported by non-EU respondents. [Figure 5.2] Despite the difference in citizenship, the percentage of DRs with a contract has decreased compared to the 2019 Survey.

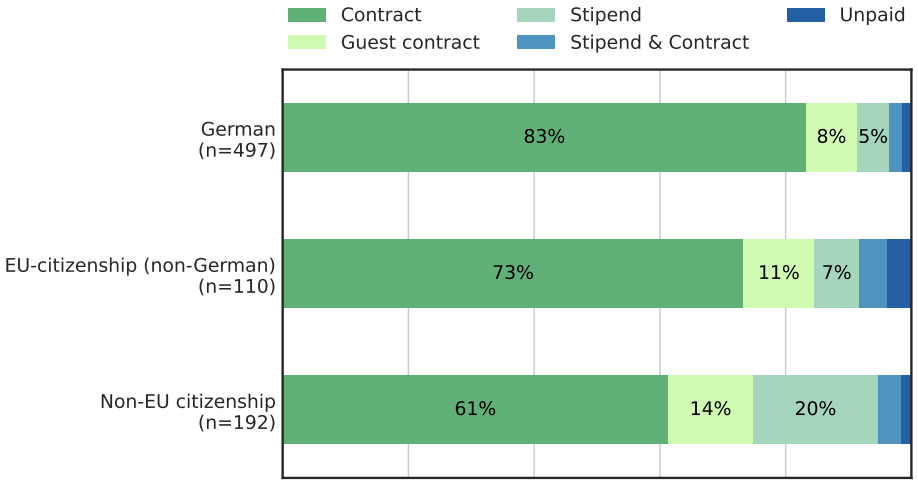


Figure 5.2: *"How is your doctoral research currently financed" by citizenship.*

Parenthood

65% of DRs with children reported being financed by a *contract* compared to 77% of DRs without children indicating this. Regarding *stipends*, the trend was reversed, with only 8% of childless DRs being financed this way, while 17% of DRs with children reported being financed by a stipend.

Type of Stipend

The stipends were examined in more detail to determine whether they were funded by the Leibniz Institutes (*internal*) or a third party (*external*). Close to 84% of the stipend recipients rely on *external stipends* (*from abroad* and *from Germany*) while 16% reported being funded by *internal stipends*. The share of *internal stipends* therefore has decreased compared to the 2019 Survey. [Figure 5.3]

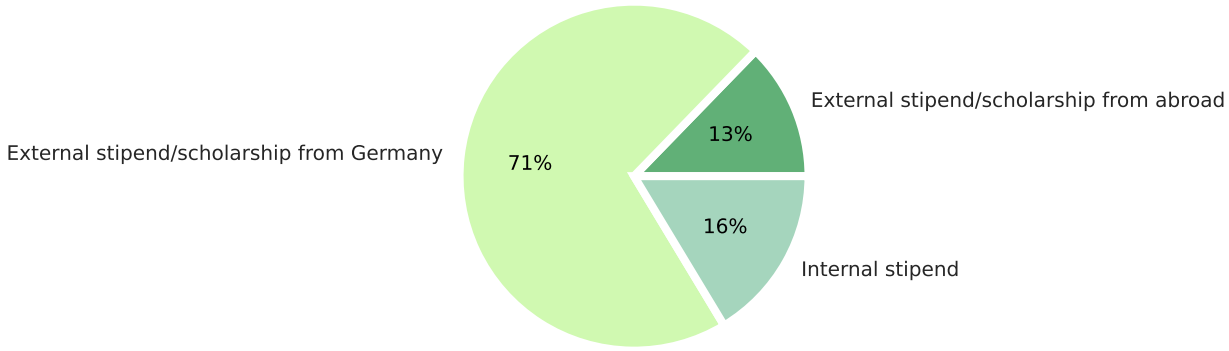


Figure 5.3: *"How is your doctoral research currently financed?" (stipend) (n = 94).*

Across all Leibniz Sections the majority of stipend recipients (87%) are primarily funded by either an *internal stipend* or an *external stipend from Germany*. Only a small percentage of stipend recipients (13 %) are funded *from abroad*, this being most prevalent in Section C, D and E. Notably, none of the stipend recipients from Section E reported being provided with an *internal stipend*.

According to the DRs' responses, holding a German citizenship appears to influence which type of stipend they receive: Of the stipend recipients with a German citizenship, 97% report receiving *external stipends from Germany* while this share is substantially lower among EU stipend recipients (non-German) (43%) and non-EU recipients (59%). Conversely, EU stipend recipients (non-German) receive *internal stipends* in much larger amounts (32%) as well es non-EU stipend recipients (22%) compared to German stipend recipients (3%). [Figure 5.4]

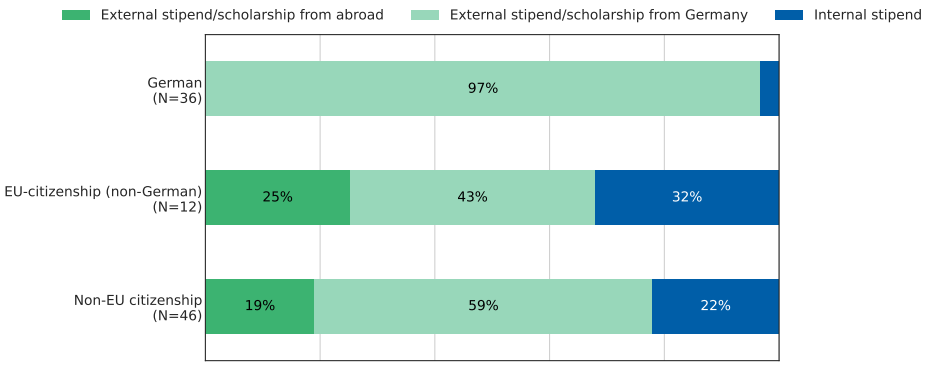


Figure 5.4: *"How is your doctoral research currently financed" (stipend) by citizenship.*

5.2 Monthly Net Income

Figure 5.5 illustrates how the type of payment is the most crucial factor in explaining the disparities in income distribution compared any other factor. The figure displays the distribution of various payment types across different income brackets, highlighting their impact on income levels. Respondents holding *stipends* are on average paid less than those with a *contract* or a *mixed type of payment* (*stipend and contract*). DRs with a *guest contract* are not paid more or less than those with a *contract* which differs from the 2019 Survey. Also, the percentage of respondents who are paid by *stipends* with a net income of less than 1200€ has decreased substantially compared to 2019 Survey. According to the German Federal Office of Statistics, single-person households with less than 1251€ are considered to be at risk of poverty. Therefore, around 3% of the *stipend* recipients and 6% of the DRs with a *mixed type of payment* are poverty-vulnerable. Additionally, stipend recipients have to pay for their statutory health insurance on their own, resulting in an even lower income after adjusting for this expense.

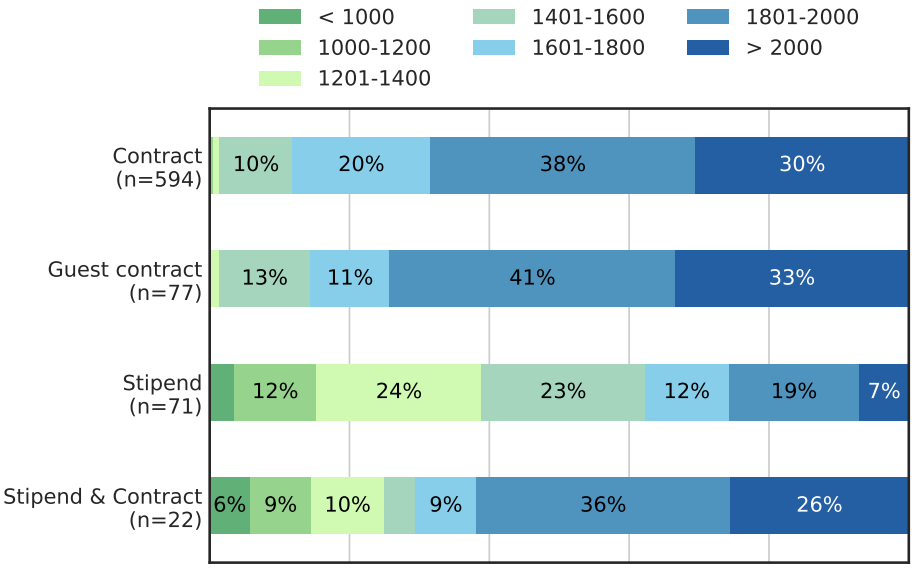


Figure 5.5: *"Right now, what is your monthly net income for your work at your research organization in euros?" based on the type of payment.*

Gender

While one-third of the male DRs reported earning more than 2000€, only a quarter of the female DRs indicated the same. On the other hand, there are more female respondents who earned between 1600-2000€ compared to their male counterparts. In the low-income range, only 8% of the female respondents reported earning between 1400-1600€ while this percentage is twice as high as for the

male respondents. A significant discrepancy in gender does not exist in the low-income bracket. Compared to the 2019 Survey, the percentage of female respondents in the high-income bracket has doubled (25% vs. 12%) while there is also a noticeable increase in the male respondents in this income bracket (32% vs. 20%). [Figure 5.6]

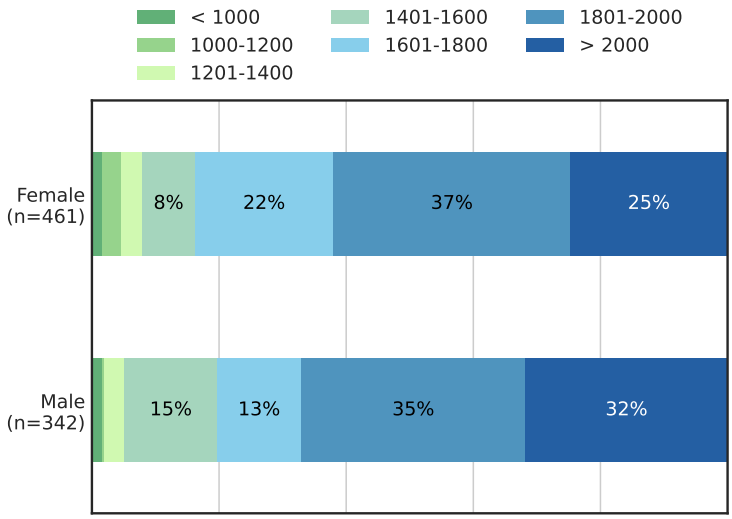


Figure 5.6: *"Right now, what is your monthly net income for your work at your institute in euros?" (monthly net income) by gender.*

Sections

A discrepancy of DRs who earn a monthly net income of more than 1600€ between the different Leibniz Sections does not exist, while small percentage differences are noted in the low-income range. Particularly noteworthy is that close to one-half of the respondents of Sections B and D earn more than 2000€. This could be attributed to a higher percentage of full working contracts among the respondents of these sections.

Citizenship

Approximately one-third of German and EU respondents report a monthly net income higher than 2000€ whereas for the non-EU respondents only one-fifth reported such an income. 5% of German and EU respondents indicated a monthly net income of less than 1400€, while for non-EU respondents, this share was at 12%. This suggests that there are notable differences in income levels across the various citizenship categories, with non-EU respondents experiencing greater income disparities.

5.3 Level of Payment (Contract Volume)

Almost one-third of the DRs reported earning a salary between 51-65% TV-L and a fifth of the DRs earn a 100% TV-L salary and a fifth earn between 66-75% TV-L. Around one in ten reported earning less than 50% TV-L

Sections

Looking at the level of payment of a contract according to the public payment scheme applied in the German academic system, across the different Leibniz Sections, a very small share of the respondents earns less than 50% TV-L. One-fifth of the DRs in Section D hold a contract with 50% TV-L, which is the highest share among all the Leibniz Sections. The majority of DRs earn between 51-65% E13 TV-L. This type of contract is more prevalent in Section A where close to 68% reported earning somewhere between 51%-65%. Nearly a quarter of DRs from Sections B, D, and E earn between 66%-75% TV-L. However, the percentage of DRs holding 100% contracts has increased compared to the 2019 Survey. Figure 5.7 illustrates that at least a quarter of respondents from Sections B through E reported earning 100% of the salary, whereas this percentage is low for Section A (8%) and high for Section D (37%). This is a significant change from the 2019 Survey, where only Section B had close to a third of respondents receiving full salary. Therefore, some progress can be seen in terms of salary increase / a higher proportion of paid working time.

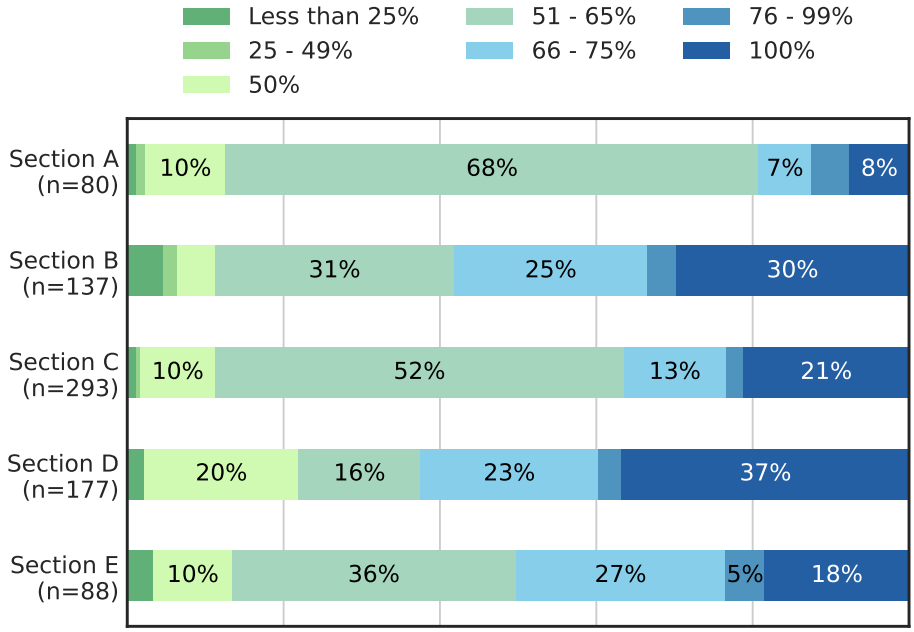


Figure 5.7: *Level of payment by section.*

Citizenship

Regarding 100% contracts, the share of EU DRs (non-German) is the highest (37%), followed by non-EU DRs (33%) and therefore leaving DRs with a German citizenship at the lowest share (20%). A possible explanation for this may be the distribution of citizenships across the Leibniz Sections. Figure 4.5 displays that the share of non-German DRs is substantially higher in those sections that are also found to have higher percentage contracts (see Figure 5.7). Most of the DRs with a German citizenship report having contracts with 51%-65% (42%), a share that is 10% higher than for non-German DRs. A very similar difference was found between DRs with German citizenship and non-EU DRs for contracts with 66%-75%. [Figure 5.8]

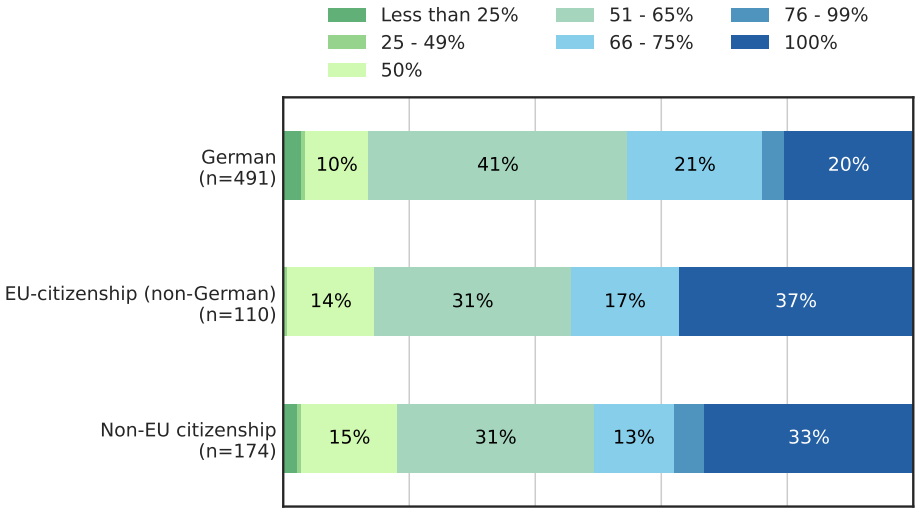


Figure 5.8: *Level of payment by citizenship.*

5.4 Contract Duration

A vast share of the DRs reported that their longest contract duration was between 25-36 months, which corresponds to 2-3 years (≈ 60%). Less than 5% of DRs reported their longest contract duration being between 6-12 months. Around 19% of DRs reported a contract duration of 1-2 years, which is a decrease of 2% compared to the results of the 2019 Survey. Notably, the majority of contracts currently being offered are below the anticipated average duration of contracts described in chapter 3, which would ideally require a duration of approximately 3.8 years. This discrepancy between the actual contract duration and the expected duration of a doctorate within the Leibniz Association could potentially contribute to stress and mental health issues for DRs.

Sections

Only a small share of DRs (specifically 1 in 10 respondents in Section C) reported a maximum contract duration of 6–12 months. A quarter of the contracts issued in Section B, C, and D were limited to a duration of 2 years while nearly every fifth of the respondents across different Leibniz Sections had a contract of more than 3 years. Half of the respondents in Section B and C reported having a contract duration between 2 to 3 years while more than two-thirds of Section A and E respondents indicated such a contract. [Figure 5.9]

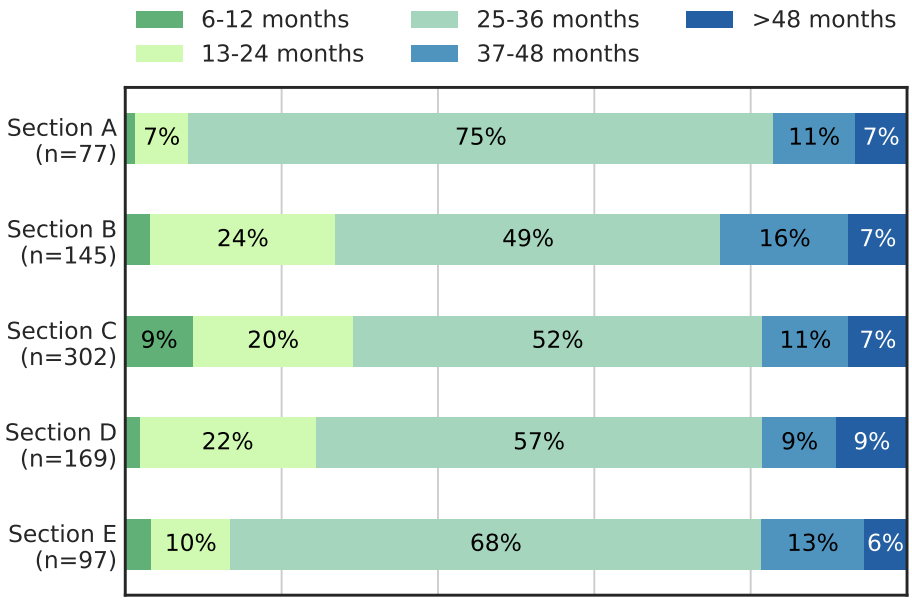


Figure 5.9: *"What was or is the longest duration of your contract or stipend related to your PhD project?" (contract duration) by section.*

Citizenship

German and EU (non-German) DRs reported a slightly higher proportion of contracts with a maximum duration between 1-3 years compared to non-EU DRs. Conversely, the percentage of German DRs with a maximum contract duration between 3-4 years was almost half that of their EU and non-EU counterparts. Notably, the percentage of DRs with a maximum contract duration exceeding 4 years remained consistent across all surveyed citizenships. [Figure 5.10]

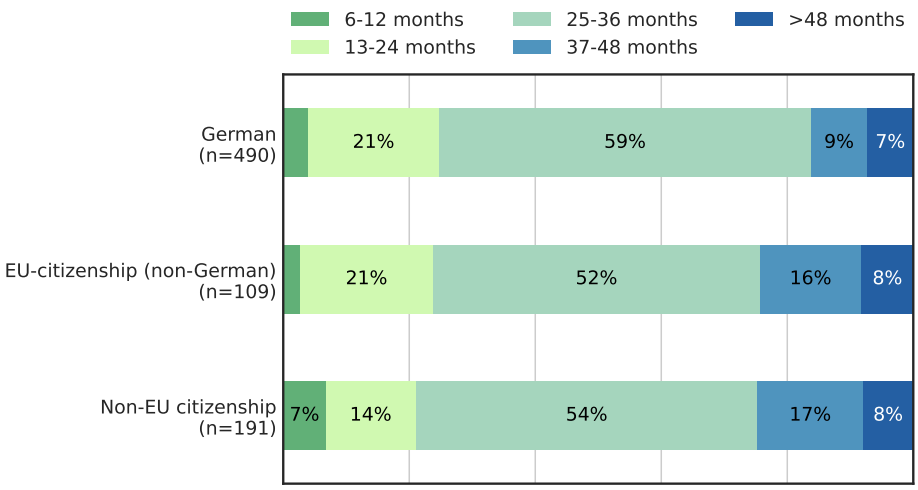


Figure 5.10: *"What was or is the longest duration of your contract or stipend related to your PhD project?" (contract duration) by citizenship.*

5.5 Contract Extensions

As noted in the preceding section, it is typical for DRs to require more time to complete their PhD than their maximum contract duration. Therefore, contract extensions were also surveyed. Around half of the DRs reported at least *one extension* at the time of the survey while one-third of the DRs reported *two extensions* and nearly one in ten reported *three extensions*. An even larger number of contract extensions is rather rare within the Leibniz Association: 6% of all DRs had *four or more extensions* while working at their Leibniz Institute.

Sections

More than half of the DRs in Section A, B, C and D reported *one extension* while this is true for every third DR from Section E. Only one-fifth of the DRs from Section A reported getting *two extensions* while this percentage is higher for other sections (close to one-third). Also interesting to observe is that one-third of the DRs from Section E reported receiving *three extensions* while this is the case for only one in ten DRs received in all every other section. [Figure 5.11]

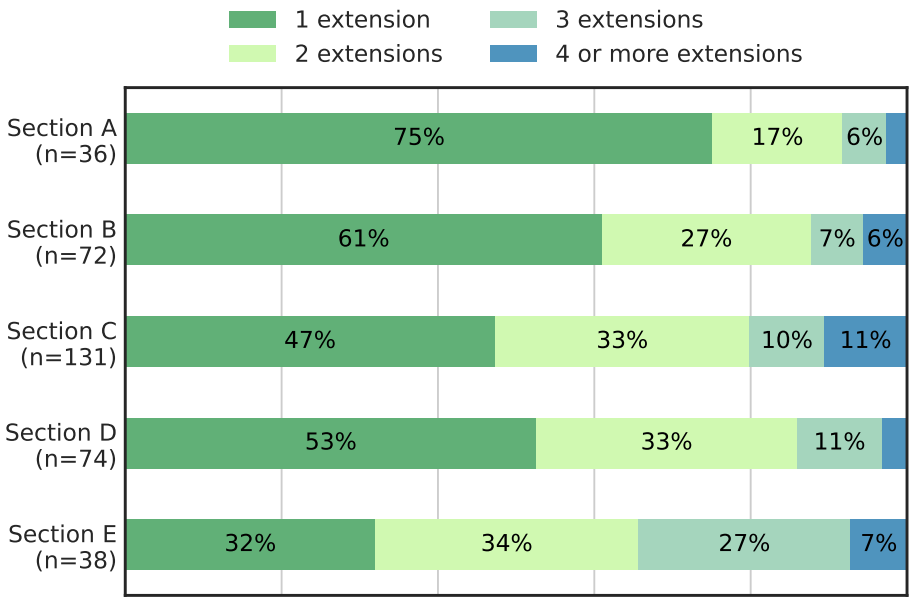


Figure 5.11: *"If any, how many extensions or additional contracts/stipends did you get during your PhD?" (contract extensions) by section.*

Citizenship

The share of DRs with a non-EU citizenship (59%) reporting *one extension* was slightly higher compared to EU (non-German) DRs (54%) and German DRs (52%). Regarding non-German DRs, the difference for *4 or more extensions* is noteworthy: While only 2% of non-EU DRs indicate this, the share for EU (non-German) DRs is as high as 9%. It should be noted that DRs from non-EU countries need a working visa/residence permit to stay in Germany which is connected to the contract duration. [Figure 5.12]

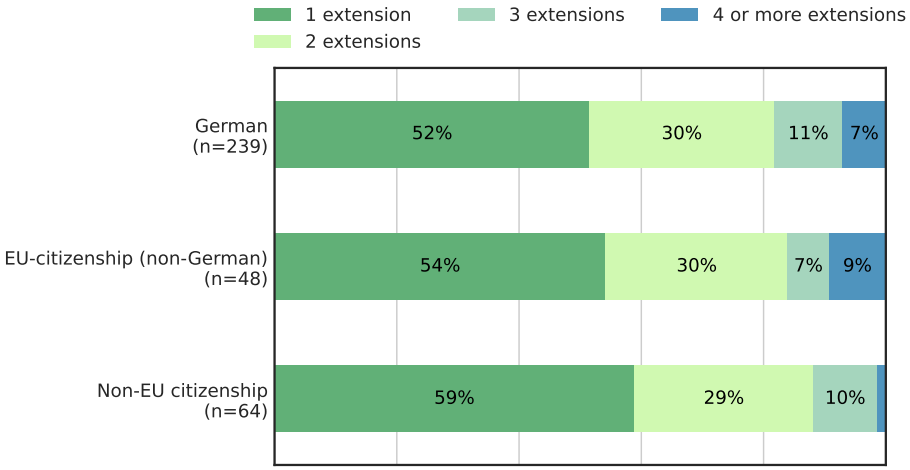


Figure 5.12: *"If any, how many extensions or additional contracts/stipends did you get during your PhD?" (contract extensions) by citizenship.*

Year of PhD

Figure 5.13 shows the number of extensions that the DRs received depending on their year of PhD. The share of *one extension* is higher for DRs in their second (87%) and third year (78%), while a third of DRs in their fourth or more year received *two extensions*. Very few (<10%) received *3 or more extensions*. It should be noted that the percentages here are of limited informational value and comparability due to the small total number of DRs in some subgroups. Also, it can be assumed that with more years, a higher amount of extensions is plausible.

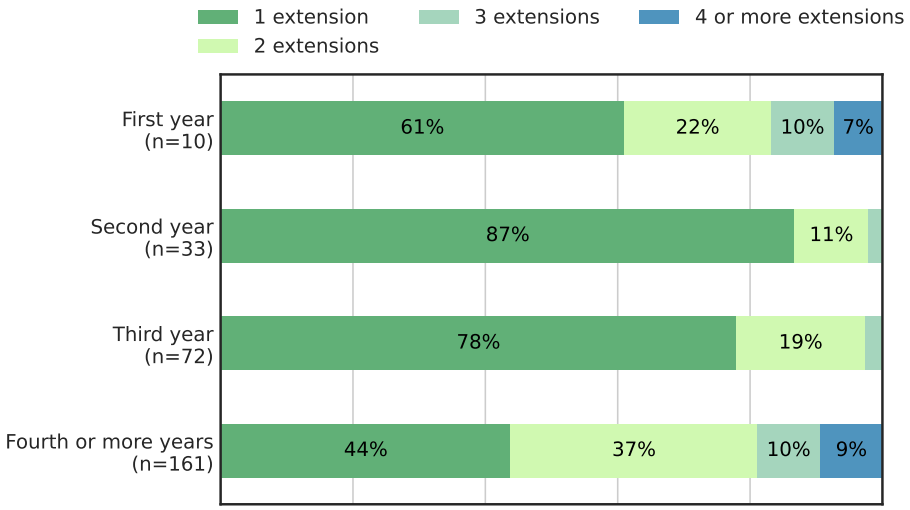


Figure 5.13: *"If any, how many extensions or additional contracts/stipends did you get during your PhD?" (contract extensions) by year of PhD.*

5.6 Working Hours

Within this section, DRs with a contract were asked about the total number of hours they are expected to work on a weekly basis according to their contract. It is important to note that there is a possibility of measurement error in the response to this question, as it may be influenced by social desirability bias. In other words, some participants may be inclined to overestimate their actual working hours, even in the context of an anonymous survey.

Figure 5.18 displays the number of hours the DRs reported actually working per week. Approximately 40% of the DRs stated working between *40–50 hours* per week and 38.8% of the DRs reported working between *30–40 hours* per week. These findings suggest that a higher proportion of the respondents are working full-time hours, with a fairly even split between those who work closer to 40 hours and those who work closer to 50 hours per week. Nearly one in ten DRs reported working for *more than 50 hours*, irrespective of their contract type, and 6.6% *less than 30 hours* per week.

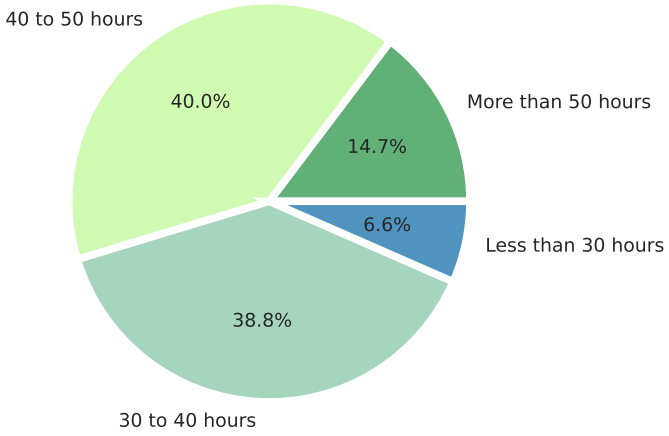


Figure 5.14: *"On average, how many hours do you typically work per week in total?" (n = 823).*

Comparing the contract working hours to the (reported) actual working hours, discrepancies emerge: While nearly half of the DRs report having contracts specifying less than 30 working hours per week, this is not reflected in the reported actual working hours, when in fact, less than 7% of the DRs reported having worked for 30 hours or less, which suggests that many of the DRs are working more hours than they are officially contracted to do. Even in cases of 100% contracts where the DRs are obliged to work 40 hours per week, the majority of them reported actual working hours of more than 40. [Figure 5.15]

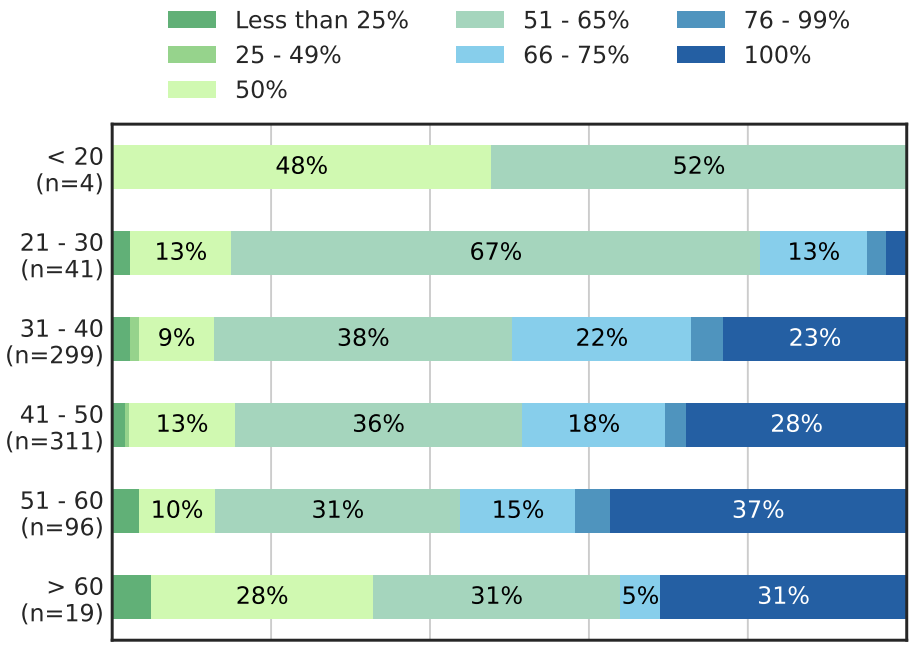


Figure 5.15: *Working hours according to contract vs. actual working hours.*

Type of Payment, Citizenship, Gender

Close to half of the respondents having stipends worked between 30 to 40 hours a week, while another 42% worked more than 40 hours. A greater proportion of respondents who held a non-EU citizenship reported working for more than 50 hours per week, compared to German and EU-citizenship respondents. Conversely, nearly half of the German and EU DRs reported working between 40-50 hours per week. On average, male DRs report more actual working hours than female DRs.

Distribution of Working Hours on Different Tasks

Apart from only asking the DRs about their actual working hours, their allocation was also surveyed. Tasks of interest were the *scientific work directly related to the doctoral research*, *scientific work not related to the doctoral research*, *attending courses and seminars*, *teaching and supervision duties* and *administrative tasks*. Most of the DRs dedicated their actual working hours (>60%) to *scientific work directly related to their doctoral research*. DRs reported spending less than 25% of their time on activities other than their doctoral research. Less than 10% was spend on *teaching and supervision*. *Administrative tasks* take up to 10% of the working hours. Another 10% is spent on *scientific work not directly related to the doctoral research*.

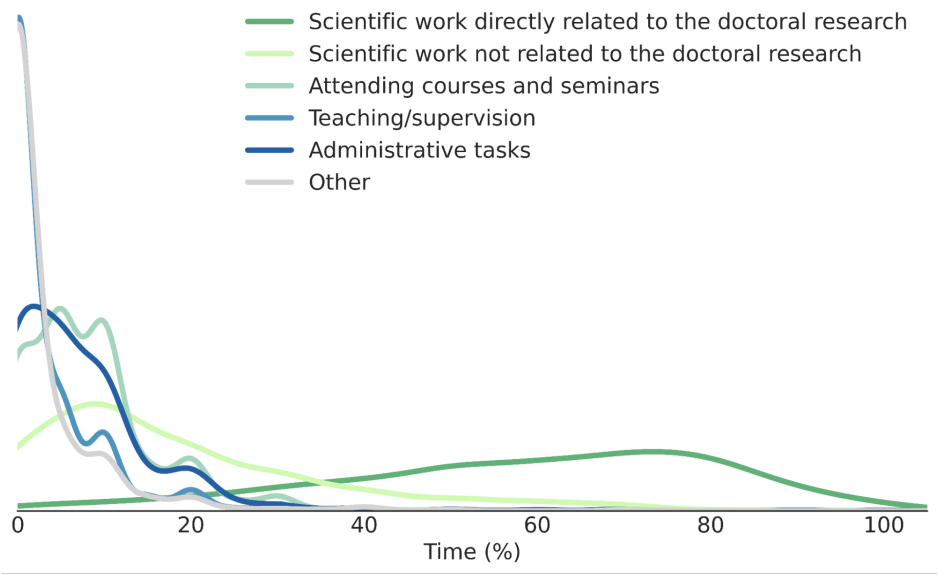


Figure 5.16: *"What percentage of your time do you currently spend on average on the different tasks?"*

5.7 Vacation

DRs were surveyed regarding the number of annual vacation days specified in their contract, as well as the actual number of vacation days taken in the previous year. Additionally, they were asked about their perceived freedom to take time off and reasons behind any potential limitations in their ability to take days off.

Contract Vacation Days vs. Vacation Days Taken

Among DRs with a *contract* (n = 588), the majority (87 %) had anywhere between 26-30 days vacation days while 7 % stated that they are entitled to take between 21-25 days of vacation per year. This is in stark contrast to DRs financed by a *stipend* (n = 68) with close to half reporting not having anything specified regarding their vacation days and 46 % reporting 26-30 official vacation days. This distribution is similar to DRs with a *combination of stipend and contract* (n = 20). When asked how many vacation days they have actually taken, the majority of DRs reported taking more than two weeks during the surveyed period (61%), while a quarter of the DRs reported taking anywhere between one week and two weeks off within the respected time period. Interestingly, 5% of the DRs indicated that they did not take any vacation days at all. [Figure 5.17]

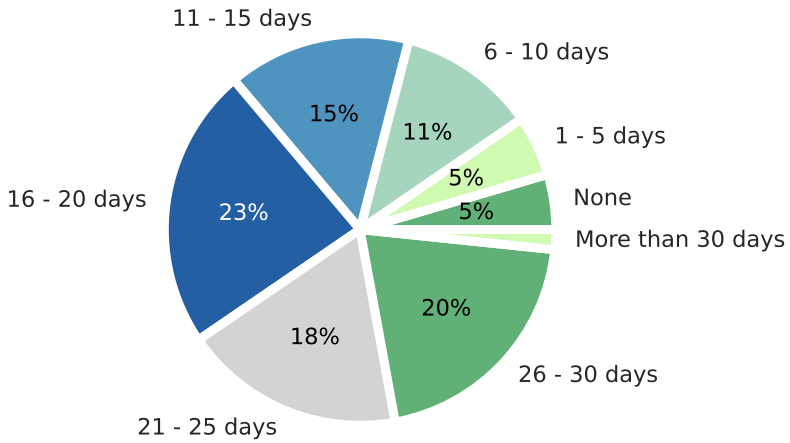


Figure 5.17: *"How many days did you take off (holiday) in the past year?" overall percentage (n = 766).*

Citizenship

The reported number of vacation days taken by Non-EU respondents (n = 182, 88 %) was less compared to their German counterparts (n = 479, 98%) and those from EU countries (n = 105, 95%). Notably, one in ten of the non-EU DRs stated not taking any vacation days at all. This could be due to the fact that DRs with stipends or a combination of stipend and contract tended to take less vacation days on average compared to DRs with contracts.

Perceived Freedom to Take Vacations

When asked about their perceived freedom to take days off, approximately half of the DRs expressed a positive sentiment. Conversely, 43% reported feeling restricted in their ability to take vacation days. As reasons those DRs mostly indicated a *high workload* or *pressure from the supervisor*. Additionally, a smaller share reported *saving their vacation days for an extended holiday in the future*. Interestingly, a minuscule percentage of the DRs not feeling free to take days off reported having no specific reason for not utilizing any vacation days (Figure 5.18).

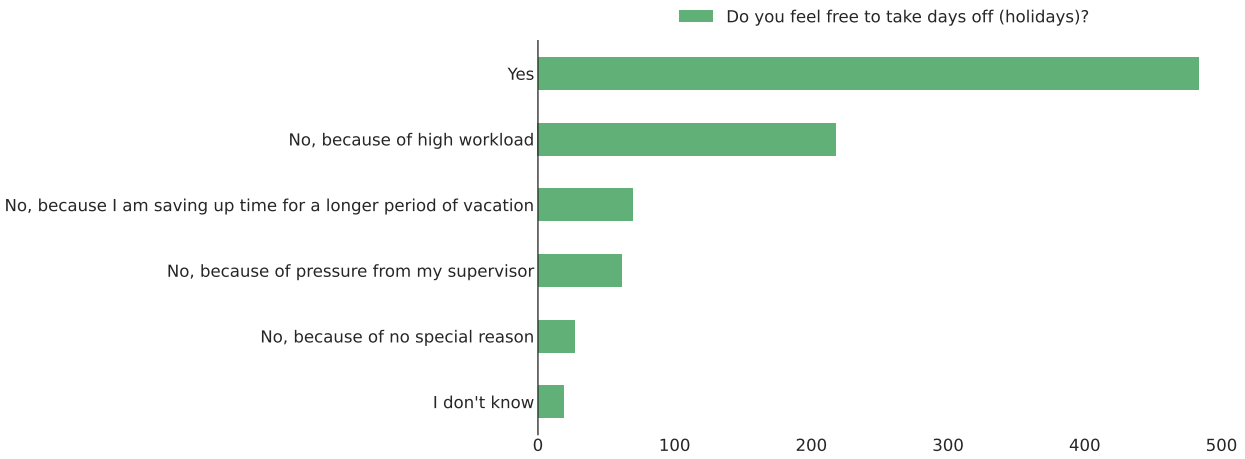


Figure 5.18: *"Do you feel free to take days off?" absolute numbers (n = 823).*

6 Satisfaction

Main findings from the following chapter:

- Generally, the satisfaction of DRs in most of the domains decreased compared to the 2019 Survey.
- Up to 26% of the surveyed DRs were dissatisfied with career development initiatives.
- Among all domains, psychological support had the worst evaluation with 33% of all surveyed DRs reporting to be on average dissatisfied with the psychological support services rendered by their institutes.
- The frequency of thoughts of quitting among DRs has gone up by 4 percentage points, with 36% of the surveyed DRs reporting to have *often* or *occasionally* contemplated quitting their PhD compared to the 32% in the 2019 Survey.

6.1 Overall Satisfaction

The satisfaction of DRs in various domains is a crucial indicator of both the quality of the training they receive and the researchers' well-being during their post-graduate studies and work. DR's contentment with various aspects of their work can significantly influence completion rates, productivity and the quality of outputs, career trajectories, as well as their mental and emotional well-being. [6] In this chapter, the aim is to evaluate the reported satisfaction of DRs in selected domains. As it was the case in the 2019 Survey, DRs were asked a range of questions targeting various domains.

Figure 6.1 provides an overview of the satisfaction of DRs in the selected domains. Similar to the 2019 Survey, those domains were *vacation days*, *supervision*, *work environment and atmosphere*, *office equipment*, *adherence to good scientific practice*, *technical support*, *scientific support*, *family support*, *salary*, *workshops and skills training*, *contribution to science*, *bureaucracy and administrative support*, *support for implementing open science practices*, *social life at the institutes*, *science communication and outreach*, *support for non-German DRs*, *career development*, *workload* and *psychological support*.

Most DRs (n = 829) evaluated their satisfaction in most of the domains as *satisfied* save for *psychological support* and *support for implementing open science practices* where most respondents were rather "neutral". Some of the domains with the worst satisfaction evaluation by DRs (*dissatisfied* and *very dissatisfied*) included: *psychological support* (33%), *bureaucracy and administrative support* (24%) and *social life at the institute* (23%).[2] *Satisfaction with vacation days* (35%), *supervision* (26%), *work environment and atmosphere* (26%) as well as *office equipment* (25%) and *laboratory equipment* (25%) topped the domains in which DRs were *very satisfied*. *Support for international DRs* (10%), *career development* (7%), *workload and psychological support* (6%) were at the bottom of the ranking — with regard to being *very satisfied*. Unlike the previous results pertaining to *dissatisfaction* in which the frequency of responses was linearly aggregated, we find it interesting to present the *very satisfied* and *satisfied* responses separately. The results in Figure 6.1 show that, *adherence to good scientific practice* (51%), *support with office equipment* (50%), *contribution to science* (50%) and *vacation days* (49%), were respectively — among the most evaluated — by the DRs as *satisfied*. Notably, the percentage of DRs that report being *very satisfied* in each of the domains is glaringly lower than those that report being *satisfied*. This observation implies that the satisfaction of DRs in the selected domains is rather modest and up for improvement.

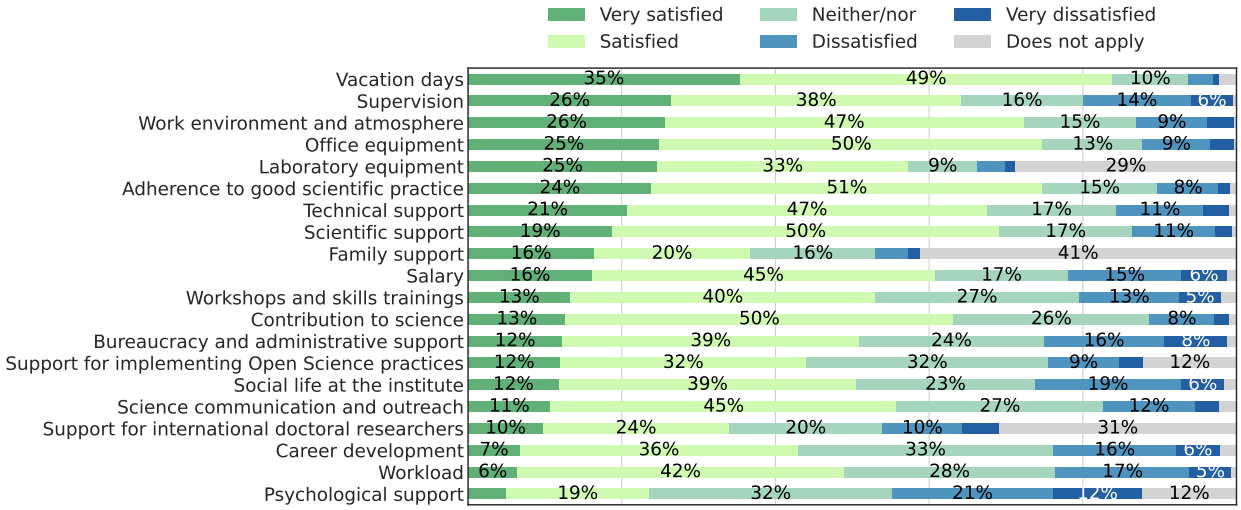


Figure 6.1: *"If you think about your own situation as a doctoral researcher, how satisfied are you with the following aspects?" (satisfaction).*

[2]Results of responses for *dissatisfied* and *very dissatisfied* are linearly aggregated for easier interpretation. For greater detail pertaining to the other domains with the worst evaluation by DRs, see figure 6.1

6.2 Developments since the 2019 Survey

To establish a connection between the results to this current report and previous years, we focus on the general satisfaction of DRs. For brevity, only the results of the 2021 and the 2019 Survey are compared. A summary of the comparison of various domains is presented in Table 6.2 below.[3] The comparison is organized by grouping the various domains into two groups, i.e., *aspects of professional life* and *aspects of social life*.

Aspects of Professional Life

Table 6.2 below shows the various domains that were included in this category. Satisfaction among DRs in most of these domains suffered a sizable reduction, apart from *career development*, *science communication and outreach* and *administrative support*. While sizable, gains in the later domains will have to be upheld, further improvement is still required. The deterioration of domains like *supervision*, *scientific support* as well as *workshops and training* has direct implications for the capacity of DRs to execute their roles. It is no surprise that in the subsequent sections, a sizable number of DRs report contemplating quitting their PhD due to the *feeling of being unqualified*. This lays bare a growing gap in capacity building activities and institutes ought to pay attention to this trend. (the so-called imposter syndrome could also be partly responsible)

Aspects of Social Life

The domains included in this category are shown in table 6.2 below. Save for satisfaction in *vacation days* and *psychological support* that had a rather small gain, DRs experienced a deterioration in the rest of the domains. The reduction is especially remarkable for *family support* (-5%) and *social life at the institute* (-10%).[4] This evidence points to a possible gap in family support services offered to DRs and inadequate attention paid to social activities and functions that could have worked to improve the well-being and psychological wellness of researchers.

Satisfaction of DRs in Various Domains by Different Groups

To get a deeper understanding of how various groups of DRs fare pertaining to these domains, the satisfaction of DRs was compared by *gender* and *age*. Specifically, satisfaction is considered selectively in the areas of *career development* and *working environment and atmosphere*. While there are no major differences, male DRs appear to be slightly more satisfied on average than

[3] Domains with a positive change direction in bold.
[4] See table 6.2.

Table 6.2: *Comparison of the general satisfaction of DRs in selected domains in 2019 and 2021.*

Domain	General satisfaction score - 2019	General satisfaction score - 2021	Change in score (percentage points)
Aspects of professional life			
Scientific support	75%	69%	-6
Technical support	70%	68%	-2
Career development	39%	43%	+4
Science communication and outreach	48%	56%	+8
Laboratory equipment	61%	58%	-3
Office equipment	81%	75%	-6
Contribution to science through work	64%	63%	-1
Workload	51%	48%	-3
Supervision	69%	64%	-5
Workshops and training skills	58%	53%	-5
Bureaucracy and administrative support	47%	51%	+4
Aspects of social life			
Vacation days	81%	84%	+3
Psychological support	21%	23%	+2
Family support	41%	36%	-5
Social life at the institute	61%	51%	-10
Work environment and atmosphere	76%	73%	-3

female DRs in the selected areas. For *career development*, 47% of the male DRs reported being somehow satisfied (*very satisfied* and *satisfied*) while this share was 41% for female DRs. [Figure 6.2] A similar distribution can be observed for *work environment and atmosphere*: 75% of the male DRs reported being somehow satisfied which is reported at 69% among female DRs. [Figure 6.3]

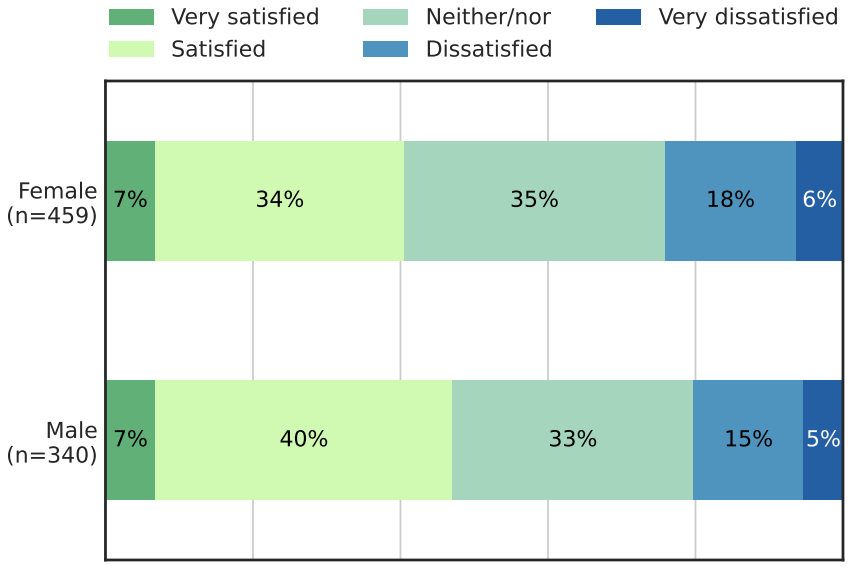


Figure 6.2: *Satisfaction career development by gender.*

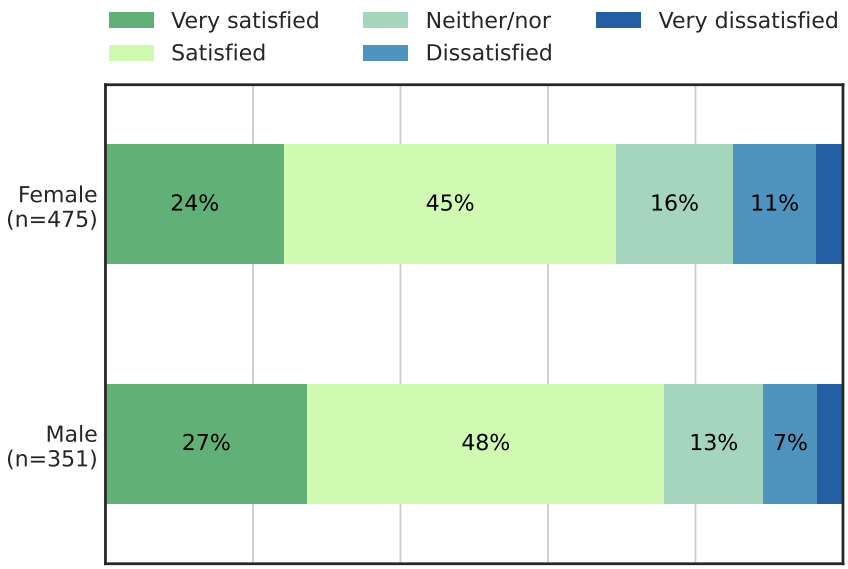


Figure 6.3: *Satisfaction work environment by gender.*

To extend the debate regarding satisfaction with *career development*, this aspect was investigated by age as well. Compared to the 2019 Survey, the findings reveal an improvement in the satisfaction of DRs pertaining to this domain. At least up to 63% of the DRs aged 25 years and below reported to be somehow satisfied with career development initiatives compared to 47% in the 2019 Survey. The responses of DRs aged 26 to 30 followed the same trend with scores of 43% in the current report as opposed to 40% in the 2019 Survey. The results of the later age groups, i.e. aged 31 to 35 and 35 and above were not so different. Another important observation is that generally, younger DRs perceive career development initiatives much more positively than the older DRs — the results of the 2019 Survey alike. [Figure 6.4]

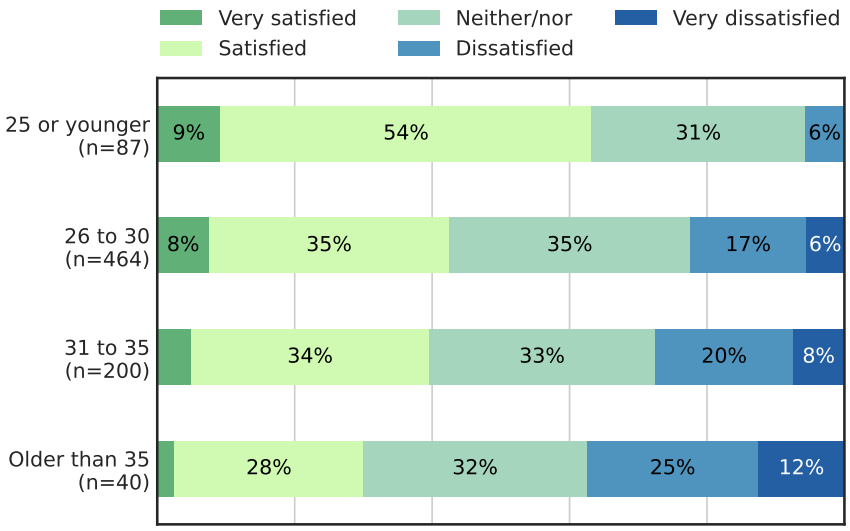


Figure 6.4: *Satisfaction career development by age.*

6.3 Thoughts of Quitting

Similar to the surveys conducted in the previous years, DRs were asked about how frequently they were contemplating quitting their PhD — if they had at all. Like this, the question of satisfaction can be extended and the coherence of responses can be assessed while gathering additional evidence to verify the respective findings. The results indicated that thoughts of quitting the PhD are not uncommon among the surveyed DRs: 12% reported *often*, 24% *occasionally* and 25% at least *rarely*. Only 39% of the surveyed DRs reported never having contemplated quitting their PhD. [Figure 6.5]

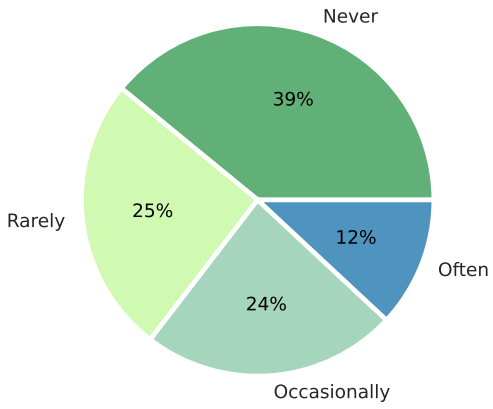


Figure 6.5: *"Have you ever considered quitting your PhD?" (n = 820)*

Year of PhD

When comparing different possible influences, the year of PhD especially had a noticeable impact. At 55% *never*, the fewest DRs thought about dropping out of their PhD in the first year, while this proportion was by far the lowest at five or more years, at 24%. Or, to put it another way, while only 21% of first-year DRs *occasionally* or *often* thought about dropping out of their PhD, over 50% for DRs in their fifth or later year reported this. This supports the hypothesis that DRs largely begin their PhD with the motivation and clear goal of completing it. [Figure 6.6]

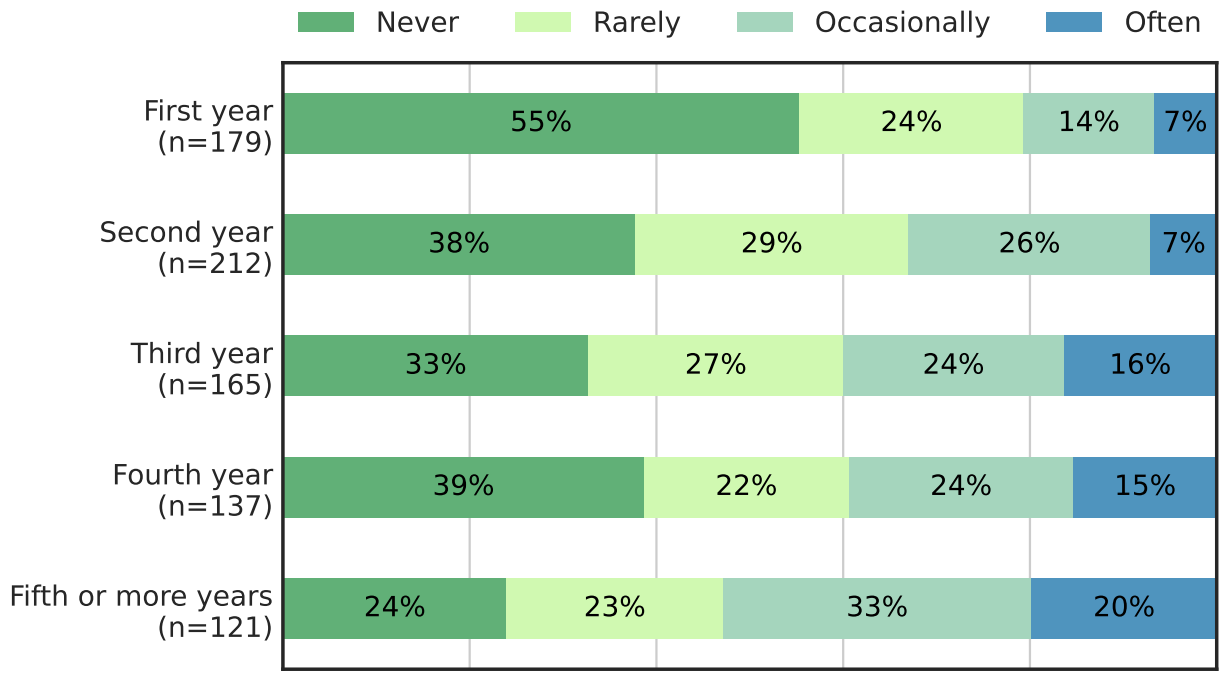


Figure 6.6: *"Have you ever considered quitting your PhD?" by year of PhD.*

Reasons for Thoughts of Quitting

When asked for the reasons for thinking about quitting the PhD the majority of the DRs reported to *not feel qualified enough* (39%). Another highly indicated of DRs was an *unattractive career perspective* (38%). This could have been the case for most senior DRs since it would be logical that the anxiety of finding a job builds up towards the last years of one's doctoral research. The inability to cope with a high workload, challenging working conditions, poor academic results, work-related difficulties with supervisor, health issues, the perception that other jobs are interesting, unlikable social environment at the workplace, personal reasons, lack of interest in the researcher's topic of study, the incompatibility of academic life with family responsibilities, personal difficulties with the supervisor, financial problems, lack of interest in scientific work, end of the project funding

period and administrative problems, respectively were the other reasons contributing to the quitting thoughts. A key observation is that most of the reasons given by DRs do not pertain to *funding, administration* or *lack of interest* in the respective research fields but rather the *feeling of not being qualified enough*, *career prospects, work related difficulties with supervisors* and *workload*. [Figure 6.7]

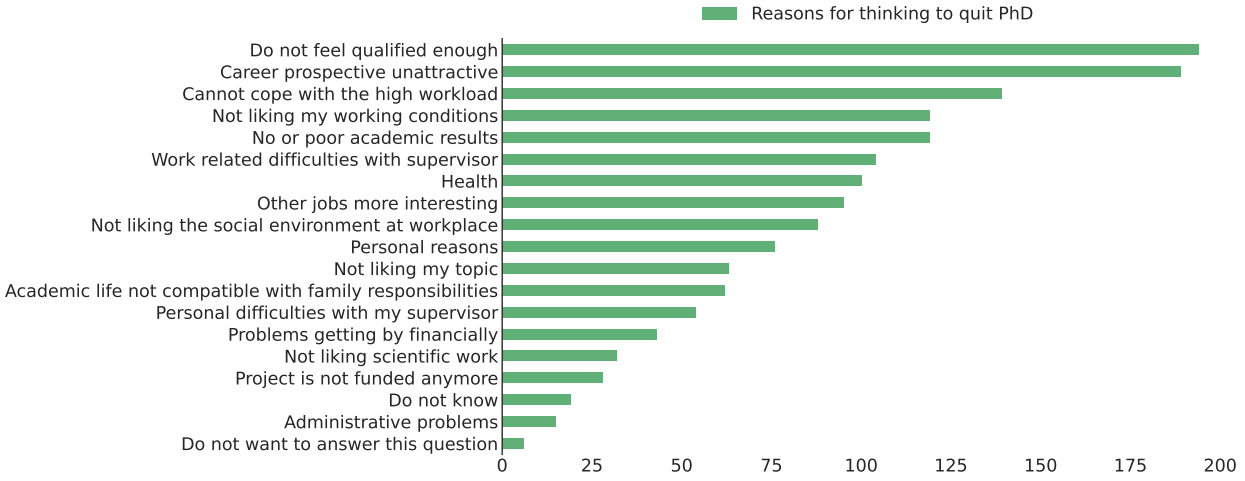


Figure 6.7: *"What was/were the reason(s) for considering to quit your PhD?"*

To investigate amongst which group of DRs the main reported reason of not feeling qualified enough was most prevalent, the *year of PhD* was quite explanatory. With 28% in the *second year* and 21% in the *third year*, mostly junior DRs frequently felt unqualified compared to those in other years (*fourth* and *fifth year* and beyond). [Figure 6.8]

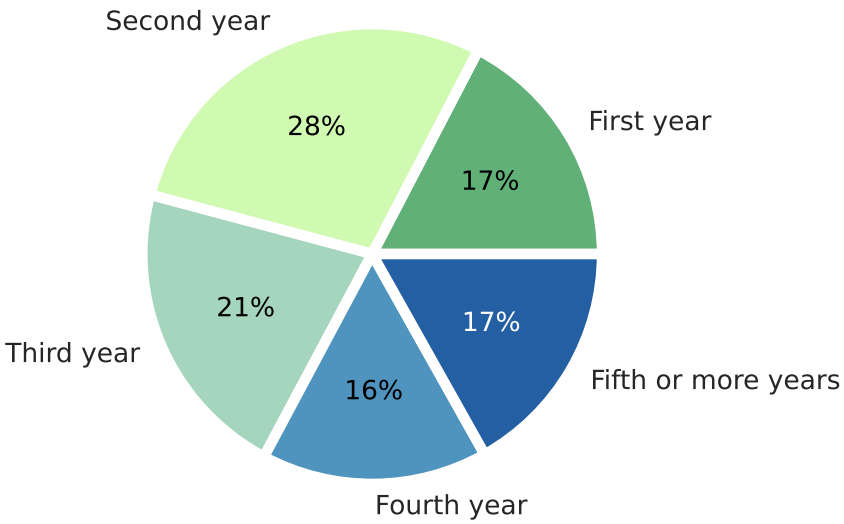


Figure 6.8: *"I do not feel qualified enough" by year of PhD (n = 194).*

6.4 Aspects of a Career in Academia

To get an understanding of how DRs judge different aspects of a career in academia they were asked to rate them on a 5-point Likert scale, among others, *work evaluation, skill development, diversity of work, self-fulfillment* and *workload*.

Aspects regarding *permanent positions* (49%), *compatibility with children* (22%), *the quest for funding* (21%), *compatibility to own or partner's career plans* (15%), *workload* (13%) and *salary* (12%), were rated by DRs as *very unattractive*. Concomitantly, these very aspects had the highest percentage being rated as *unattractive* by the respondents. *Interesting work conditions* (49%), *skill development* (33%), *diversity of work* (29%), *self-fulfillment* (27%), *service to society* (22%), *mobility* (17%), *science communication and outreach* (16%) and *teaching* (13%), had the highest percentage of being rated as *very attractive aspects*. [Figure 6.9]

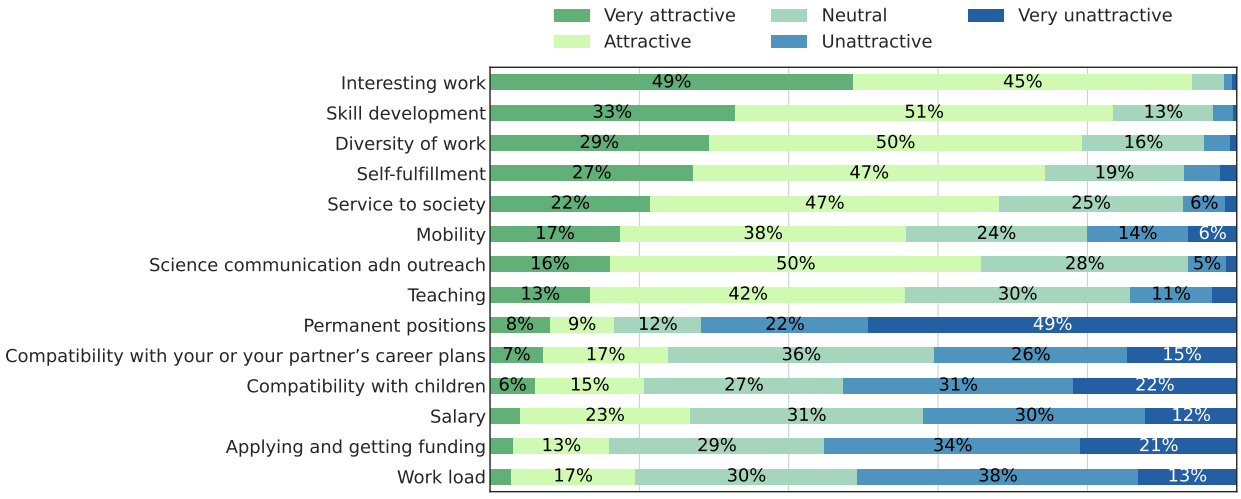


Figure 6.9: *"In general, how do you judge the following aspects of an academic research career?"*

Judging Salary by Gender

Regarding salary, more male DRs (15%) indicate this as *very unattractive* as opposed to the female DRs (10%). Slightly more female DRs evaluate it as *unattractive*, *neutral* and *attractive* compared to the male DRs. Although 5% of the male respondents indicated the salary in academia as *very attractive* compared to the 1% of the female DRs, these are extremely low figures for both genders. [Figure 6.10]

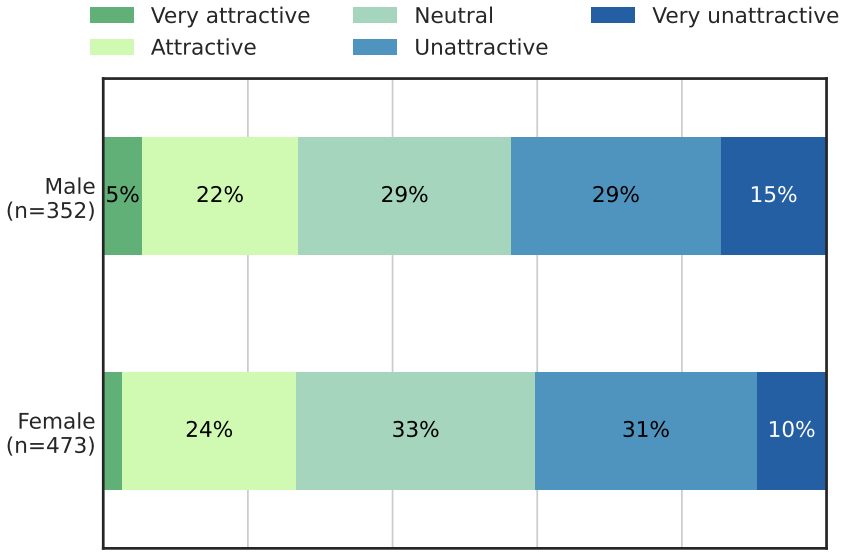


Figure 6.10: *Judging salary by gender.*

Judging Salary by Parenthood

Pertaining to whether DRs were planning to have children or not, our descriptive results indicate that the later group had a higher percentage in judging the salary as *very unattractive* (13%) and *unattractive* (31%) compared to the former (10%) and (23%), respectively. Up to 35% of the DRs who are planning to have children actually find the salary in academia attractive as opposed to the 21% who are not planning to have children. [Figure 6.11]

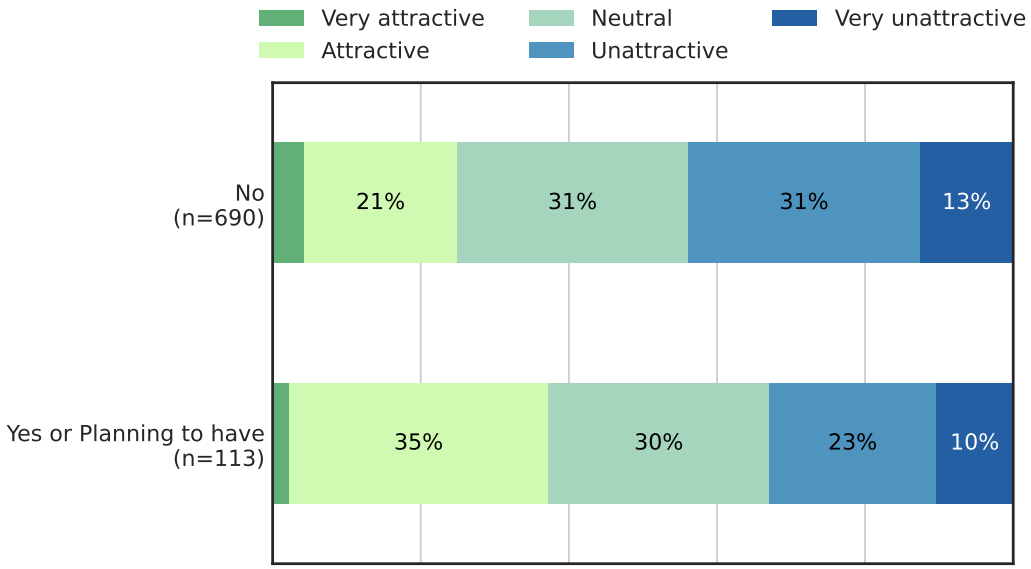


Figure 6.11: *Judging salary by parenthood.*

Judging Compatibility of an Academic Career and Having Children by Gender

Female DRs indicated a more negative perception of having children while taking up a role in academia (59%, *unattractive* and *very unattractive*) compared to their male counterparts (46%, *unattractive* and *very unattractive*). In other words, a sizable number of female DRs that want to have children perceive a career in academia as unattractive compared to male DRs. [Figure 6.12]

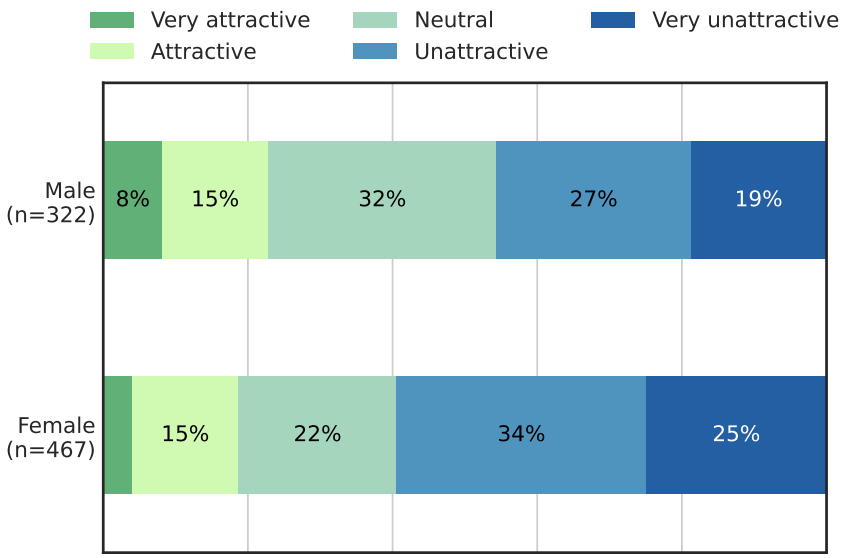


Figure 6.12: *Judging compatibility of academic career and having children by gender.*

Judging Service to Society by Section

DRs were asked how they evaluate the aspect of offering a *service to society* in an academic career. DRs in Section C (54%), Section D (41%) and Section E (38%) indicated the most negative perception with evaluating this aspect *unattractive* and *very unattractive*. Section A had the highest share of respondents evaluating this aspect as *attractive* and *very attractive* (39%). These results are different from the 2019 Survey in which Section E (84%), B (78%), and C (73%) had the highest share of DRs evaluating *service to society* as an attractive or very attractive aspect of a career in academia. In the 2021 results, conversely, Section C instead had the lowest number of DRs perceiving a career in academia as attractive or very attractive (15%). [Figure 6.13]

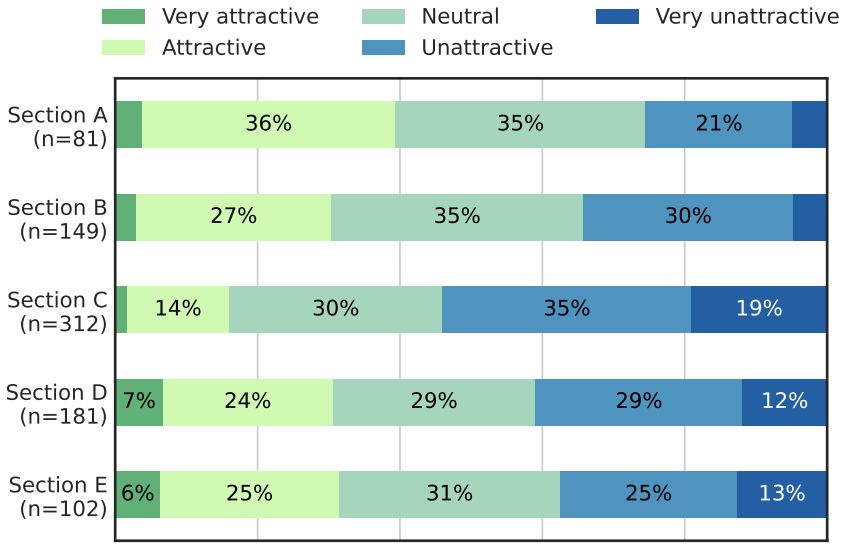


Figure 6.13: *Judging service to society by section.*

Judging Permanent Positions by Year of PhD

A closer investigation of the aspect with by far the largest proportion of *very unattractive* revealed a trend with regard to the year of PhD. While the aspect of permanent positions was still rated as *very unattractive* by 36% in the first year, this proportion is already over half of all respondents in the third year. [Figure 6.14]

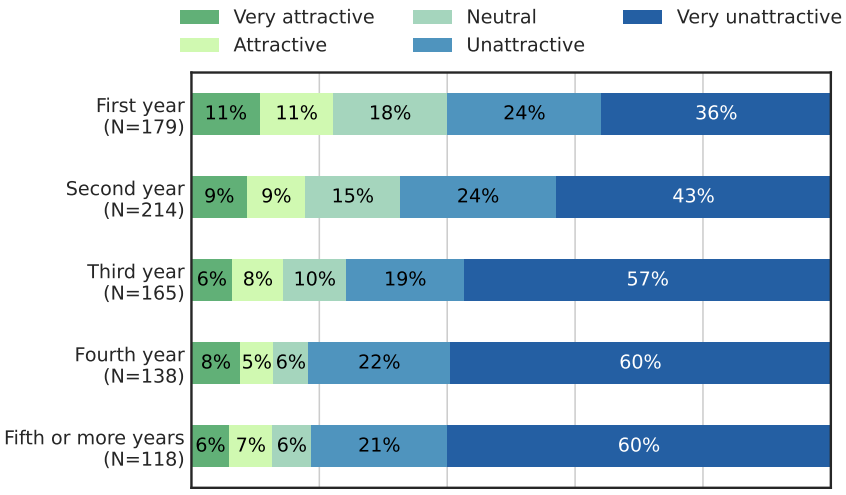


Figure 6.14: *Judging permanent positions by year of PhD.*

6.5 Support for International Doctoral Researchers

DRs without a German citizenship were asked how satisfied they were with the support for internationals in general. 50% of the respondents reported that they were *satisfied* while 26% indicated *dissatisfied*. A total of 22% of the DRs were neither *satisfied* nor *dissatisfied*. The sizable number of the *dissatisfied* respondents signals room for improvement in the support services offered to international DRs by their respective institutes. Linearly aggregating respondents who were generally satisfied yields 50% as opposed to the 58% recorded in the 2019 Survey, revealing a sizable decline and underscoring the need to improve services offered by institutes pertaining to this domain. [Figure 6.15]

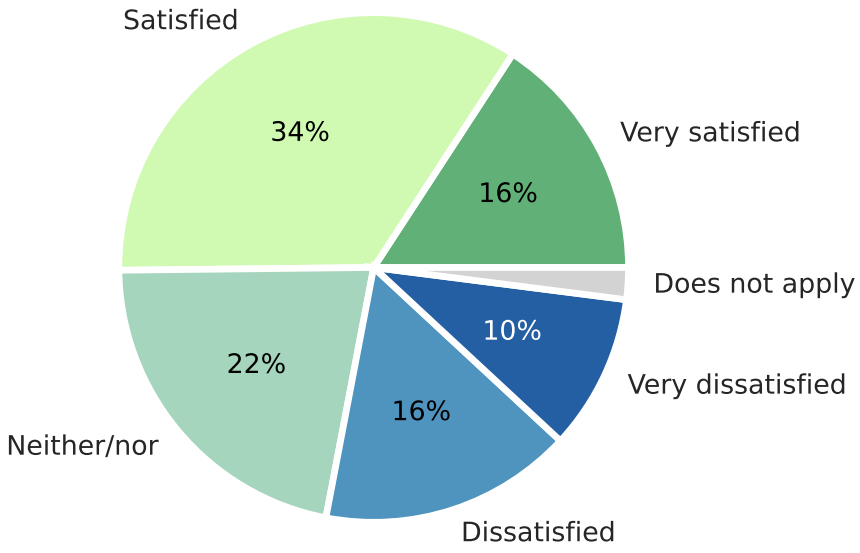


Figure 6.15: *Satisfaction international support by citizenship non-German (n = 316).*

7 Supervision

Main findings from the following chapter:

- 65% of the DRs were satisfied with their supervision.
- Satisfaction with supervision declined over the course of the doctorate, with only 55% somehow satisfied after four or more years.
- Of the DRs who were thinking about quitting their PhD often, 53% were dissatisfied with their supervision.
- The more satisfied DRs were with their supervision, the less time they estimated for completing their PhD.
- DRs who met more frequently with their supervisor were more satisfied with their supervision.
- On average, DRs who reported having access to institutionalized supervision support were more satisfied with their supervision.

7.1 Overall Satisfaction with PhD Supervision

When asked how satisfied they were with their PhD supervision, a total of 824 DRs provided a valid response, ranging from *very satisfied* to *very dissatisfied*. Overall, the majority was somehow satisfied (65%). Still, one-fifth report some level of dissatisfaction (20%). [Figure 7.1]

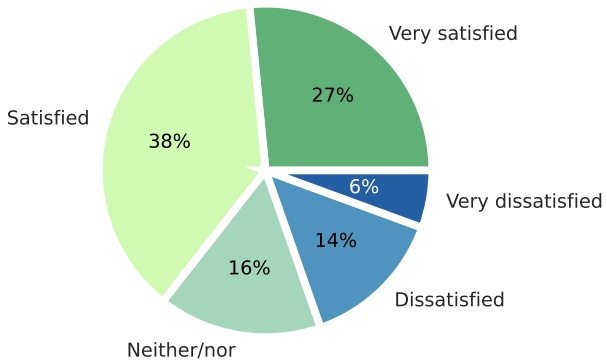


Figure 7.1: *"If you think about your own situation as a doctoral researcher, how satisfied are you with the following aspects?" – "Supervision" (satisfaction supervision).*

Year of PhD

The earlier DRs were in their PhD, the more satisfied they were with their supervision, which is consistent with the 2019 Survey. However, there were no more than a quarter of dissatisfied DRs in any year of PhD listed. [Figure 7.2] This differs from the 2019 Survey, where more than 25% reported a level of dissatisfaction starting as early as the third year. Though, in the previous survey the *year of PhD* has been grouped differently and a total of six response options have been given without a neutral middle.

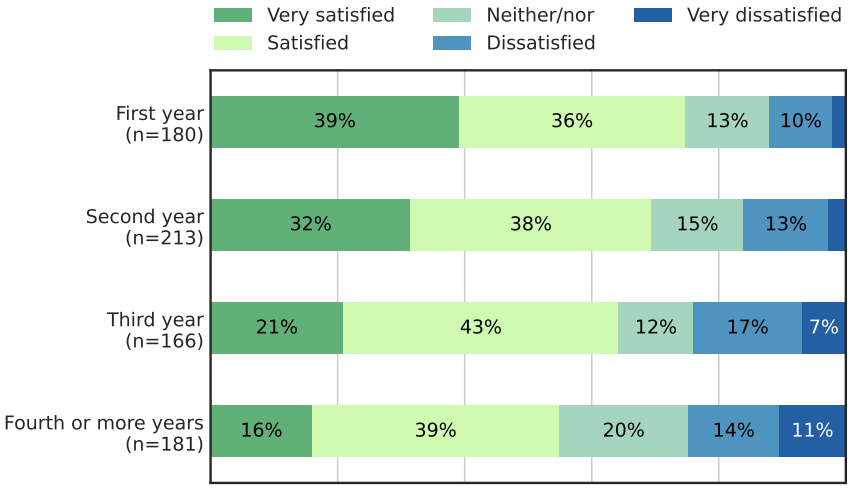


Figure 7.2: *Satisfaction supervision by year of PhD.*

Citizenship

Differentiated by citizenship, there was also no subgroup in which less than half of the DRs reported some level of satisfaction. In the 2021 Survey, the group with German citizenship reported the greatest amount of dissatisfaction, followed by EU citizenship and finally non-EU citizenship. International DRs were thus on average more satisfied with their PhD supervision than German DRs. [Figure 7.3]

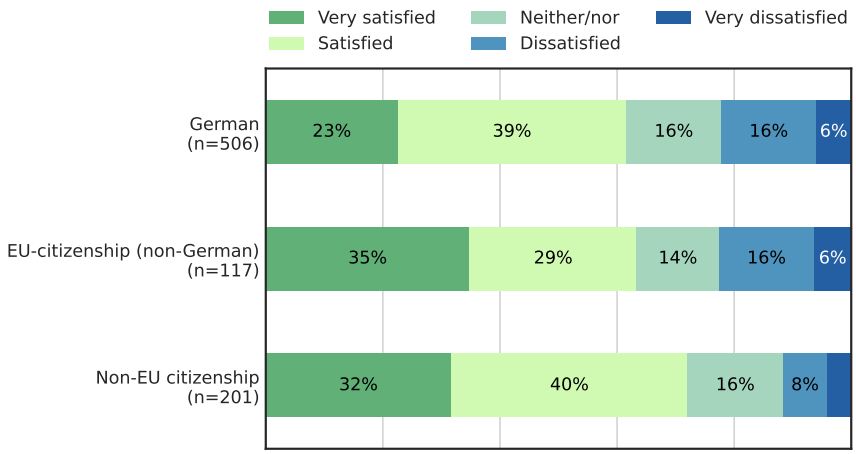


Figure 7.3: *Satisfaction supervision by "What is your citizenship? Should you have multiple citizenships, please select the one you feel best represented by" (citizenship).*

Parenthood

DRs with children were, on average, more satisfied with their supervision than those without children. This intensified the trend that became apparent in the 2019 Survey. A clear difference appeared between DRs who were planning to have children and those who already had children. [Figure 7.4]

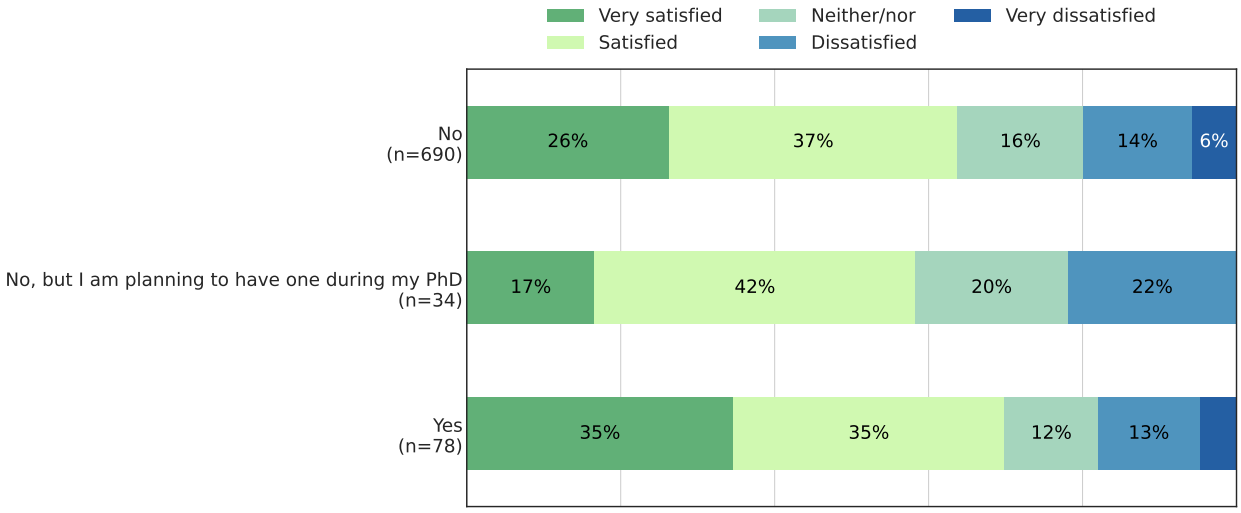


Figure 7.4: *Satisfaction supervision by "Do you have or are currently expecting children?" (parenthood).*

7.2 Relevance of Supervision

Thoughts of Quitting

In the survey results, there was a clear relationship between *satisfaction with supervision* and *thoughts of quitting the PhD*. While among DRs who reported *never* for thoughts of quitting, only 20% were somehow dissatisfied with their supervision, among DRs who reported *often*, this share was at 53%. This was more than half, suggesting a strong relationship between *satisfaction with supervision* and *thoughts of quitting*. [Figure 7.5]

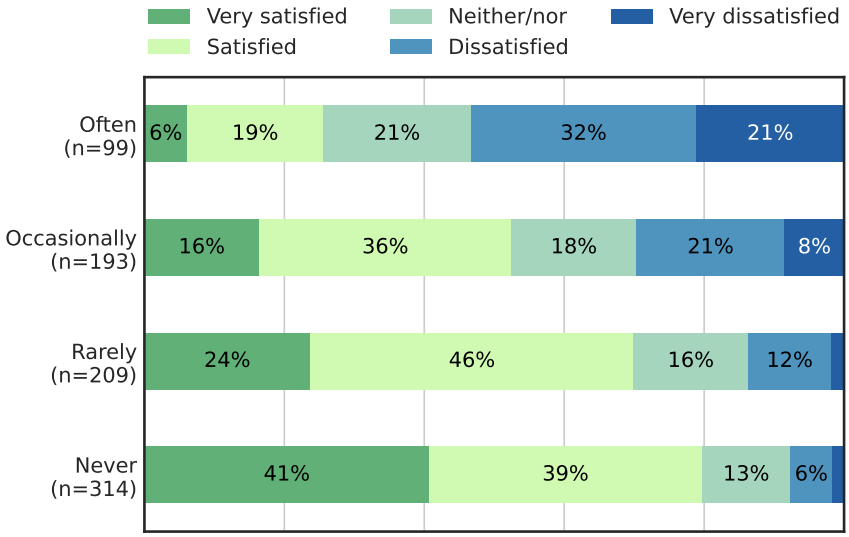


Figure 7.5: *Satisfaction supervision by "Have you ever considered quitting your PhD?" (thoughts of quitting).*

Reasons for Quitting

There can be many different reasons for considering dropping out of the PhD. To further explore the relationship shown in the data, DRs were asked about their reasons. [Figure 6.7] Supervision does not always have to be the deciding issue, but it can influence the extent to which other factors become a problem. 20.6% of the respondents indicated *work-related problems with the supervisor* as a reason to think about quitting their PhD. This makes the percentage about twice as high as for *personal problems with the supervisor*. How supervisors can influence other factors was illustrated, for example, by the question of whether DRs feel free to take days off. Here, 17.8% feel pressured by their supervisor to the point that it affects their feeling of being able to take vacation.

Estimated PhD Duration

In principle, it can be assumed that there is a desire to complete the doctorate without delay. As experienced scientists, supervisors can provide substantial support here. A glance at the relation between *satisfaction with supervision* and the *estimated PhD duration* confirmed this hypothesis. For example, for DRs estimating three years for their doctorate, 74% stated that they were somehow satisfied. This proportion was only just over half for DRs estimating a duration of five years. [Figure 7.6]

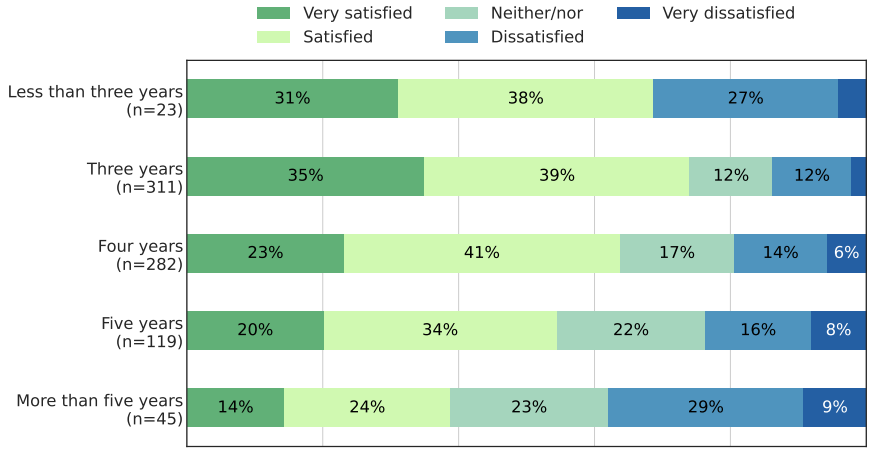


Figure 7.6: *Satisfaction supervision by estimated PhD duration.*

7.3 Need for Improvement of Supervision

Last but not least, the question about in which area an improvement would be desirable also provides information about the concrete relevance of the supervision. More than half of all respondents reported that they would like to see an improvement in supervision, with nearly 30% indicating *very much*. [Figure 7.7]

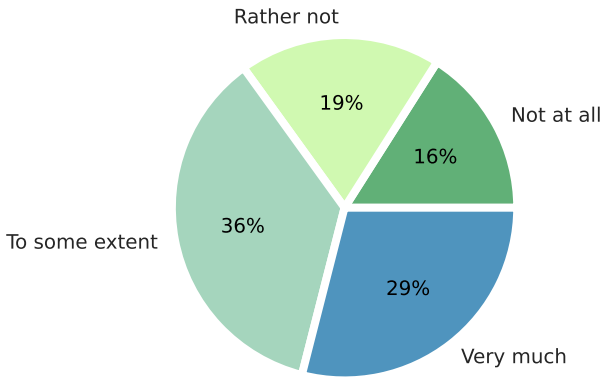


Figure 7.7: *"Which of the following aspects of your work as a doctoral researcher would you like to be improved?" – "Supervision".*

Aspects of (Direct) Supervision

The positive overall tendency [Figure 7.1] was also reflected in the evaluation of individual aspects of direct supervision (for the distinction between direct and formal supervision and their influence, see section 7.4). [Figure 7.8] While *strict and clear requirements* are somewhat more open to interpretation in terms of rating, *leadership skills* were most notable. The share of *fully agree* was the smallest here (41%) and the shares of *partially disagree* (12%) and *fully disagree* (9%) were the highest compared to the other aspects. Since *giving advice* can be assumed to be an essential aspect of supervision, the share of *fully agree* would ideally be 100% here - this was not the case.

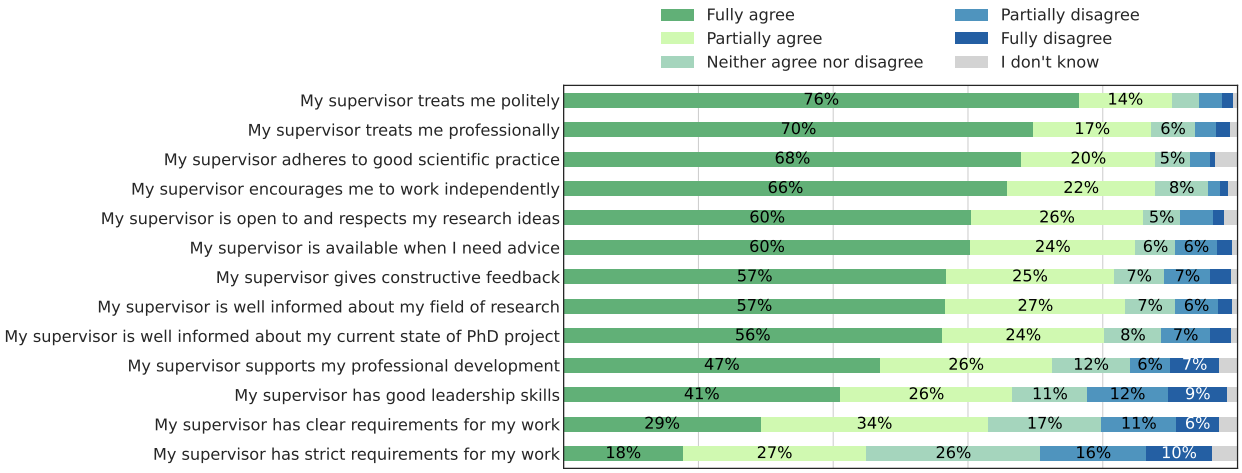


Figure 7.8: *"Please rate the supervision provided by your direct supervisor".*

Problems with Supervision

DRs were also asked in a multiple-choice question about the areas in which they had problems with supervision. *Availability of supervision for advice* [Figure 7.9] may also be related to *meeting frequency*. Indeed, this was reflected in the most commonly reported problems. Both regularity and frequency were complained about by DRs. The positively reported *scientific independency* – 87% agreed here to some extent – coincided with the result that disagreements about publications were reported least here.

Figure 7.9: *"Did you ever encounter problems regarding your supervision?"*

7.4 Interaction Frequency with PhD Supervisor

This survey distinguished between *formal* and *direct supervisors*. The *formal supervisor* referred to the main advisor of the thesis and the *direct supervisor* to the person the DRs actually consult and discuss their project with on a more regular basis (the difference was explained in the questionnaire, see Appendix). When asked if this was the same person, 53% reported *yes*, 39% *no*. Thus, the majority of DRs received direct supervision from their formal supervisors. This did not seem to have a major impact on satisfaction with supervision. However, when supervision is divided, substantial differences in the *frequency of interaction* between direct and formal supervisors were apparent: While *quarterly*, *six-monthly*, and *yearly* were the three most commonly indicated responses for formal supervisors, it was distinctly *almost daily*, *weekly*, and *every other week* for direct supervisors. Because this is the larger group and the interaction is far more frequent, below aspects of direct supervision are focused on, or cases in which formal and direct supervisors are

the same person. While personal preferences regarding the frequency of contact may vary, a clear trend can be seen nonetheless: In the *almost daily* group, nearly 50% of respondents indicated the highest response option for satisfaction with supervision with a mean of 4.3. For the *monthly* group, which is also still large, the mean is only 3.3 already. [Figure 7.10]

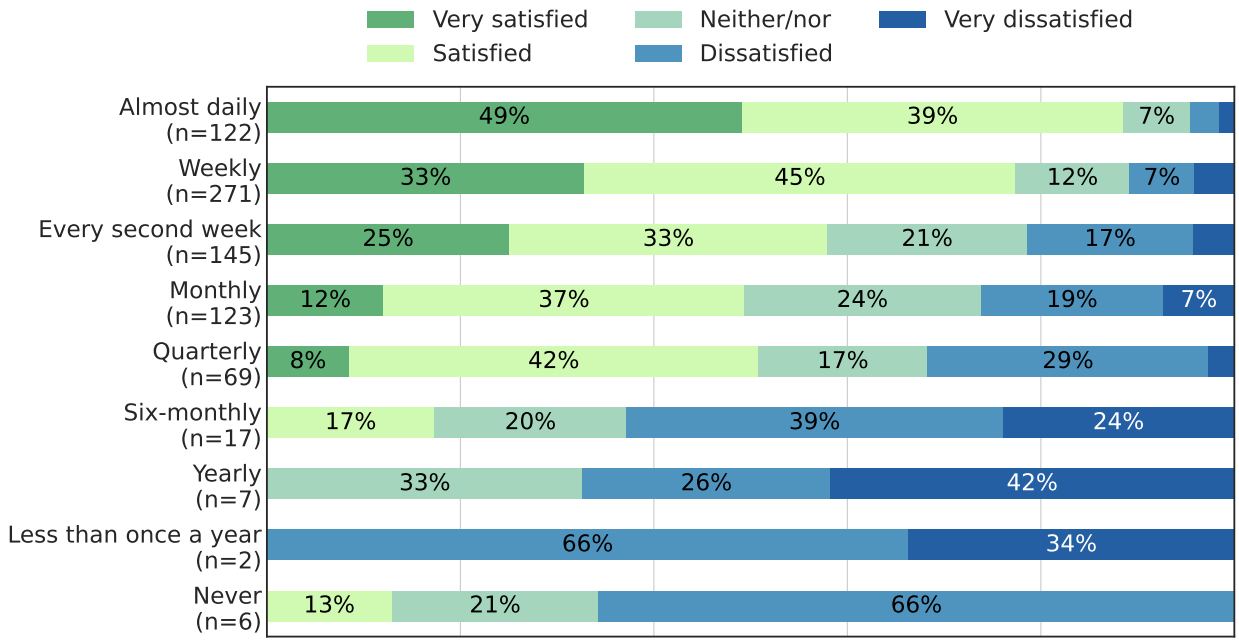


Figure 7.10: *"How often do you communicate on average with your direct supervisor about your PhD project?" (meeting frequency).*

Year of PhD

The earlier DRs were in their PhD, the more interaction they reported. Although it is fortunate that in all the years shown, the frequency of interaction has been reported as at least *every second week* for more than half, one can see clear differences between the *first* and the *fourth (or more) years*. [Figure 7.11] This may be related to the fact that there is less need for discussion at the end of the doctorate, since the research question has already been worked on and work is now mainly done independently. And indeed, reported interaction preference showed such a trend. [Figure 7.12]

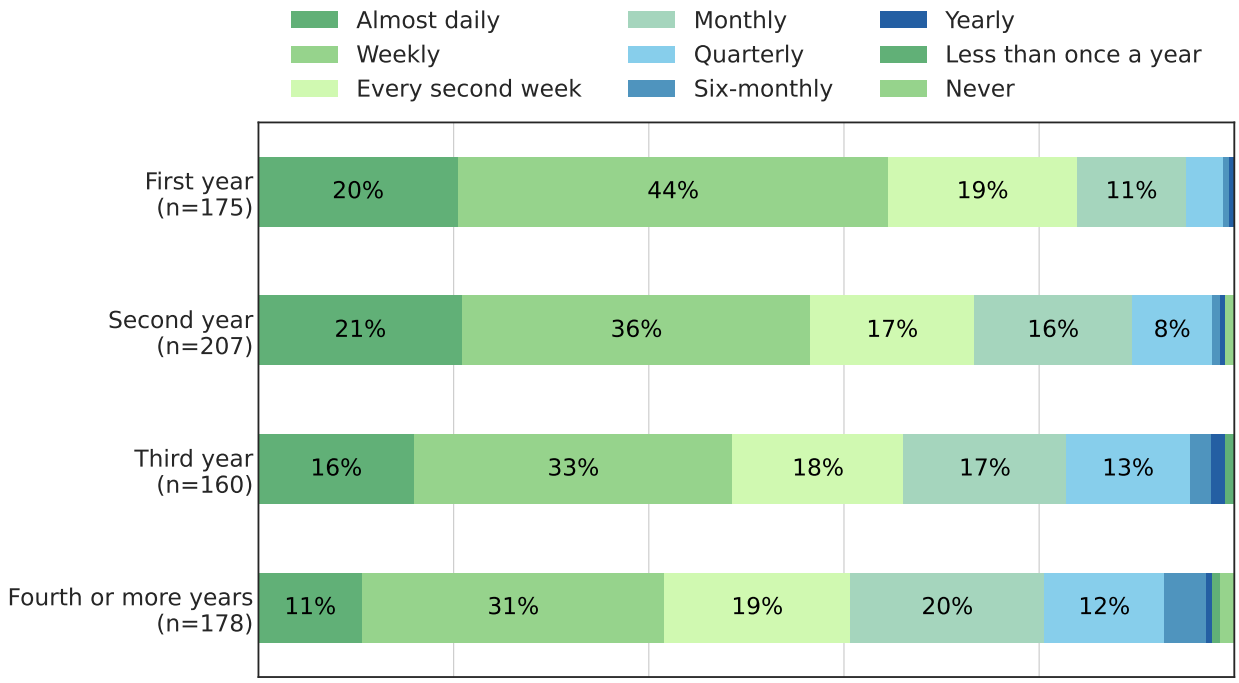


Figure 7.11: *Meeting frequency with direct or combined supervisor by year of PhD.*

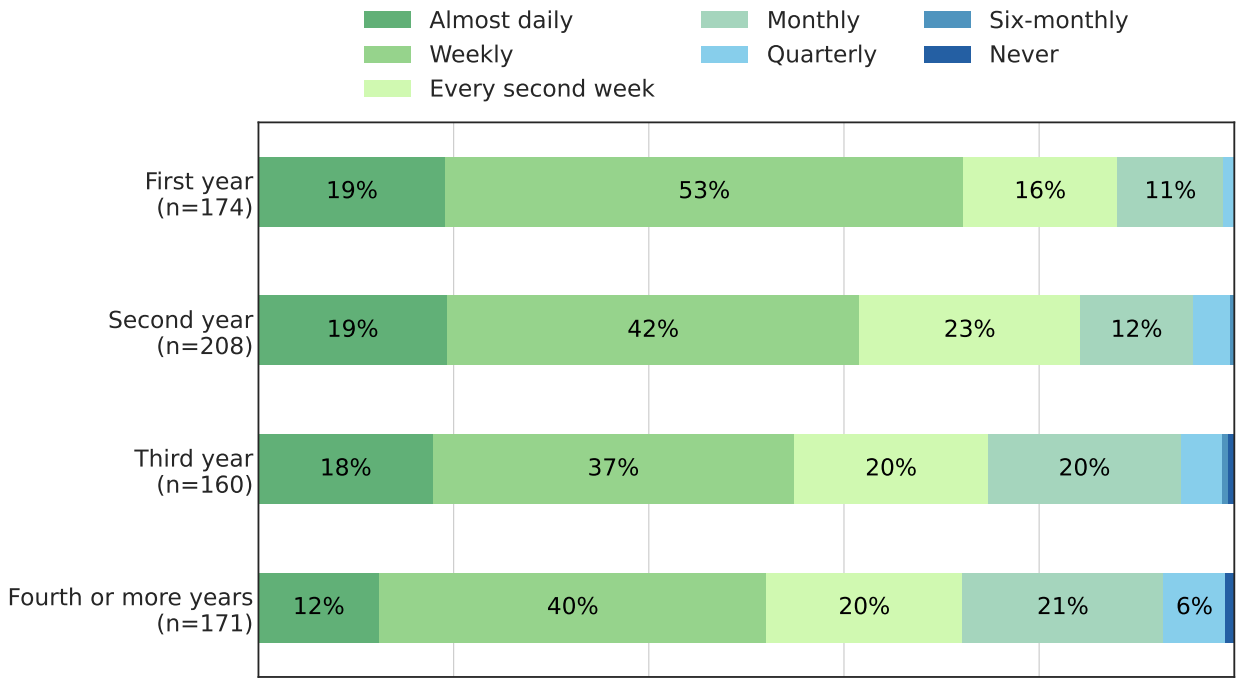


Figure 7.12: *"How often would you like to communicate with your direct supervisor about your PhD project?" by year of PhD.*

Citizenship

As in the 2019 Survey, German DRs indicated less frequent meetings with their supervisors than non-German DRs. Again, more than half of all DRs in all groups reported meeting at least *every second week*. In terms of meeting at least *weekly*, non-German DRs reported this the most, at 63%. Among the non-EU DRs, this was 56%, and among the German DRs, 45%. [Figure 7.13]

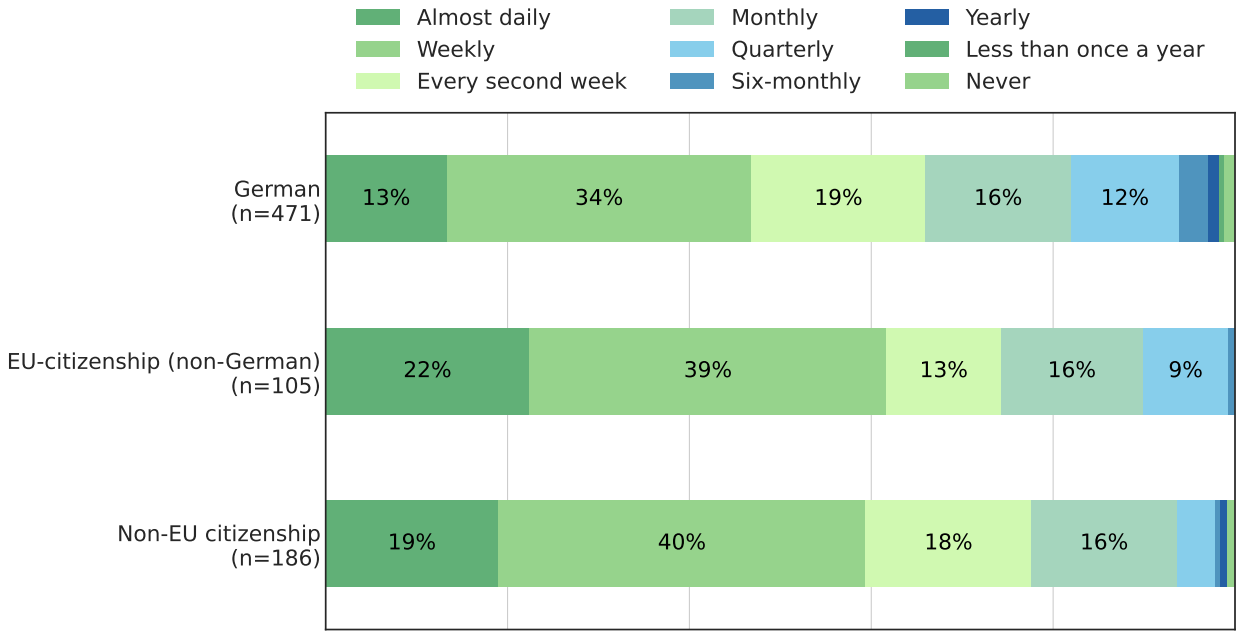


Figure 7.13: *Meeting frequency with direct or combined supervisor by citizenship.*

Gender

While more than half (56%) of male DRs reported having at least weekly meetings with their supervisor, just slightly less than half (46%) of female DRs do. This gender difference was already evident in the 2019 Survey. A stronger difference to the 2019 Survey can be seen in the category *almost daily*: Among male DRs, this proportion decreased from 26% to 17%, and among female DRs from 22% to 15%.

7.5 Institutionalized Support

In addition to direct supervisor support, there are other ways to ensure the progress of the doctorate. Participants were asked whether they had any of the listed types of institutionalized support. Explanations were offered for the *PhD supervision agreement*, the *written project outline*, the *training plan*, and the *thesis advisory committee (TAC)* (see Appendix). [Figure 7.14]

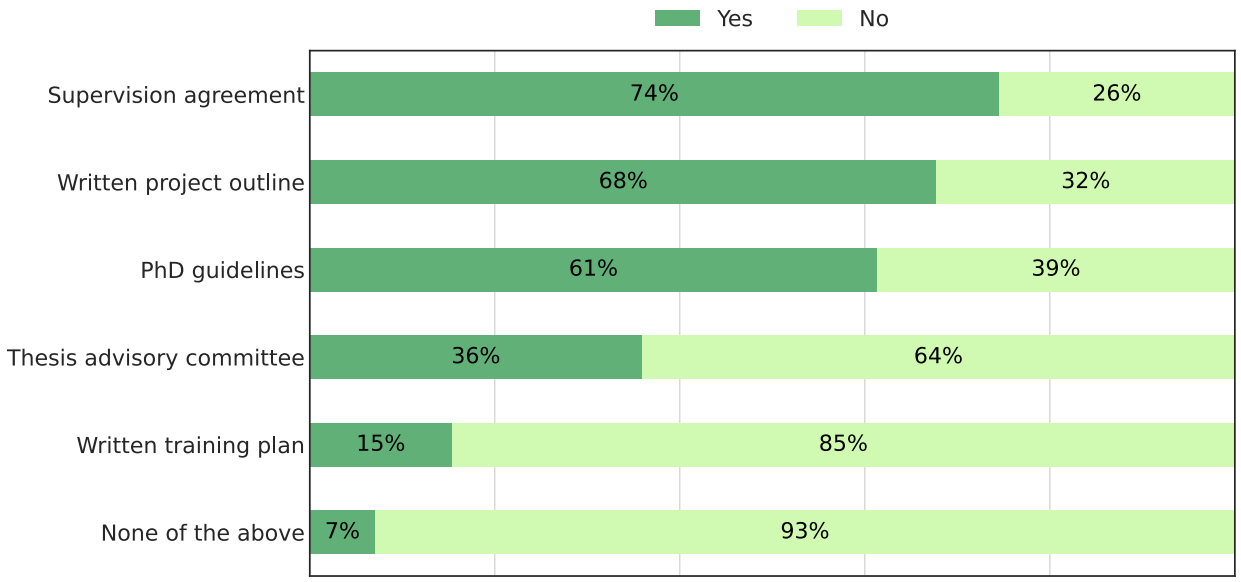


Figure 7.14: *"Do you have one of the following"*.

Sections

Differentiated by sections, it is noticeable that there were major differences, especially for the *thesis advisory committee*: About half of all respondents from Section C and E stated that they have one, which is about twice the share compared to the rest of the sections. At slightly over 70%, the proportions of Section C and E were also highest in the *written project outline*, together with Section A. [Figure 7.15]

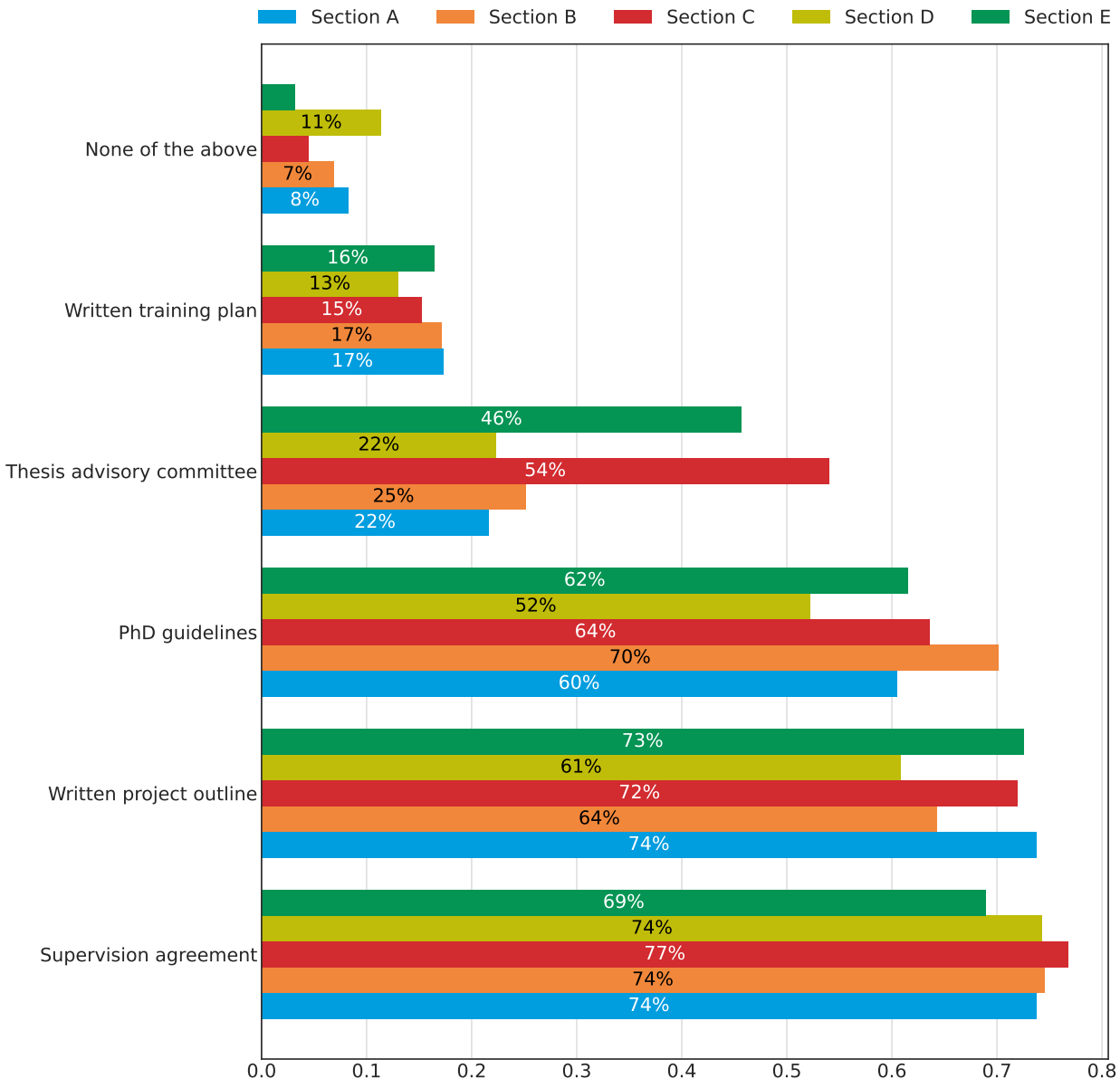


Figure 7.15: *"Do you have one of the following" by section.*

Example: Supervision Agreement

The PhD supervision agreement is recommended by the Leibniz Association since 2019 and a template is offered by the Leibniz PhD Network. A total of 74% of respondents reported having such an agreement. [Figure 7.14] In terms of satisfaction with supervision, the supervision agreement did not appear to have a major impact. [Figure 7.16] For *thoughts of quitting*, the case was somewhat different: The share of respondents without such an agreement was the highest (36%), for the others (*occasionally*, *rarely*, *never*) this share was never higher than 25%, suggesting a

relationship between having a supervision agreement and thoughts of quitting. [Figure 7.17] With regard to the *estimated duration of the PhD*, the differences were again less distinct: In the group with such an agreement, for example, 40% stated a duration of *three years*, in the group without 36%. *Five or more years* were indicated by 21% of the group with an agreement and 24% of the group without an agreement. [Figure 7.18]

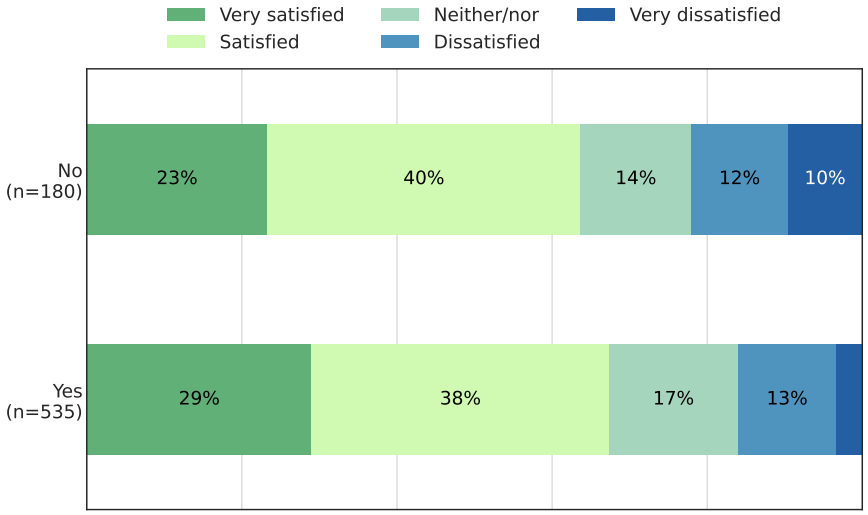


Figure 7.16: *Supervision agreement by satisfaction supervision.*

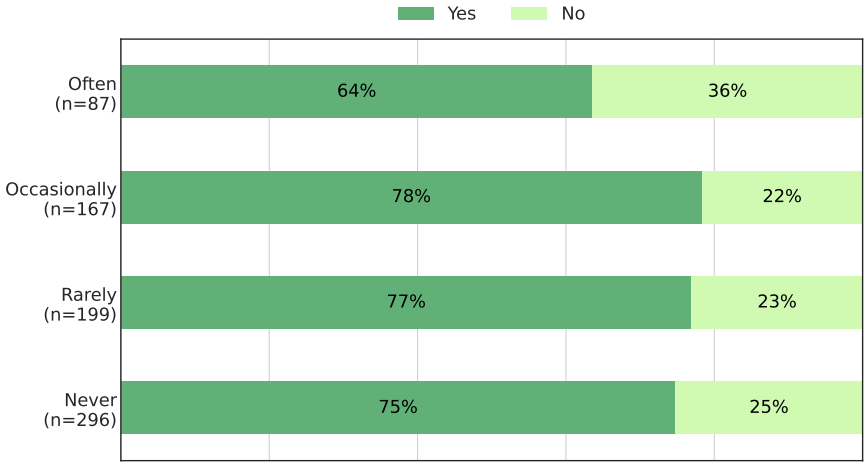


Figure 7.17: *Supervision agreement by thoughts of quitting.*

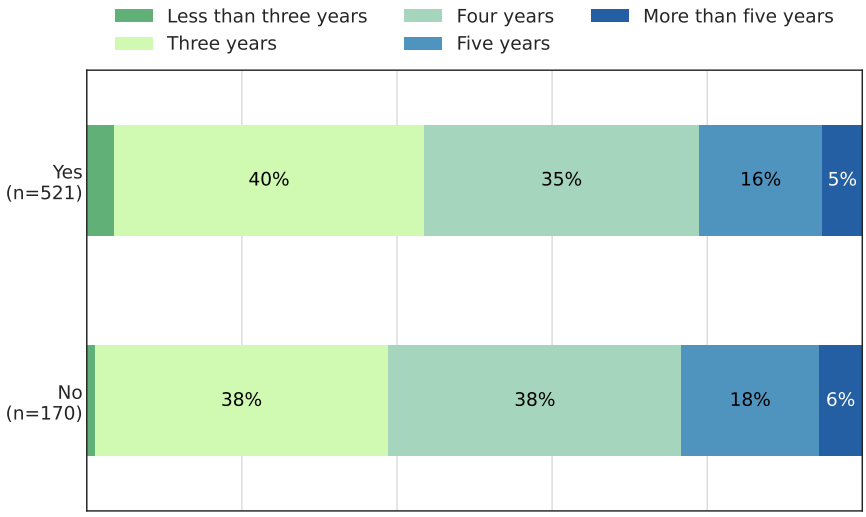


Figure 7.18: *Supervision agreement by the estimated duration of PhD.*

The signing of a supervision agreement includes, among other things, information about the supervision and the project. Against this background, the data showed an increase in the share with such an agreement from the *first* to the *second year*, from 65% to 74%. Since this represented the largest jump and no significant changes in the proportion could be detected thereafter, it appears that some do not sign a supervision agreement until the second year. [Figure 7.19]

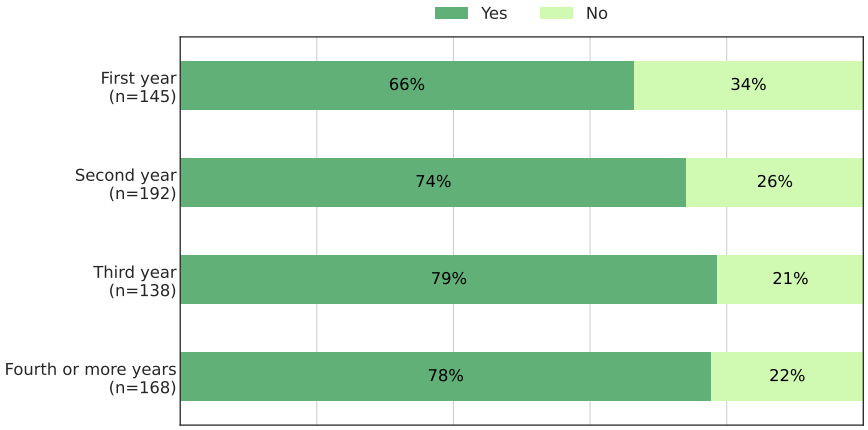


Figure 7.19: *Supervision agreement by year of PhD.*

Example: Thesis Advisory Committee

The Thesis Advisory Committee (TAC) is usually formed by supervisors and so-called mentors. Thus, it is a tool for supervision that goes beyond individual supervisors. Respectively, the data showed that the share of DRs with a TAC (36%) was much lower than those with a supervision agreement (74%). [Figure 7.15] Nonetheless, the differences in the shares of satisfaction with supervision between DRs with and without TAC were larger than for the supervision agreement: With a TAC, 33% reported being *very satisfied*, without a TAC 24%. [Figure 7.20] In terms of *thoughts of quitting*, the existence of a TAC seemed to have a similar influence as the supervision agreement. In the comparison of the endpoints of the scale (*often* and *never*), there was a difference of 10%, which was similar to the difference with the supervision agreement. [Figure 7.21] In the context of the *estimated duration of the PhD*, the largest difference was most apparent in the range of *five or more years*, where 15% for DRs with TAC compared with 26% for DRs without TAC. [Figure 7.22]

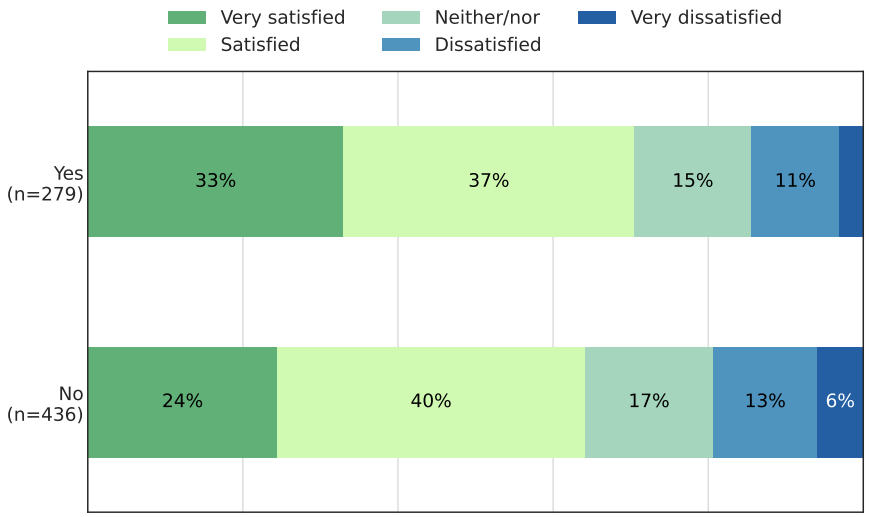


Figure 7.20: *Thesis advisory committee by satisfaction supervision.*

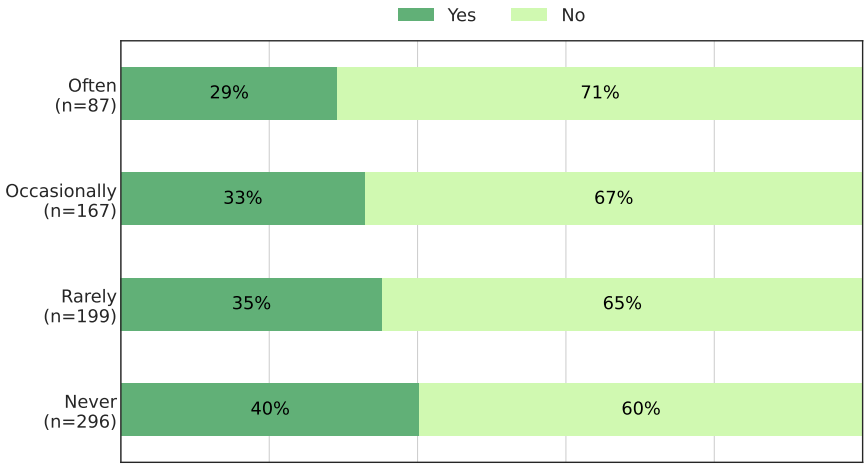


Figure 7.21: *Thesis advisory committee by thoughts of quitting.*

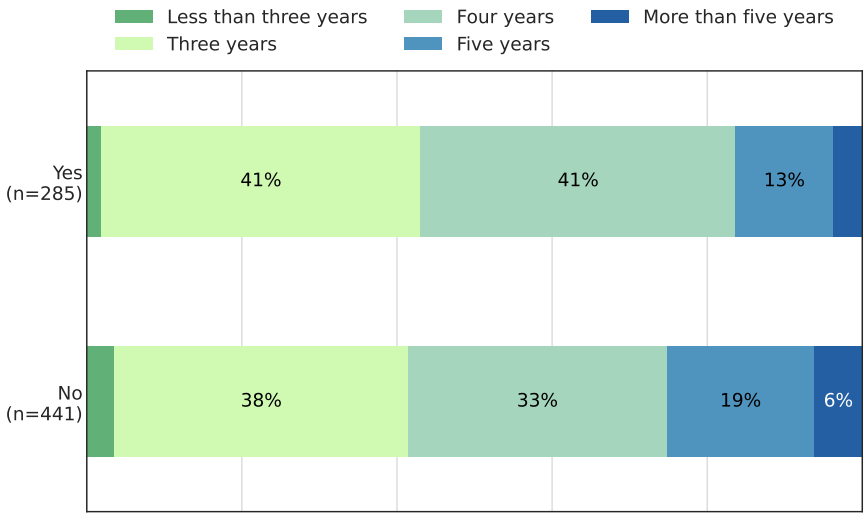


Figure 7.22: *Thesis advisory committee by the estimated duration of PhD.*

Involvement in Decision-making

Finally, in this chapter, the involvement of DRs in decision-making processes at their institutes is focused on. Divided by sections, it could be seen that a maximum of 16% answered this question with a definite *yes*, with the lowest value being 9%. [Figure 7.23] However, most DRs stated that the DRs at the institute are not involved in hirings, from one-third to just under half. It is also interesting to note that in some sections almost half of the DRs stated that they *do not know about* the involvement of DRs in decision-making at their institute, indicating a lack of information, even though they are highly affected by leadership and *leadership skills* are among the lowest rated aspects of (direct) supervision. [Figure 7.8]

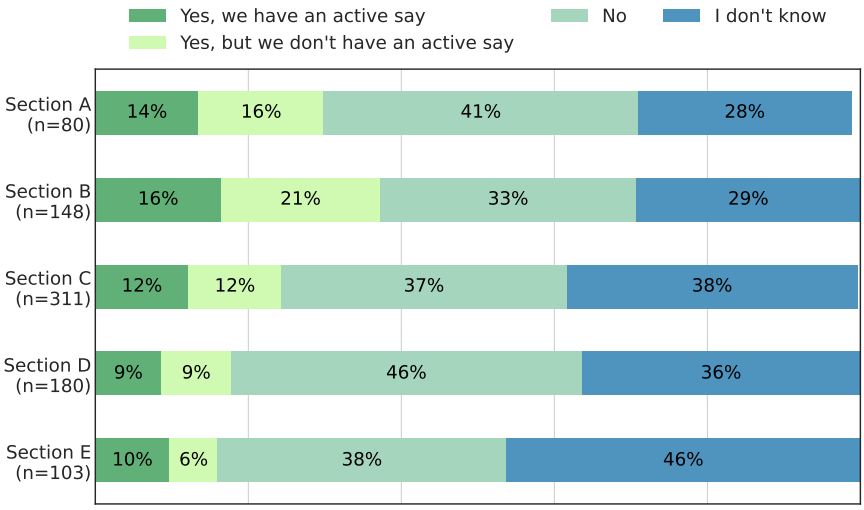


Figure 7.23: *"Are doctoral researchers involved in the process of director/professor/group leader hirings at your institution?" (examples were given, see Appendix).*

8 Integration

Main findings from the following chapter:

- 83% of the DRs indicated that their institutes do not provide support with translation of working contracts and relevant documents.
- 36% of non-EU DRs reported that they require more help from their institutes pertaining to visas for their residency and with bureaucracy in the immigration office.
- 48% of non-German DRs consider the German language an obstacle to communicating with their peers at their institutes.
- The German language proficiency of international DRs tends to improve over the course of their doctorate.
- In 29% of the cases, DRs do not attend social events at their institutes, either because they don't know about them or because the events are not organized at all. Such DRs tend to have more often thoughts about quitting their PhD.

In this chapter, it is analyzed how well DRs felt integrated into their Leibniz Institutes in terms of various factors ranging from *language barriers* and *social integration*, as well as *support received and needed with administrative tasks* in their respective institutes. Due to the fact that non-German DRs comprise more than a third (39%) of all DRs within the Leibniz Association, special focus was put on them in this regard.

8.1 Support Provided and Needed in the Leibniz Institutes

During the doctorate, DRs face administrative tasks that may be confusing and overwhelming, specially for those not fluent in the German language. This can delay and hinder the bureaucratic processes to start, develop and finish their PhD. Thus, institutes should provide guidance in the process in the form of information documents, personal emails, or oral correspondence upon request. Examples of support concern university enrollment, visa application, local resident registration, among others.

The DRs were asked about which kind of support was provided by their respective institutes, and 472 respondents disclosed that, among all the available options, *university enrollment* (59% *yes*) and *application to graduate school* (47% *yes*) were the most provided types of support. On the other side, 83% and 81% of the respondents indicated that their institutes did not provide support with *translation of working contract and relevant documents* and with *immigration office*, respectively. 38% indicated that none of the proposed types of support were facilitated by their institutes. [Figure 8.1]

Sections

The share of *yes* to the various forms of support reveals that in most of the sections DRs indicated similar percentages pertaining to support with *university enrollment* (from 58% Section E to 63% Section B). Section A reported the lowest share in this regard (53%). In terms of support with *application to graduate school*, Sections A and C reported the highest percentages, that is 59% and 63% respectively, whereas Section D only reported 28% of the respondents indicating *yes* in this item. All these percentages in all sections increased compared to the 2019 Survey.

Institutes among all the sections still do not offer enough support concerning topics that non-German DRs often have to face, e.g. *translation of working contracts and relevant documents, help with immigration office, registering at the local Resident Registration Office* and *visa for their residency*. Those sections with the highest share of *yes* in the mentioned items were Section D and E, which reported the highest share of non-German DRs in their institutes. [Figure 4.5)] On the contrary, Section A reported the lowest share in these forms of support. [Figure 8.2]

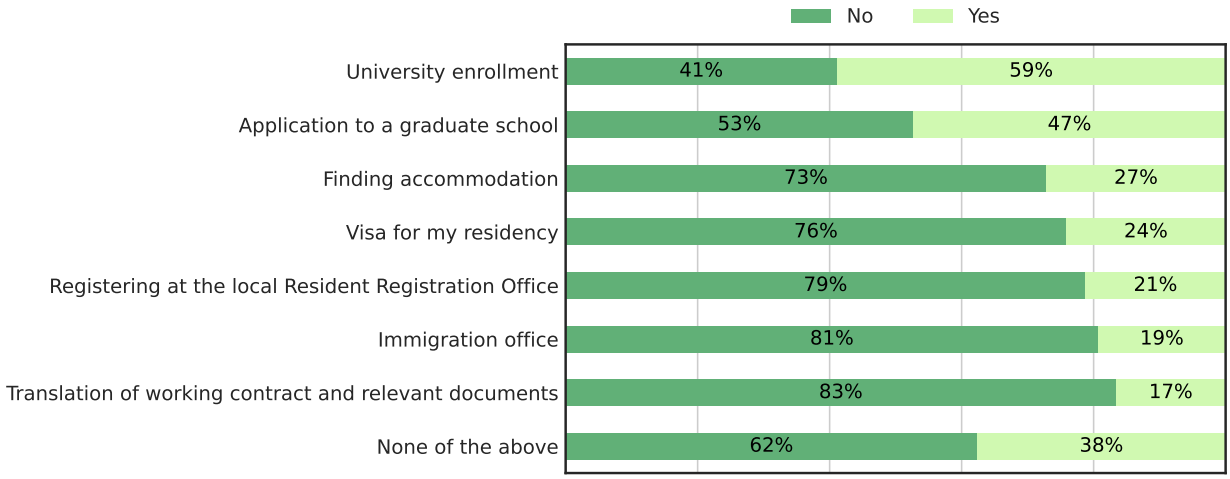


Figure 8.1: *"For which of the following aspects did you receive support from your institute/center/unit?" (integration).*

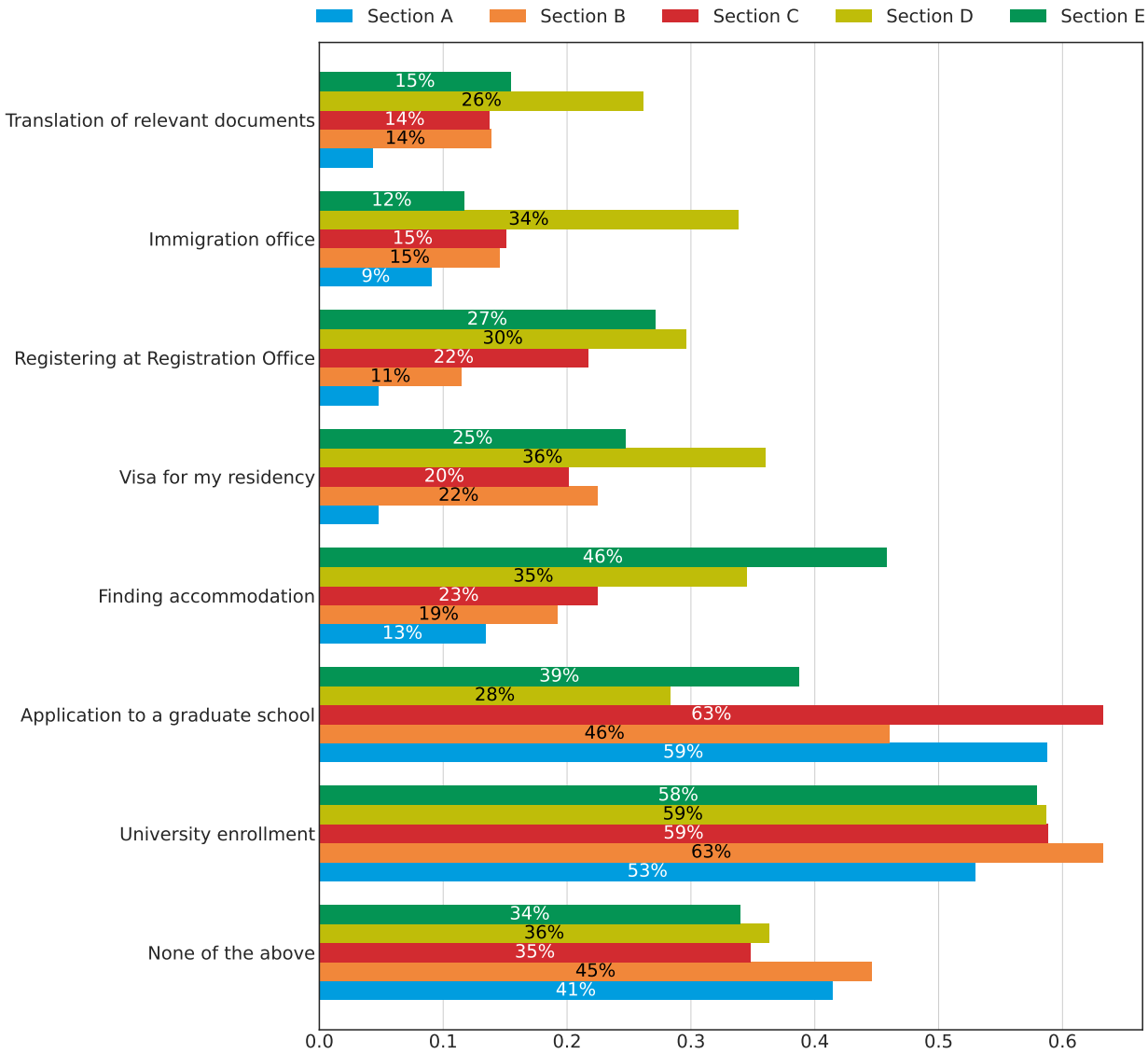


Figure 8.2: *"For which of the following aspects did you receive support from your institute/center/unit?" percentage of "yes" by section.*

When asked about which kind of support would have been needed from their respective institutes, 353 respondents disclosed that, among all the available options, *university enrollment* (63% *yes*) and *finding accommodation* (43% *yes*) were the most needed types of support. 56% (n = 753) of the respondents indicated that none of the provided options were needed.

Citizenship

Concerning DRs not holding an EU citizenship, 36% and 37% indicated that they would have needed more support with *immigration office* and *visa for my residency*. Moreover, 61% of those non-EU DRs indicated the need for further support with *finding accommodation* and 53% with the *translation of relevant documents*. These results are in line with those presented in Figure 8.2. Non-German EU DRs (n = 117) indicated that they need more support from their institutes in terms of *translation of relevant documents* (59%), *university enrollment* (58%) and *finding accommodation* (54%). German DRs (n = 511) generally need more support with *university enrollment* (80%) and *application to graduate school* (36%). 73% of German DRs indicated that they do not need further support with any of the proposed items. [Figure 8.3]

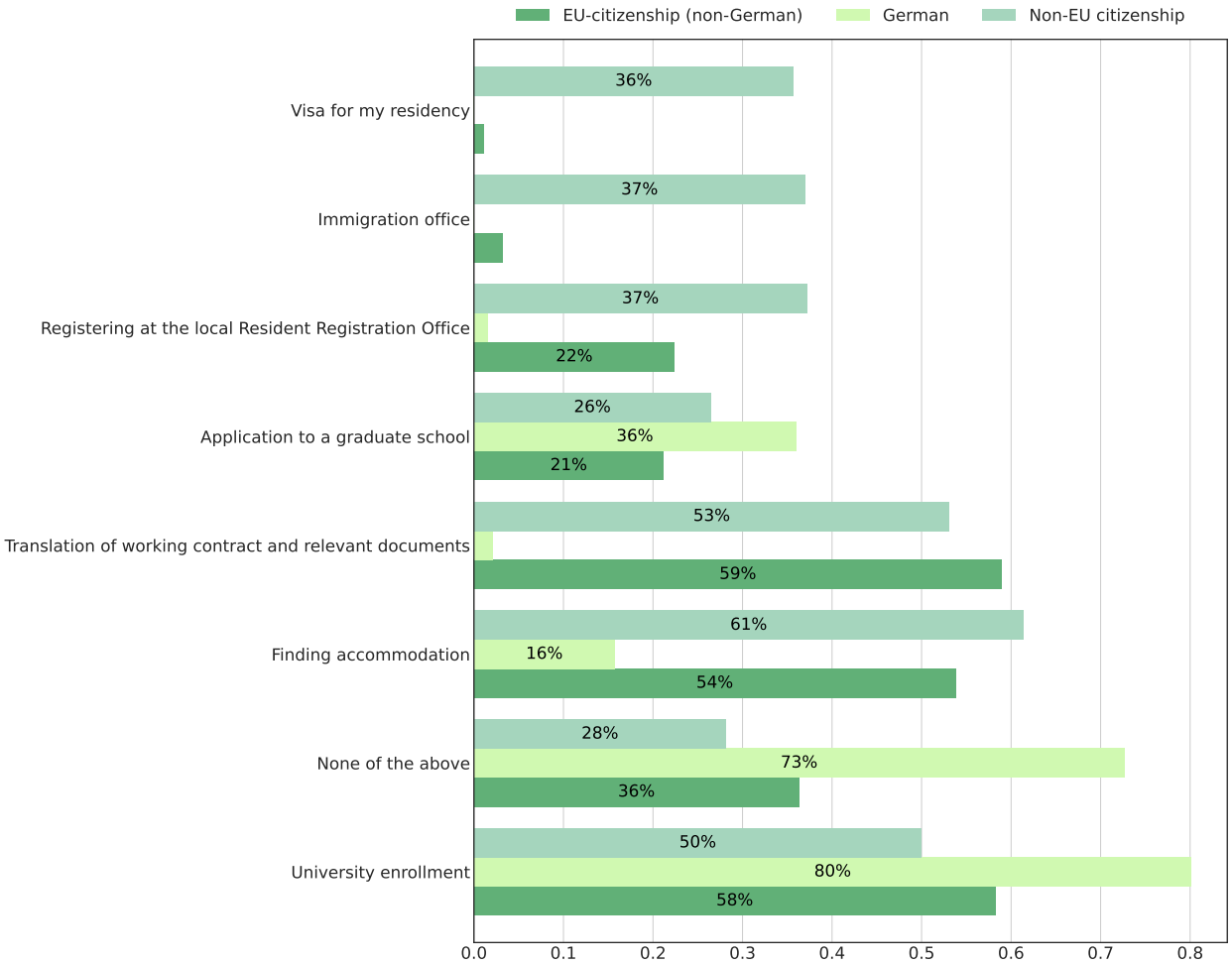


Figure 8.3: *"For which of the following aspects you would have needed more support from your institute/center/unit?" percentage of "yes" by citizenship.*

8.2 Language Proficiency and Difficulties

Language barriers are often a burden on non-German DRs pertaining to social and professional life integration. For this reason, this section focuses on the language proficiency of DRs holding a non-German citizenship, who made up 39% of the total number of respondents of this survey, as well as their difficulties to communicate with their colleagues and the consequences that this could entail.

When asked about their German language level, 52% (n = 317) of the non-German DRs disclosed that they have *none* (19%) or they were in a *beginner phase* (33%). On the other hand, 13% disclosed that their German level is *fluid* and 5% were *native German speakers*. 30% of the non-German DRs considered their language skills to be at an *intermediate level*.

Citizenship

When considering the citizenship, non-German DRs holding EU citizenship reported a slightly higher share of respondents with *intermediate* to *native language skills* compared to those holding non-EU citizenship, that is 50% (n = 116) versus 47% (n = 200), respectively. However, the share of non-EU DRs with *beginner* proficiency was six points above the one of EU DRs. This gives a hint about the potential issues pertaining to language barriers that non-EU DRs might have in their professional and social life. This could also indicate that non-EU DRs were more active in terms of learning the German language. [Figure 8.4]

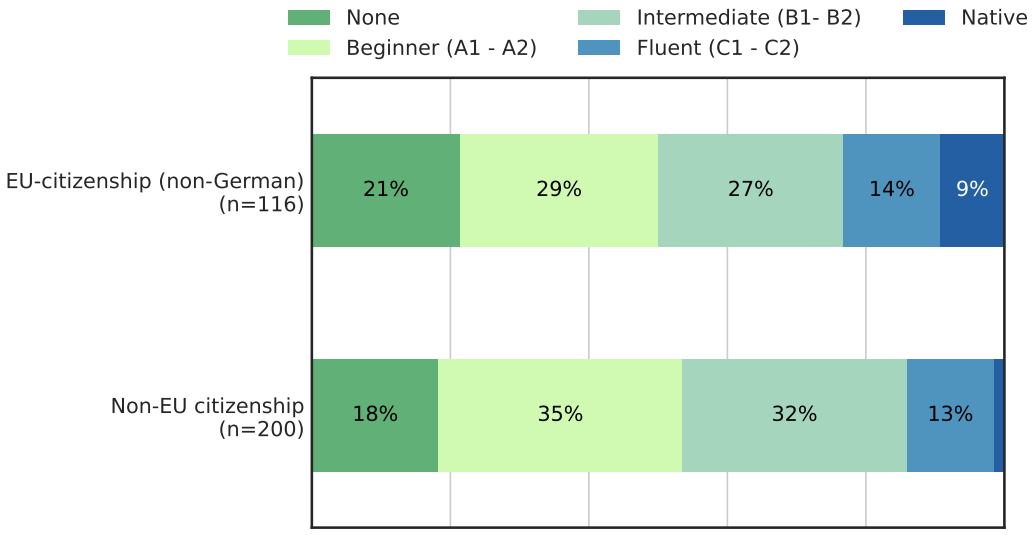


Figure 8.4: *"Do you speak German?" (German) by citizenship.*

Year of PhD

Regarding language proficiency considering the year of PhD, non-German DRs tend to improve their language skills the further they reach in their doctorate. The share of *none* to *beginner (A1-A2)* DRs decreased gradually from the first year of PhD. Accordingly, the share of non-German DRs with *intermediate (B1-B2)* level of German language increased with the year of the PhD, from 23% (n = 88) the second year to 31% (n = 58) the third year and to 40% (n = 59) the fourth or more years. Non-German DRs within the first year of PhD reported the highest percentage of *none* language level (29%, n = 86). According to the survey data, the level of German language proficiency peaks in the last years of PhD, reporting more than 20% (n = 59) of non-German DRs with fluent or native language skills in their fourth or more years of PhD. In general, institutes should provide further support to international DRs to attend German courses from the very beginning of the doctoral phase. This would help them to improve their German language proficiency and potentially reduce the language barriers inside and outside their institutes. [Figure 8.5]

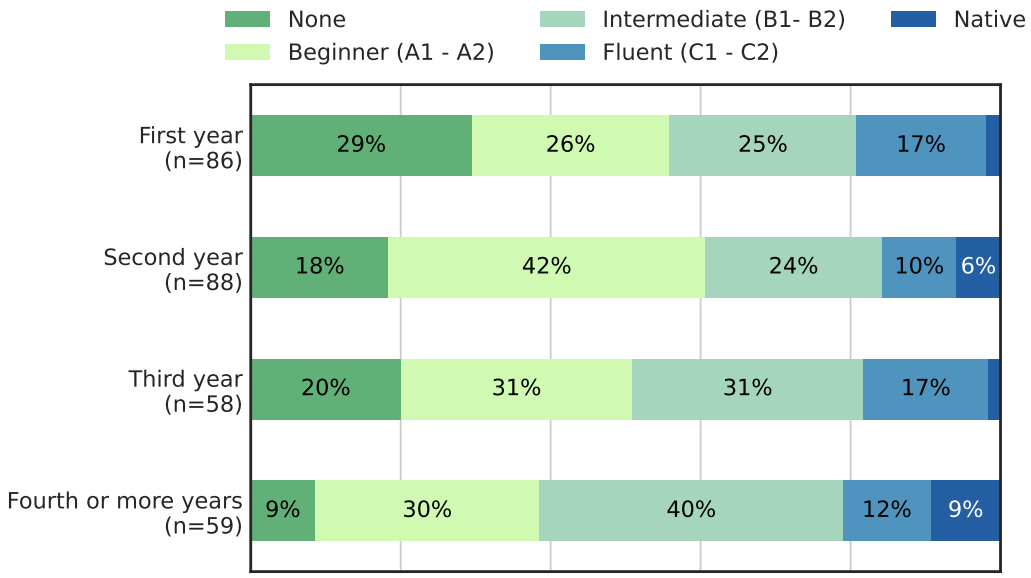


Figure 8.5: *German proficiency by year of PhD.*

8.3 Language Barriers

When asked to what extent is the German language an obstacle to communicating with their colleagues, non-German DRs reported that it was to some extent in 38% (n = 317) of the cases and very much for 10% of them. 23% reported that it was rather not and 29% that it was not an issue at all. All in all, almost half of the non-German DRs considered that language was an obstacle to establishing communication with their colleagues at their respective institutes. 50% (n = 172) of

Non-EU DRs disclosed that language was a barrier at least to some extent, whereas for EU DRs, the share raised up to 43% (n = 89). On the contrary, the percentage of non-EU DRs that considered that language was not a barrier at all raised 11 points above the share of EU DRs, that is 33% (n = 172) compared to 22% (n = 89), respectively.

Year of PhD

Regarding the year of PhD, generally the further the international DRs reach in their PhD, the more difficulties they had to face with respect to language barriers. That is, the percentage of international DRs that considered that language barriers were a problem at least to some extent increased from 30% (n = 69) in the first year to 54% (n = 75) in the second year and to 59% (n = 48) the third year. The percentage of DRs that consider language barriers are very much a problem peaks from the fourth year on (11%; n = 46). [Figure 8.6]

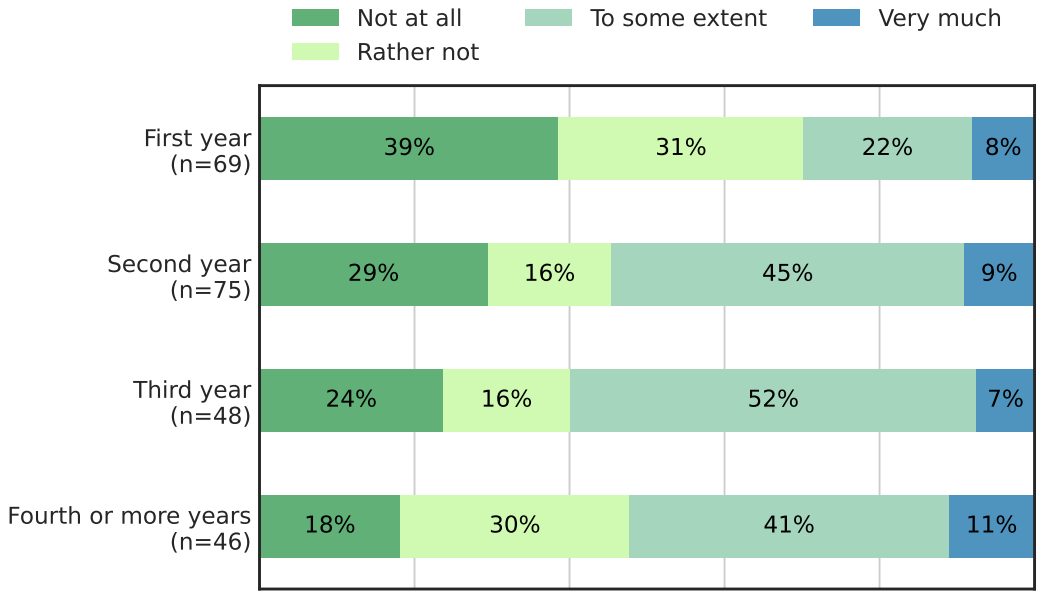


Figure 8.6: *"Is language an obstacle for communication with people at your institute?" by year of PhD.*

Sections

Section E reported the highest percentage of international DRs considering language as an obstacle at least to some extent for communication with their peers (82%; n = 37), followed by Section C (58%; n = 112), Section A (54%; n = 9), Section D (34%; n = 76) and Section B (20%; n = 27).

8.4 Availability of Important Information in an Understood Language

International DRs were asked if in their institutes all the important information was available in a language they understand and 67% (n = 316) of them disclosed that most or all the important information was available (44% and 23%, respectively). Only 3% out of 316 respondents indicated that none of the information was available and 30% that some of the information was available. The situation has improved in this regard concerning the 2019 Survey, where 20% of all the international DRs stated that none of the information was available in a language that they understand.

Sections

Sections B and D were the ones reporting the highest shares of international DRs indicating that at least most of the information was available in a language that they understand. That is 90% (n = 27) and 80% (n = 76), respectively. Followed by Section C (56%; n = 112), Section E (47%; n = 37) and Section A (38%; n = 8). [Figure 8.7]

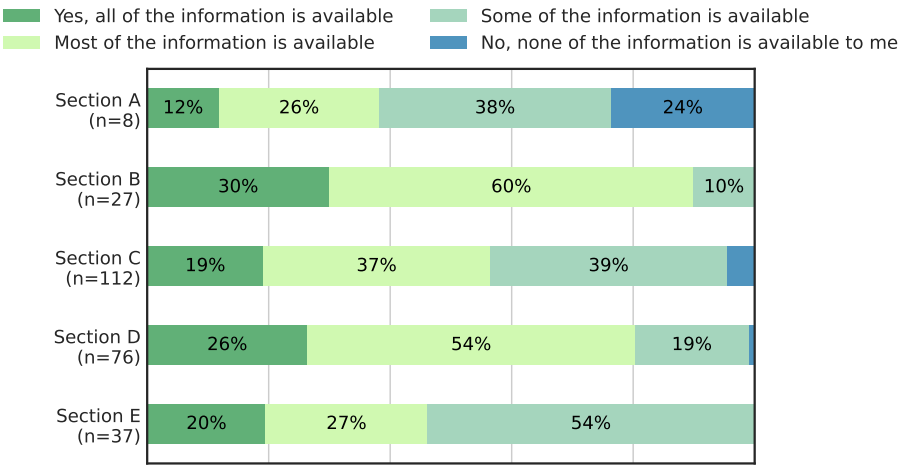


Figure 8.7: *"Is all the important information available in a language you understand?" by section.*

8.5 Social Activities at the Institutes

All DRs regardless of their citizenship were asked whether there were regular social activities in their research groups or institutes. 24% stated that there were no social activities in their institutes and 5% didn't know if they were taking place. Almost half of the DRs indicated that there were social activities and they participated sometimes (25%) or often (24%). On the other hand, 11% acknowledged the existence of such events but they rarely attended them (11%) or never attended

them (3%). It is clear that institutes should support the organization of social events to help integrating new DRs in their working environment as well as strengthen their bounds with the rest of the employees. This would potentially benefit the motivation of DRs towards the completion of their PhD.

Parenthood and Care Responsibilities

Out of those DRs that have children and answered this question (n = 77) 17% disclosed that there were social activities but they rarely attend them, 5% do not attend them at all and 6% did not know if their institutes or research groups organized such activities.

15% of DRs with care responsibilities apart from children (n = 81) indicated that there were social activities in their institutes or groups but they rarely attended them or did not attend them at all. The share of DRs with no caring responsibilities apart from children (n = 724) that were able to attend social activities always, often, or sometimes made up 58% of them, in contrast to the 50% (n = 81) of DRs that did have caring responsibilities.

Sections

DRs affiliated with institutes belonging to Sections D, C and E reported the highest share of *no, there are no social activities* rising to 29% (n = 178), 27% (n = 308) and 26% (n = 102), respectively. Sections A and B reported the lowest share in this regard, being 20% (n = 84) and 14% (n = 149) respectively. Section B had the highest share of DRs attending sometimes, often or always to social events namely 69% (n = 149). [Figure 8.8]

Thoughts of Quitting

DRs that did not attend any social activities were more prone to have thoughts about quitting their PhD. Out of the DRs who disclosed that there were no social activities organized at their institutes (n = 195), 51% had occasional or often thoughts about quitting their PhD. For those that did not attend or rarely attend these events, the percentages rise up to 43% (n = 26) and 34% (n = 88), respectively. These percentages were lower the more often the DRs attended social events in their groups or at their institutes.

Alternatively, these results could also be interpreted as it follows: DRs who have more often thoughts about quitting might be less motivated to attend any social activity at their institutes due to misgivings. This could also lead to the fact that they tend to ignore these events to such extent that they disclosed *No, there are no social activities*, even though they were organized. [Figure 8.9]

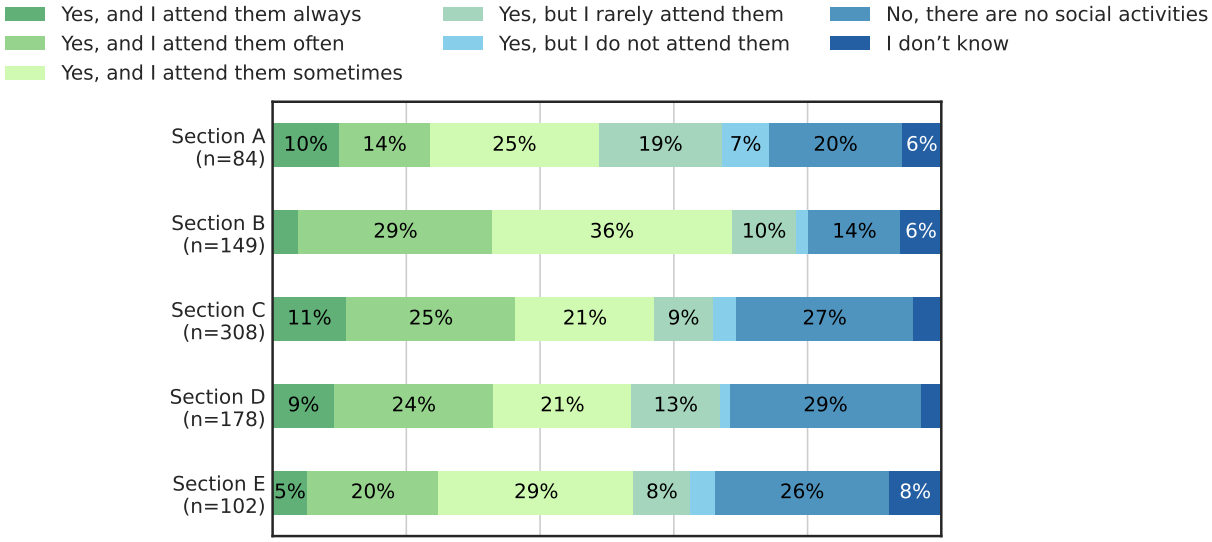


Figure 8.8: *"Are there regular social activities in your group or at your institution?" (social activities) by section.*

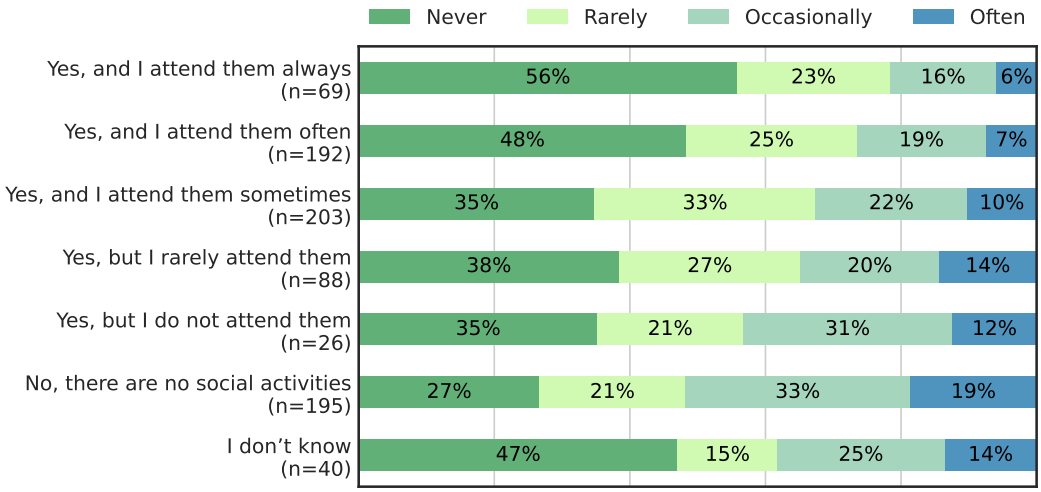


Figure 8.9: *Social activities by thoughts of quitting.*

9 Career Development

Main findings from the following chapter:

- The majority of DRs indicated that they would like to continue to work in some research or science-related job.
- 55% of DRs indicated that they would like to continue working in academia.
- 45% of DRs felt either *very unprepared* or *unprepared* for a job outside of science.
- These findings were quite similar compared to the results from the 2019 Survey, suggesting that in the perspective of future careers, the COVID pandemic did not change the respondents' preferences substantially.

9.1 Offers for Career Development

DRs were asked if their institutes support their careers, and to what extent. Seven measures of career development that have been considered fundamental to creating a solid researcher background in Germany were surveyed.

The outcomes are in line with the findings of the 2019 Survey, with *soft skill course* (82%) and *sobility period* (84%) showing the highest level of support. The other measures reported from the most to the least implemented by the institutes are: *practical courses* (77%), *language courses* (73%), *mentoring* (68%), *transition to a non-academic career* (53%), and *career development office* (46%). [Figure 9.1]

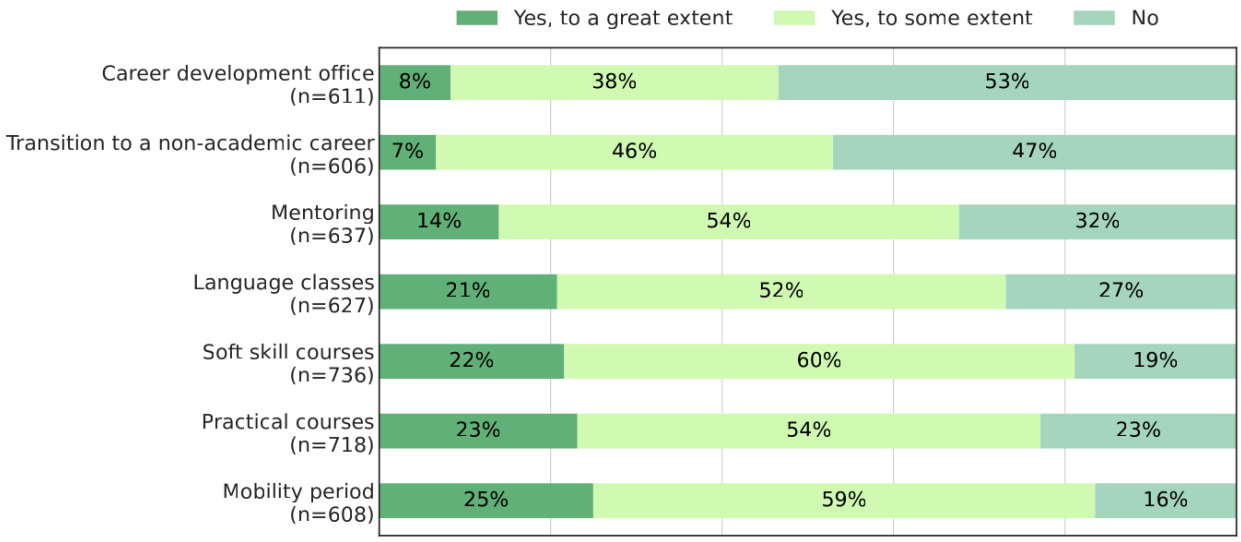


Figure 9.1: *"Which of the following measures for your career development are supported by your center/institute?"*

The similarities in the findings of the 2019 and 2021 Survey lead to the conclusion that probably there were no significant changes by the institutes regarding career development initiatives in the intervening time period. Although this is a positive sign for those institutes that were already implementing many of these measures, it doesn't bode well for the others that didn't take the opportunity to dedicate more resources to the development of their DRs' careers.

Language Classes

Investigating further the offerings by the institutes for *language classes*, the majority of institutes offered *in-house German classes* (57%) and 32% gave *monetary support for external courses*. Only 15% of the DRs reported that their institute does not provide any kind of support for learning German. [Figure 9.2] Even though this percentage does not match the outcomes in the previous figure for language classes perfectly, possibly due to a lower participation rate (only 255 respondents for this specific question), both results showed how the vast majority of institutes in the Leibniz Association were actively supporting their international employees in learning German.

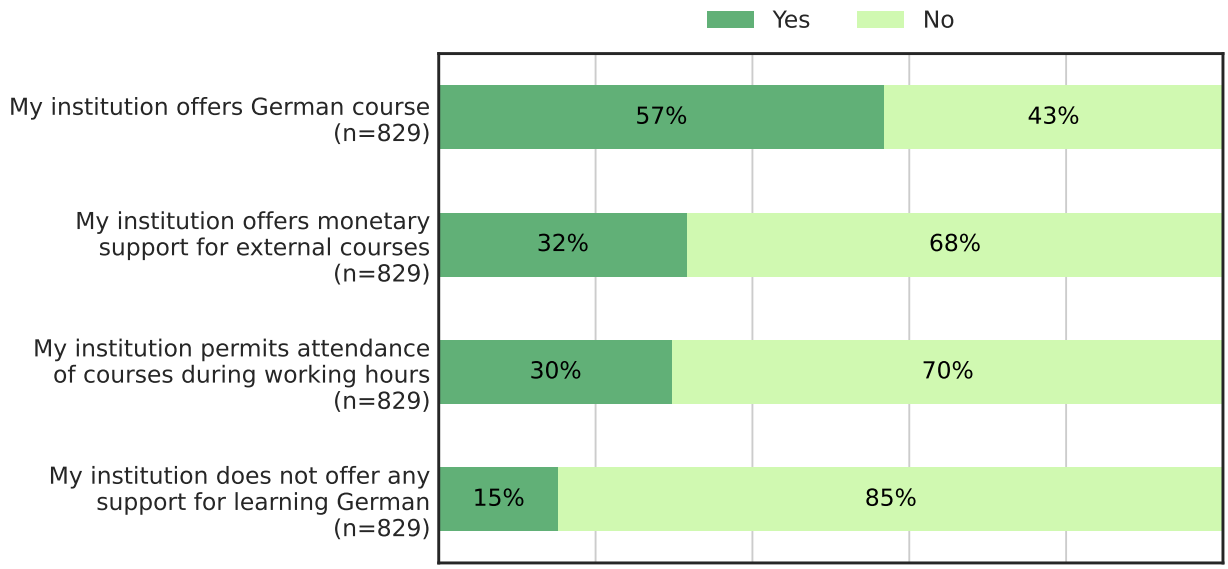


Figure 9.2: *"How does your center/institute support you in learning German?"*

9.2 Career Perspectives

Respondents were asked to indicate on a Likert scale how much they would have liked to work in eight possible future career paths. The career paths included fields such as *academia*, *non-academic scientific research*, *private sector-related jobs* or *taking a break*. The common trend among DRs that appeared in the 2021 Survey was to continue working in some research or science-related job. Similarly, as in the 2019 Survey, 78% of the total respondents would like to keep researching but not in an academic position, while slightly more than half replied that they would also like to stay in academia. Data suggests that there was no preference between the public and private sectors as long as the job position keeps being science-related, judging by the similar percentages (36% *rather yes* and around 10% *very much*). Regarding the prospect of alternatives to working in academia or other science-related jobs, only 17% of the respondents replied that they wanted to start their own business in the future. These results are quite similar to the ones from the 2019 Survey. [Figure 9.3] This observation suggests that in the perspective of future careers, the COVID pandemic did not change the respondents' preferences much. No substantial changes in career preferences over the course of the doctorate were found when the year of PhD was investigated. The percentage of *very much* for academia, for example, varied between 22% and 28% with no discernible trend.

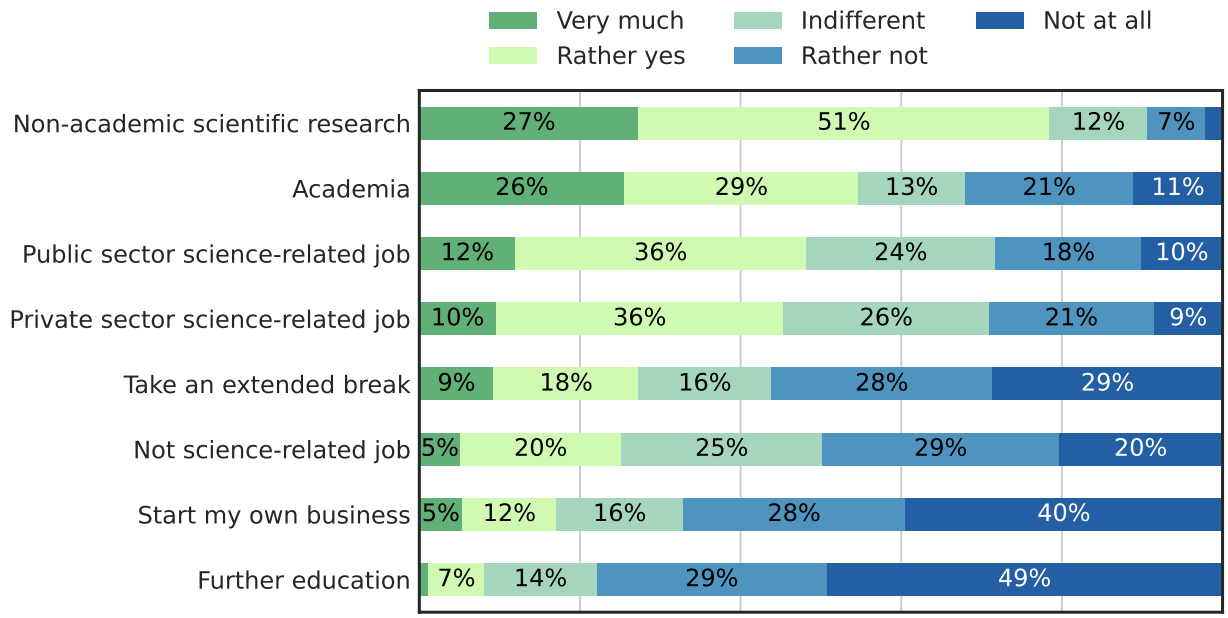


Figure 9.3: *"Which field would you like to work in after completing your PhD?"*

Sections

Section A (67%) and Section E (68%) were those with the highest rate of DRs willing to stay in academia and Section C (47%) and Section D (50%) were the ones with the lowest.

Citizenship

Based on citizenship, EU (non-German) citizens (61%) and non-EU citizens (65%) seemed to be more willing to remain in the academic world after completing their PhD compared to German citizens (49%). The gender of DRs did not seem to be of great influence in this regard (57% of male respondents versus 51% of female respondents).

Feeling (un)prepared for the Future

The respondents indicated a generally positive impression (75%) about being sufficiently prepared for a scientific job. [Figure 9.4] At the same time, when asked whether they felt well prepared for a job outside of science, 36% of the respondents replied they felt either *unprepared* and 9% *very unprepared*. [Figure 9.5] 18% either did not want to answer this question or replied that they did not know. In contrast to the outcome of the 2019 Survey, no significant impact of gender on the

DRs' feeling to be prepared for the future position was found. The biggest difference between the male and female DRs was found for feeling prepared for a job outside the scientific field. In this case, 37% of the female respondents indicated feeling *unprepared*, compared to 32% of the male respondents.

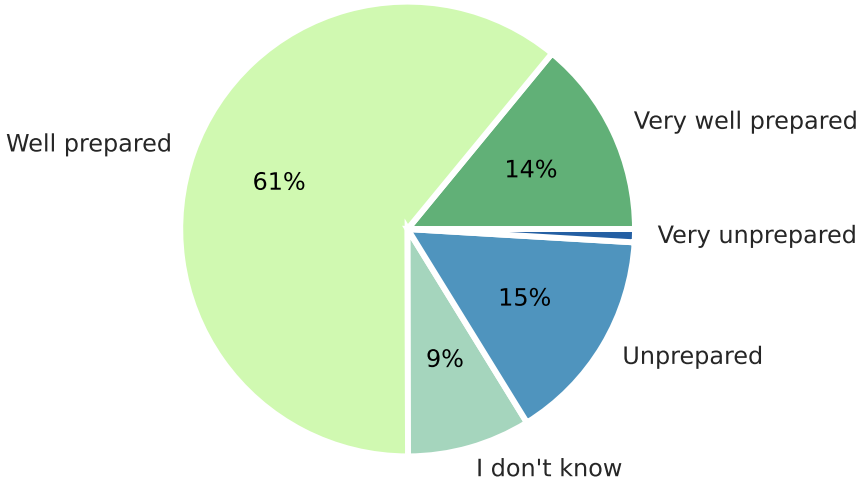


Figure 9.4: *"Do you think you are well trained for a job inside science/academia?" (n = 820).*

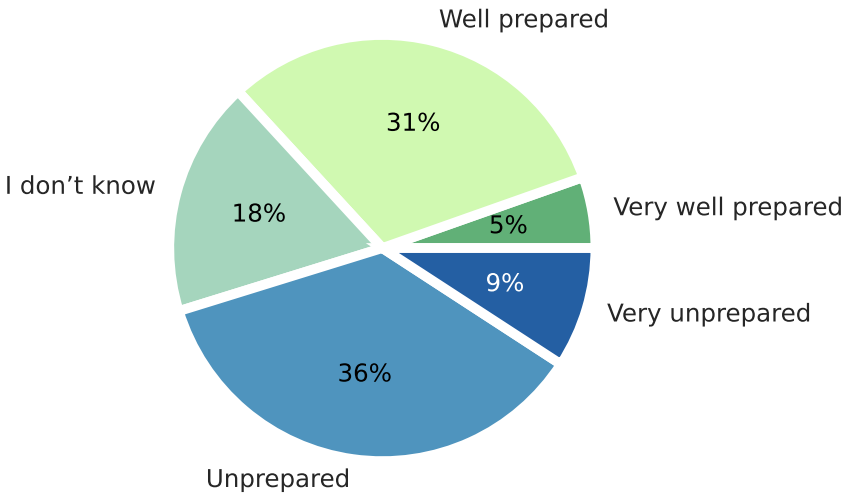


Figure 9.5: *"Do you think you are well trained for a job outside science/academia?" (n = 825).*

10 Family

Main findings from the following chapter:

- 14% of the DRs reported being parents or wanting to become a parent during the PhD.
- Only a third of them was satisfied with and aware of the childcare support offered by their institute.
- 10% of DRs had care responsibilities besides of children. 57% of DRs with other care responsibilities were unsatisfied with the level of support they got for them.
- 28% of DRs with children were unsatisfied with the financial and organizational support they received.

10.1 Parenting Demographics

Parenting during a PhD can be challenging, and many institutes offer support for parents/future parents. 9.7% of the DRs (n = 78) were parents or expecting children, a number in the same order of magnitude as highlighted in the 2019 Survey (13%; n = 120) and 2017 (12%; n = 117). The share of parents varied between 6% and 20% between Leibniz Sections, with Section C showing the lowest percentage. [Figure 10.1]

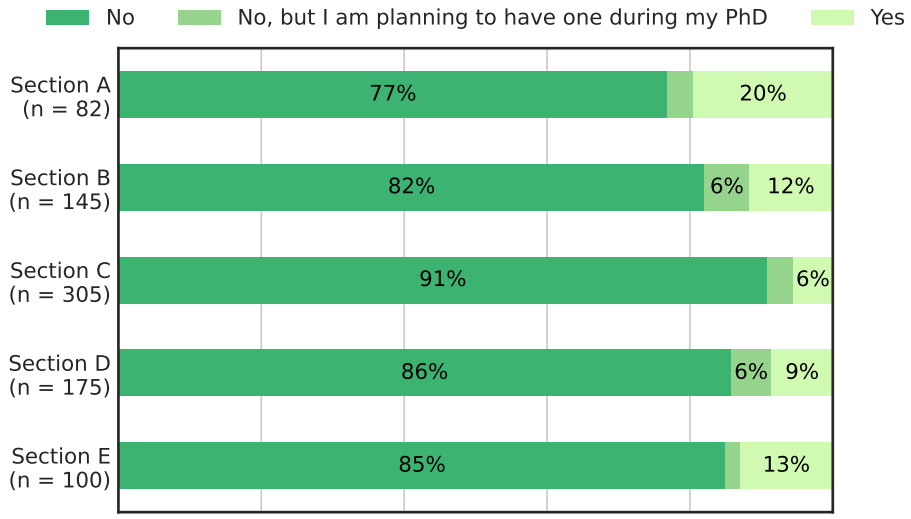


Figure 10.1: *"Do you have or are you currently expecting children?" by section.*

10.2 Becoming a Parent During a PhD

While 4.3% of DRs were planning on becoming a parent during their PhD, most of the respondents were uninterested in getting (more) children during their studies. [Figure 10.2]

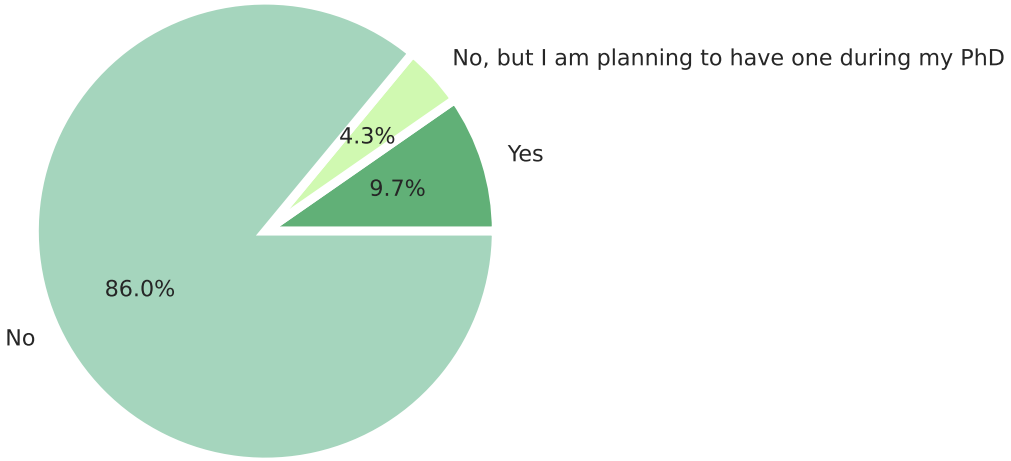


Figure 10.2: *"Do you have or are you currently expecting children?" (n = 802).*

Several reasons for this decision were indicated by the respondents: Personal reasons aside, 17% of the respondents reported *non-family friendly working conditions*. The second most given reason was the *fear of jeopardizing their career* with 15.7%, and 11% fear that they *cannot afford to have a child*. [Figure 10.3] Compared to the answers from the 2019 Survey the amount of DRs not having children due to *non-family friendly working conditions* halved (17% vs. 34%), the *financial insecurity* reduced by two-thirds (11% vs. 32%) and the ones in *fear of jeopardizing their careers* halved with (15.7% vs. 30%).

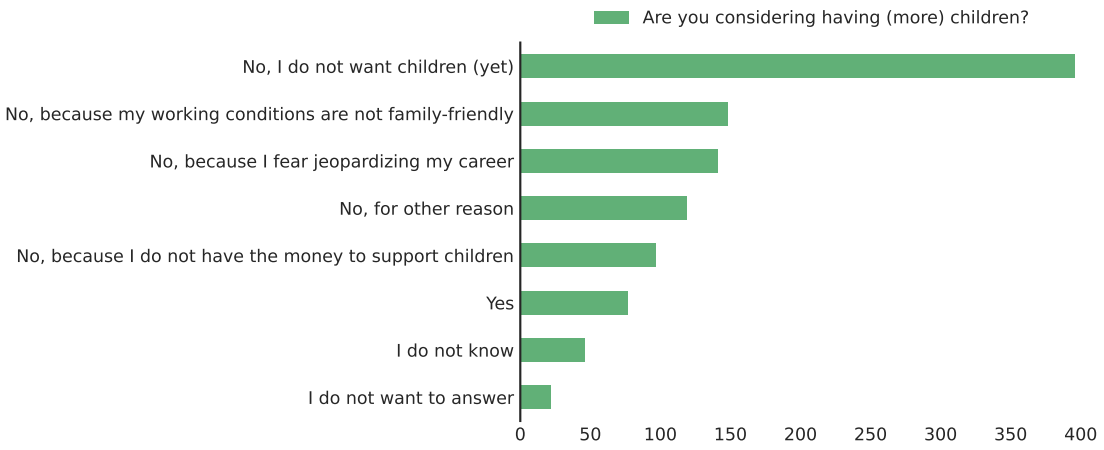


Figure 10.3: *"Are you considering having (more) children during your doctoral research project?" (n = 807).*

10.3 Support Offered for Raising Children

General Tendencies among DRs

When asked if they felt like there is sufficient support (financial and organizational) from their institute for raising a child, 34.5% of the DRs indicated having or planning to have children (14% of all respondents; Figure 10.2) agreed that there was enough support, which was slightly less than the 40% of DRs who answered this question positively in the 2019 Survey. Additionally, 27.6% of the respondents disagreed, and 37.9% answered that they did not know, underlining an unawareness of the potential systems in place. [Figure 10.4]

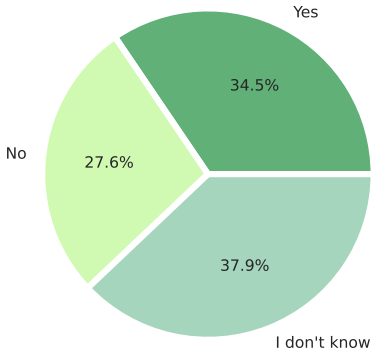


Figure 10.4: *"Do you feel there is sufficient support (financial and organizational) from your center/institute/unit for raising/caring for a child?" (n = 113).*

The support by their respective institutes varied widely among the sections. While only 21% (n = 9) of people in Section C thought that there was sufficient support for having children, 51% (n = 18) of DRs in Section B did think the support was sufficient. The other sections distributed themselves between those two values [Figure 10.5].

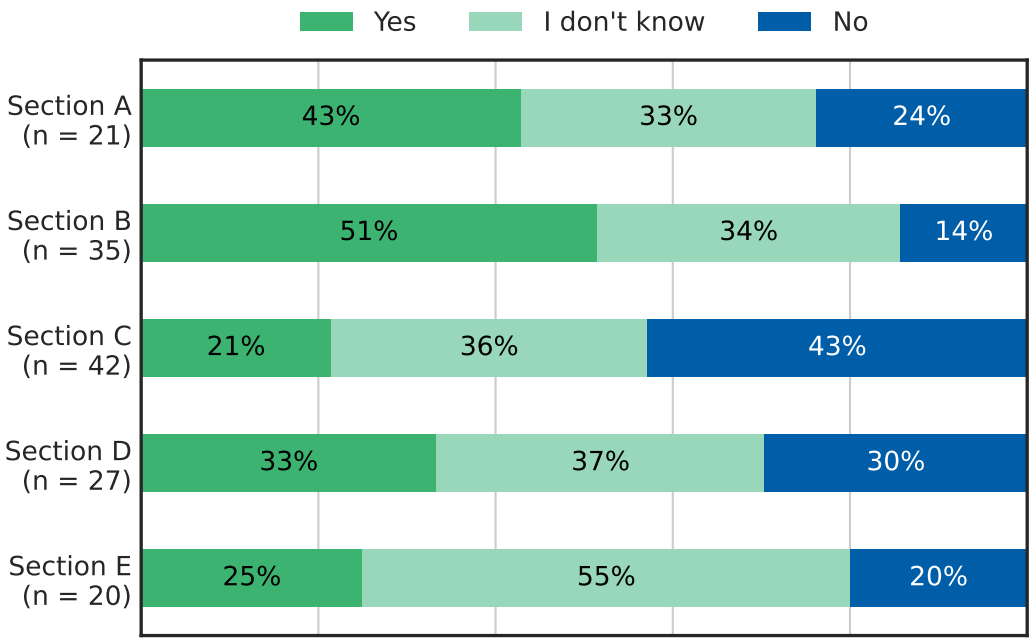


Figure 10.5: *"Do you feel there is sufficient support (financial and organizational) from your center/institute/unit for raising/caring for a child?" by section.*

Support Offered

The most common childcare service offered at the institutes was *home office / mobile work* with 44%, followed by the *parent-friendly environment* with 24%. 12% responded that there was *access to daycare*. [Figure 10.6] The option of home office thereby increased by 12% points in comparison to the 2019 Survey, while *parent-friendly environment* and *access to daycare* stayed the same.

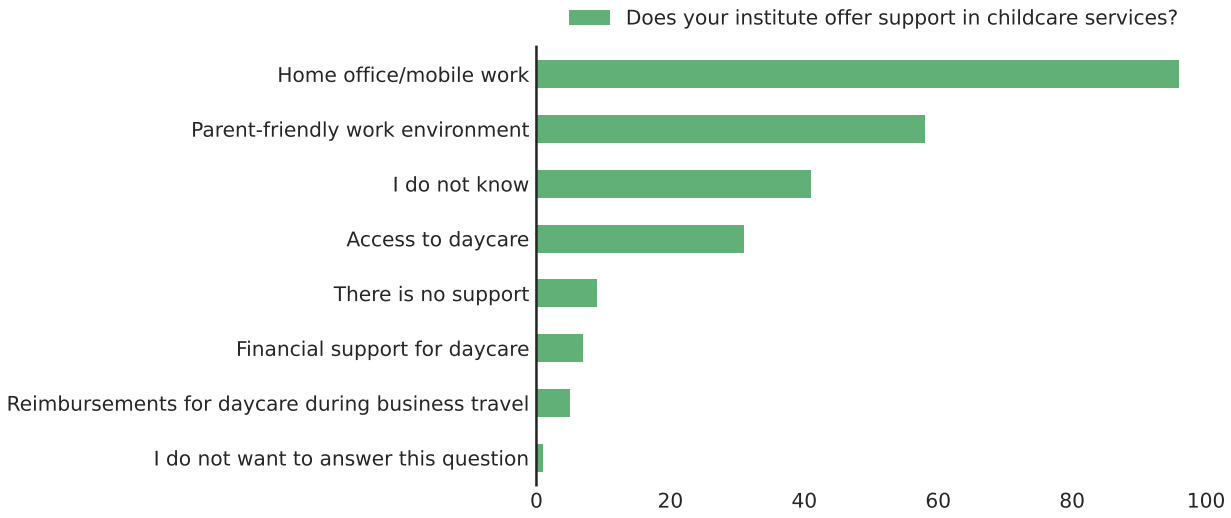


Figure 10.6: *"Does your center/institute/unit offer support in childcare services?" (n = 248).*

10.4 Additional Support Needed Besides of Children

10.1% (n = 82) of the DRs reported that they had other caring responsibilities besides children but only 16% (n = 13) did feel well supported for these caring responsibilities while 57.3% (n = 47) answered that they did not feel supported. [Figure 10.7] This was consistent with the findings from the 2019 Survey. Henceforth, Leibniz Institutes should also focus on DRs with other caring responsibilities such as looking after elderly family members or disadvantaged family members.

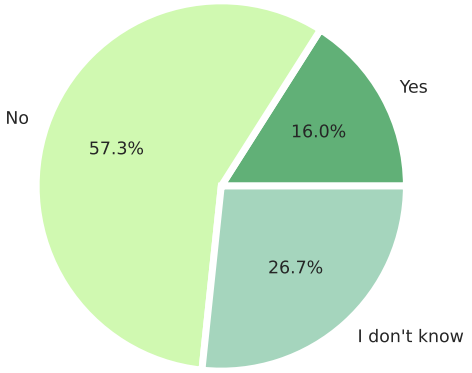


Figure 10.7: *"Do you feel you are supported by your center/institute/unit in your caring responsibilities apart from children?" (n = 82).*

Furthermore, the percentage of support outside of childcare was inconsistent across the different sections with Section D having the lowest percentage of unsatisfied DRs of 43% and Section B having the highest percentage of 71% respectively. [Figure 10.8]

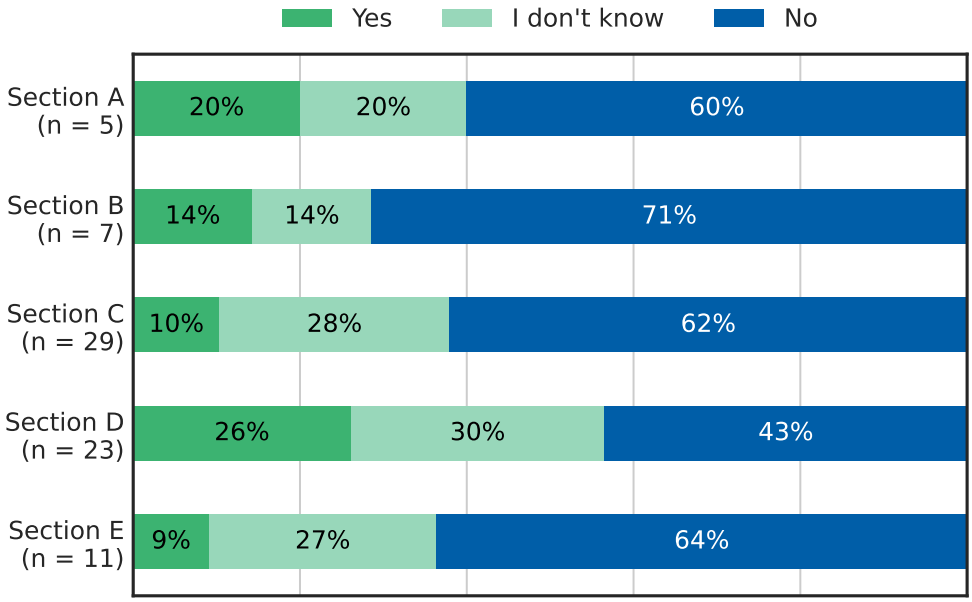


Figure 10.8: *"Do you feel you are supported by your center/institute/unit in your caring responsibilities apart from children?" by section.*

11 Power Abuse

Main findings from the following chapter:

- About 22% of the DRs stated that they had experienced bullying from a superior. This number was higher compared to the 2019 Survey.
- The majority of DRs reported not having experienced any form of discrimination.
- 12% of DRs had a conflict with a superior. This percentage was slightly less than in the 2019 Survey. German and female DRs reported cases of conflict more often.
- Only one-third of the DRs who reported a conflict were satisfied with the consequences of their report. This number was less compared to the 2019 Survey.
- 80% of the DRs who reported a conflict suffered from moderate to high levels of anxiety.
- There was a substantial difference between German and non-German DRs in their awareness of aid mechanisms and contact persons to turn to in case of conflicts. Non-German DRs were less aware of these resources.

This chapter reports the findings on discrimination and the abuse of power, which includes any form of bullying and unwanted sexual behavior faced by the DRs at their respective institutes. At the end of this chapter, the impact that the abuse of power has on the DRs, how it affects their research and aid mechanisms in place to help out are described. Abuse of power or abuse of authority is any misuse of power from the position of authority in order to harm other people, bully them, or place them at a disadvantage. It also entails the use by an official of his or her vested power to improperly discriminate against another person. People can be discriminated against due to their *gender*, *nationality*, *ethnicity*, *age*, *sexual orientation*, *religion*, and *mental health* among other things.

11.1 Discrimination

The majority of the respondents reported not being subjected to any form of discrimination. From the data collected, it is also clear that factors such as *nationality, ethnicity, gender, age, mental health*, etc. play a significant role among those who reported being discriminated against, with *nationality* and *gender* being the most obvious contributing factors for discrimination. A fifth of the respondents were not sure whether they faced any discrimination in the workplace. This indicates that the definition and meaning of what discrimination is needs to be well established. [Figure 11.1]

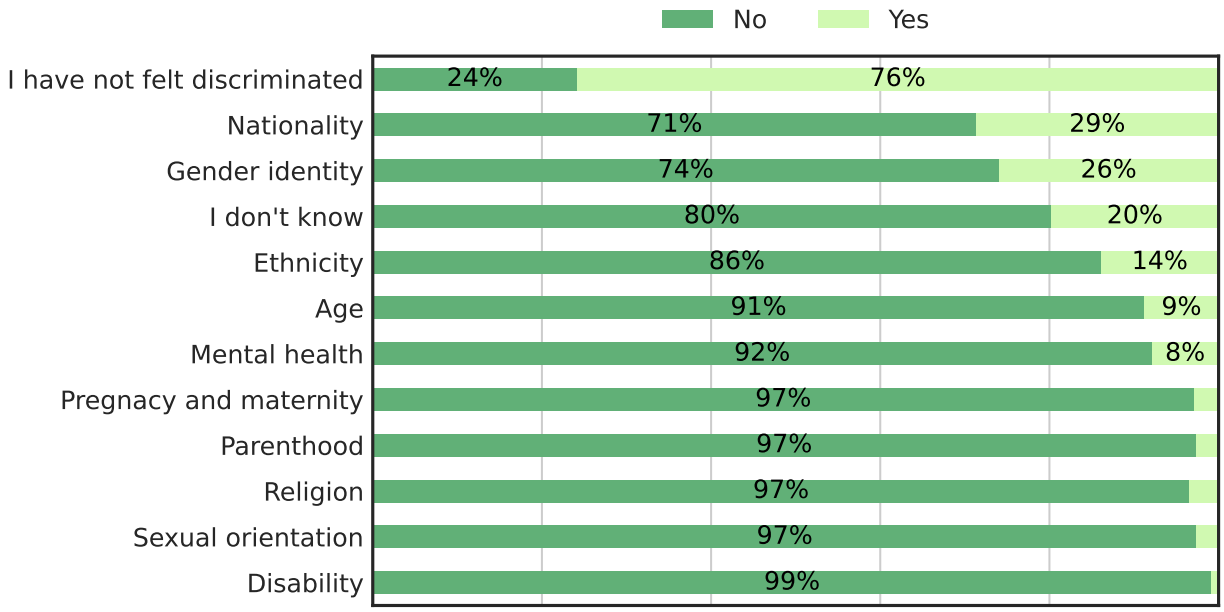


Figure 11.1: *"Have you felt discriminated against"*.

11.2 Being Subjected to Bullying

The DRs were asked whether they have experienced or witnessed cases of bullying by a superior. In an explanatory text, bullying was defined as a "repeated and persistent negative behavior directed towards one or several individuals, which creates a hostile work environment, including gender, cultural or religious discrimination" (Appendix). Bullying can be carried out not only by the supervisor but also by other scientific staff, fellow DRs and other staff. The respondents perceived that factors such as the position of power, gender, and ethnic group as the basis for bullying. Close to 22% reported that they have been subjected to bullying by a superior. This percentage has more than doubled compared to the 2019 Survey (10%). Among those who reported being bullied, 22% experienced some form of bullying *once*, another 6% experienced it on a *weekly* basis. Close to

61% reported having experienced bullying *occasionally* and 9% on a *monthly* basis. Those who reported bullying describe it as some form of increased *pressure to get the work done*, *verbal harassment* and *threat to professional status* among other things. It should also be noted that many respondents reported being subjected to some form of indirect bullying, e.g. spreading rumors, lies, making fun of a person, and withholding information. [Figure 11.2]

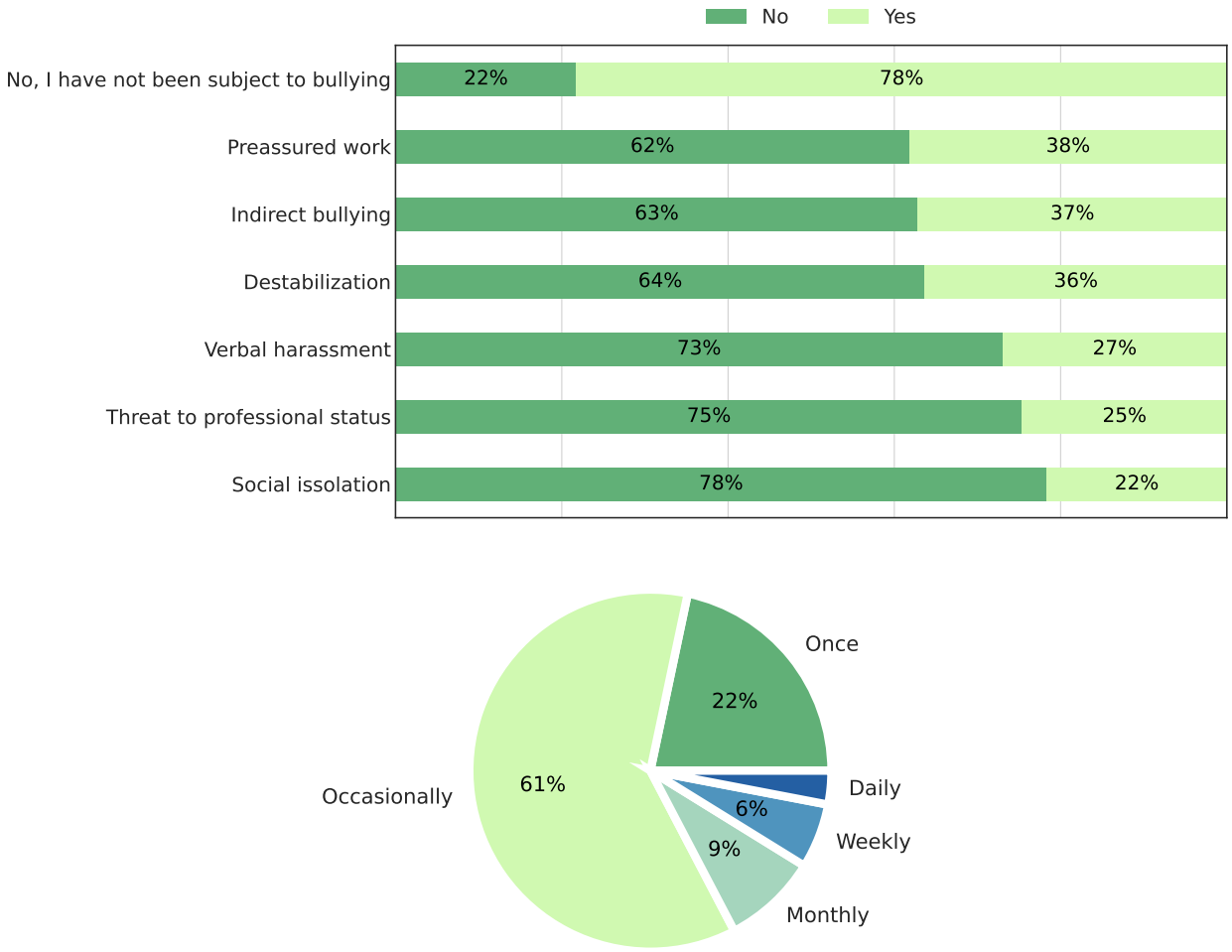


Figure 11.2: *"Have you been subject to bullying?" overall percentage (top) and "How often have you been subject to bullying?" (n = 154) (bottom).*

Sections

It appears that there are discrepancies between the different sections in terms of the frequency of bullying reported by the respondents. Specifically, in Section D (n = 33), one in every five respondents stated that they experience bullying on a monthly basis, while in Section A (n = 12), the majority of the respondents reported occasional bullying. [Figure 11.3]

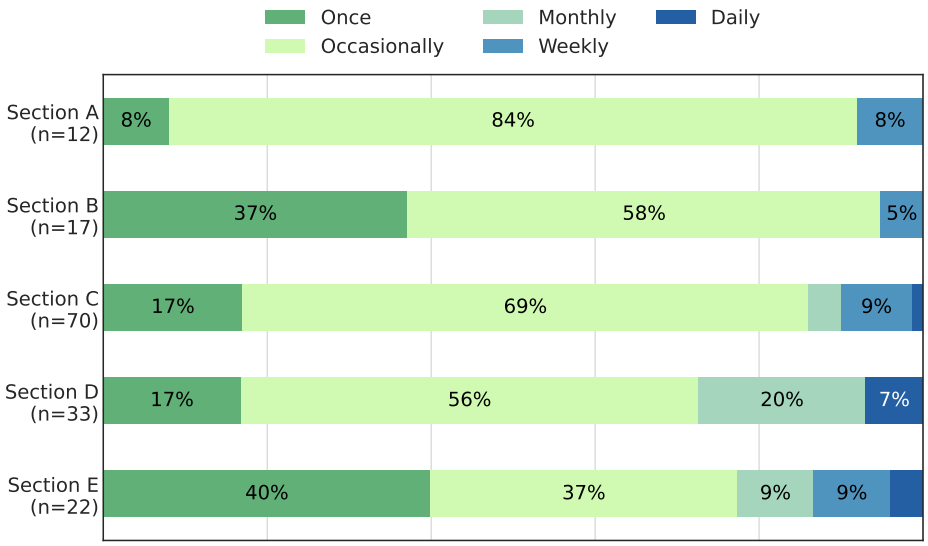


Figure 11.3: *"How often have you been subjected to bullying" by section.*

Citizenship

Upon analyzing the data to determine if citizenship plays a role in the respondents experiencing bullying, it appears that it is not a significant factor. Close to 15% of the respondents, regardless of their citizenship, reported being bullied on a *monthly* and *weekly* basis. [Figure 11.4]

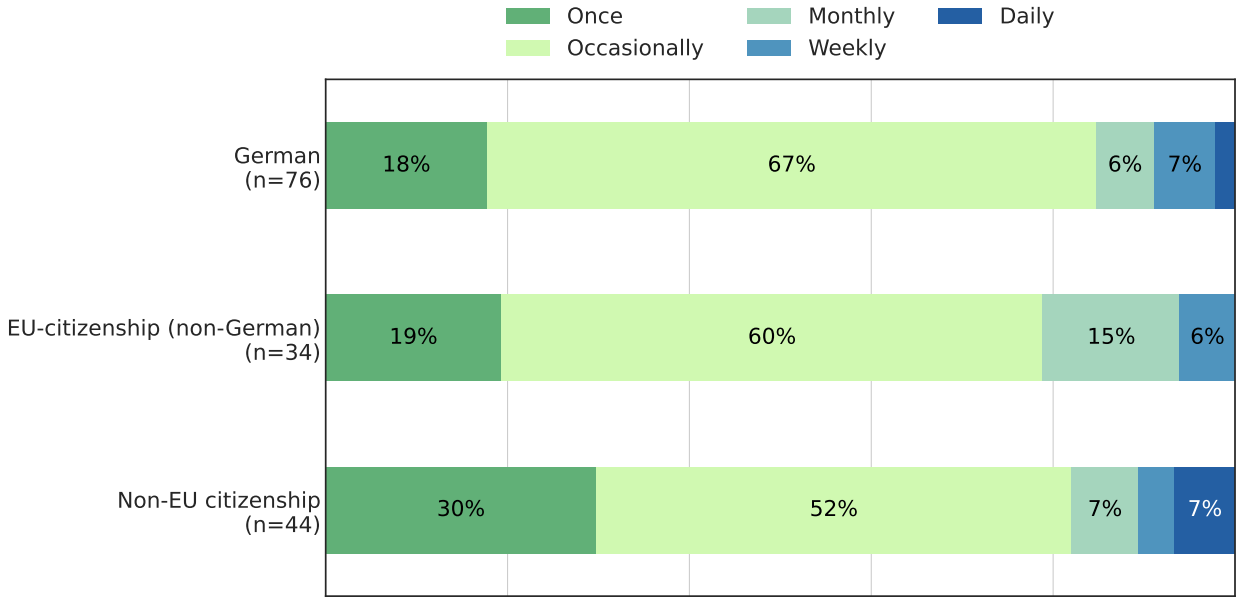


Figure 11.4: *"How often have you been subjected to bullying" by citizenship*

11.3 Witnessing Bullying

Compared to personal encounters with bullying by superiors, 24% of the respondents reported having witnessed bullying without being the target of his behavior themselves. This number has increased compared to the 2019 Survey. Roughly 16% of the participants reported witnessing bullying *on at least one occasion*, while 9% reported observing it *weekly*. The remaining two-thirds of the survey respondents witnessed bullying by a superior *occasionally*. It appears that bullying occurs on a regular basis to a certain degree and is not an isolated event.

Gender

For instance, female respondents witnessed occasional bullying slightly more than male respondents although the frequency of being a witness to regular bullying (*monthly* and *weekly*) remains the same. [Figure 11.5] More female respondents also reported destabilization at work compared to their male counterparts while male respondents are subjected to slightly more verbal harassment.

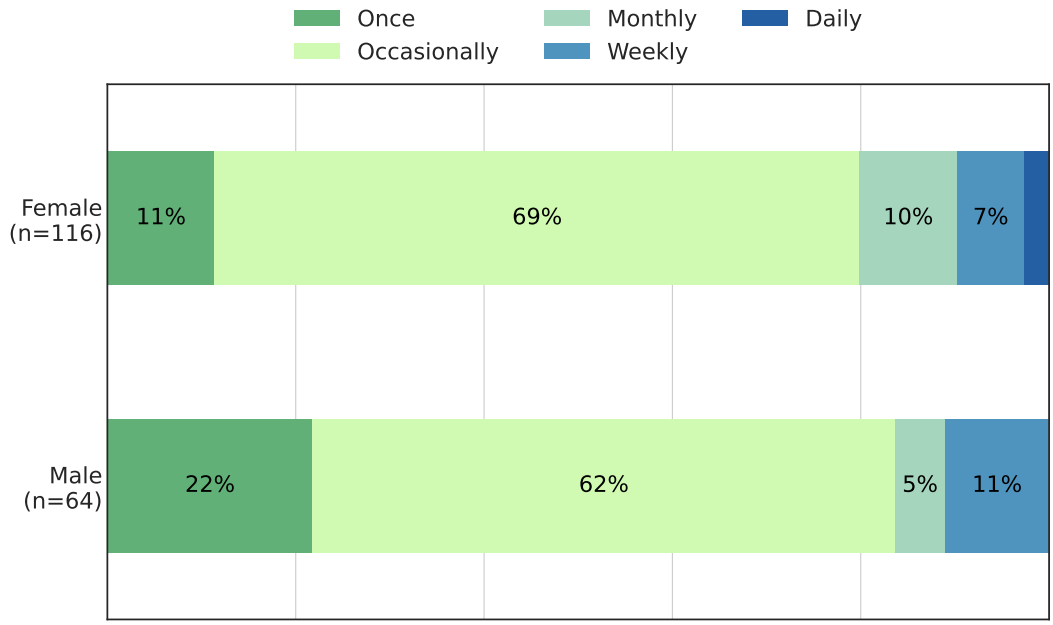


Figure 11.5: *"How often have you witnessed bullying?" by gender.*

11.4 Being Subjected to Sexualized Behavior

According to the survey results, the main perpetrators besides the *direct supervisor* are *other scientific staff* and *fellow DRs*. Close to 90% of the respondents have *never* experienced unwanted sexual behavior from a superior themselves. This is higher for male compared to female respondents. Among those who have experienced this behavior, more female respondents reported being subjected to unwanted physical contact, messages and calls. Approximately half of the male respondents who experienced unwanted sexual behavior were hesitant to provide information about the specific type of sexual behavior. Both genders were subjected to unwanted verbal harassment and intrusive approaches. Among those who were subjected to sexual harassment around half (47%) reported being subject to this behavior *occasionally* while a third of the respondents experienced it *once*. A very small percentage of the respondents reported being subjected to this behavior on a *monthly* basis. 11% of the respondents did not answer this question. [Figure 11.6] In addition, more female respondents reported being subjected to unwanted sexual behavior by their supervisor occasionally. Other factors, such as *citizenship*, *duration of the PhD*, or *parenthood* did not seem to lead to more or less negative experiences.

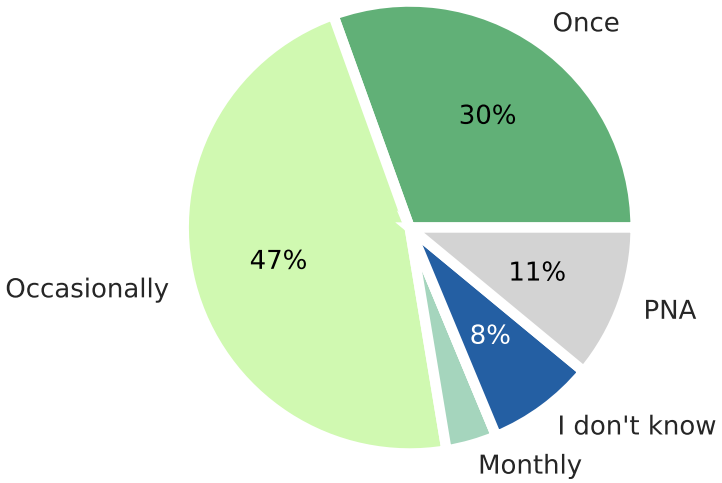


Figure 11.6: *"How often have you been subject to sexualized harassment?" (n = 46).*

11.5 Witnessing Sexualized Behavior

In addition to reporting their own experiences with unwanted sexual behavior, the respondents were also asked if they had witnessed such behavior directed toward their colleagues and peers. Around 92% of the DRs reported that they never witnessed any such behavior. Compared to the 2019 Survey, there is a 2% increase. Approximately 50% of the respondents reported having witnessed an occasional unwanted sexual behavior from a superior at some point in time. Furthermore, almost 40% of the respondents reported observing such behavior at least once, with a very small percentage reporting monthly exposure to this behavior. [Figure 11.7] Unwanted verbal remarks were reported by both male and female respondents, suggesting that this type of behavior was prevalent across genders. However, a greater proportion of female respondents reported experiencing intrusive approaches, indicating that this type of behavior may be more commonly directed toward women.

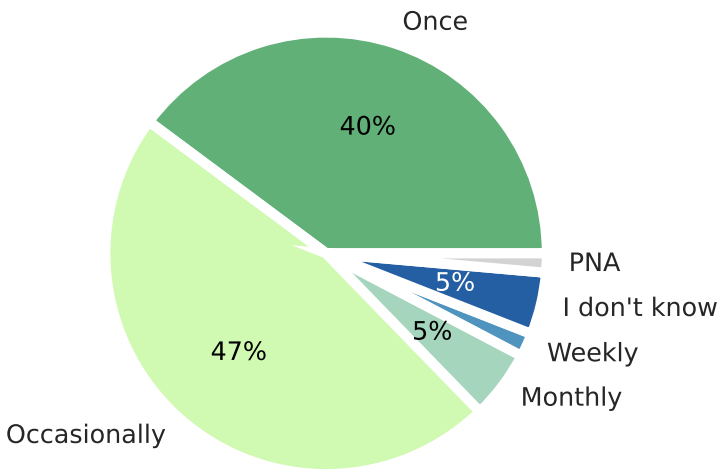


Figure 11.7: *"While working at your institute/center/unit, have you at any point witnessed unwanted behavior that you would call sexualized harassment?" (n = 56).*

Gender

Of those who reported witnessing sexual harassment, female respondents were more likely than their male counterparts to have observed this behavior. A greater proportion of female respondents reported witnessing unwanted sexual behavior when compared to their male counterparts. [Figure 11.8] This disparity between the genders was found to be even more pronounced when compared to the results of the 2019 Survey.

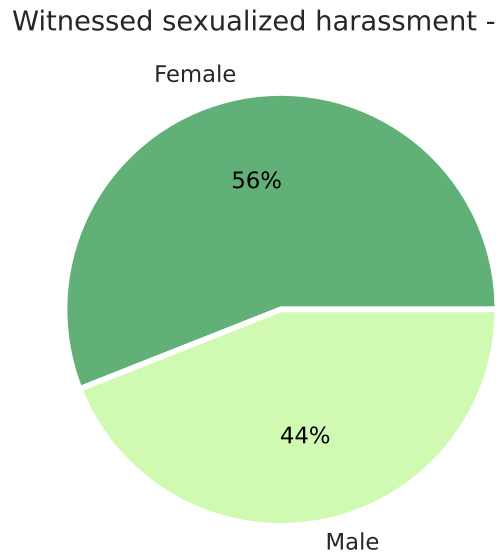


Figure 11.8: *"How often have you witnessed sexual harassment" by gender (n = 77).*

11.6 Cases of Conflict: Help, Reports, Consequences, Impact

Cases of Conflict: Help

In the 2021 Leibniz PhD Survey, respondents were asked if they were aware of mechanisms that can provide support in cases of conflict with supervisors or other staff members. The respondents were asked if they knew, among other things: *the elected PhD representatives, their institute's ombudsperson, the respective works councils* and *the equal opportunities officer*. The DRs were also asked about their awareness of the Leibniz Ombudsperson, who is in charge of the entire Leibniz Association and can be contacted whenever the researchers do not want to get in touch with the local ombudsperson at their institutes for any reason. DRs were somewhat aware of the different resolution mechanisms that can help in case of any conflict, regardless of nationality. At least two-thirds of the respondents knew of the PhD representatives, most likely due to them being elected by their fellow DRs to represent their interests within the institute. The awareness about the local ombudsperson is high among the German respondents (71%), whereas only half the respondents with EU (51%) and non EU-citizenship (40%) are aware of this. Even less respondents are aware of the equal opportunities officer. Close to 10% of the respondents are not aware of any of the mechanisms that can help in cases of conflict. [Figure 11.9] The awareness of resolution mechanisms does not differ much across genders with females being more aware of the conflict resolution mechanisms in some cases compared to their male counterparts. However, across citizenships, it is clear that non EU-citizens are less likely to be aware of the aid in place in case of potential conflict with the supervisor compared to German respondents.

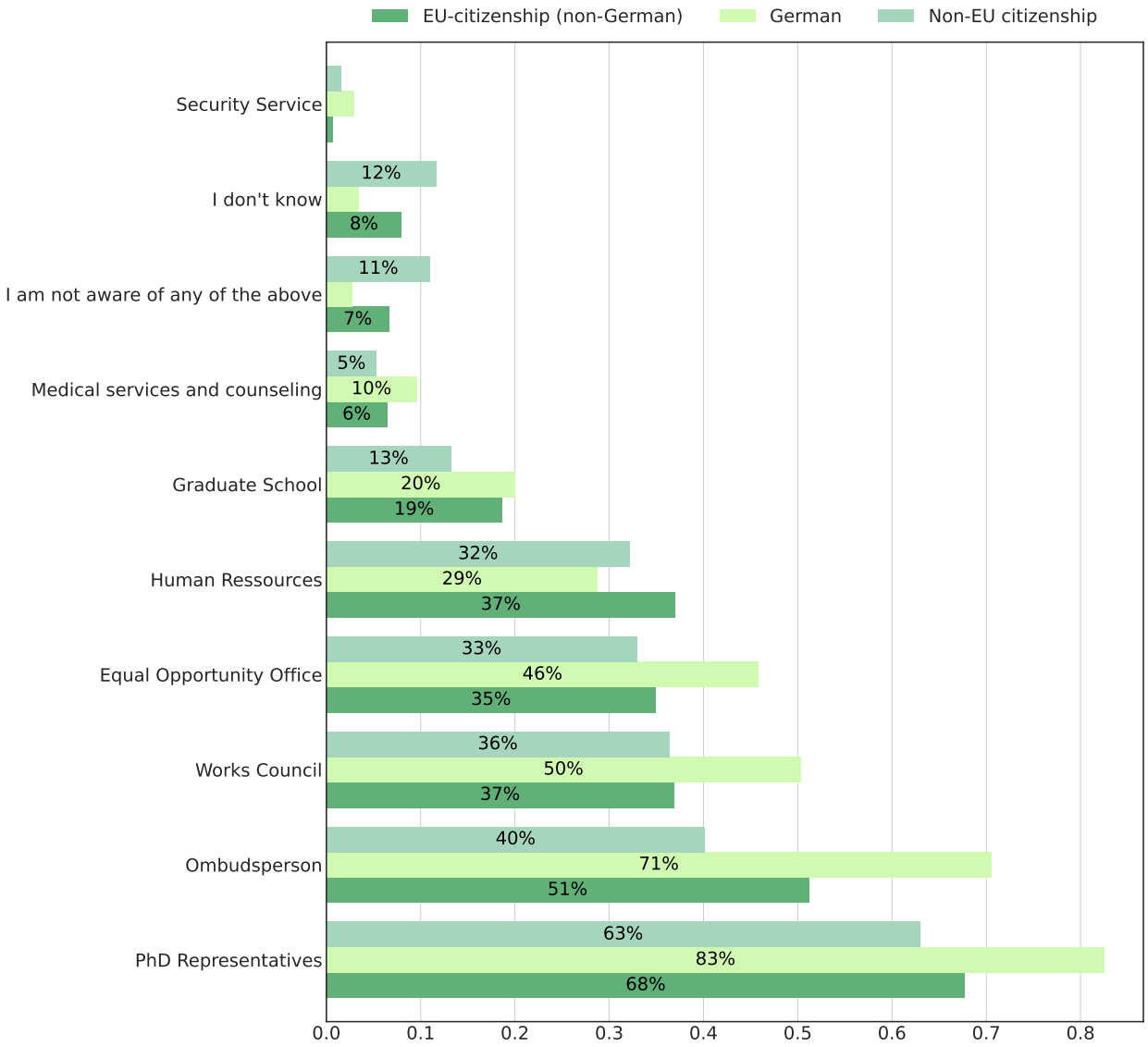


Figure 11.9: *"How aware are you of the aid mechanisms that can help you in case of conflicts" by citizenship.*

Cases of Conflict: Reports

7% of the respondents have had a conflict with a supervisor and reported it while another 5% had a serious conflict but decided not to report it. The percentage of respondents having a serious conflict and not reporting it has reduced by half compared to the 2019 Survey (10.1%). The remaining 88% stated that they never had a serious conflict with their supervisors. [Figure 11.10] (It is important to acknowledge that this topic is highly sensitive, and some respondents may have refrained from reporting any conflicts in the survey, even if they experienced them)

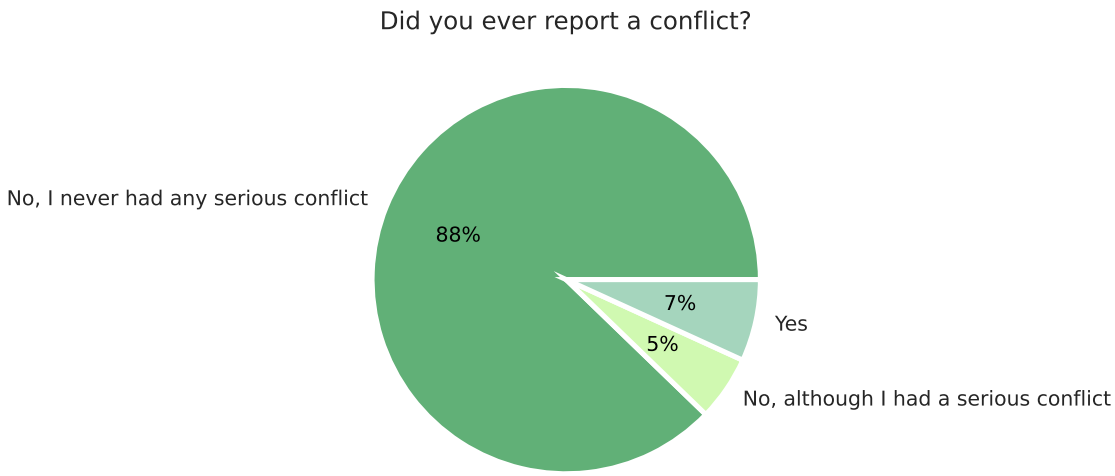


Figure 11.10: *"Did you ever report a conflict" overall percentage (n = 799).*

Reports: Gender

The survey results indicate a noteworthy gender-based discrepancy in the reporting of conflicts with female respondents comprising 58% of the total number of conflict reports, while male respondents accounted for 42%. This suggests that female DRs may be more inclined to report conflicts than male DRs. [Figure 11.11]

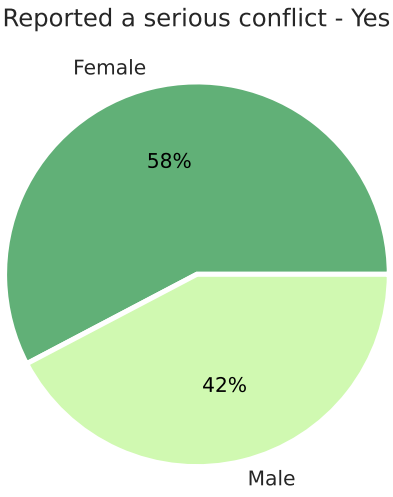


Figure 11.11: *"Did you ever report a conflict" by gender (n = 55).*

Reports: Sections

Although the majority of the respondents across the different Leibniz Sections reported not having faced any bullying at their workplace, there are still significant discrepancies between the different sections when it comes to other factors such as social isolation, pressured work, verbal harassment and so on. One-third of the respondents in Sections C, D and E reported having been subjected to verbal harassment while this is close to one-fifth and one in ten respondents in Sections B and A, respectively. 22% of the respondents of Section A reported that they suffered from indirect bullying while more than a third of the respondents from other sections reported having experienced the same.

Reports: Citizenship

German participants exhibit a greater inclination to report potential conflicts compared to their EU and non-EU counterparts. [Figure 11.12] This could be attributed to German respondents being more aware of the support mechanisms available to DRs compared to their EU and non-EU peers. While language barriers may play a significant role in the reporting of conflicts, as ombudspersons and working councils are predominantly constituted in German and therefore more easily accessible to German-speaking respondents, there are additional resources in place such as the PhD representatives.

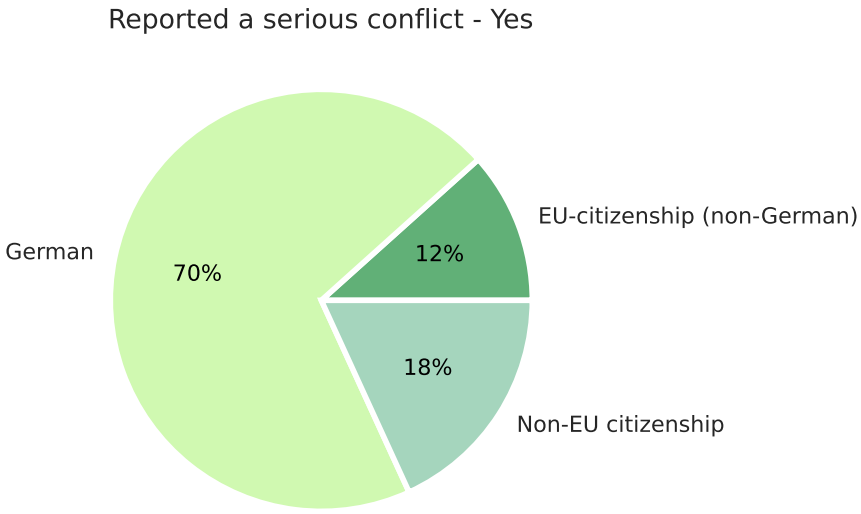


Figure 11.12: *"Did you ever report a conflict" by citizenship (n = 55).*

Cases of Conflict: Consequences

When asked about their level of satisfaction with the resulting consequences, 33% of the respondents reported being *dissatisfied* or *very dissatisfied*, 28% felt neither *satisfied nor dissatisfied*, and the remaining 33% reported somewhat satisfied. In comparison to the 2019 Survey, the proportion of dissatisfied respondents remained nearly unchanged, while the number of respondents who expressed satisfaction with the consequences declined. [11.13]

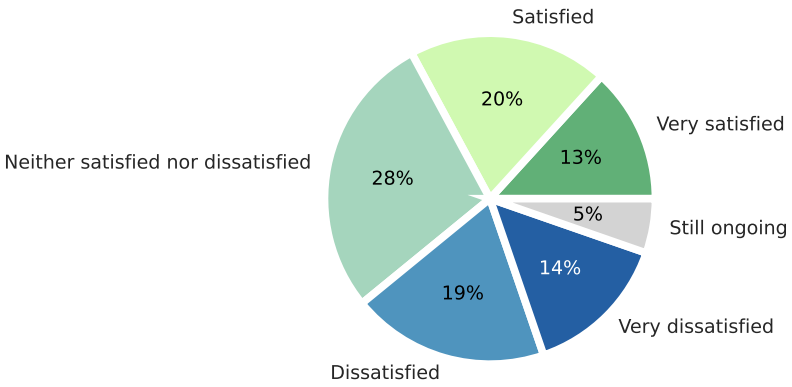


Figure 11.13: *"How satisfied are you with the outcome of reporting the conflict?" (n = 55).*

Cases of Conflict: Impact

This subsection aims to explore the potential impact of direct or indirect experiences of unwanted sexualized behavior and bullying on several topics, including *satisfaction with PhD*, *supervision*, *thoughts about quitting the PhD* and *mental health* outcomes among respondents. The purpose of this analysis is to shed light on the potential implications of these experiences and provide insight into the factors that may influence the well-being and success of DRs.

As mentioned in the previous section, close to a third of the respondents reported being *dissatisfied* with the outcome of reporting the conflicts while another third of the respondents were *neither satisfied nor dissatisfied*. According to the survey results, all forms of direct and indirect experiences with unwanted sexualized behavior and bullying have a significant negative impact on respondents, even after controlling for other explanatory variables such as *gender*, *citizenship* and *year of PhD*. This finding suggests that experiences of unwanted sexualized behavior and bullying can have a pervasive and enduring effect on the well-being and success of DRs, regardless of their individual characteristics or circumstances. These results highlight the importance of addressing and preventing these types of behaviors in academic environments in order to promote the health and productivity of DRs.

Impact: Thoughts of Quitting

Thoughts of quitting the PhD are also influenced by power abuse. Both direct experiences of unwanted sexualized behavior and direct or indirect experiences of bullying are associated with an increased likelihood of DR entertaining thoughts of quitting. Of the respondents who reported a serious conflict, around 50% reported having occasional or frequent thoughts of quitting their PhD. A quarter (24%) of the DRs reported never having thoughts of quitting the PhD. [Figure 11.14]

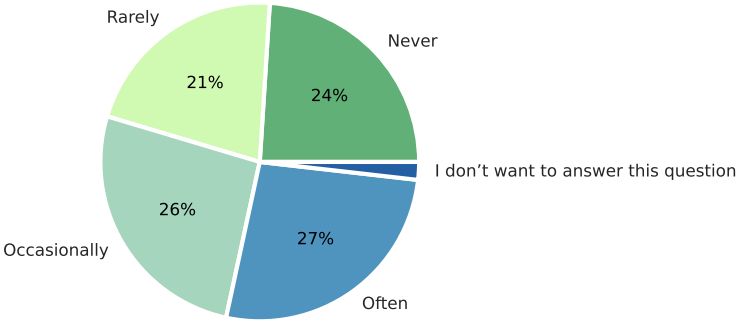


Figure 11.14: *"How often have you thought about quitting your PhD?", respondents who answered yes to reporting conflicts (n = 55).*

Impact: Mental Health

The mental health of DRs is another topic that could potentially be influenced by direct or indirect experiences of power abuse. 57% of the respondents reporting a serious conflict indicated suffering from high anxiety. [Figure 11.15]

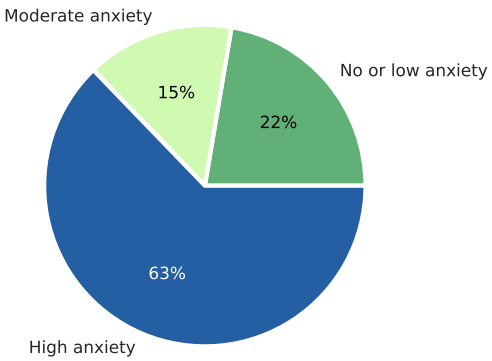


Figure 11.15: *Level of trait anxiety of respondents who had a conflict and reported it (n = 55).*

Bullying exerts a negative impact on the mental health of the DRs. It can be seen that all of the respondents who reported having been subjected to bullying on a monthly basis suffer from either high or moderate anxiety. On the contrary, of those who experienced daily or weekly bullying, a third reported having no or low levels of anxiety. This could be attributed to the awareness mechanisms in place to help DRs in the case of bullying. In general, more than one-third of the respondents who had experienced some form of bullying reported moderate to high levels of anxiety. This highlights the potential negative impact that bullying can have on the mental health and the well-being of DRs and underscores the importance of addressing this issue to promote the welfare of students. [Figure 11.16]

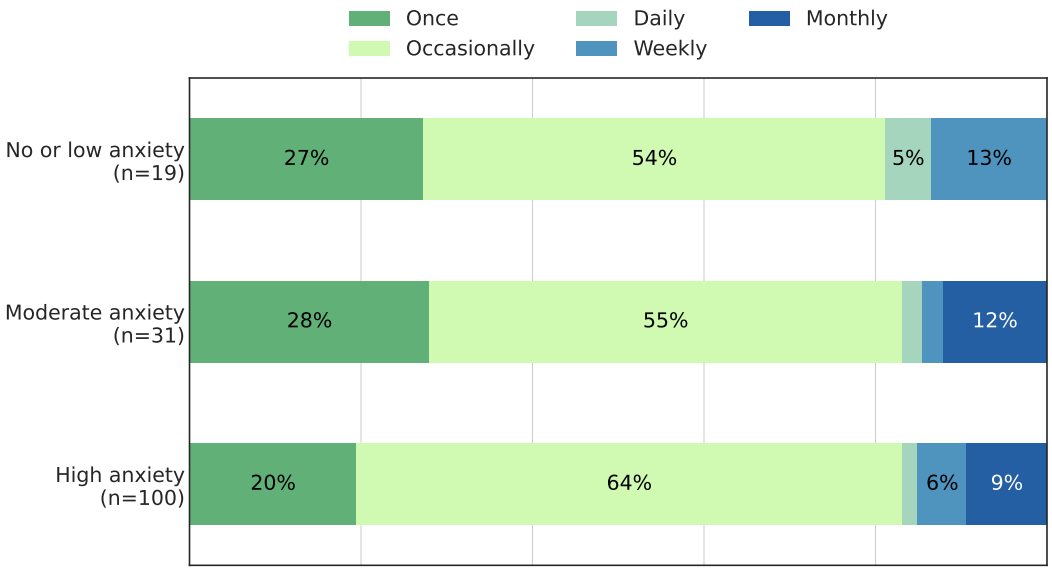


Figure 11.16: *Level of trait anxiety by respondents who were subjected to bullying at their institute (n = 55).*

12 Mental Health

Main findings from the following chapter:

- Approximately 45%-49% of the respondents reported mild to high depressive and anxiety symptoms.
- 60% of non-European DRs experienced mild to high depression and around 74% suffered from anxiety.
- 70% of DRs working more than 50 hours per week indicated moderate to severe depression levels. Moreover, higher levels of anxiety and depression were correlated with less days taken off.
- About 43% of DRs reported not feeling free to take vacation days. Around 70% of them indicated moderate to high anxiety and mild to severe depression symptoms. Around two-thirds reported workload as a reason.
- Almost 60% of the DRs were not aware of any mental health resources.
- DRs who reported a poor social life at the institutes showed higher anxiety and depression levels.

According to the World Health Organization (WHO), health is a state of complete physical, mental, and social well-being, not merely the absence of disease. Mental health is indispensable for a good quality of life. Although a constant level of stress is part and parcel of daily life, this stress is not detrimental and sometimes proves to be even quite motivational. However, when it exceeds a certain level or is exposed for a long time, it can slowly start to affect our mental and physical health. This survey used three main mental health constructs:

- State anxiety: refers to the level of anxiety in response to a situation or an event.
- Trait anxiety: refers to the level of anxiety an individual is predisposed to exhibit. Generally, the symptoms of trait anxiety tend to exacerbate under stressful circumstances.
- Depression: refers to the general presence of depressive symptoms.

According to the 2019 Survey, 46% of the respondents reported suffering from high anxiety levels, and about 15% reported suffering from depression. Since this last survey report, the Leibniz Association has taken notice and initiated a task force to investigate the matter in depth. After a year of investigation, the task force published a guide to deal with increasing levels of mental stress among DRs at Leibniz Institutes [7]. Because of the Leibniz Associations's special attention to this topic, a summary is provided at the end of this chapter.

In this report, we aim to provide an extensive description of the mental health situation in 2021 among the DRs' respondents within the association.

Two validated psychometric instruments were used to assess the mental health status of the DRs: The short form of the Spielberger State-Trait Anxiety Inventory (STAI), which is used for the common classification of anxiety in research and clinical settings, and the Patient Health Questionnaire module PHQ-9 [1], which is used as a measurement tool for common mental disorders (for more information see Methods).

12.1 Mental Health Situation of Doctoral Researchers

Almost half the DRs reported having high state and trait anxiety levels which is the tendency to be highly anxious or suffering from anxiety while close to a fifth reported having moderate anxiety levels. A third of the respondents reported no to low anxiety. Regarding the level of depression, close to half of the respondents reported having mild to severe depression symptoms while another half have no to minimal depression. Overall, more than 60% of the DRs suffered from one or both type of anxieties on a level that is either moderate or high. In comparison to the 2019 Survey, this percentage has remained unchanged meaning that the measures and aid mechanisms in place to help the DRs seem to be not effective. [Figure 12.1]

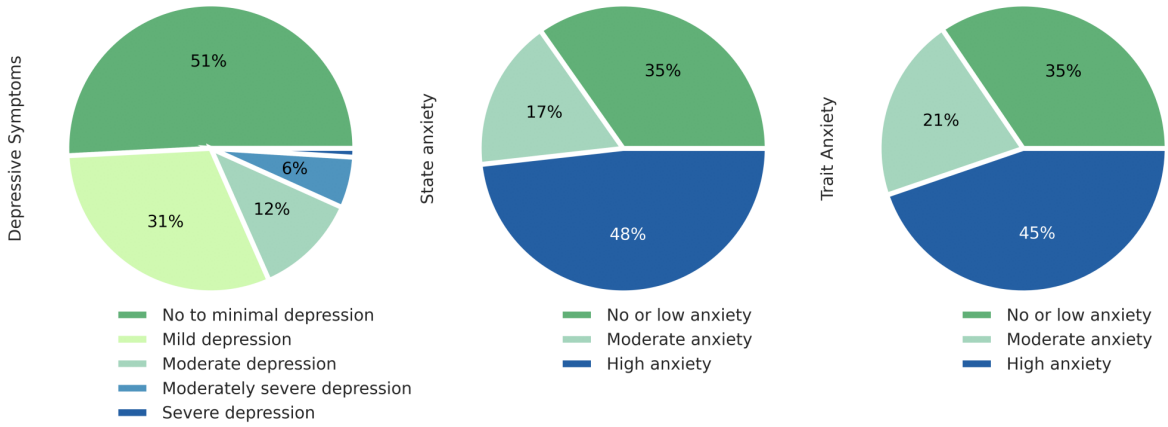


Figure 12.1: *Distribution of depressive symptoms (n = 760), levels of state anxiety (n = 764) and trait anxiety (n = 776) among respondents, from left to right, respectively.*

Sections

While the majority of the respondents reported having suffered from no to minimal depression, the percentage of respondents who did suffer from depression albeit on varying degrees is not small. Around a third of all the respondents across all sections suffered from mild depression while one in 10 suffered from moderate levels of depression. Particularly, more respondents in Section C (18%) reported having suffered from moderate depression Figure 12.2. There doesn't seem to be a big change in the levels of depression reported by the respondents of this survey compared to the previous survey although the differences are not insignificant. While the effects of COVID-19 may explain these changes between the two surveys, it nevertheless implies that more measures should be taken to combat the depression of the DRs. On the other hand, more than half of the respondents ($\approx$ 70%) reported having suffered from moderate to high levels of anxiety [Figure 12.3]. A recent study reported the depressive and anxiety symptom exhibited by the general German population during the time of COVID-19 (2019-2021) and it was found that the general population was more depressed and anxious during this period while the level of anxiety and depression among the DRs remained roughly the same [8]. This gives an insight into the mental health issues faced constantly by the DRs.

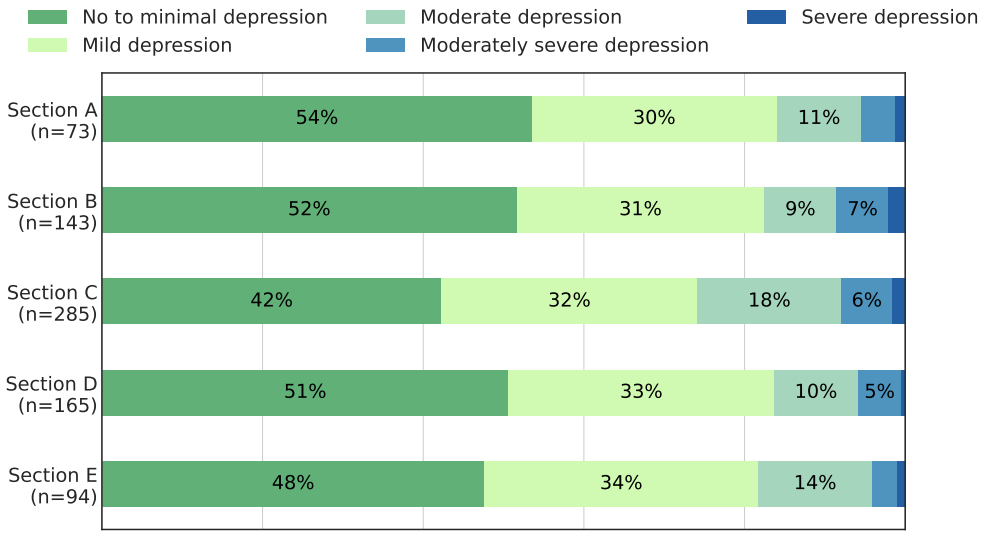


Figure 12.2: *Depressive symptoms by section.*

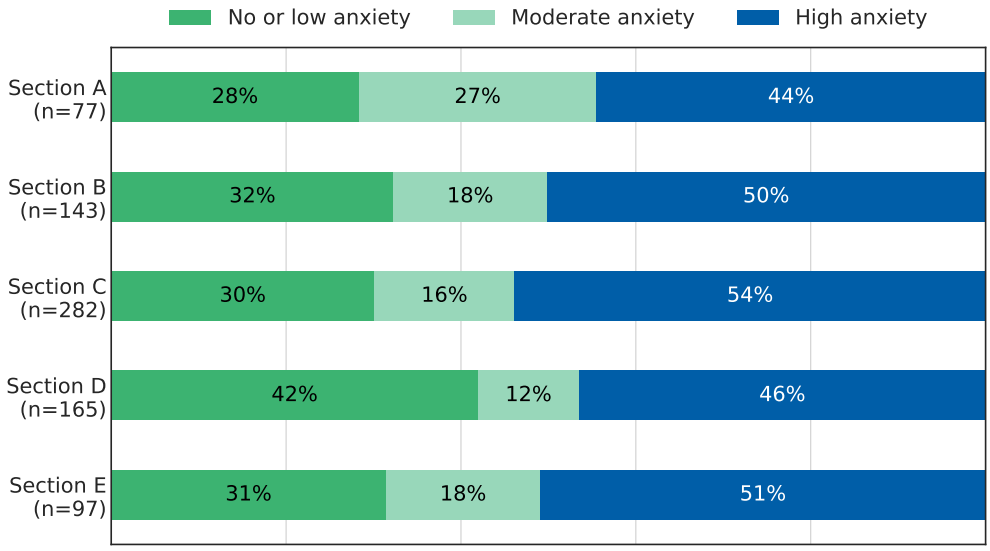


Figure 12.3: *State anxiety by section.*

Year of PhD

There were 53% of the first-year DRs who reported the presence of no depressive symptoms. However, compared to the 2019 Survey, this percentage did not fall in the subsequent years and rather remains quite stable, with the majority of the respondents in each year reporting no to minimal depression (23% decrease from 1st year to the 3rdyear and 15% increase from 3rd to 4th year). Additionally, the prevalence of no to minimal depressive symptoms in both the first year and the fourth year may be attributed to the adoption of mitigation strategies to counter stress from progressing

through a PhD. However, reporting moderately severe depressive symptoms increases from 2nd year onwards, with maximum reporting among those in the 4th year of the PhD, 80% increase from 5% in the 2nd year to 9% in the 4th year[Figure 12.4]. Levels of state anxiety reported also increased from 1st year of PhD to the 4th year of PhD by 27%. [Figure 12.5] This tendency in depressive and anxiety symptoms might be attributed to the career-related uncertainty that the end of the doctorate brings.

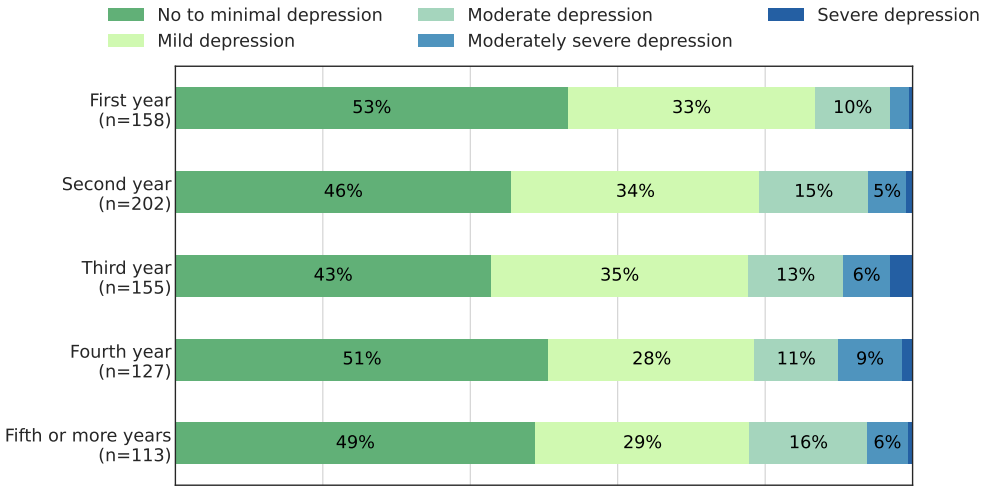


Figure 12.4: *Depressive symptoms by year of PhD.*

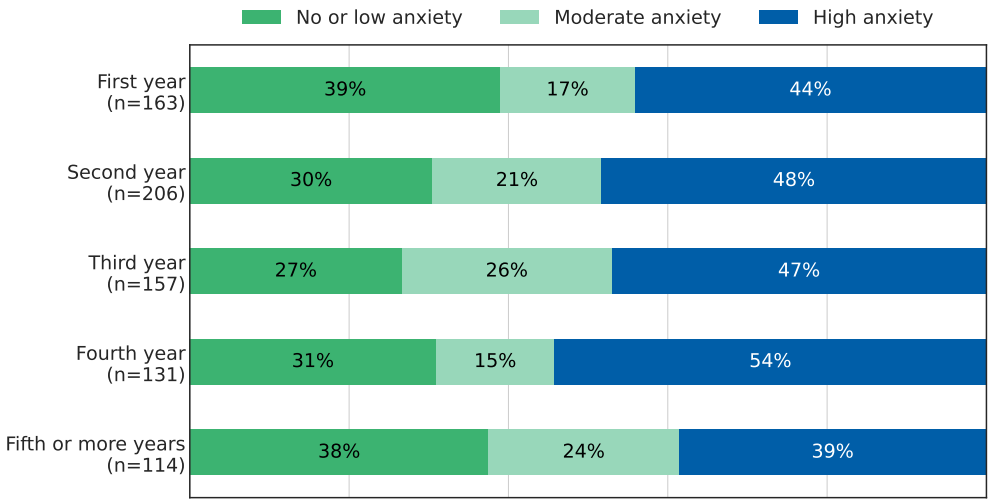


Figure 12.5: *State anxiety by year of PhD.*

Citizenship

Almost 60 % of the respondents from non-EU countries reported some level of depression ranging from mid-level (37%) to moderately severe depression (5%) while around 75% reported that they suffer from moderate to high anxiety[Figure 12.6]. In contrast, less percentage of German DRs seem to suffer from depression (45%) and anxiety(64%). [Figure 12.7] This could be due to the fact that non-EU respondents do not have immediate family settings nearby and the impossibility of not being able to visit their family during the time of COVID-19 due to travel restrictions.

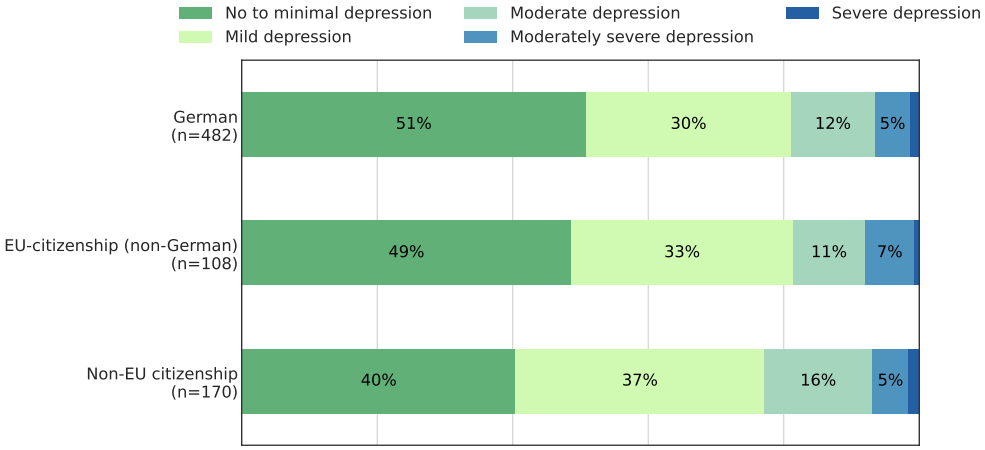


Figure 12.6: *Depressive symptoms by citizenship.*

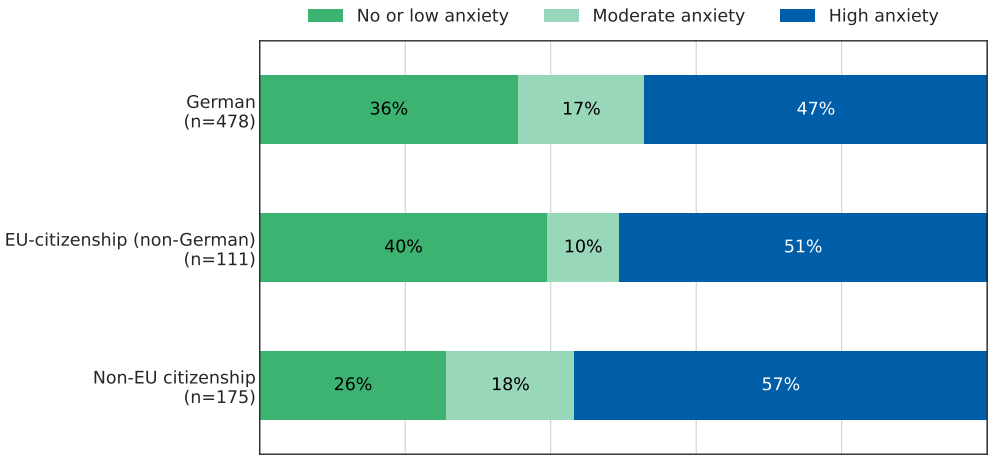


Figure 12.7: *State anxiety by citizenship.*

Thoughts of Quitting

Among the DRs who reported to think of quitting the PhD *occasionally* or *often*, more than two-thirds exhibited mild to moderately severe depression symptoms. Even among those who said they *rarely* or *never* thought about quitting, at least a third indicated some level of depressive symptoms [Figure 12.8]. Close to 80% of the DRs who have often thought of quitting also suffered form very high anxiety levels [Figure 12.9].

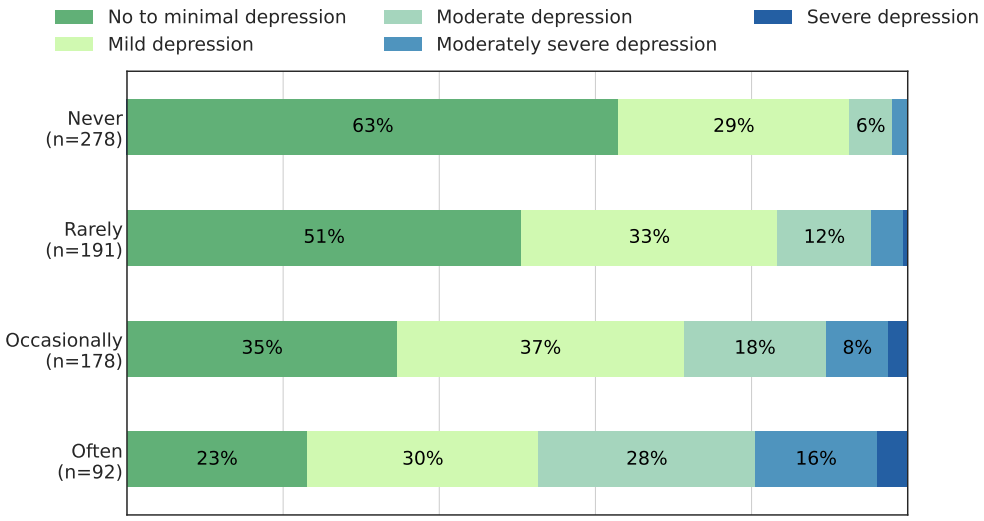


Figure 12.8: *Depressive symptoms by thoughts of quitting.*

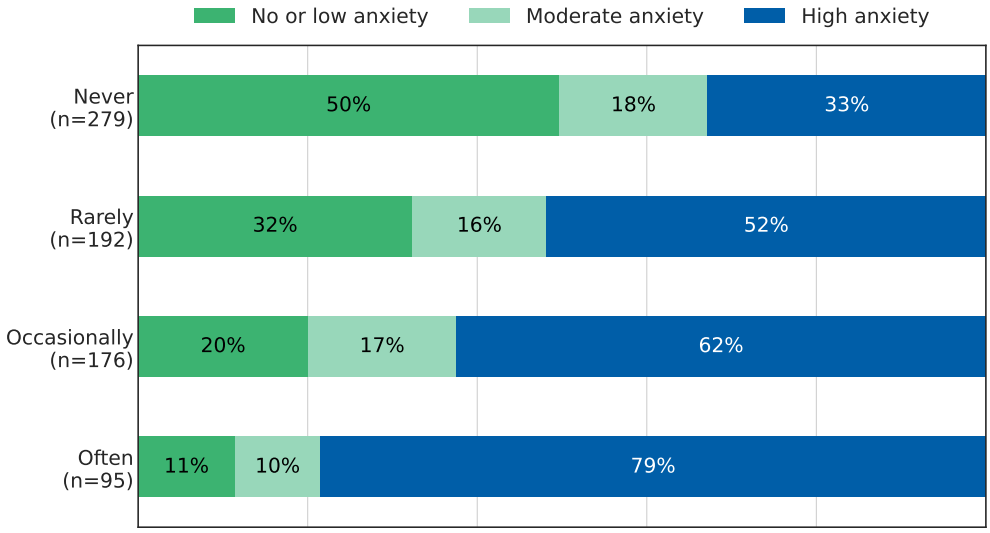


Figure 12.9: *State anxiety by thoughts of quitting.*

12.2 Overwork and Mental Health

Working Hours

Working hours have a direct impact on depressive symptoms. Working too much or too little is trending to indicate higher reporting of depressive symptoms [9, 10]. Accordingly, the survey results show that the higher the number of working hours, the higher the percentage of respondents who suffered from depression in varying degrees. While the percentage of respondents who suffered from mild depression is nearly constant across those who reported working anywhere between 30-70 hours with one exception being those in the working hour range 50-60 hours, the percentage of those who suffered from moderate to moderately severe depression increased with increase in working hours. Among those who reported working between 30-40 hours and 40-50 hours, one in 10 and close to every fifth of the respondents suffered from moderate to moderately severe depression. This further increases to a third of every respondent who worked between 50-60 hours. [Figure 12.10]

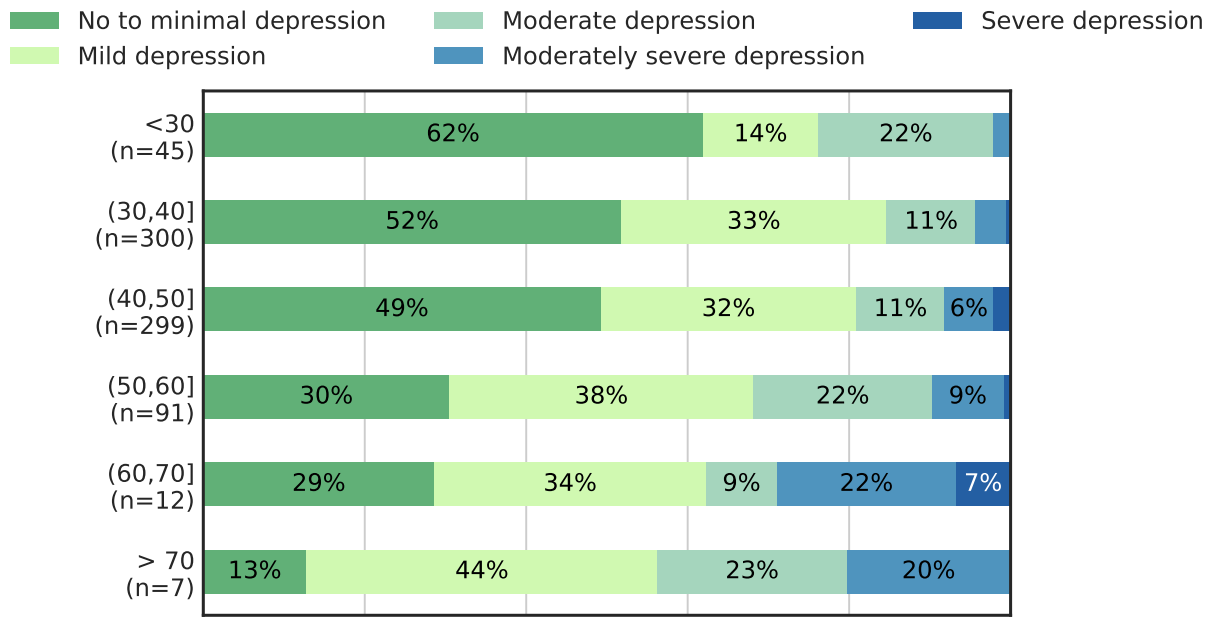


Figure 12.10: *Depressive symptoms by working hours.*

Taking Time Off

More than two-thirds of respondents who reported working more than three times per week on weekends exhibited high anxiety levels while half of the respondents who reported working either once or twice per month reported suffering from high levels of anxiety. Even among those who have never worked during the weekends, one-third still reported suffering from high anxiety [Figure 12.11]. There is also an increasing trend with respect to the level of depression and the frequency of working on weekends. More than half of the respondents who worked more than two weekends per month exhibited depressive symptoms in varying degrees while even among those who worked only once or never still exhibited mild to moderate levels of depression [Figure 12.12].

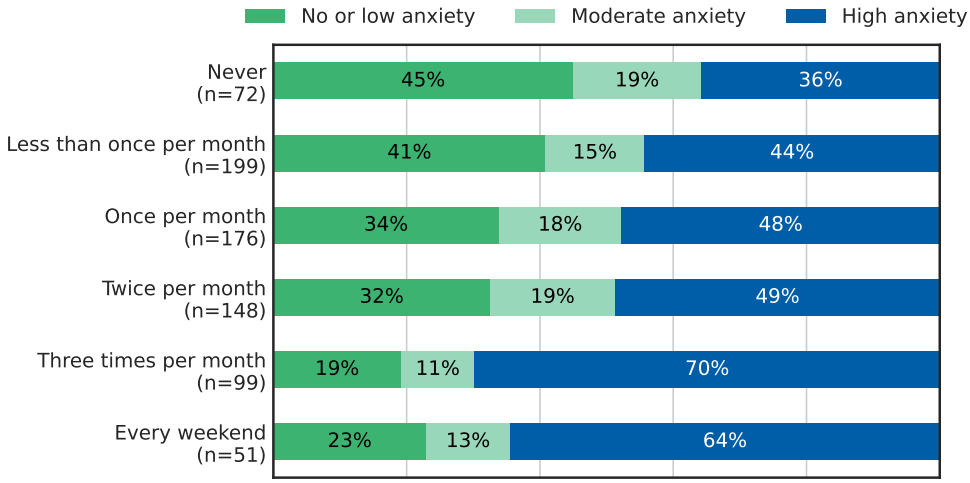


Figure 12.11: *State anxiety by working during the holidays/weekends.*

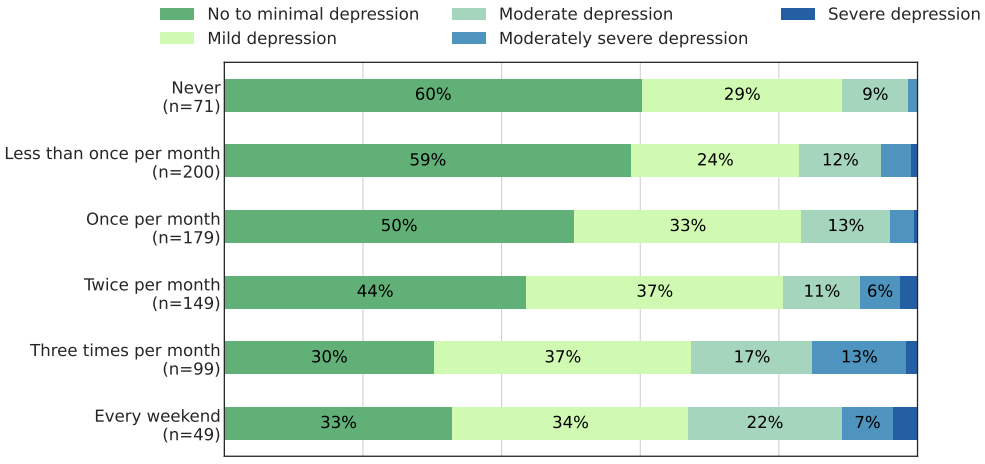


Figure 12.12: *Depressive symptoms by working during the holidays/weekends.*

Perceived Freedom of Taking Days Off

Out of the DRs who indicated that they do not feel free to take days off (43%) close to 78% reported moderate (15%) to high anxiety (63%) levels [Figure 12.13]. Additionally, more than two-thirds also reported having suffered from varying levels of depression, with more than 25% suffering from moderate to severe depression. [Figure 12.14]

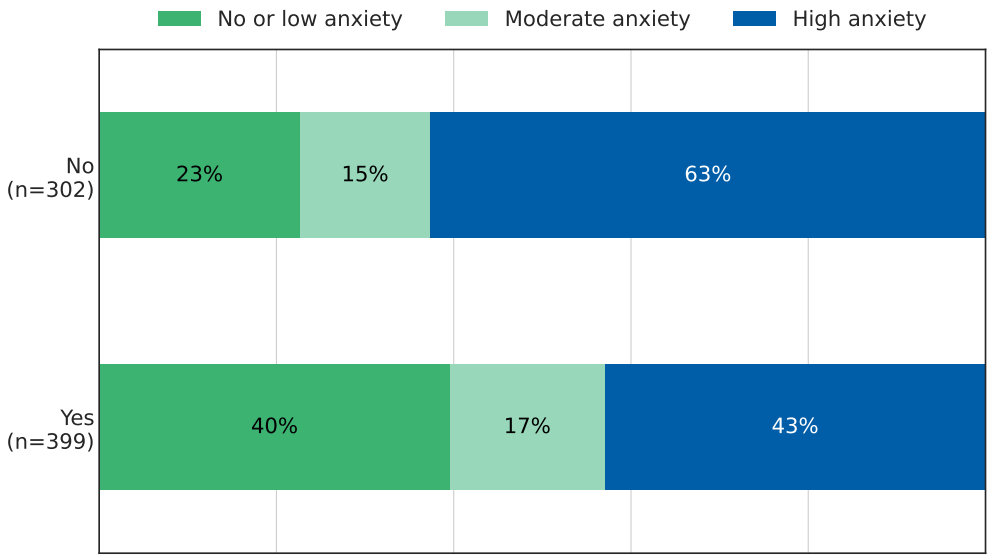


Figure 12.13: *State anxiety by "Do you feel free to take days off (holidays)?".*

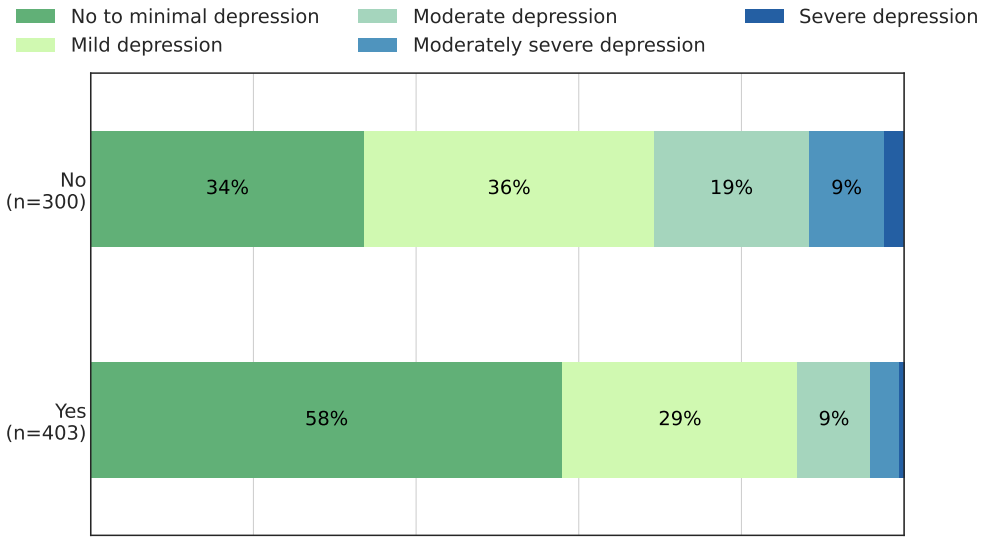


Figure 12.14: *Depressive symptoms by "Do you feel free to take days off (holidays)?".*

Among the reasons for the DRs not feeling free to take days off, the most reported ones were *workload*, *pressure from supervisor* and *saving vacation days*. For participants who reported workload to be the reason, close to 80% indicated moderate to high levels of anxiety [Figure 12.15]. For participants who reported Pressure from the supervisor to be the reason, 84% exhibited moderate to high levels of anxiety [Figure 12.16]. The highest level of anxiety is among those DRs who do not feel free to take days off which is coupled with *workload* and *pressure from the supervisor*. [Figure 12.17]

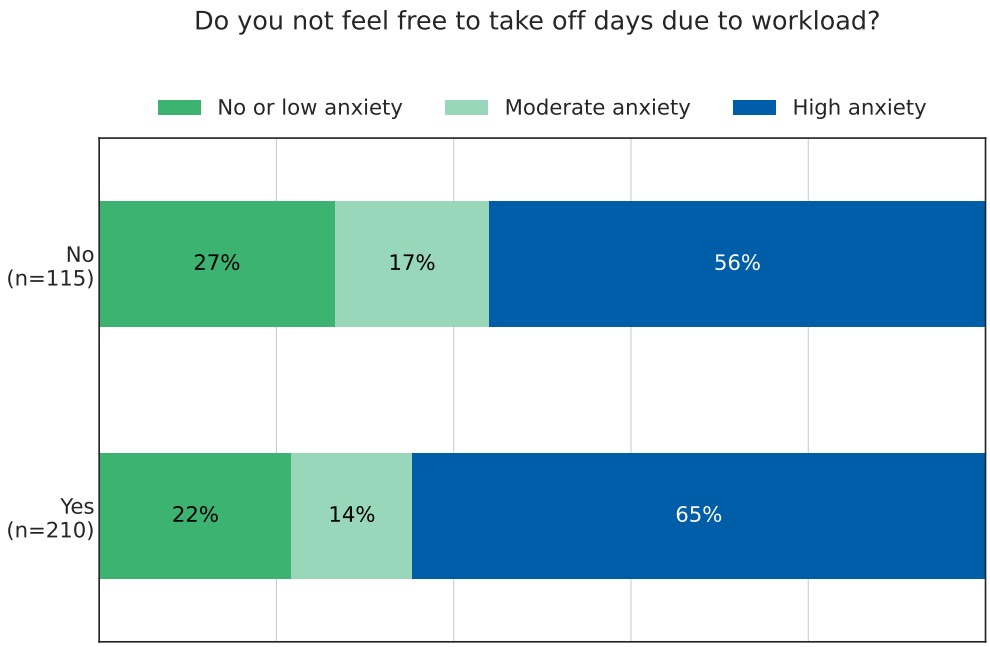


Figure 12.15: *Distribution of state anxiety symptoms in participants who responded that they do not feel free to take the time off due to the workload.*

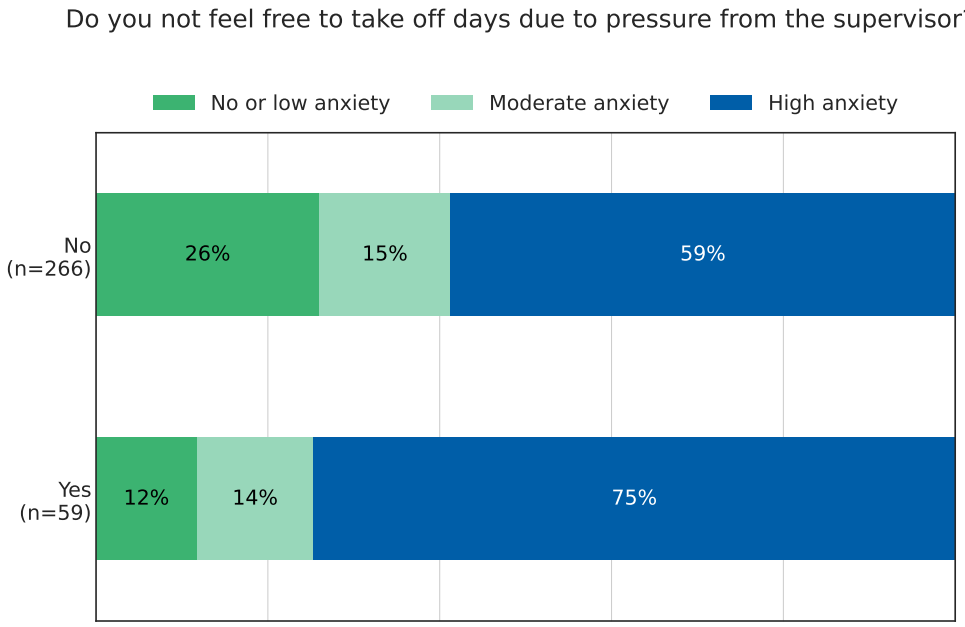


Figure 12.16: *Distribution of state anxiety symptoms in participants who responded that they do not feel free to take the time off due to their supervisor.*

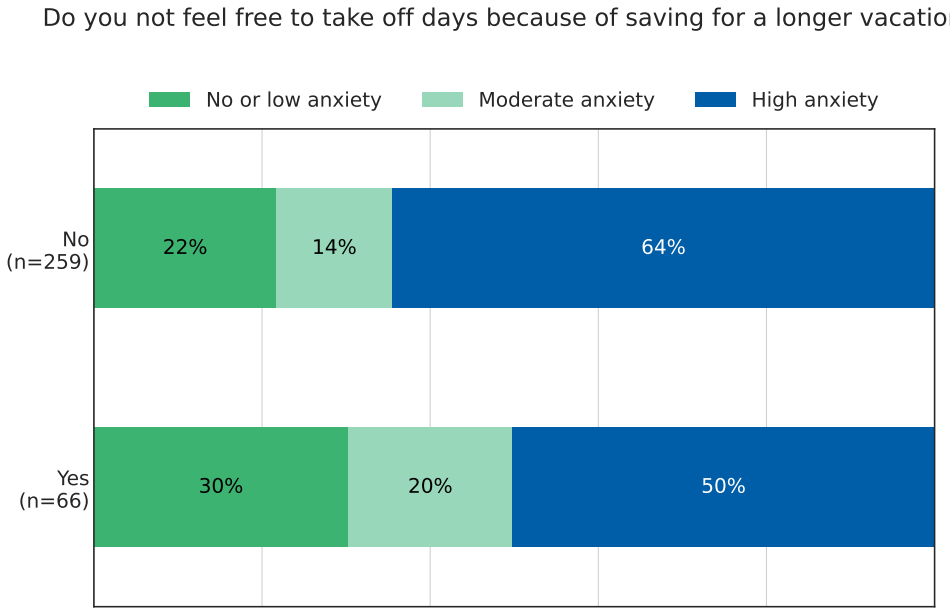


Figure 12.17: *Distribution of state anxiety symptoms in participants who responded that they do not feel free to take time off because they are saving for a longer period of vacation.*

12.3 Supervision and Mental Health

In this survey, a clear distinction was made between a *formal supervisor*, which refers to the main advisor of your thesis as present in your committee and a *direct supervisor* being the person you actually consult and discuss your project with on a more regular basis. The overall trend in anxiety symptoms during interactions with both the formal and direct supervisors is similar, however, this trend seems to be stronger for the direct supervisor [Figure 12.19]. The majority of the DRs meet their direct supervisor more frequently than their formal supervisors quarterly and every six months (n = 114) compared to b) monthly and weekly (n = 375). DRs who reported meeting their direct supervisor monthly exhibited a 50% increase in high anxiety scores compared to DRs who reported meeting almost daily. As the duration of the inter-meeting interval deviates from *almost daily* (for direct supervisors), so does the percentage of respondents reporting high state anxiety. [Figure 12.19]

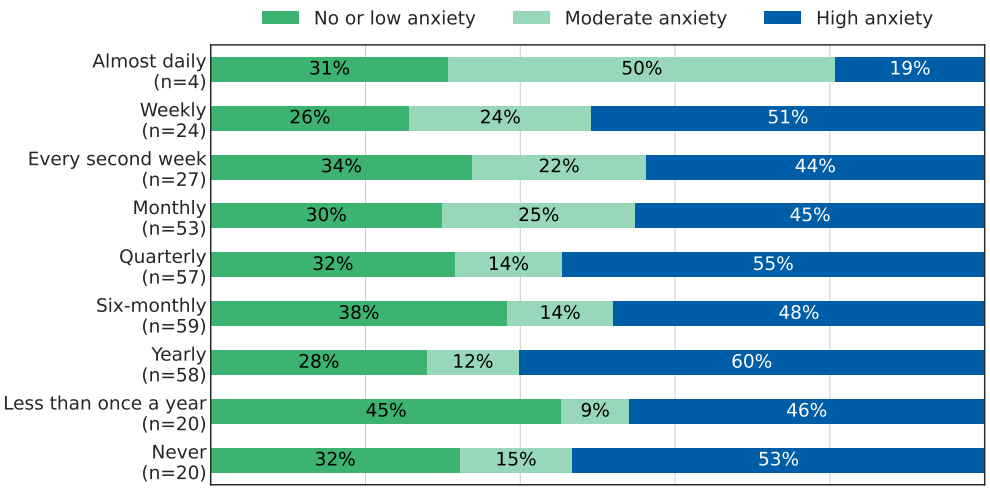


Figure 12.18: *State anxiety by meeting frequency (formal supervisor).*

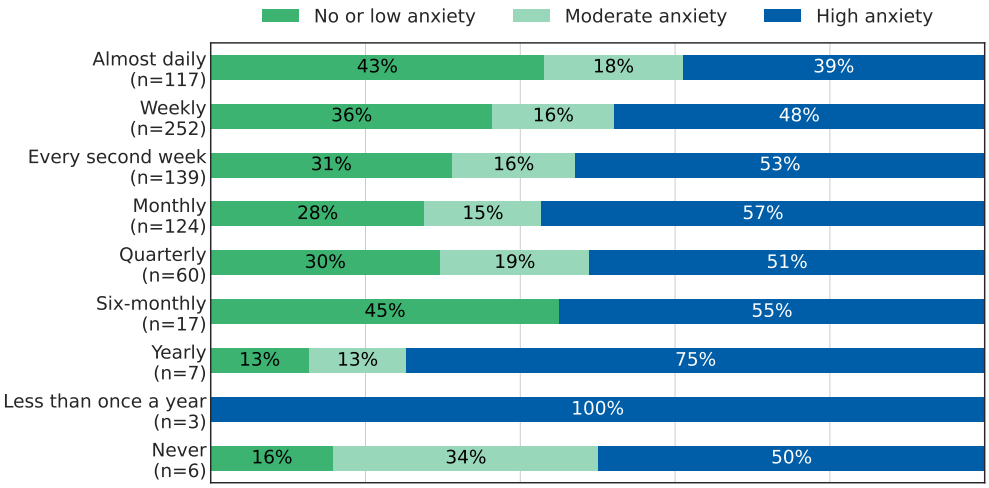


Figure 12.19: *State anxiety by meeting frequency (direct supervisor).*

A similar link as between meeting frequency and state anxiety is also apparent for depressive symptoms: While of the DRs who reported meeting their direct supervisor daily, 53% score from mild to severe depression, while this percentage is 63% for the DRs who reported monthly meetings. Here, the proportion of moderately severe to severe depression increases from 3% to 10%.

12.4 Awareness of Mental Health Resources

Mental health is more than simply a topic for persons who suffer from mental illnesses. It has an influence on our social, emotional, physical, and cognitive health. Unfortunately, many people might not obtain the necessary care due to the stigma connected with mental health and due to the unawareness of the resources to help them. Untreated mental illness can among other things contribute to poorer job performance. More than half of the respondents ($\approx$ 60%) stated being unaware of any mental health resources. More than a third reported that they are aware of the mental health resources in place but that they have never used them and roughly 3% stated that they were not satisfied with the resources in place. [Figure 12.20]

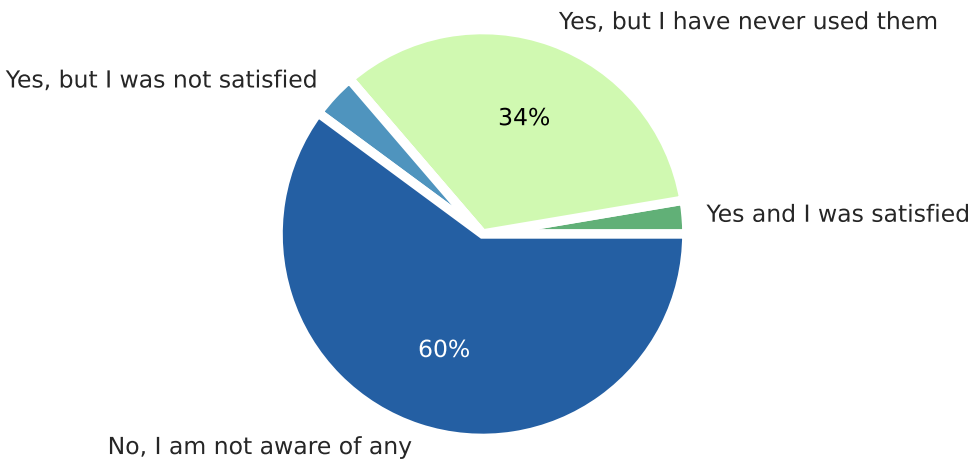


Figure 12.20: *Awareness of mental health resources (n = 829).*

DRs who reported having used mental health resources but not being satisfied with them are the ones with higher levels of depression [Figure 12.21], and anxiety. [Figure 12.22]. This indicates that mental health resources not only have to be in place but also monitored regarding their effectiveness.

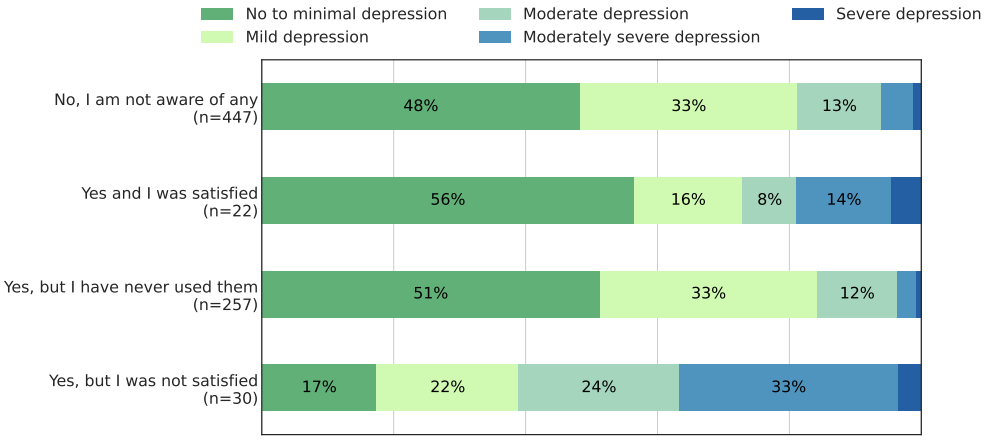


Figure 12.21: *Depressive symptoms by "Are you aware of your centers/institutes/units mental health resources?".*

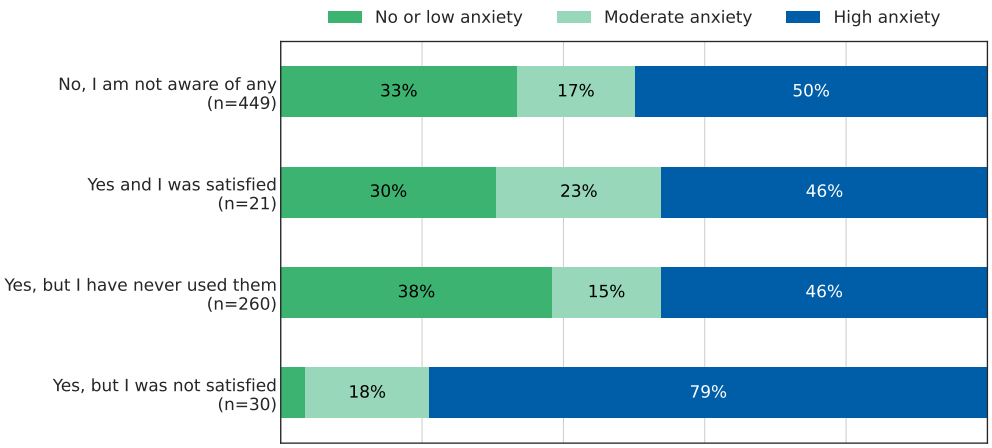


Figure 12.22: *State anxiety levels by "Are you aware of your centers/institutes/units mental health resources?".*

Sections

About 74%, 64%, and 62% from Section E, D and A reported not being aware of any mental health resources. [Figure 12.23]

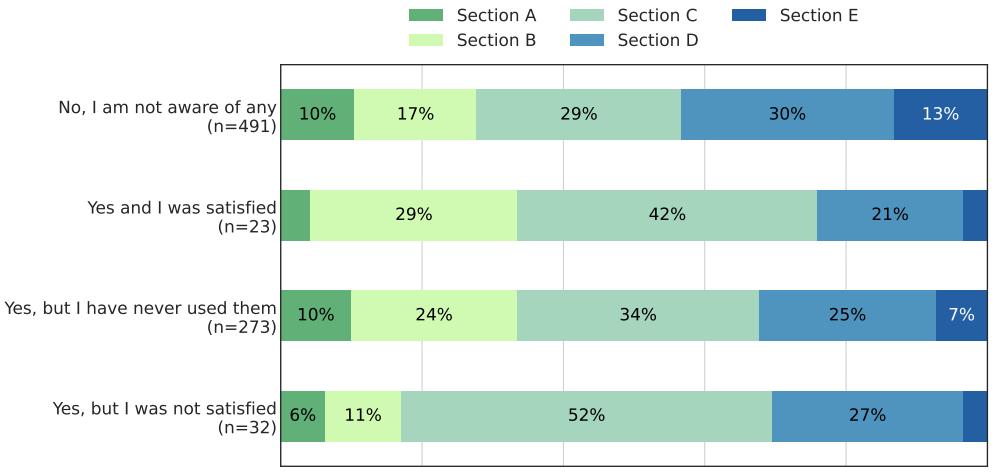


Figure 12.23: *"Are you aware of your centers/institutes/units mental health resources?" by section.*

12.5 Social Life and Mental Health

DRs who reported that they were dissatisfied with the social life at their institute exhibited more depressive symptoms [Figure 12.24], and higher levels of anxiety [Figure 12.25].

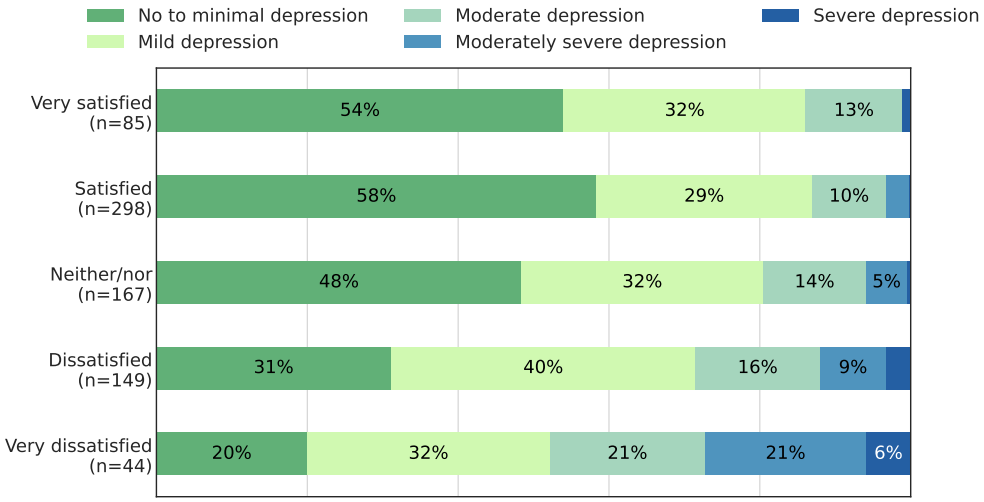


Figure 12.24: *Depressive symptoms by satisfaction with the social life at the institute.*

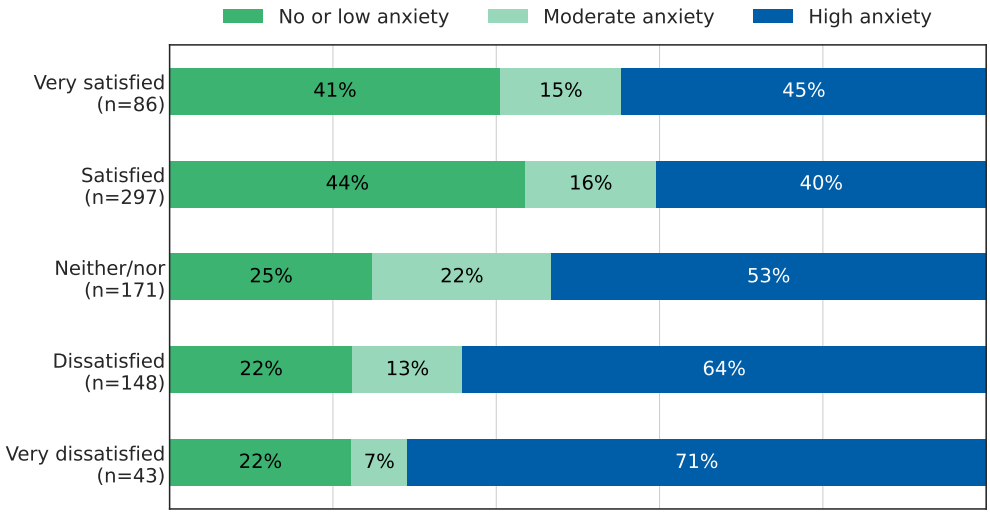


Figure 12.25: *State anxiety by satisfaction with the social life at the institute.*

Close to 18% of the DRs stated that the reason for them to consider quitting their PhD was the social environment at their workplace. 80% of them exhibited some level of depression which underlines the importance of the institute's social life/environment for the well-being of the DRs. [Figure 12.26]

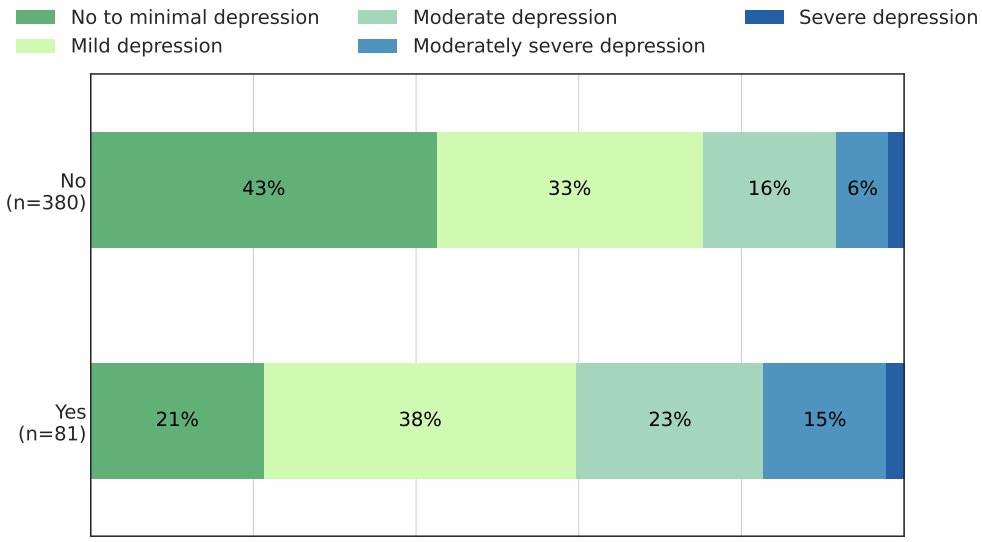


Figure 12.26: *Depressive symptoms in respondents who were either satisfied (top panel) or unsatisfied (bottom panel) with the social environment.*

12.6 Conclusion

Undoubtedly, mental health is critically important for everyone as it is an inherent and vital part of overall health and well-being. According to the data collected from the 2021 Leibniz PhD Survey, half of the DRs suffer from mild to severe depression and also show high anxiety levels. The respondents' primary reasons for poor mental health were intermittent supervision, less perceived freedom to take days off and lack of social life at the institutes. While the COVID-19 pandemic may also have had a role in the poor mental health of the DRs, the comparable data from the 2019 Survey shows that there isn't a big difference in the percentage of DRs who reported having suffered from mental health problems. Additionally, the lack of awareness of mental health resources does not help mitigate this problem. More non-EU DRs experience higher levels of depression and anxiety than their German and EU counterparts. This could have been due to distant family settings and the inability to visit them during COVID-19 or due to the restriction of travel. While anxiety levels with the formal supervisor did not change over the meeting frequency, fewer meetings with the direct supervisor harmed the anxiety levels.

As stated earlier, another essential component that contributes positively to good mental health is taking some time off. DRs who reported working more than three weekends every month suffered from high anxiety levels, while 70% of the DRs working more than 50 hours per week showed moderate to severe depression levels. Close to half of the DRs do not feel free to take days off, and a majority reported having suffered from moderate to high anxiety levels. Two-thirds of them said that workload is one of the reasons for not taking days off. Moreover, one in five respondents

stated that there was a lack of freedom to take vacations due to the supervisor, out of which 89% suffered from moderate to high levels of anxiety and depression. Poor social life at the institute results in higher levels of anxiety and depression in DRs, and this may lead to frequent thoughts of quitting the PhD.

Several steps can be taken to alleviate the situation, which includes during the onboarding of the DRs. The welcome packages could contain information about psychological counselling, monitoring the working hours of the DRs, and including the supervisors in an open discussion about the expectations of the DRs. In addition, institutes and departments can frequent social activities to maintain a vibrant and diverse social infrastructure at the institutes for the DRs to lean on. Additionally, more formally, institutes could take advantage of various programs available for both DRs and supervisors to identify the symptoms of mental exhaustion due to work-related stress and provide healthy coping techniques. One such program offered by the Leibniz Institute for Resilience Research (LIR) is the employee assistance program that has gained traction in various Leibniz institutes. The program consists of a resilience workshop for DRs and an introduction to their resilience screening program. One can be provided with individual coaching and evaluation after the screening. Institutes must align themselves towards these steps to create a healthy environment for their DRs and employees.

13 The Impact of COVID-19 pandemic on Doctoral Researchers

Main findings from the following chapter:

- 74% of DRs were *very satisfied* or *satisfied* with how their institute handled the pandemic suffices during the years 2020 and 2021. 9% of DRs expressed that they were *dissatisfied* or *very dissatisfied*.
- Measures that increased satisfaction with the pandemic handling were *home office opportunities*, *regular COVID testing*, *mask supply* and *reduced number of people in offices*. However, they did not have an influence on whether DRs felt safe at their respective working places.
- DRs would like to keep *online conferences*, *flexible working hours* and *home office opportunities*.
- 81% of DRs experienced *reduced networking opportunities* and 59% *reduced career development options* during the years 2020 and 2021.

13.1 SARS-CoV-2 arrives in Germany

In Germany, the first cases of SARS-CoV-2 causing COVID-19 were confirmed at the beginning of January 2020. Three months later, on March 11, 2020, the World Health Organization (WHO) declared COVID-19 a pandemic. With rising cases and in reaction to the WHO, half-week after, Germany declared a state of emergency and brought restrictions on public life starting on March 22, 2020. By the beginning of April 2020, 220.000/338.000 stores were shut down under new lockdown restrictions [11] with 80% of the country's workforce "living with mandatory or recommended workplace closures" [12]. Although the situation alleviated itself after three months, a second wave of the pandemic arrived soon after. On November 2, 2020, a new package of measures was announced bringing society again into a new "Lockdown Light". On January 6, 2021, the German government saw no alternative to the next strict lockdown. While the vaccination process of the German society slowly started with the BionTech vaccine in December 2020 [13] and in January 2021 with the Moderna vaccine [14] the vaccine was offered by age groups. DRs therefore needed to wait in line as other working groups in society thus the DRs were also impacted by the measure put in place and the general sense of instability due to the disease's novelty [15, 16, 17].

When the survey took place at the end/start of 2020/2021 93% DRs who took part in the survey reported to not have been infected by COVID-19 [Figure 13.1].

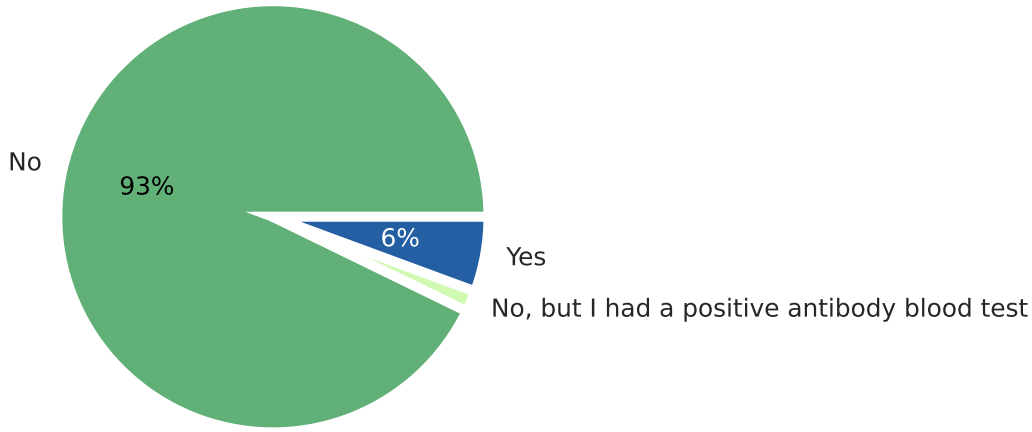


Figure 13.1: *"Did you test positive for COVID-19?" overall percentage. Answers were given during the questionnaire at the beginning of 2021 (n = 829).*

13.2 Overall satisfaction with the security measures of the Leibniz Institutes

As the COVID-19 pandemic progressed in Germany, several safety and security measures were taken by the Leibniz Institutes to mitigate disruption to work routines and to accommodate local "shelter-in-place" orders to limit the spread of the virus. 74% of the DRs expressed that they felt *very satisfied* or *satisfied* with how their institute handled the pandemic situation during the years 2020 and 2021. A minority of 9% of the DR expressed that they were *dissatisfied* or *very dissatisfied* [Figure 13.2].

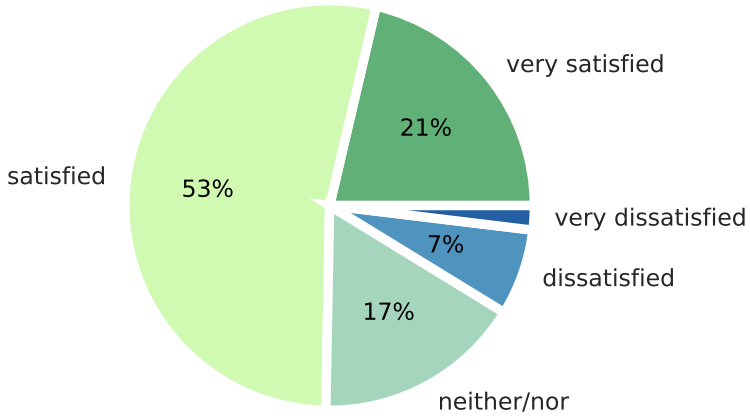


Figure 13.2: *"How satisfied are you with how your institute handled the pandemic situation?" (n = 829).*

Furthermore, the majority of DRs would like to keep *online conferences, flexible working hours and home office opportunities* with the majority support of 60% to 92% of people. [Figure 13.3] From all DRs surveyed 90% were at least able to spend one month in home office while approximately 20% could spend between six to twelve months and 25% twelve months or more in home office.

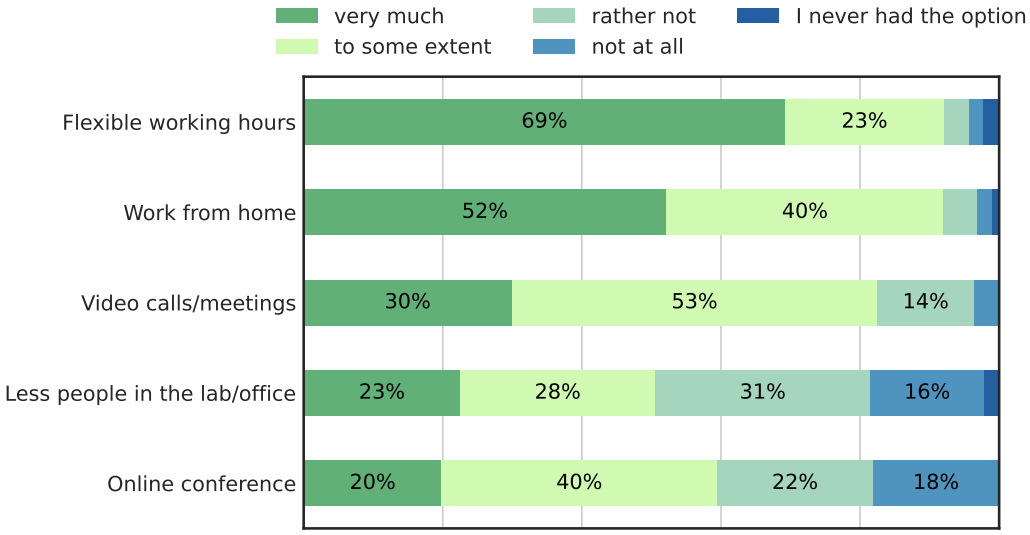


Figure 13.3: *"To which degree would you like to keep work options offered during the COVID-19 pandemic afterward?" (n = 813).*

However, significant downsides of the measures were experienced, too. As explained by Li and Griffin [18], the spread of the COVID-19 pandemic increased the psychological uncertainty of workers affecting the overall satisfaction of DRs in the Leibniz PhD Network (LPN). Directly related to lockdown policies, satisfaction levels decreased due to physical health, mental health and working conditions. Most prominent are higher levels of fear of infectiousness of the virus [19, 20], uncertainty over changing workplace conditions [21, 22], as well as limitations on social relations and sense of personal security.

While over two-thirds (n = 559) of DRs could decide to work from home, a third of the respondents stressed that they *needed to be at their office* at least once per week (n = 276). From DRs who always or often *had to work from their offices*, and *could not work from home*, 80% (n = 160) expressed that they felt *safe* at their institute and well protected. However, a minority of 17% (n = 35) expressed that they did *not feel safe* in their work environment. The mainly applied techniques which increased satisfaction with the pandemic handling were home office opportunities, regular COVID testing, mask supply and reduced people in offices with an offer rate of 71–90% in institutes with satisfied DRs while only 40–64% of offerings in institutes with dissatisfied DRs.

25% (n = 195) of respondents stated that they *had to work directly at their institutes*, independently of their choice. From them, 82% (n = 160) answered that they felt *safe* with the safety policies in place of their institutes (incl. distancing, masking, hand hygiene, ventilation measures), while 18% (n = 35) did *not feel safe*. From those who did not feel safe, 6% (n = 2) stated that they also felt *unsatisfied* or *very unsatisfied* with how their institute handled the pandemic situation. In comparison, DRs working directly at their offices who did feel *safe*, 16% (n = 26) expressed being *satisfied* or *very satisfied* with their institute's management of their workplace.

For DRs who feel *safe*, 20% (n = 38) were supported with *regular COVID-19 testing* at the workplace, 12% (n = 24) with *reduced office occupancy* rules, 16% (n = 31) with a *home office opportunity* and 18% (n = 36) with *masks* from the institute, as well as offered masks and antigen tests routinely, respectively. DRs who did *not feel safe* received *regular COVID-19 testing* in 29% (n = 10), 17% (n = 6) *reduced office occupancy*, 14% (n = 5) the opportunity for *home office* and 25% (n = 9) *masks*.

13.3 Career and Networking Opportunities During the COVID-19 Pandemic

According to DRs, the most severely affected areas of their professional experience during the years 2020 and 2021 were networking opportunities and career development with a perception of decrease among the DRs of 81% and 59%. [Figure 13.4] The perception of decreased networking opportunities was the same among all sections and did not depend on income or citizenship either.

On the other hand, worrisome feelings about negative impacts on career opportunities vary across the sections, independently of income or citizenship. While only 42% (n = 36) of DRs expect to see negative impacts on future careers within Section A, 69% (n = 71) DRs of Section E expect to see negative impacts. DRs in Sections B, C and D presumed negative career impacts with roughly 58% (n = 87, 170, 105).

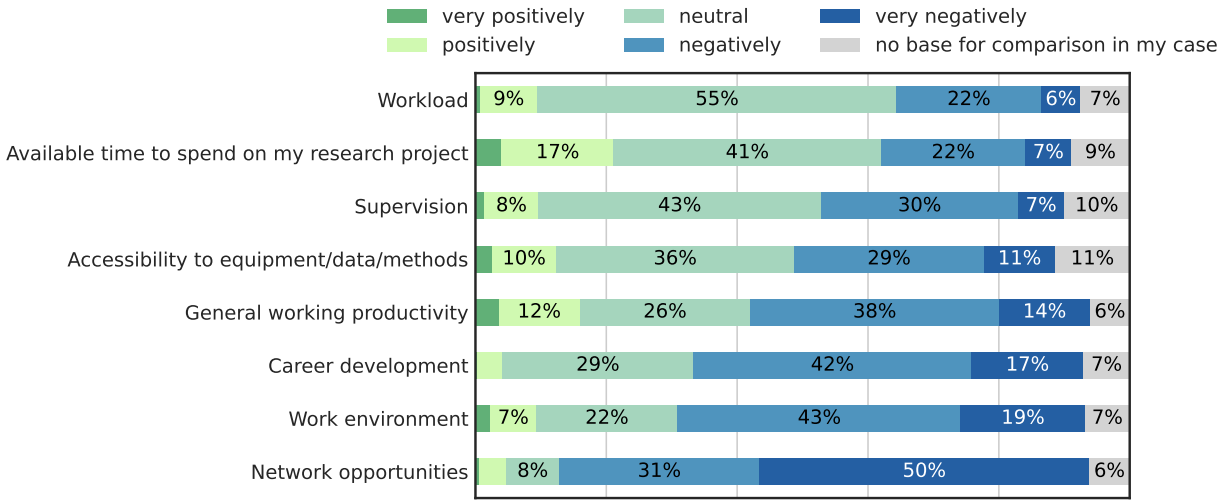


Figure 13.4: *"How do you perceive the COVID-19 pandemic to have impacted the following factors?" (n = 829).*

In comparison, German students of which 64% complained that their networking and socializing opportunities decreased, DRs from the Leibniz-Institutes seemed to be specifically vulnerable [23].

In the field of career opportunities, the perception of DRs is almost double as high as among young adults with higher education of which only 30% were worried about their future career [24]. Furthermore, half of the DRs expected an extension on their PhD time which is in line with the overall of students in Germany of which 55% expect a study extension due to COVID-19 [Figure 13.5] [25].

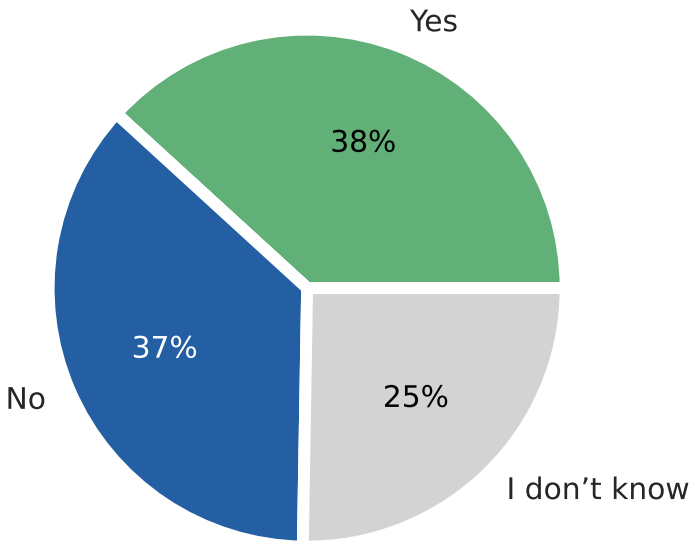


Figure 13.5: *"Are you expecting any delay in your PhD due to COVID-19?" overall percentage (n = 826).*

13.4 Work-Life Balance: Time Management

The COVID-19 pandemic in-shelter policies impacted the work-life balance and leisure activities of DRs in Germany. As for other graduate associations, many DRs struggled with being productive, to find a consistent routine and saw changes to their private lives [26, 27, 28, 29].

Working Hours

Around 31% (n = 257) of people reported a negative effect of COVID-19 on the time spent on their research project, while 20% (n = 174) did see an improvement in the time spent on the dissertation. Aside from time management, the work power of DRs was affected negatively or severely negatively due to limited accessibility to equipment for 40% (n = 332), as well as reduced advisory and supervision of progress. Only 10% (n = 83) did see an improvement. As a probable consequence, 40% (n = 332) of PhDs, therefore, expect a delay in handing in their dissertation ranging from six months to one an entire year.

Leisure Time

38% of responding DRs expressed a reduction in the number of holidays taken during the years 2020 and 2021 [Figure 13.6]. International DRs did not take any holidays 3,5 times more than German DRs in 2020 (7.8% vs. 2.2%). Only 29% of the international DRs took all their holidays while 42% of German DRs did. Independent of their gender, arrangements for holidays and leisure habits were altered by the in-shelter policies. They, therefore, follow a common pattern also seen in other areas like [30] described. In total 71% of DRs reported that the quality of their leisure time decreased and 46% that the quantity of leisure time in total decreased. Furthermore, the contact with relatives and social contacts worsened at 71% and 82% respectively. 66% reported a problem with the separation between work and leisure time. Additionally, the financial situation worsened for 10% of DRs.

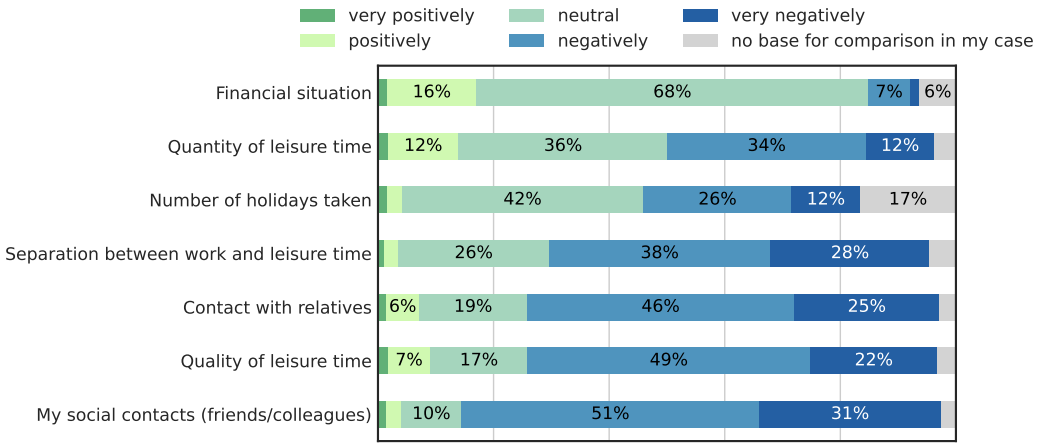


Figure 13.6: *"How has the COVID-19 pandemic impacted your personal life?" (n = 829).*

Parenthood and Home-Schooling Responsibilities

In general, 75% of DRs with children reported that the caring responsibilities due to closed KiTas (kindergartens) or care of the elderly increased. [Figure 13.7] Additionally, the increased care duties reduced the working efficiency, caused changes in the daily working rhythm, and made it hard for DRs to keep up with the normal working loads. Female DRs were more vulnerable to the increased pressure with 62% (n = 28) vs. 39% (n = 13) of males seeing a decrease in efficiency,

53% (n = 24) vs. 36% (n = 12) for changes in working rhythm and 69% (n = 31) vs. 45% (n = 15) for males in terms of struggles to keep up with the workload. On the other hand, male DRs with children could enjoy more time with their children than female DRs with children could (48% vs. 38%).

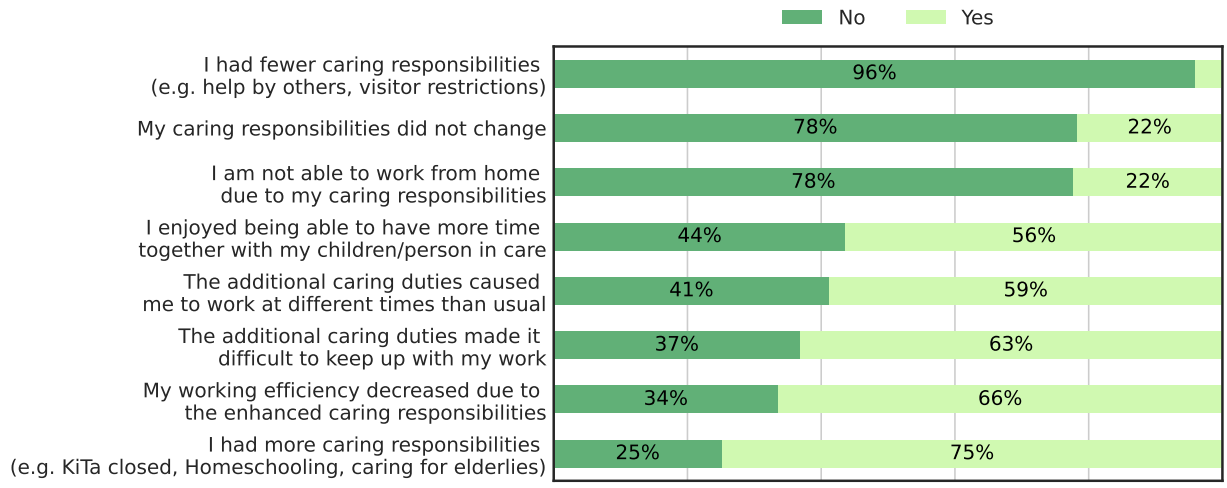


Figure 13.7: *"How did the pandemic change your caring responsibilities for your children and how did it influence your workload?" (n = 829).*

Both results are in line with the overall development of childcare during the COVID-19 pandemic in Germany. As reported by the DIW Berlin the fraction of females looking after the children all by themselves increased from 8% to 16% putting additional stress on the work-life balance of females [31].

13.5 Remote Work Conditions

In terms of home office, 71% of DRs could work from home regularly while 59% could work from the respective institutes regularly. [Figure 13.8] 39% of the DRs had to work from home regularly while 76% of DRs wanted to work from home. 15% (n = 71) of female DRs wanted to *always* work from home. In contrast, only 11% (n = 38) of male DRs *always* wanted to work from home. Additionally, 30% (n = 144) of female DRs wanted to work often from home whereas only 24% (n = 84) of male DRs often wanted to work from home. In contrast, the amount of salary a DR received did not influence whether the DR wanted to work from home or not. However, 23% (n = 18) of DRs with children wanted to always work from home or often while only 12% (n = 83) without children wanted to do so.

Furthermore, a big difference was seen among the different sections in terms of DRs who want to work always or often from home. In Section A 59% (n = 48), Section B 55% (n = 81), Section C 32% (n = 99), Section D 35% (n = 63) and Section E 45% (n = 46) of DRs wanted to *often* or *always* work from home.

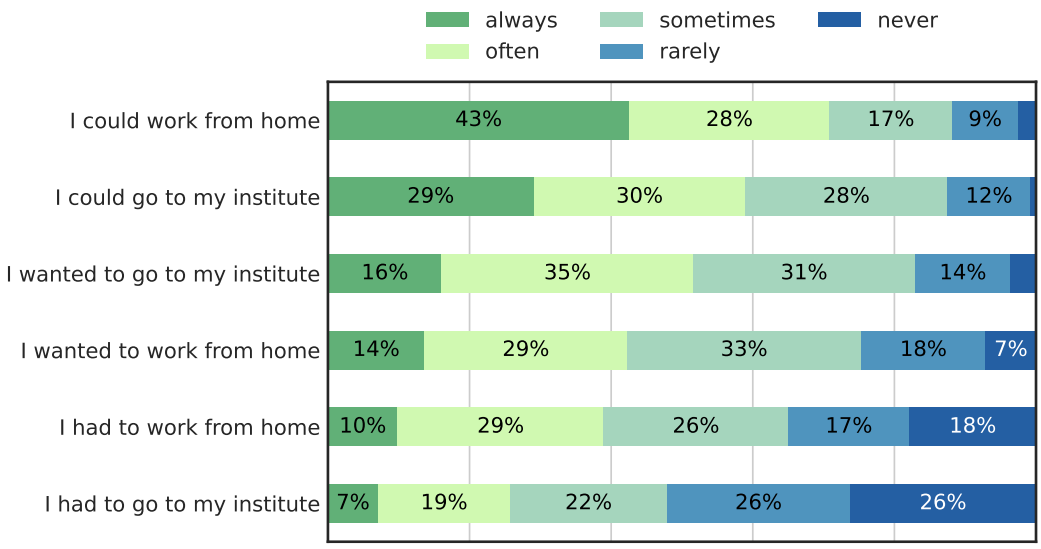


Figure 13.8: *"How was your working situation during the pandemic?" (n = 829).*

As the previous graph showed only 26% (n = 216) of people *always* or *often* had to go to the institutes to work in their offices. 51% (n = 423) of the DRs *always* or often wanted to go to the institutes regularly for work. Regardless of this 92% (n = 748) of all DRs want to keep the home office opportunities [Figure 13.8] and [Figure 13.3].

These numbers are higher in comparison to all economic sectors of Germany where only 26% of people were able to work full-time in the home office at the beginning of 2020, which decreased to only 7% in the following weeks until mid 2020. However, the number of people who could stay in part-time home-office stayed stable at around 20% overall in Germany in 2020 [32]. A close comparison to the educational sector shows that in this sector 48% of people worked from home [32].

The DRs and their supervisors were henceforth ahead of the general population as well as the educational sector in terms of home office during the COVID-19 pandemic. Although many institutes are slowly going back to their normal operations, the (partial) home office possibilities should be kept available for the DRs. This is due to the broad support by DRs although the COVID-19 virus is now considered an endemic virus within Germany [33].

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14 Appendix

14.1 List of Acronyms

EU European Union

DR Doctoral Researcher

DS Depressive symptoms

LPN Leibniz PhD Network

PHQ Patient-Health-Questionnaire

PNA Prefer not to answer

SA State Anxiety

STAI Spielberger State-Trait Anxiety Inventory

TA Trait Anxiety

14.2 Questionnaire of the 2021 Leibniz PhD Survey

German version below!

Welcome to the N2 Survey 2021,

and thank you for participating! This is a voluntary survey for all doctoral researchers working within the Leibniz Association, the Helmholtz Association, IPP community Mainz and the Max Planck Society. They are united in the N2 'Network of Networks' representing the doctoral researchers in all these organizations.

Please be aware that this survey is performed in English. For legal reasons and to ensure everyone understands it, we will provide the informations for data protection in both German and English language. Our privacy notice is also available in both languages, however only the German one is legally binding.

Declaration of consent according the EU General Data Protection Regulation (GDPR)

Please take the time and carefully read our privacy notice. You can find it attached to the invitation mail to this survey and also via this link (click here).

The aim of this survey is to provide a clear picture of the situation of doctoral researchers in Germany's non-university research organizations. This includes: demographics, working conditions, the quality of the supervision, caring responsibilities, experiences with power abuse and discrimination, mental health, and the impact of COVID-19.

To be allowed to collect and handle this data, we need your consent (note the checkbox below). Please be aware that we also collect data that is rendered sensitive data according the DSGVO, including questions to your gender, sexual orientation, ethnicity, migrational background, mental and physical health, handicaps, parenting and pregnancy as well as religion. For these questions we ask you additionally for your consent on the next page. Split from your agreement on this page, you also have the option to reject being presented those sensitive questions at all. If you decide to have a look at those questions the first answer to this question always will be "I don´t want to answer this question" – allowing you to choose later on as well.

While filling the survey your IP-address is technically known to the survey collection service provider LimeSurvey GmbH and is deleted as you leave the website. During the survey no identifiers, according to the GDPR, such as your name, mail address IP-address, are collected and stored in the data sets.

Section A: Sensitive question

German version below!

This survey contains questions that could be perceived as sensitive and very personal. This includes questions regarding: gender, sexual orientation, ethnicity, general family situation, bullying, sexualized harassment, discrimination as well as health. For these sensitive questions, the first option will always be “I don't want to answer this question”.

Due to the sensitive nature of these questions, below you can choose to not be presented with any of these questions.

However, it is very important for us to ask these questions because they are key determinants for the well-being of doctoral researchers and the environments they work in. Furthermore, we want to understand and portray the diversity present in our organizations.

As for example, the data is used to assess discrimination: If e.g. 50 people feel discriminated because of their sexual orientation, this does not help us to evaluate the whole problem, as those 50 people could represent only 2% of the Doctoral Researchers from the LGBTIQ+ community or 100%. The first scenario would be problematic as every case of discrimination is one too much but the second scenario could indicate a structural problem.

Please be aware that we follow the GDPR and make sure your data is protected! For more informations, please have a look at our privacy notice. You can find it attached to the invitation mail to this survey and also via this link (click here).

With selecting "Yes, it is okay for me." and "Next" you accept the terms and conditions listed on the previous page and above, including the use of the provided data in case you complete the survey. More information regarding our data security policy can be found here (Pflichtinformation nach §13 und 14 DSGVO, attached).

Diese Umfrage beinhaltet Fragen welche als sensitiv und sehr persönlich angesehen werden können. Dies beinhaltet Fragen zu Geschlechtsidentitäten, sexueller Orientierung, ethnische Zugehörigkeit, Migrationshintergrund, mentaler und physischer Gesundheit, körperlicher und psychischer Beeinträchtigungen, Elternschaft und Schwangerschaft sowie Religion.

Für diese Fragen lautet die erste Antwortmöglichkeit immer „I don´t want to answer this question“.

Aufgrund der sensiblen Natur dieser Fragen möchten wir dir jedoch auch die Möglichkeit geben, diese gänzlich ausblenden zu lassen. Wir erachten es jedoch als sehr wichtig diese Fragen zu stellen, da sie Schlüsselfaktoren für das Wohlergehen der Promovierenden sowie deren Arbeitsumfeld darstellen. Außerdem möchten wir die Diversität unserer Organisationen besser und umfangreicher verstehen. So werden die erhobenen Daten zum Beispiel genutzt um Diskriminierung besser zu verstehen.

Fühlen sich zum Beispiel 50 Personen aufgrund ihrer sexuellen Orientierung am Arbeitsplatz diskriminiert, lässt dies noch keine ausführliche Aussage zu. So könnten diese 50 Personen nur 2% der Promovierenden, welche sich der LGBTIQ+ Community zugehörig fühlen, oder 100% ausmachen. Während im ersten Fall natürlich jeder Einzelfall von Diskriminierung einer zu viel ist, so könnte der zweite Fall auf schwerwiegende strukturelle Probleme hinweisen.

Sei versichert, dass wir den Schutz deiner Daten sehr ernst nehmen und den Maßgaben der DSGVO folgen! Weitere Informationen findest du in unseren Datenschutzhinweisen (click here).

Mit der Wahl von „Yes, it is okay for me I agree with the data protection regulations for these sensitive questions!“ stimmst du der Teilnahme an den sensiblen Fragen der Umfrage zu und willigst auch der Nutzung und Erhebung deiner Daten gemäß unserer Datenschutzhinweisen ein.

A1. Would you like to be presented with these questions?

- [ ] Yes, it is okay for me and I agree with the data protection regulations for these sensitive questions
- [ ] No, I prefer not to see them

Section B: Demographics

In this section, we will ask general questions about yourself and your doctoral project.

Section 1/10

B1. Have you participated in the last N2 survey 2019?

- [ ] Yes
- [ ] No
- [ ] I don't remember
- [ ] I don't want to answer this question

B2. Which institute/section/center are you associated with?

Comments: Institute-specific data can be useful to facilitate change in single institutes but needs to be balanced with the need to reduce data collected and ensure anonymity. "Associated" was chosen as a word because it also includes PhDs who are not officially employed by the institutes but only working at the institutes.

- [ ] Akademie für Raumforschung und Landesplanung - Leibniz-Forum für Raumwissenschaften (ARL)
- [ ] Bernhard-Nocht-Institut für Tropenmedizin (BNITM)
- [ ] Deutsches Bergbau-Museum Bochum - Leibniz-Forschungsmuseum für Georessourcen (DBM)
- [ ] Deutsches Diabetes-Zentrum - Leibniz-Zentrum für Diabetes-Forschung (DDZ)
- [ ] Deutsches Institut für Ernährungsforschung Potsdam-Rehbrücke (DIfE)
- [ ] Deutsches Institut für Erwachsenenbildung - Leibniz-Zentrum für Lebenslanges Lernen (DIE)
- [ ] Deutsches Museum (DM)
- [ ] Deutsches Primatenzentrum - Leibniz-Institut für Primatenforschung (DPZ)
- [ ] Deutsches Rheuma-Forschungszentrum Berlin (DRFZ)
- [ ] Deutsches Schifffahrtsmuseum - Leibniz-Institut für Maritime Geschichte (DSM)
- [ ] DIPF | Leibniz-Institut für Bildungsforschung und Bildungsinformation (DIPF)
- [ ] DIW Berlin - Deutsches Institut für Wirtschaftsforschung (DIW)
- [ ] DWI - Leibniz-Institut für Interaktive Materialien (DWI)
- [ ] Ferdinand-Braun-Institut, Leibniz-Institut für Höchstfrequenztechnik (FBH)
- [ ] FIZ Karlsruhe - Leibniz-Institut für Informationsinfrastruktur (FIZ KA)
- [ ] Forschungszentrum Borstel - Leibniz Lungenzentrum (FZB)
- [ ] Georg-Eckert-Institut - Leibniz-Institut für internationale Schulbuchforschung (GEI)
- [ ] Germanisches Nationalmuseum - Leibniz-Forschungsmuseum für Kulturgeschichte (GNM)
- [ ] GESIS - Leibniz-Institut für Sozialwissenschaften (GESIS)

GIGA German Institute of Global and Area Studies (GIGA)

Heinrich-Pette-Institut - Leibniz-Institut für Experimentelle Virologie (HPI)

Herder-Institut für historische Ostmitteleuropaforschung - Institut der Leibniz-Gemeinschaft (HI)

ifo Institut - Leibniz-Institut für Wirtschaftsforschung an der Universität München e. V. (ifo)

INM - Leibniz-Institut für Neue Materialien (INM)

Institut für Weltwirtschaft (IfW)

Institut für Zeitgeschichte München - Berlin (IfZ)

IUF - Leibniz-Institut für umweltmedizinische Forschung (IUF)

Leibniz-Forschungsinstitut für Molekulare Pharmakologie (FMP)

Leibniz-Institut DSMZ-Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH (DSMZ)

Leibniz-Institut für Agrarentwicklung in Transformationsökonomien (IAMO)

Leibniz-Institut für Agrartechnik und Bioökonomie (ATB)

Leibniz-Institut für Alternsforschung - Fritz-Lipmann-Institut (FLI)

Leibniz-Institut für Analytische Wissenschaften - ISAS - e.V. (ISAS)

Leibniz-Institut für Angewandte Geophysik (LIAG)

Leibniz-Institut für Arbeitsforschung an der TU Dortmund (IfADo)

Leibniz-Institut für Astrophysik Potsdam (AIP)

Leibniz-Institut für Atmosphärenphysik an der Universität Rostock (IAP)

Leibniz-Institut für Bildungsverläufe e.V. (LIfBi)

Leibniz-Institut für Deutsche Sprache (IDS)

Leibniz-Institut für die Pädagogik der Naturwissenschaften und Mathematik (IPN)

Leibniz-Institut für Europäische Geschichte Mainz (IEG)

Leibniz-Institut für Festkörper- und Werkstoffforschung Dresden (IFW)

Leibniz-Institut für Gemüse- und Zierpflanzenbau (IGZ)

Leibniz-Institut für Geschichte und Kultur des östlichen Europa (GWZO)

Leibniz-Institut für Gewässerökologie und Binnenfischerei (IGB)

Leibniz-Institut für innovative Mikroelektronik (IHP)

Leibniz-Institut für jüdische Geschichte und Kultur - Simon Dubnow (DI)

Leibniz-Institut für Katalyse e. V. an der Universität Rostock (LIKAT)

- [ ] Leibniz-Institut für Kristallzüchtung (IKZ)
- [ ] Leibniz-Institut für Länderkunde (IfL)
- [ ] Leibniz-Institut für Lebensmittel-Systembiologie (LSB)
- [ ] Leibniz-Institut für Medienforschung | Hans-Bredow-Institut (HBI)
- [ ] Leibniz-Institut für Naturstoff-Forschung und Infektionsbiologie - Hans-Knöll-Institut (HKI)
- [ ] Leibniz-Institut für Neurobiologie (LIN)
- [ ] Leibniz-Institut für Nutztierbiologie (FBN)
- [ ] Leibniz-Institut für Oberflächenmodifizierung (IOM)
- [ ] Leibniz-Institut für ökologische Raumentwicklung (IÖR)
- [ ] Leibniz-Institut für Ost- und Südosteuropaforschung (IOS)
- [ ] Leibniz-Institut für Ostseeforschung Warnemünde (IOW)
- [ ] Leibniz-Institut für Pflanzenbiochemie (IPB)
- [ ] Leibniz-Institut für Pflanzengenetik und Kulturpflanzenforschung (IPK)
- [ ] Leibniz-Institut für Photonische Technologien (IPHT)
- [ ] Leibniz-Institut für Plasmaforschung und Technologie (INP)
- [ ] Leibniz-Institut für Polymerforschung Dresden (IPF)
- [ ] Leibniz-Institut für Präventionsforschung und Epidemiologie (BIPS)
- [ ] Leibniz-Institut für Raumbezogene Sozialforschung (IRS)
- [ ] Leibniz-Institut für Sonnenphysik (KIS)
- [ ] Leibniz-Institut für Troposphärenforschung (TROPOS)
- [ ] Leibniz-Institut für Werkstofforientierte Technologien (IWT)
- [ ] Leibniz-Institut für Wirtschaftsforschung Halle (IWH)
- [ ] Leibniz-Institut für Wissensmedien (IWM)
- [ ] Leibniz-Institut für Zoo- und Wildtierforschung (IZW)
- [ ] Leibniz-Institut Hessische Stiftung Friedens- und Konfliktforschung (HSFK)
- [ ] Leibniz-Zentrum Allgemeine Sprachwissenschaft (ZAS)
- [ ] Leibniz-Zentrum für Agrarlandschaftsforschung (ZALF)
- [ ] Leibniz-Zentrum für Literatur- und Kulturforschung (ZfL)
- [ ] Leibniz-Zentrum für Marine Tropenforschung GmbH (ZMT)

- [ ] Leibniz-Zentrum für Psychologische Information und Dokumentation (ZPID)
- [ ] Leibniz-Zentrum für Zeithistorische Forschung Potsdam (ZZF)
- [ ] Leibniz-Zentrum Moderner Orient (ZMO)
- [ ] Mathematisches Forschungsinstitut Oberwolfach (MFO)
- [ ] Max-Born-Institut für Nichtlineare Optik und Kurzzeitspektroskopie (MBI)
- [ ] Museum für Naturkunde - Leibniz-Institut für Evolutions- und Biodiversitätsforschung (MfN)
- [ ] Paul-Drude-Institut für Festkörperelektronik (PDI)
- [ ] Potsdam-Institut für Klimafolgenforschung (PIK)
- [ ] Römisch-Germanisches Zentralmuseum - Leibniz-Forschungsinstitut für Archäologie (RGZM)
- [ ] RWI - Leibniz-Institut für Wirtschaftsforschung (RWI)
- [ ] Schloss Dagstuhl - Leibniz-Zentrum für Informatik (LZI)
- [ ] Senckenberg Gesellschaft für Naturforschung (SGN)
- [ ] TIB - Leibniz-Informationszentrum Technik und Naturwissenschaften (TIB)
- [ ] Weierstraß-Institut für Angewandte Analysis und Stochastik (WIAS)
- [ ] Wissenschaftszentrum Berlin für Sozialforschung (WZB)
- [ ] ZBW - Leibniz-Informationszentrum Wirtschaft (ZBW)
- [ ] ZEW - Leibniz-Zentrum für Europäische Wirtschaftsforschung (ZEW)
- [ ] Zoologisches Forschungsmuseum Alexander Koenig - Leibniz-Institut für Biodiversität der Tiere (ZFMK)
- [ ] I don't want to answer this question
- [ ] Other

Other

B3. Which field (subject) are you working in?

Please choose only one of the following:

- ☐ Chemistry
- ☐ Physics
- ☐ Geosciences
- ☐ Mathematics
- ☐ Biology
- ☐ Medicine/Veterinary medicine
- ☐ Law and Economics
- ☐ Social and Behavioral Sciences
- ☐ Humanities
- ☐ Engineering
- ☐ Computer science
- ☐ Health sciences
- ☐ Agriculture, Forestry
- ☐ I don't want to answer this question
- ☐ Other

Other

B4. My overall work is predominantly

- [ ] Laboratory work
- [ ] Fieldwork
- [ ] Computational work
- [ ] Library/chronicle work
- [ ] Theoretical/methodological work
- [ ] I don't know
- [ ] I don't want to answer this question
- [ ] Other

Other

B5. What is your year of birth?

- [ ] 1970
- [ ] 1971
- [ ] 1972
- [ ] 1973
- [ ] 1974
- [ ] 1975
- [ ] 1976
- [ ] 1977
- [ ] 1978
- [ ] 1979
- [ ] 1980
- [ ] 1981
- [ ] 1982
- [ ] 1983
- [ ] 1984
- [ ] 1985

1986 ☐

1987 ☐

1988 ☐

1989 ☐

1990 ☐

1991 ☐

1992 ☐

1993 ☐

1994 ☐

1995 ☐

1996 ☐

1997 ☐

1998 ☐

1999 ☐

2000 ☐

2001 ☐

2002 ☐

2003 ☐

2004 ☐

2005 ☐

I don't want to answer this question ☐

Other ☐

Other

B6. With which gender do you identify most?

- Female ☐
- Male ☐
- Gender diverse (Gender-fluid) ☐
- Non-binary ☐
- I don't want to answer this question ☐
- Other gender representations: ☐

Other gender representations:

B7. With which sexual orientation do you identify most?

- I don’t want to answer this question ☐
- Heterosexual ☐
- Homosexual ☐
- Bisexual ☐
- Asexual ☐
- Queer ☐
- Other ☐

Other

B8. In which year did you start your PhD?

Explanation: The start of your doctoral research is either the start of your first contract/stipend or your enrollment in a university as a doctoral researcher, whichever is earlier.

- 2021 ☐
- 2020 ☐
- 2019 ☐
- 2018 ☐
- 2017 ☐
- 2016 ☐
- 2015 ☐
- 2014 or earlier ☐
- I don't know ☐
- I don't want to answer this question ☐

B9. In which month did you start your PhD?

Explanation: The start of your doctoral research is either the start of your first contract/stipend or your enrollment in a university as a doctoral researcher, whichever is earlier.

- 01 ☐
- 02 ☐
- 03 ☐
- 04 ☐
- 05 ☐
- 06 ☐
- 07 ☐
- 08 ☐
- 09 ☐
- 10 ☐
- 11 ☐
- 12 ☐
- I don't know ☐
- I don't want to answer this question ☐

B10. In which year do you expect to submit your PhD Thesis?

- 2021 ☐
- 2022 ☐
- 2023 ☐
- 2024 ☐
- 2025 ☐
- 2026 ☐
- 2027 ☐
- 2028 ☐
- 2029 or later ☐
- I don't know ☐
- I don't want to answer this question ☐

B11. In which month do you expect to submit your PhD Thesis?

- 01 ☐
- 02 ☐
- 03 ☐
- 04 ☐
- 05 ☐
- 06 ☐
- 07 ☐
- 08 ☐
- 09 ☐
- 10 ☐
- 11 ☐
- 12 ☐
- I don't know ☐
- I don't want to answer this question ☐

B12. To get a better picture on the diversity of your organization - I identify my ethnicity as:

To get a better picture on the diversity of your organization we're asking questions regarding your ethnicity. Please select the option(s) that you feel best represent(s) you. We hope this can shed light on issues certain groups could be facing within the (organization). Please be assured that your data will be treated confidentially and used in an ethical way.

- [ ] I don't want to answer this question
- [ ] European/European descent
- [ ] Latino/Hispanic
- [ ] Middle Eastern
- [ ] African
- [ ] Caribbean
- [ ] South Asian
- [ ] East Asian/Southeast Asian
- [ ] Pacific Islander
- [ ] Northeast Asian
- [ ] Other

Other

B13. What is your citizenship? Should you have multiple citizenships, please select the one you feel best represented by.

- [ ] I don't want to answer this question
- [ ] German
- [ ] Citizen outside the European Union (EU)
- [ ] Citizen within the European Union (EU)

B14. Were your parents born in Germany?

- [ ] I don't want to answer this question
- [ ] Yes, both of my parents were born in Germany
- [ ] Only one of my parents were born in Germany
- [ ] No, none of my parents were born in Germany
- [ ] I don´t know

B15. Were you born in Germany?

- I don't want to answer this question ☐
- No, I was born outside of Germany ☐
- Yes, I was born in Germany ☐

B16. Do you consider yourself to have a disability?

- I don't want to answer this question ☐
- Yes and I have a "Schwerbehindertenausweis" (handicapped pass) ☐
- Yes, but it is not officially recognized in Germany ☐
- No ☐
- I don't know ☐

B17. Is there anything regarding this section you would like to tell us?

Section C: Working conditions

In this section, we ask you about your salary or income, possible contract extensions, your working hours or the amount of holidays that are entitled to you.

Section 2/10

C1. How is your doctoral research currently financed ?

Explanation: A contract is usually paid according to the TVöD / TVL system (e.g. 50% or 65%) and also includes the funding contract. With a stipend, you are not legally bound to your workplace but also do not pay into the social security system.

- ☐ Contract (internal from Leibniz)
- ☐ Contract (external/guest contract)
- ☐ Internal stipend
- ☐ External stipend/scholarship from Germany
- ☐ External stipend/scholarship from abroad
- ☐ Unpaid
- ☐ I don't know
- ☐ I don't want to answer this question
- ☐ Other

Other

C2. Does your stipend get a top-up contract by your center/institute?

- ☐ No, I don't get a top-up
- ☐ Yes
- ☐ I don't know
- ☐ I don't want to answer this question

C3. For how long have you been working on your PhD without pay?

- 0 - 3 months ☐
- 4 - 6 months ☐
- 7 - 9 months ☐
- 10 - 12 months ☐
- More than 12 months ☐
- I don't want to answer this question ☐

C4. Please select all that apply as to why you are currently unpaid.

- It is my choice ☐
- My funding extension was not granted ☐
- The funding ran out ☐
- I don't want to answer this question ☐
- Other ☐

Other

C5. Are you currently collecting unemployment benefits (''Arbeitslosengeld'')?

- Yes ☐
- No ☐
- I don't want to answer this question ☐

C6. Right now, what is your monthly net income for your work at your research organization in euros?

Explanation: Net income is the amount of money transferred to your bank account every month. Do not count any bonuses such as a Christmas bonus etc. Scholarship holders and freelancers: deduct tax and health insurance. Income not related to work in the institute/doctoral research should not be included.

- < 500 ☐
- 500-700 ☐
- 701-1000 ☐
- 1001-1100 ☐
- 1101-1200 ☐
- 1201-1300 ☐
- 1301-1400 ☐
- 1401-1500 ☐
- 1501-1600 ☐
- 1601-1700 ☐
- 1701-1800 ☐
- 1801-1900 ☐
- 1901-2000 ☐
- 2001-2100 ☐
- 2101-2200 ☐
- 2201-2300 ☐
- 2301-2400 ☐
- 2401-2500 ☐
- > 2500 ☐
- I don't know ☐
- I don't want to answer this question ☐

C7. How much do you pay for your rent and associated living costs per month in euros (e.g. heating, gas, water, and electricity)?

Example: Your rent is 600€, you additionally pay 70€ for warm water and heating, 20€ for electricity, 20€ for internet and 10€ for garbage disposal plus elevator fees. This amounts to total costs of 720€

- <100 ☐
- 100-200 ☐
- 201-300 ☐
- 301-400 ☐
- 401-500 ☐
- 501-600 ☐
- 601-700 ☐
- 701-800 ☐
- 801-900 ☐
- 901-1000 ☐
- 1001-1100 ☐
- 1101-1200 ☐
- 1201-1300 ☐
- 1301-1400 ☐
- 1401-1500 ☐
- 1501-1600 ☐
- 1601-1700 ☐
- 1701-1800 ☐
- 1801-1900 ☐
- 1901-2000 ☐
- >2000 ☐
- I don't know ☐
- I don't want to answer this question ☐

C8. What was or is the longest duration of your contract or stipend related to your PhD project?

- [ ] <6 months
- [ ] 6-12 months
- [ ] 13-24 months
- [ ] 25-36 months
- [ ] 37-48 months
- [ ] >48 months
- [ ] I don't want to answer this question
- [ ] I don't know
- [ ] Other

Other

C9. If any, how many extensions or additional contracts/stipends did you get during your PhD?

- [ ] I did not get any extensions or additional contracts/stipends
- [ ] 1 extension/additional contract/stipend
- [ ] 2 extensions/additional contracts/stipends
- [ ] 3 extensions/additional contracts/stipends
- [ ] 4 extensions/additional contracts/stipends
- [ ] 5 extensions/additional contracts/stipends
- [ ] more than 5 extensions/additional contracts/stipends
- [ ] I don't know
- [ ] I don't want to answer this question

C10. Would it be possible for you to extend your current contract/stipend for the following reasons?

	Yes	No	I don't know	I don't want to answer this question
More time needed to complete PhD project	☐	☐	☐	☐
Parental leave	☐	☐	☐	☐

	Yes	No	I don't know	I don't want to answer this question
Wrap-up phase after completion of the PhD project	☐	☐	☐	☐

C11. Are you financially responsible for anyone else?

- ☐ Yes
- ☐ No
- ☐ I don't want to answer this question

C12. Do you get external financial support to cover your living expenses? If yes, who is assisting you financially?

- ☐ I took up a loan for my time as a doctoral researcher
- ☐ Parents
- ☐ Other relatives
- ☐ Partner(s)
- ☐ State - Kindergeld
- ☐ Other job
- ☐ No, I do not get external financial support
- ☐ I don't want to answer this question
- ☐ Other

Other

C13. How strongly do you depend on this external financial support to cover your living expenses?

- ☐ Very strongly
- ☐ Strongly
- ☐ Somewhat strongly
- ☐ Weakly
- ☐ Not at all
- ☐ I don't want to answer this question

C14. Did you spend parts of your salary on items you primarily used for work in the past year?

- [ ] No
- [ ] Yes
- [ ] I don't want to answer this question

C15. Roughly how much of your salary (in euros) did you spend on items you primarily used for work?

- [ ] 1 - 100
- [ ] 101 - 500
- [ ] 501 - 1000
- [ ] more than 1000
- [ ] I don't know
- [ ] I don't want to answer this question

C16. What items did you buy from your salary that you primarily used for work?

- [ ] Computer
- [ ] Chair
- [ ] Computer hardware (cable, mouse, camera, microphone, headset)
- [ ] Tablet
- [ ] Screen
- [ ] External hard drives
- [ ] Office equipment (folders, pens, ...)
- [ ] Software
- [ ] Desk
- [ ] Books and articles
- [ ] Accounts for databases
- [ ] I don't want to answer this question
- [ ] Other

Other

C17. How many holidays per year can you take according to your contract or stipend?

- [ ] My funding does not specify the number of holidays
- [ ] 1-5 days
- [ ] 6-10 days
- [ ] 11-15 days
- [ ] 16-20 days
- [ ] 21-25 days
- [ ] 26-30 days
- [ ] >30 days
- [ ] I don't know
- [ ] I don't want to answer this question

C18. How many hours per week are you expected to work according to your contract?

Example: A 50% contract according to TVöD demands you to work 20h or 19.5h depending on the state you work in.

- [ ] I don't know
- [ ] I don't want to answer this question
- [ ] 0
- [ ] 1
- [ ] 2
- [ ] 3
- [ ] 4
- [ ] 5
- [ ] 6
- [ ] 7
- [ ] 8
- [ ] 9
- [ ] 10
- [ ] 11
- [ ] 12
- [ ] 13

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43 ☐

44 ☐

45 ☐

C19. Anything regarding this section you would like to tell us?

Section D: Satisfaction

In this section, we ask questions about how satisfied you are with different aspects of your work as a doctoral researcher, e.g. which of them could be improved, what you think about a career in academia, and if you have ever considered quitting your PhD.

Section 3/10

D1. If you think about your own situation as a doctoral researcher, how satisfied are you with the following aspects?

	Very satisfied	Satisfied	Neither/nor	Dissatisfied	Very dissatisfied	Does not apply	I don't want to answer this question
Supervision	☐	☐	☐	☐	☐	☐	☐
Salary	☐	☐	☐	☐	☐	☐	☐
Vacation days	☐	☐	☐	☐	☐	☐	☐
Support for international doctoral researchers	☐	☐	☐	☐	☐	☐	☐
Bureaucracy and administrative support	☐	☐	☐	☐	☐	☐	☐
Internal workshops and skills trainings	☐	☐	☐	☐	☐	☐	☐
Contribution to science	☐	☐	☐	☐	☐	☐	☐
Technical support	☐	☐	☐	☐	☐	☐	☐
Career development	☐	☐	☐	☐	☐	☐	☐
Science communication and outreach	☐	☐	☐	☐	☐	☐	☐
Psychological support	☐	☐	☐	☐	☐	☐	☐

	Very satisfied	Satisfied	Neither/nor	Dissatisfied	Very dissatisfied	Does not apply	I don't want to answer this question
Laboratory equipment	☐	☐	☐	☐	☐	☐	☐
Office equipment	☐	☐	☐	☐	☐	☐	☐
Scientific support	☐	☐	☐	☐	☐	☐	☐
Family support	☐	☐	☐	☐	☐	☐	☐
Work environment and atmosphere	☐	☐	☐	☐	☐	☐	☐
Workload	☐	☐	☐	☐	☐	☐	☐
Social life at the institute	☐	☐	☐	☐	☐	☐	☐
Adherence to good scientific practice in my work environment	☐	☐	☐	☐	☐	☐	☐
Support for implementing Open Science practices at your institute	☐	☐	☐	☐	☐	☐	☐

D2. Have you ever considered quitting your PhD?

- ☐ Never
- ☐ Rarely
- ☐ Occasionally
- ☐ Often
- ☐ I don't know
- ☐ I don't want to answer this question

D3. What was/were the reason(s) for considering to quit your PhD?

- ☐ I do not like scientific work.
- ☐ I do not like my topic.
- ☐ I have problems getting by financially.
- ☐ I do not like my working conditions.
- ☐ I have work related difficulties with my supervisor.
- ☐ I don't like the social environment at my workplace.
- ☐ I have personal difficulties with my supervisor.
- ☐ I find my career prospective unattractive.
- ☐ I have personal reasons.
- ☐ I do not feel qualified enough.

I have no or poor academic results. ☐

I find other jobs more interesting. ☐

I can’t cope with the high workload. ☐

My academic life is not compatible with my family responsibilities. ☐

My project is not funded anymore. ☐

I have administrative problems. ☐

My health. ☐

I don't want to answer this question. ☐

I don't know. ☐

Other, please specify ☐

Other, please specify

D4. On average, how many hours do you typically work per week in total?

Working time - that is both for your dissertation and all other tasks you have to perform at your institute or university, for instance, project work or meetings (in your office as well as at other places) and teaching.

- < 20 ☐
- 21 - 25 ☐
- 26 - 30 ☐
- 31 - 35 ☐
- 36 - 40 ☐
- 41 - 45 ☐
- 46 - 50 ☐
- 51 - 55 ☐
- 56 - 60 ☐
- 61 - 65 ☐
- 66 - 70 ☐
- 71 - 75 ☐
- 76 - 80 ☐
- > 80 ☐
- I don't know ☐
- I don't want to answer this question ☐

D5. What percentage of your time do you currently spend on average on the following tasks?

- Scientific work directly related to the doctoral research ☐☐☐
- Scientific work not related to the doctoral research (helping other projects, maintenance, etc.) ☐☐☐
- Attending courses and seminars ☐☐☐
- Teaching/supervision ☐☐☐
- Administrative tasks ☐☐☐
- Other ☐☐☐

D6. Are your working hours tracked officially in your institute?

- [ ] Yes
- [ ] No
- [ ] No, but I track my working hours myself
- [ ] I don't know
- [ ] I don't want to answer this question

D7. How often have you worked during weekends or public holidays in the past year?

Please note: This question asks for work related to your PhD. It is place-independent and includes all work done at your institute/center, your home or any other location. It does not include an additional part-time job or other work which is unrelated to your PhD.

- [ ] Never
- [ ] Less than once per month
- [ ] Once per month
- [ ] Twice per month
- [ ] Three times per month
- [ ] Every weekend
- [ ] I don't know
- [ ] I don't want to answer this question

D8. How many days did you take off (holiday) in the past year?

- [ ] None
- [ ] 1 - 5 days
- [ ] 6 - 10 days
- [ ] 11 - 15 days
- [ ] 16 - 20 days
- [ ] 21 - 25 days
- [ ] 26 - 30 days
- [ ] More than 30 days
- [ ] I don't know
- [ ] I don't want to answer this question

D9. Do you feel free to take days off (holidays)?

- [ ] Yes

- [ ] No, because of high workload
- [ ] No, because of pressure from my supervisor
- [ ] No, because I am saving up time for a longer period of vacation
- [ ] No, because of no special reason
- [ ] I don't know
- [ ] I don't want to answer this question
- [ ] Other

Other

D10. In general, how do you judge the following aspects of an academic research career?

	Very attractive	Attractive	Neutral	Unattractive	Very unattractive	I don't want to answer this question
Salaries in academia	☐	☐	☐	☐	☐	☐
Availability of permanent positions	☐	☐	☐	☐	☐	☐
Teaching	☐	☐	☐	☐	☐	☐
Applying for and obtaining funding	☐	☐	☐	☐	☐	☐
Service to society	☐	☐	☐	☐	☐	☐
Workload	☐	☐	☐	☐	☐	☐
Mobility (i.e., work in different countries or cities)	☐	☐	☐	☐	☐	☐
Compatibility of own career plans with career plans of partner	☐	☐	☐	☐	☐	☐
Compatibility of own career plans with having children	☐	☐	☐	☐	☐	☐
Interesting work	☐	☐	☐	☐	☐	☐
Diversity of work	☐	☐	☐	☐	☐	☐
Science communication and outreach	☐	☐	☐	☐	☐	☐
Self-fulfillment	☐	☐	☐	☐	☐	☐
Skill development	☐	☐	☐	☐	☐	☐

D11. Which of the following aspects of your work as a doctoral researcher would you like to be improved?

	Not at all	Rather not	To some extent	Very much	Does not apply	I don't want to answer this question
Supervision	☐	☐	☐	☐	☐	☐
Vacation days	☐	☐	☐	☐	☐	☐
Salary and benefits	☐	☐	☐	☐	☐	☐
Bureaucracy and administrative support	☐	☐	☐	☐	☐	☐
Workshops and skills trainings	☐	☐	☐	☐	☐	☐
Contribution to science	☐	☐	☐	☐	☐	☐
Technical support	☐	☐	☐	☐	☐	☐
Career development	☐	☐	☐	☐	☐	☐
Science communication and outreach	☐	☐	☐	☐	☐	☐
Psychological support	☐	☐	☐	☐	☐	☐
Laboratory equipment	☐	☐	☐	☐	☐	☐
Office equipment (e.g., computer, software, own desk etc.)	☐	☐	☐	☐	☐	☐
Scientific support	☐	☐	☐	☐	☐	☐
Family support	☐	☐	☐	☐	☐	☐
Support for foreign employees	☐	☐	☐	☐	☐	☐
Work environment and atmosphere	☐	☐	☐	☐	☐	☐
Workload	☐	☐	☐	☐	☐	☐
Social life at the institute	☐	☐	☐	☐	☐	☐
Support for implementing Open Science practices at your institute	☐	☐	☐	☐	☐	☐

D12. Anything regarding this section you would like to tell us?

Section E: Supervision

For the following questions, we would like to make the distinction between "formal" and "direct" supervisor clear:

"Formal" supervisor refers to the main advisor of your thesis as present in your committee.

"Direct" supervisor refers to the person you actually consult and discuss your project with on a more regular basis.

Section 4/10

E1. Do you have one of the following?

Explanation PhD supervision agreement: This is a written agreement between the formal supervisor and the doctoral researcher outlining their responsibilities from the beginning of the PhD project until the completion of the doctoral thesis.

Explanation project outline: This is a preliminary project plan defining the objectives of the PhD project as well as the methodology to achieve them within the given timeframe of a doctoral research project.

Explanation training plan: This is a plan detailing the courses mandatory for the completion of your PhD.

Explanation thesis advisory committee: A thesis advisory committee or "TAC" is a group of two or more independent researchers (including your formal/primary supervisor) who you meet on a regular basis, give you advice on how to progress and successfully complete your PhD project.

- [ ] A supervision agreement with your formal supervisor
- [ ] A written project outline
- [ ] A written training plan
- [ ] A thesis advisory committee (TAC) or similar
- [ ] PhD guidelines
- [ ] I don't have any of the above
- [ ] I don't know
- [ ] I don't want to answer this question

E2. How often do you meet your thesis advisory committee (TAC) or similar?

- ☐ I meet my TAC twice a year or more frequently
- ☐ I meet my TAC once per year
- ☐ I meet my TAC once during my PhD
- ☐ There are no regulations how often to meet my TAC
- ☐ I don't know
- ☐ I don't want to answer this question

E3. Is your <u>formal</u> supervisor your <u>direct</u> supervisor?

"Formal" supervisor refers to the main advisor of your thesis as present in your committee. "Direct" supervisor refers to the person you actually consult and discuss your project with on a more regular basis.

- ☐ Yes
- ☐ No
- ☐ I don't have a formal supervisor yet
- ☐ I don't have a direct supervisor yet
- ☐ I don't know
- ☐ I don't want to answer this question

E4. Which gender does your supervisor presents as?

	I don't want to answer this question	Male	Female	Diverse	I don't know	Does not apply
Direct supervisor:	☐	☐	☐	☐	☐	☐
Formal supervisor:	☐	☐	☐	☐	☐	☐

E5. How often do you communicate on average with your formal supervisor about your PhD project?

- ☐ Almost daily
- ☐ Weekly
- ☐ Every second week
- ☐ Monthly
- ☐ Quarterly
- ☐ Six-monthly
- ☐ Yearly
- ☐ Less than once a year
- ☐ Never
- ☐ I don't know
- ☐ I don't want to answer this question

E6. How often would you like to communicate with your formal supervisor about your PhD project?

- ☐ Almost daily
- ☐ Weekly
- ☐ Every second week
- ☐ Monthly
- ☐ Quarterly
- ☐ Six-monthly
- ☐ Yearly
- ☐ Less than once a year
- ☐ Never
- ☐ I don't know
- ☐ I don't want to answer this question

E7. Please rate the supervision provided by your formal supervisor.

	Fully agree	Partially agree	Neither agree nor disagree	Partially disagree	Fully disagree	I don't know	I don't want to answer this question
My supervisor treats me professionally	☐	☐	☐	☐	☐	☐	☐
My supervisor is well informed about my field of research	☐	☐	☐	☐	☐	☐	☐
My supervisor is available when I need advice	☐	☐	☐	☐	☐	☐	☐

	Fully agree	Partially agree	Neither agree nor disagree	Partially disagree	Fully disagree	I don't know	I don't want to answer this question
My supervisor is well informed about my current state of PhD project	☐	☐	☐	☐	☐	☐	☐
My supervisor has strict requirements for my work	☐	☐	☐	☐	☐	☐	☐
My supervisor has clear requirements for my work	☐	☐	☐	☐	☐	☐	☐
My supervisor is open to and respects my research ideas	☐	☐	☐	☐	☐	☐	☐
My supervisor supports my professional development (establishing contacts, recommending conferences...)	☐	☐	☐	☐	☐	☐	☐
My supervisor gives constructive feedback	☐	☐	☐	☐	☐	☐	☐
My supervisor encourages me to work independently	☐	☐	☐	☐	☐	☐	☐
My supervisor treats me politely	☐	☐	☐	☐	☐	☐	☐
My supervisor adheres to good scientific practice	☐	☐	☐	☐	☐	☐	☐
My supervisor has good leadership skills	☐	☐	☐	☐	☐	☐	☐

E8. How often do you communicate on average with your <u>direct</u> supervisor about your PhD project?

- ☐ Almost daily
- ☐ Weekly
- ☐ Every second week
- ☐ Monthly
- ☐ Quarterly
- ☐ Six-monthly
- ☐ Yearly
- ☐ Less than once a year
- ☐ Never
- ☐ I don't know
- ☐ I don't want to answer this question

E9. How often would you like to communicate with your direct supervisor about your PhD project?

- ☐ Almost daily
- ☐ Weekly
- ☐ Every second week
- ☐ Monthly
- ☐ Quarterly
- ☐ Six-monthly
- ☐ Yearly
- ☐ Less than once a year
- ☐ Never
- ☐ I don't know
- ☐ I don't want to answer this question

E10. Please rate the supervision provided by your direct supervisor.

	Fully agree	Partially agree	Neither agree nor disagree	Partially disagree	Fully disagree	I don't know	I don't want to answer this question
My supervisor treats me professionally	☐	☐	☐	☐	☐	☐	☐
My supervisor is well informed about my field of research	☐	☐	☐	☐	☐	☐	☐
My supervisor is available when I need advice	☐	☐	☐	☐	☐	☐	☐
My supervisor is well informed about my current state of PhD project	☐	☐	☐	☐	☐	☐	☐
My supervisor has strict requirements for my work	☐	☐	☐	☐	☐	☐	☐
My supervisor has clear requirements for my work	☐	☐	☐	☐	☐	☐	☐
My supervisor is open to and respects my research ideas	☐	☐	☐	☐	☐	☐	☐
My supervisor supports my professional development (establishing contacts, recommending conferences...)	☐	☐	☐	☐	☐	☐	☐
My supervisor gives constructive feedback	☐	☐	☐	☐	☐	☐	☐
My supervisor encourages me to work independently	☐	☐	☐	☐	☐	☐	☐
My supervisor treats me politely	☐	☐	☐	☐	☐	☐	☐
My supervisor adheres to good scientific practice	☐	☐	☐	☐	☐	☐	☐
My supervisor has good leadership skills	☐	☐	☐	☐	☐	☐	☐

E11. Did you ever encounter problems regarding your supervision?

- [ ] Not enough meetings
- [ ] Too many meetings
- [ ] Not enough scientific discussion
- [ ] Meetings not regular enough
- [ ] Not enough experts in your group
- [ ] Supervisors not experienced enough in your field
- [ ] Not enough feedback
- [ ] Not enough encouragement
- [ ] Personality of my supervisor
- [ ] Disagreement between supervisors
- [ ] Disagreement about publication
- [ ] No problem with supervision
- [ ] I don’t know
- [ ] I don't want to answer this question

E12. Are doctoral researchers involved in the process of director/professor/group leader hirings at your institution?

E.g. by giving a letter of recommendation or being asked for their opinion after a presentation by the applicant,....

- [ ] Yes, we have an active say
- [ ] Yes, but we don't have an active say
- [ ] No
- [ ] I don't know
- [ ] I don't want to answer this question

E13. Anything regarding this section you would like to tell us?

Section F: Integration

In this section, we ask you how integrated you feel at your center/institute in terms of language barriers and social integration and if you received support with administrative tasks.

Section 5/10

F1. For which of the following aspects did you receive support from your institute/center?

Explanation 'support': *You may have received support to fulfill different administrative tasks and to give you guidance in the process. This support may have been in the form of an information document, personal e-mail or oral correspondence and has been given to you directly or at least upon request. Examples of 'support' can be checklists for University enrollment, visa application, or local resident registration etc.*

- [ ] University enrollment
- [ ] Application to a graduate school
- [ ] Finding accommodation
- [ ] Registering at the local Resident Registration Office
- [ ] Visa for my residency
- [ ] Immigration office
- [ ] Translation of working contract and relevant documents
- [ ] None of the above
- [ ] I don't know
- [ ] I don't want to answer this question
- [ ] Other, please specify

Other, please specify

F2. For which of the following aspects <u>would you have needed</u> more support from your institute/center?

- [ ] University enrollment
- [ ] Application to a graduate school
- [ ] Finding accommodation
- [ ] Registering at the local Resident Registration Office
- [ ] Visa for my residency
- [ ] Immigration office

- [ ] Translation of working contract and relevant documents
- [ ] None of the above
- [ ] I don't know
- [ ] I don't want to answer this question
- [ ] Other, please specify

Other, please specify

F3. Do you speak German?

- [ ] None
- [ ] Beginner (A1 - A2)
- [ ] Intermediate (B1- B2)
- [ ] Fluent (C1 - C2)
- [ ] Native
- [ ] I don't know
- [ ] I don’t want to answer this question

F4. Is language an obstacle for communication with people at your institute/center?

- [ ] Very much
- [ ] To some extent
- [ ] Rather not
- [ ] Not at all
- [ ] I don't know
- [ ] I don't want to answer this question

F5. Is all the important information (group internal, administrative, your contract/stipend) available in a language you understand?

- ☐ Yes, all of the information is available
- ☐ Most of the information is available
- ☐ Some of the information is available
- ☐ No, none of the information is available to me
- ☐ I don't know
- ☐ I don't want to answer this question

F6. Are there regular social activities in your group or at your institution (e.g., sports events, going out for dinner/drinks, discussion forums, movie nights, or respective online versions during the pandemic, etc.)?

- ☐ Yes, and I attend them always
- ☐ Yes, and I attend them often
- ☐ Yes, and I attend them sometimes
- ☐ Yes, but I rarely attend them
- ☐ Yes, but I do not attend them
- ☐ No, there are no social activities
- ☐ I don’t know
- ☐ I don’t want to answer this question

F7. Anything regarding this section you would like to tell us?

Section G: Career development

In this section, we ask you about your career plans and how you evaluate the measures in place at your institute/center/unit **to prepare you for your future career (publications, transferable skills, soft skills, etc.).**

Section 6/10

G1. Are you currently enrolled in a graduate school?

- ☐ Yes, at my institution
- ☐ Yes, somewhere else
- ☐ No
- ☐ I don't know
- ☐ I don't want to answer this question

G2. Which field would you like to work in after completing your PhD?

	Very much	Rather yes	Indifferent	Rather not	Not at all	I don't know	I don't want to answer this question
Academia	☐	☐	☐	☐	☐	☐	☐
Non-academic scientific research	☐	☐	☐	☐	☐	☐	☐
Public sector science-related job (e.g. public relationships or science management)	☐	☐	☐	☐	☐	☐	☐
Private sector science-related job (e.g. public relationships or science management)	☐	☐	☐	☐	☐	☐	☐
Not science-related job	☐	☐	☐	☐	☐	☐	☐
Take an extended break	☐	☐	☐	☐	☐	☐	☐
Start my own business	☐	☐	☐	☐	☐	☐	☐
Further education (e.g. another PhD, MBA)	☐	☐	☐	☐	☐	☐	☐

G3. Which of the following measures for your career development are supported by your center/institute?

	Yes, to a great extent	Yes, to some extent	No	I don't know	I don't want to answer this question
Mobility period (e.g. internships, research stays,...)	☐	☐	☐	☐	☐
Language classes	☐	☐	☐	☐	☐
Mentoring	☐	☐	☐	☐	☐
Soft skill courses	☐	☐	☐	☐	☐
Practical courses (e.g. method-oriented courses, ...)	☐	☐	☐	☐	☐

	Yes, to a great extent	Yes, to some extent	No	I don't know	I don't want to answer this question
Transition to a non-academic career (e.g. career fairs, career talks, networking possibilities,...)	☐	☐	☐	☐	☐
Career development office/Career center	☐	☐	☐	☐	☐

G4. How does your center/institute support you in learning German?

- ☐ My institution offers German courses
- ☐ My institution offers monetary support for external courses
- ☐ My institution permits attendance of courses during working hours
- ☐ My institution does not offer any support for learning German
- ☐ I don't know
- ☐ I don't want to answer this question

G5. Do you think that you are well trained for a job <u>outside</u> science/academia?

A job outside academia can be in industry or public service not related to publicly funded research institutions.

- ☐ Very well prepared
- ☐ Well prepared
- ☐ Unprepared
- ☐ Very unprepared
- ☐ I don't know
- ☐ I don't want to answer this question

G6. Do you think you are well trained for a job <u>inside</u> science/academia?

- ☐ Very well prepared
- ☐ Well prepared
- ☐ Unprepared
- ☐ Very unprepared
- ☐ I don't know
- ☐ I don't want to answer this question

G7. Anything regarding this section you would like to tell us?

Section H: Family

In this section, we ask questions related to family life while conducting your doctoral research project. We are interested in whether you have children and how families are supported by your institute in terms of childcare, organizational and financial aspects.

Section 7/10

H1. Do you have or are you currently expecting children?

- [ ] I don't want to answer this question
- [ ] Yes
- [ ] No
- [ ] No, but I am planning to have one during my PhD

H2. Your youngest child is...

- [ ] I don't want to answer this question
- [ ] Not in external daycare (yet)
- [ ] In daycare or kindergarten
- [ ] In primary/elementary school
- [ ] In secondary school
- [ ] I don't know

H3. Are you considering having (more) children during your doctoral research project?

- [ ] I don't want to answer this question
- [ ] Yes
- [ ] No, I do not want children (yet)
- [ ] No, because I don't have the money to support children
- [ ] No, because my working conditions are not family-friendly
- [ ] No, because I fear jeopardizing my career
- [ ] No, for other reason
- [ ] I don't know

H4. Does your center/institute offer support in childcare services?

- [ ] Access to daycare
- [ ] Financial support for daycare
- [ ] Parent-friendly work environment

Reimbursements for daycare during business travel ☐

Home office/mobile work ☐

There is no support ☐

I don't know ☐

I don't want to answer this question ☐

H5. Do you feel there is sufficient support (financial and organizational) from your center/institute for raising/caring for a child?

Yes ☐

No ☐

I don't know ☐

I don't want to answer this question ☐

H6. Do you have caring responsibility apart from children?

For example parents, relatives, ...

Yes ☐

No ☐

I don't know ☐

I don't want to answer this question ☐

H7. Do you feel you are supported by your center/institute in your caring responsibilities apart from children?

Yes ☐

No ☐

I don't know ☐

I don't want to answer this question ☐

H8. Do you feel able to unite your caring responsibilities with your PhD?

Very much ☐

To some extent ☐

Rather not ☐

Not at all ☐

I don't know ☐

I don't want to answer this question ☐

H9. Is there anything regarding this section you would like to tell us?

Section I: Power Abuse

In this section, we ask you about mechanisms for conflict resolution in place at your institute/center, conflicts you are experiencing during your PhD, for instance with a superior and your satisfaction with the resolution of these conflicts.

Section 8/10

If you suffer from serious cases of bullying or sexualized harassment, please be aware that those might be cases of legal offense. Therefore, the German state protects you by law.

If you think, this might be applicable to you, please reach out to your centers resources (Ombudspersons, Workers Council or Human Resources) and state your case.

Always remember, you are not alone in this situation and there are people who can help you!

I1. Which of the following mechanisms are you aware of that can help you in case of a conflict with a superior?

A superior in your working context is a person in a position of power over you, for example by having an influence on the success of your academic career or the prolongation of your working contract. Abuse of power describes the behavior of a superior using their power for personal gain and/or to your disadvantage and can take many forms.

- [ ] Ombudsperson
- [ ] Human Ressources
- [ ] Works Council
- [ ] Equal Opportunity Officer
- [ ] Graduate School
- [ ] PhD Representatives
- [ ] Medical services and counseling
- [ ] Security service
- [ ] I am not aware of any of the above
- [ ] I don't know
- [ ] I don't want to answer this question

Other ☐

Other

I2. Did you ever report a conflict to one of the institutions above?

Yes ☐

No, although I had a serious conflict ☐

No, I never had any serious conflict ☐

I don't know ☐

I don't want to answer this question ☐

I3. Why did you not report your conflict?

I wasn't sure whom to report it to ☐

I didn't think it would be resolved ☐

I felt the people who I could report to were not sufficiently trained to deal with it ☐

I was afraid of repercussions ☐

I didn't think the conflict was severe enough ☐

I could deal with it myself ☐

I don't know ☐

I don't want to answer this question ☐

Other ☐

Other

I4. With whom was the conflict?

Formal supervisor ☐

Direct supervisor ☐

Other doctoral researcher ☐

Other scientific staff ☐

Administrative staff ☐

I don't know ☐

I don't want to answer this question ☐

Other ☐

Other

I5. How satisfied were you with the consequences of your report?

Very dissatisfied ☐

Dissatisfied ☐

Neither satisfied nor dissatisfied ☐

Satisfied ☐

Very satisfied ☐

Still ongoing ☐

I don't know ☐

I don't want to answer this question ☐

I6. While working at your institute/center, have you at any point <u>experienced</u> unwanted behaviour that you would call "sexualized harassment"?

I don't want to answer this question ☐

Intrusive/unwanted looks and/or non-physical approaching, e.g. catcalling , whistling, staring,... ☐

Unwanted verbal remarks of a sexualized nature and/or obscene gestures, e.g. sexualized innuendos, jokes and comments on one's appearance,... ☐

Spreading sexualized information/rumors/lies about a person ☐

Unwanted material/messages/calls of sexual nature ☐

Unwanted touching or physical contact, e.g. patting my back, stroking, hugging,... ☐

Requests for sexual favors or unwelcome sexual advances ☐

Feeling pressured to engage with someone sexually ☐

Physical acts of sexual assault ☐

No, I have not been subject to sexual harassment ☐

I don't know ☐

Other ☐

Other

I7. How often have you been <u>subject</u> to sexualized harassment?

I don't want to answer this question ☐

Once ☐

Occasionally ☐

Monthly ☐

Weekly ☐

Daily ☐

I don't know ☐

I8. Who was (were) the perpetrator(s) of sexalized harassment?

I don't want to answer this question ☐

Formal supervisor ☐

Direct supervisor ☐

Other doctoral researcher ☐

Other scientific staff ☐

Administrative staff ☐

I don't know ☐

Other ☐

Other

I9. While working at your institute/center, have you at any point witnessed unwanted behaviour that you would call "sexualized harassment"?

- [ ] Yes
- [ ] No
- [ ] I don't know
- [ ] I don't want to answer this question

I10. How often have you witnessed sexualized harassment?

- [ ] Once
- [ ] Occasionally
- [ ] Monthly
- [ ] Weekly
- [ ] Daily
- [ ] I don't know
- [ ] I don't want to answer this question

I11. Who was (were) the perpetrator(s) of sexualized harassment?

- [ ] Formal supervisor
- [ ] Direct supervisor
- [ ] Other doctoral researcher
- [ ] Other scientific staff
- [ ] Administrative staff
- [ ] I don't know
- [ ] I don't want to answer this question
- [ ] Other

Other

I12. While working at your institute/center, have you at any point been subject to any of these forms of bullying?

- [ ] I don't want to answer this question
- [ ] Indirect bullying, e.g. spreading rumours, lies, making fun of a person, withholding information,...

- [ ] Destabilization, e.g. failure to give credit when due, constant non-constructive criticism, removal of responsibility, preventing access to opportunities,...
- [ ] Pressured overwork, e.g. impossible deadlines, unnecessary disruptions,..
- [ ] Verbal harassment, e.g. name-calling, insults, intimidation, yelling,...
- [ ] Social isolation, e.g. damage to friendship networks, exclusion,...
- [ ] Threat to professional status, e.g. degrading one's opinion, public professional humiliation, accusation regarding lack of effort, tampering with a person's work equipment,...
- [ ] Physical attack, e.g. pushing,...
- [ ] No, I have not been subject to bullying
- [ ] I don't know
- [ ] Other

Other

I13. How often have you been <u>subjected</u> to these forms of bullying?

- [ ] I don't want to answer this question
- [ ] Once
- [ ] Occasionally
- [ ] Monthly
- [ ] Weekly
- [ ] Daily
- [ ] I don't know

I14. Who was (were) the perpetrator(s) of bullying?

- [ ] I don't want to answer this question
- [ ] Formal supervisor
- [ ] Direct supervisor
- [ ] Other doctoral researcher
- [ ] Other scientific staff
- [ ] Administrative staff
- [ ] I don't know

Other ☐

Other

I15. What did you perceive as the basis for bullying?

I don't want to answer this question ☐

Gender ☐

Ethnic group ☐

Age ☐

Physical properties (e.g. disability) ☐

Position of Power/Hierarchy ☐

I don't know ☐

Other ☐

Other

I16. While working at your institute/center, have you at any point <u>witnessed</u> bullying?

Yes ☐

No ☐

I don't know ☐

I don't want to answer this question ☐

I17. How often have you witnessed bullying?

- [ ] Once
- [ ] Occasionally
- [ ] Monthly
- [ ] Weekly
- [ ] Daily
- [ ] I don't know
- [ ] I don't want to answer this question

I18. Who was (were) the perpetrator(s) of bullying?

- [ ] Formal supervisor
- [ ] Direct supervisor
- [ ] Other doctoral researcher
- [ ] Other scientific staff
- [ ] Administrative staff
- [ ] I don't know
- [ ] I don't want to answer this question

I19. What did you perceive as the basis for bullying?

- [ ] Gender
- [ ] Ethnic group
- [ ] Age
- [ ] Physical properties (e.g. disability)
- [ ] Position of Power/Hierarchy
- [ ] I don't know
- [ ] I don't want to answer this question
- [ ] Other

Other

I20. Have you ever felt discriminated against in your work environment because of one or more of the following?

- [ ] I don't want to answer this question
- [ ] Nationality
- [ ] Ethnicity
- [ ] Age
- [ ] Sexual orientation
- [ ] Gender identity
- [ ] Religion
- [ ] Disability
- [ ] Parenthood
- [ ] Pregnancy and maternity
- [ ] Mental Health
- [ ] I have not felt discriminated in my work environment so far
- [ ] I don't know
- [ ] Other

Other

I21. Is there anything regarding this section you would like to tell us?

Section J: Mental health

In this section, we ask you about your well-being. With this section we acknowledge the obstacles, pressure to perform, as well as the impact the latter can have on your mental health.

The term "mental health" has been explained by many scholars. According to the WHO, it has been described as: "subjective well-being, perceived self-efficacy, [...] and self-actualization of one's intellectual and emotional potential, among others." We want to, again, stress the importance of confidentiality and anonymity of the answers submitted during your participation in this survey. If you feel uncomfortable with the questions in this section, you will always have the option "I don't want to answer this question".

Since it is a particularly sensitive topic, we want to provide you with the option to not be presented with these questions.

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Your mental health is of utmost importance for the success of your doctoral research project, but also for a happy and fulfilled private life. This survey aims to raise awareness amongst you, your colleagues and the scientific community.

Please do not hesitate to turn to one of the included help lines, friends or your doctoral representatives, if especially emotionally touched by these questions.

More information for immediate help can be found on your centers webpage/intranet and with support of your administration.

J1. Would you like to be presented with these questions?

- ☐ Yes, it is okay for me
- ☐ No, I prefer not to see them

J2. Please read each statement below and then indicate how you feel right now, at this moment.

	Not at all	Somewhat	Moderately	Very much	I don't want to answer this question
I feel calm	☐	☐	☐	☐	☐
I feel tense	☐	☐	☐	☐	☐
I feel upset	☐	☐	☐	☐	☐
I feel relaxed	☐	☐	☐	☐	☐
I feel content	☐	☐	☐	☐	☐
I feel worried	☐	☐	☐	☐	☐

J3. Please read each statement below and then indicate how you generally feel.

	Not at all	Somewhat	Moderately	Very much	I don't want to answer this question
I am "calm, cool and collected"	☐	☐	☐	☐	☐

	Not at all	Somewhat	Moderately	Very much	I don't want to answer this question
I feel that difficulties are piling up so that I cannot overcome them	☐	☐	☐	☐	☐
I worry too much over something that really doesn't matter	☐	☐	☐	☐	☐
I am happy	☐	☐	☐	☐	☐
I have disturbing thoughts	☐	☐	☐	☐	☐
I lack self-confidence	☐	☐	☐	☐	☐
I feel secure	☐	☐	☐	☐	☐
I take disappointments so keenly that I can't put them out of my mind	☐	☐	☐	☐	☐

J4. Over the last two weeks, how often have you been bothered by any of the following problems?

	Not at all	Several days	More than half the days	Nearly every day	I don't want to answer this question
Little interest or pleasure in doing things	☐	☐	☐	☐	☐
Feeling down, depressed, or hopeless	☐	☐	☐	☐	☐
Trouble falling or staying asleep, or sleeping too much	☐	☐	☐	☐	☐
Feeling tired or having little energy	☐	☐	☐	☐	☐
Poor appetite or overeating	☐	☐	☐	☐	☐
Feeling bad about yourself - or that you are a failure or have let yourself or your family down	☐	☐	☐	☐	☐
Trouble concentrating on things such as reading the newspaper or watching television	☐	☐	☐	☐	☐
Moving or speaking so slowly that other people could have noticed? Or the opposite - being so fidgety or restless that you have been moving around a lot more than usual	☐	☐	☐	☐	☐

J5. If you have been bothered by any problems, how difficult have any of the above mentioned problems made it for you to do your work?

- [ ] Not difficult at all
- [ ] Somewhat difficult
- [ ] Very difficult
- [ ] Extremely difficult
- [ ] I have not been bothered by any problems
- [ ] I don't know
- [ ] I don't want to answer this question

J6. You answered 'I don't want to answer this question' for all questions in block D. We would be interested in your reasons for not answering.

- [ ] I feel uncomfortable answering such questions
- [ ] I can't relate to this type of questions
- [ ] I don't want to answer this question
- [ ] My current situation is unrelated to work
- [ ] Other, please specify

Other, please specify

J7. Are you aware of your centers/institutes mental health resources?

- [ ] No, I am not aware of any
- [ ] Yes, but I have never used them
- [ ] Yes and I was satisfied
- [ ] Yes, but I was not satisfied
- [ ] I don't want to answer this question

J8. Anything regarding this section you would like to tell us?

Section K: COVID-19

In this section, we are asking questions on how the COVID-19 pandemic influenced your work as a doctoral researcher.

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K1. Did you test positive (PCR) for COVID-19 at some point?

- ☐ I don't want to answer this option
- ☐ Yes
- ☐ No, but I had a positive antibody blood test
- ☐ No

K2. How do you perceive the COVID-19 pandemic to have impacted the following factors?

	very positively	positively	neutral	negatively	very negatively	no base for comparison in my case	I don't know	I don't want to answer this question
Accessibility to equipment/data/methods	☐	☐	☐	☐	☐	☐	☐	☐
Supervision	☐	☐	☐	☐	☐	☐	☐	☐
Satisfaction with available time to spend on my research project	☐	☐	☐	☐	☐	☐	☐	☐
General working productivity	☐	☐	☐	☐	☐	☐	☐	☐
Work environment and atmosphere	☐	☐	☐	☐	☐	☐	☐	☐
Networking opportunities	☐	☐	☐	☐	☐	☐	☐	☐
Workload	☐	☐	☐	☐	☐	☐	☐	☐
Career development	☐	☐	☐	☐	☐	☐	☐	☐

K3. Are you expecting a delay in your PhD due to COVID-19?

- ☐ Yes
- ☐ No
- ☐ I don’t know
- ☐ I don’t want to answer this question

K4. How long do you expect the COVID-19 related delay of your PhD to be?

- [ ] 1 month
- [ ] 2 months
- [ ] 3 months
- [ ] 4 months
- [ ] 5 months
- [ ] 6 months
- [ ] 7 months
- [ ] 8 months
- [ ] 9 months
- [ ] 10 months
- [ ] 11 months
- [ ] 12 months
- [ ] 13 months
- [ ] 14 months
- [ ] 15 months
- [ ] 16 months
- [ ] 17 months
- [ ] 18 months
- [ ] more than 18 months
- [ ] I don't want to answer this question

K5. How did the pandemic change your caring responsibilities for your children and how did it influence your workload?

- [ ] My caring responsibilities did not change.
- [ ] I had more caring responsibilities (e.g. KiTa closed, Homeschooling, caring for elderlies).
- [ ] I had fewer caring responsibilities (e.g. help by others, visitor restrictions).
- [ ] The additional caring duties made it difficult to keep up with my work.
- [ ] The additional caring duties caused me to work at different times than usual (e.g. evening/night).
- [ ] My working efficiency decreased due to the enhanced caring responsibilities.
- [ ] I enjoyed being able to have more time together with my children/person in care.

I am not able to work from home due to my caring responsibilities. ☐

I don't know ☐

I don't want to answer this question ☐

Other ☐

Other

K6. How did the pandemic change your further caring responsibilities apart from children and how did it influence your workload?

It did not change/does not apply. ☐

I had more caring responsibilities (e.g. KiTa closed, Homeschooling, caring for elderlies). ☐

My caring responsibilities did not change. ☐

I had fewer caring responsibilities (e.g. help by others, visitor restrictions) ☐

The additional caring duties made it difficult to keep up with my work. ☐

The additional caring duties caused me to work at different times than usual (e.g. evening/night). ☐

My working efficiency decreased due to the enhanced caring responsibilities ☐

I enjoyed being able to have more time together with my children/elderlies ☐

I am not able to work from home due to my caring responsibilities ☐

I don't know ☐

I don't want to answer this question ☐

Other ☐

Other

K7. How was your working situation during the pandemic?

	never	rarely	sometimes	often	always	I don't want to answer this question	Does not apply
I wanted to work from home	☐	☐	☐	☐	☐	☐	☐
I could work from home	☐	☐	☐	☐	☐	☐	☐

	never	rarely	sometimes	often	always	I don't want to answer this question	Does not apply
I had to work from home	☐	☐	☐	☐	☐	☐	☐
I wanted to go to my institute	☐	☐	☐	☐	☐	☐	☐
I could go to my institute	☐	☐	☐	☐	☐	☐	☐
I had to go to my institute	☐	☐	☐	☐	☐	☐	☐

K8. How many months did you spend mostly in home office since the start of the pandemic?

- ☐ 1 month
- ☐ 2 months
- ☐ 3 months
- ☐ 4 months
- ☐ 5 months
- ☐ 6 months
- ☐ 7 months
- ☐ 8 months
- ☐ 9 months
- ☐ 10 months
- ☐ 11 months
- ☐ 12 months
- ☐ 13 months
- ☐ 14 months
- ☐ 15 months
- ☐ 16 months
- ☐ 17 months
- ☐ 18 months
- ☐ 19 months
- ☐ 20 months
- ☐ 21 months
- ☐ I don't want to answer this question

K9. Did you feel safe and protected against a potential COVID-19 infection when working in the institute?

- ☐ Yes
- ☐ No
- ☐ Does not apply
- ☐ I don't want to answer this question

K10. Which COVID-19 support did your institute implement/provide/offer for you?

- ☐ Extension of contracts
- ☐ One-time financial bonus
- ☐ Financial support for home office equipment
- ☐ Office equipment can be taken home (e.g. chair, computer)
- ☐ Mental health support
- ☐ Regular COVID testing
- ☐ Opportunity to do home office
- ☐ Opportunity to work on home office from another country
- ☐ Reduced office/room occupation density
- ☐ Supply for masks
- ☐ Access to software/resources via remote desktop
- ☐ None
- ☐ I don't know
- ☐ I don't want to answer this question
- ☐ Other

Other

K11. How has the COVID-19 pandemic impacted your personal life?

	very positively	positively	neutral	negatively	very negatively	no base for comparison in my case	I don't know	I don't want to answer this question
The number of holidays taken compared to before COVID-19	☐	☐	☐	☐	☐	☐	☐	☐
Quality of leisure time	☐	☐	☐	☐	☐	☐	☐	☐

	very positively	positively	neutral	negatively	very negatively	no base for comparison in my case	I don't know	I don't want to answer this question
Quantity of leisure time	☐	☐	☐	☐	☐	☐	☐	☐
Contact with relatives	☐	☐	☐	☐	☐	☐	☐	☐
My social contacts (friends/colleagues)	☐	☐	☐	☐	☐	☐	☐	☐
Separation between work and leisure time	☐	☐	☐	☐	☐	☐	☐	☐
Financial situation	☐	☐	☐	☐	☐	☐	☐	☐

K12. To which degree would you like to keep work options offered during the COVID-19 pandemic afterwards?

	not at all	rather not	to some extent	very much	I never had the option	I don't know	I don't want to answer this question
Work from home/home office	☐	☐	☐	☐	☐	☐	☐
Flexible working hours/“Vertrauensarbeitszeit”	☐	☐	☐	☐	☐	☐	☐
Less people in the lab/office	☐	☐	☐	☐	☐	☐	☐
Video calls/meetings	☐	☐	☐	☐	☐	☐	☐
Online conference	☐	☐	☐	☐	☐	☐	☐

K13. How satisfied are you with how your institute handled the pandemic situation?

- very satisfied ☐
- satisfied ☐
- neither/nor ☐
- dissatisfied ☐
- very dissatisfied ☐
- does not apply ☐
- I don’t want to answer this question ☐

K14. Is there anything regarding this section you would like to tell us?

Section L: One last question

L1. Would you recommend doing a doctoral research project at your center/institute to a friend?

- Yes ☐
- No ☐
- I don't know ☐
- I don't want to answer this question ☐

Section M: The end

M1. Anything regarding the survey you would like to tell us?

Thank you very much for your participation in the 2021 survey!

The data of this survey is invaluable for the realistic assessment of the situation of doctoral researchers in the Leibniz Association and the basis for future improvement for our situation. We will carefully analyse the results after the survey closes and will publish the aggregated survey results in the form of a report as soon as they are available.

This questionnaire has been developed in the framework of N2 the 'Network of Networks'. It represents more than 18.000 doctoral researchers of the Leibniz Association, the Helmholtz Association, the IPP community Mainz and the Max Planck Society. It aims to promote doctoral researchers, focusing on working conditions, career development, supervision, and equal opportunities.

For any questions, comments and concerns, you are welcome to contact us via email (survey@leibniz-phd.net) or to get in touch with us directly.