PhDnet

Student Survey 2012

Contents

Introduction

Every second year, the Max Planck PhDnet[1] conducts a survey of current PhD candidates within the Max Planck Society (MPS).This survey provides an invaluable body of data that allows the PhDnet to make informed decisions about the future course and goals of the doctoral candidates and our relationship to the MPS General Administration. The survey gives us a reliable statistical overview of the feelings, situations and opinions within the PhDnet. It allows us not only to identify problems but also to find where things are going well and use these good practice examples to solve local problems at other institutes.

The PhDnet is closely involved with commissions and committees that will affect the direction of the MPS and hence current and future PhD candidates. These include the Max Planck Commission on Scientific Offspring, regular meetings with the MPS General Administration and meetings with influential people external to the MPS.

For the voices of PhD candidates to be heard, we must present reliable statistics which back up our positions. The biennial survey provides that. In the past, the survey has been integral to many big gains for PhD candidates, including the raising of the stipend amount and the introduction of the Health Insurance Subsidy.

The survey helps us to help you. This is why we thank the 1891 PhD candidates that participated in the 2012 survey and encourage a high participation for the next survey.

PhDnet steering group 2013

[1] http://www.phdnet.mpg.de/

Summary

This report describes some of the key findings from the analysis of more than 1,800 responses to the survey sent in 2012 to PhD Students of the MPS. Section 1 is a demographic study of the students of the MPS. Its main focuses are nationality, age and gender of the PhD students.

In section 2 the working conditions of the PhD students are extensively studied. The satisfaction of students with their working environment, as well as their supervision, are analyzed. Also several aspects of work life balance have been addressed, such as holidays, workload, and stress related diseases. Importantly, the effects of parenthood have also been considered. The career perspectives of the PhD students are addressed in section 3, including different types of career support that the supervisor may provide.

In section 4 the funding of PhD students is investigated. After introducing the different types of funding, it is shown how it correlates with aspects such as nationality, gender, or the tasks performed by the students. Special care has been taken in reporting students' preferences, knowledge and opinions on the issue of funding. Section 5 is devoted to investigate the different health insurances that students have, as well as their costs.

In section 6 some specific Max Planck Institutes are highlighted based on their good performance in several aspects such as good funding, being international, having healthy students or providing good supervision. Finally, the methods used to perform the data analysis are described in section 7.

1. Who are the PhD students of the Max Planck Society?

The PhD students of the Max Planck Society form a very diverse group. They come from all over the globe. There are males as well as females. Some are in their twenties and some in their thirties. Some just started their PhD while others have spent several years at it. To better understand what their worries are, we start by analyzing demographic data to know who they are.

1.1. Where do they come from and where are they

The first thing to notice is the great diversity of nationalities among PhD students. Students come from every continent to study in any of the three sections of the Max Planck Society (Chemical-Physical-Technical, CPT; Biology-Medicine, BM; Humanities, GSH). While the largest population of PhD students is German, about 60% of the total, the rest of Europe has a large representation, amounting to a 19% of the students (both EU and non-EU europeans). This is followed by the high representation of Asian students, who make up about 13% of the total (see Fig. 1.1, above). These trends are roughly preserved when the different sections of the MPS are considered separately (pie charts in Fig. 1.1, below).

To understand the situation of PhD students it is not only important to understand where they come from, but also where they are studying. The Max Planck Society has more than eighty institutes spread mostly across Germany [1]. Fig. 1.2 shows how the PhD students responding to this survey are distributed in Germany. The distribution on the map is very uniform, with many more students of the CPT and BM sections than of the GSH section.

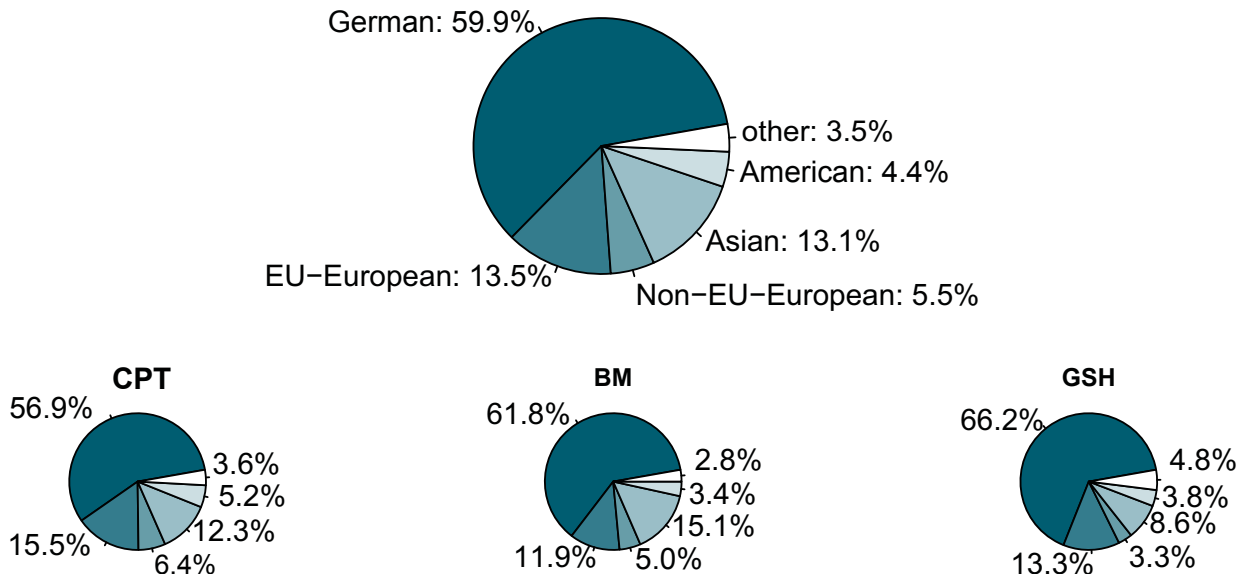

Fig. 1.1. Distribution of nationalities. On the piechart above we have the global distribution, while below we see the data separated for each of the three sections.

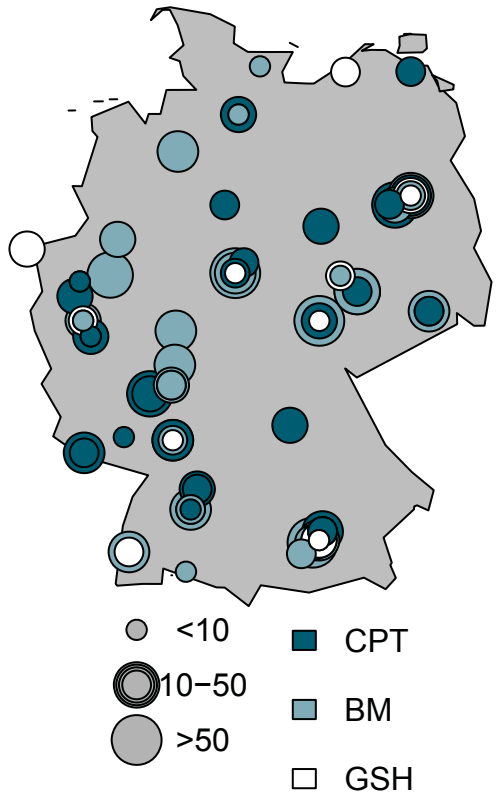

Fig. 1.2. Distribution of PhD student responses over Germany. Small circles (< 10), stripped circles (10 - 50) and big circles (> 50) correspond to the number of responses. The three colors correspond to the three sections as indicated in the legend.

1.2. Age distribution

Like nationality, age is also very variable among PhD students at the MPS. In Fig. 1.3 we see that it spans a whole decade, from students in their early twenties to those in their early thirties. The peak age of PhD students is 28. It is also interesting to note that the students who responded the survey are at very diverse stages of their PhD. The survey was responded to at the beginning of 2012, and as shown in Fig. 1.4 most of the students were in their fourth year or lower (having started in 2009 or after). However more than 15% of the students started in 2008 or earlier, indicating that a significant fraction of PhD candidates take much longer than the expected three years to complete their thesis (Fig. 1.4).

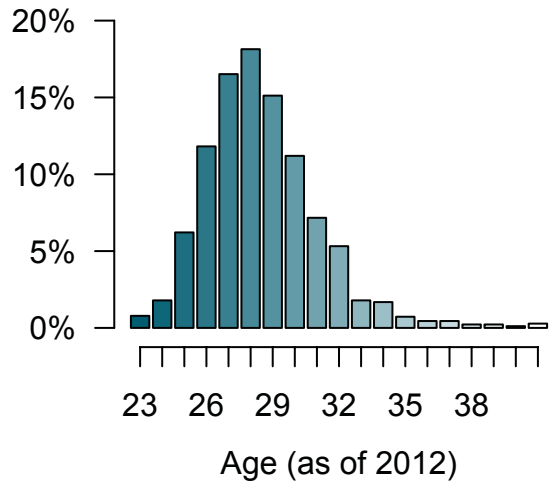

Fig. 1.3. Age distribution of PhD students. Note that the peak age is 28.

1.3. Gender disparity in different sections

Gender equality is a very important aspect in academia. It is thus important that we pay attention to how gender correlates with different aspects of the students lives . Here we provide some demographic data of students.

While females are a big fraction of the body of PhD students (around 40% of the total), their representation is still well below parity (see Fig. 1.5). It is worth noting that this disparity shows remarkable differences among sections. On the one hand the CPT section has the largest disparity, with almost twice as many male PhD students as female ones; on the other the BM and GSH sections have virtually the same percentage of

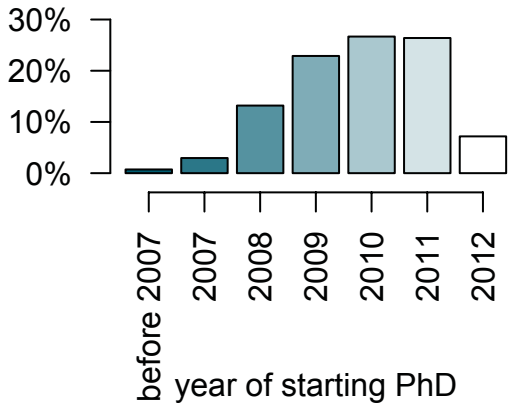

Fig. 1.4. Year of starting the PhD. Even if the survey was taken in early 2012, there is still a large percentage of PhD students that have begun in 2008 or earlier.

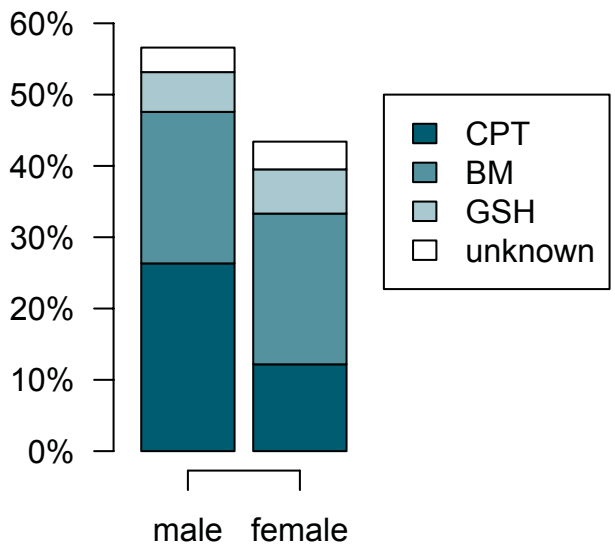

Fig. 1.5. Distribution of genders, total and over sections. The number of males in the CPT section roughly doubles that of females.

female and male PhD students, with a slight predominance of females in the BM section (see Fig. 1.5).

1.4. Conclusions

- The percentage of students by nationalities is 60% Germans, 20% Europeans, 13% Asians, 4% Americans, and the rest from other locations (see Fig. 1.1).
- The peak age of students is 28 years (see Fig. 1.3).
- While in the GSH and BM sections the number of female and male students is similar, in the CPT section the number of males doubles that of females (see Fig. 1.5).

1.5. References

1. Data taken from http://www.mpg.de/institutes, (retrived on: 15-10-2014).

2. Working conditions

Working conditions play an essential role to ensure best performance and development of employees. This is especially important for PhD students, who are usually at the beginning of their careers. Optimal working conditions may bring forward brilliant, creative and motivated researchers. In contrast to that bad working conditions can not only inhibit such a development but also make employees sick.

There are many aspects that influence the quality of working conditions. Proper management and leadership provide an optimal workplace, good guidance and a relaxed atmosphere among workers. Also an employee needs possibilities to balance out his/her work and private life. Especially employees who parent a child need opportunities to combine work and private life to handle both appropriately.

This section portrays the working conditions of the Max Planck PhD students.

2.1. Satisfaction

Satisfaction in general plays an important role for the capability to work creative, motivated and efficient. Here we report how satisfied PhD students within the Max Plank Society are in several key factors of working conditions.

Walking on sunshine – Satisfaction with working conditions

Overall 13% of the PhD students report a very high satisfaction and 53% are satisfied (Fig. 2.1), whereas 11% complain about low or very low satisfaction. The participants are especially happy with the labor equipment and the work environment, where 85% and 80% respectively report very high or high satisfaction. The evaluation of the scientific support and workload reaches more diverse numbers. Here 64% and 52% respectively are very highly or highly satisfied and 16% and 12% respectively lowly or very lowly. In contrast to those values, salary and benefits is evaluated poorly. 28% still are very highly or highly satisfied with their payment. 43% rate the satisfaction with the salary “low” and “very low”.

Although the overall satisfaction is high in general, it differs amongst different sections. PhD students of the BM section (60% high or very high) are less satisfied, than the CPT and GSH sections (70% high or very high).

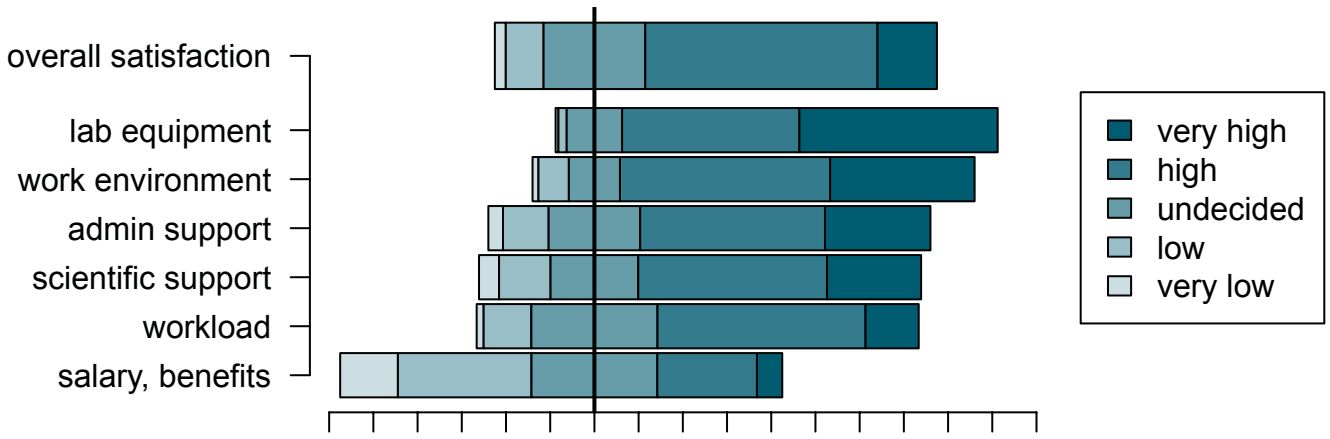

Fig. 2.1. Satisfaction with working conditions. Each bar illustrates 100% of the responses respectively, the distance between two ticks of the x-axis is 10%. The base line is set in the middle of undecided. Left from the baseline: unsatisfied participants; Right from the baseline: satisfied participants.

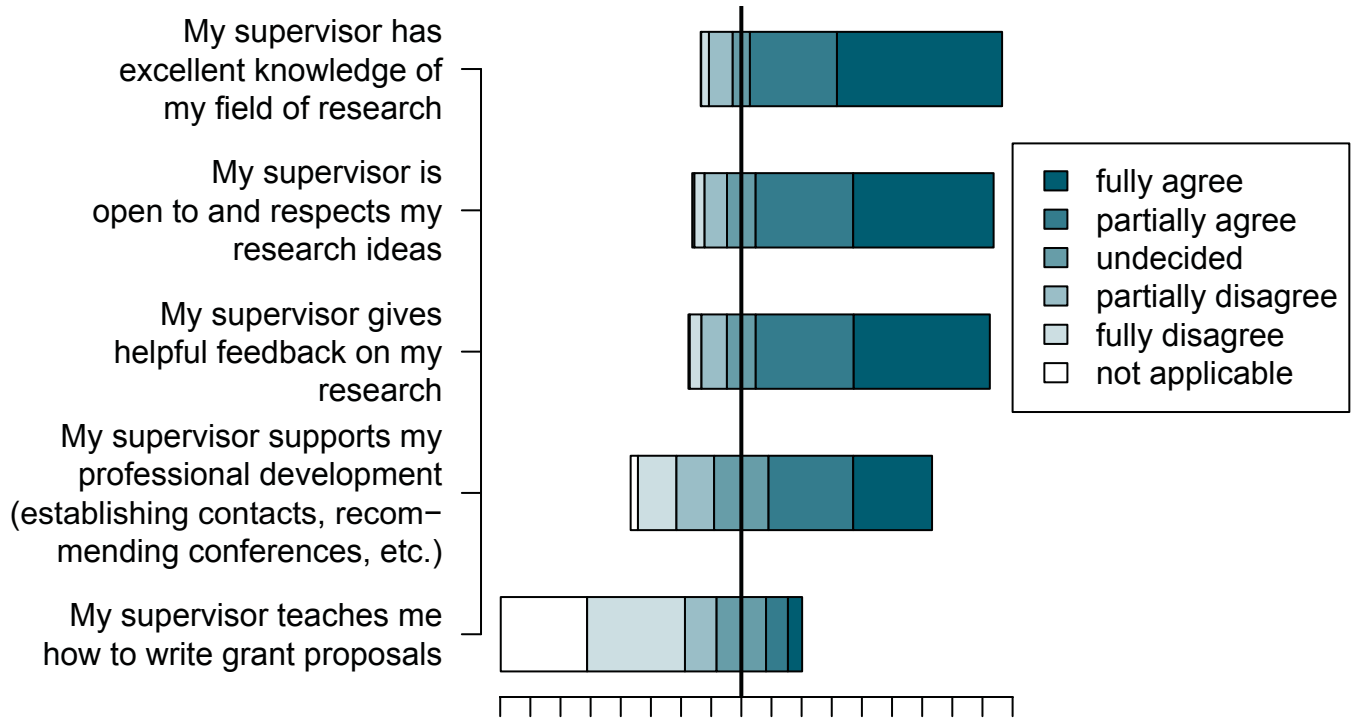

Fig. 2.2. Supervision for the Max-Planck PhD students I. Each bar illustrates 100% of the responses respectively, the distance between two ticks of the x-axis is 10%. The base line is set in the middle of undecided. Left from the baseline: participants that disagree with the statement; Right from the baseline: participants that agree with the statement. "Not applicable" is sited at the end of the left side.

Conclusions

- Most participants are highly satisfied in all questioned points, except for salary.

2.2. Supervision

The PhDnet Survey 2009 [1] clearly indicated a crucial role of supervision for the satisfactory completion of the PhD thesis. Therefore the supervisor should be chosen very carefully. But how should this decision be made? Which aspects of supervision have influence on satisfaction? This section examines those questions and also shows by whom and how frequently the PhD students are supervised.

Follow my lead - Who is your Supervisor?

The doctoral thesis supervisor can be a professor, a junior professor or a group leader. This is why in most cases those supervisors are professors or group leaders. Nevertheless, the doctoral thesis supervisor may direct a senior scientist or even a

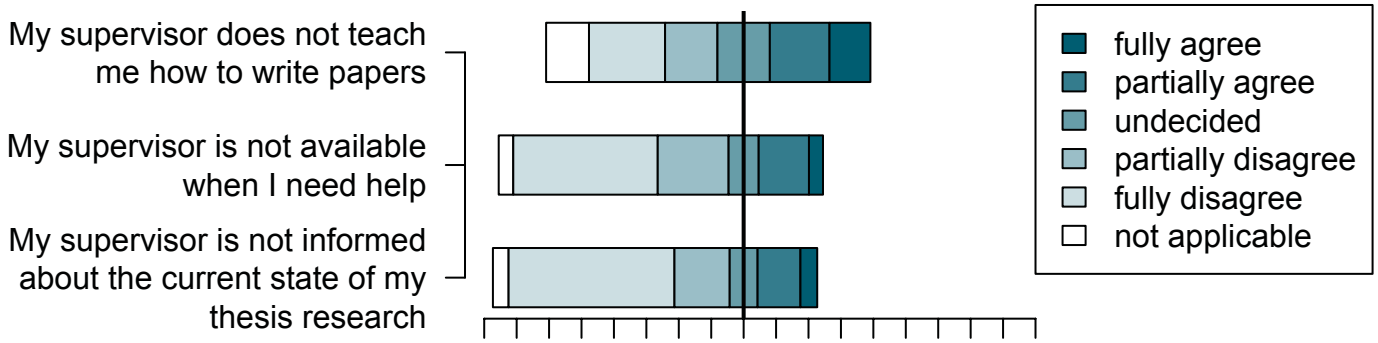

Fig. 2.3. Supervision for the Max-Planck PhD students II. Each bar illustrates 100% of the responses respectively, the distance between two ticks of the x-axis is 10%. The base line is set in the middle of undecided. Left from the baseline: participants that disagree with the statement; Right from the baseline: participants that agree with the statement. "Not applicable" is sited at the end of the left side.

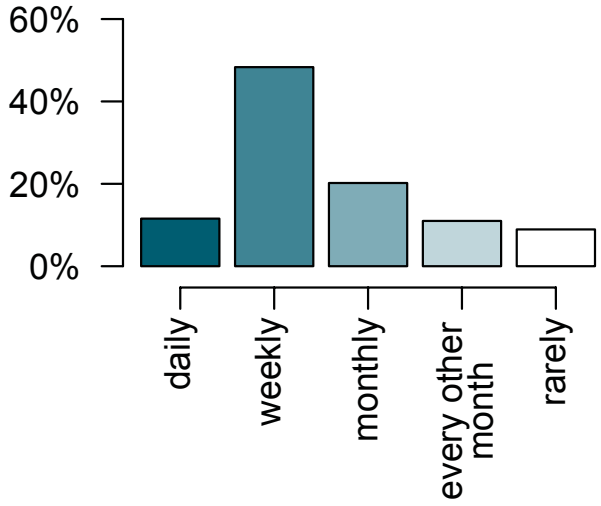

Fig. 2.4. How often do you meet and talk about your project with your supervisor?

postdoc to take over the day-to-day supervision. Half of the participants (47%) are supervised directly by their group leader and some even by an institute director (8%). 23% get their supervision from senior scientist or postdocs. It was noted that 19% report that they have no day-to-day supervision at all. The majority of the participating PhD students chose their supervisor themselves (data not shown).

Scientific knowledge of the field of research is very important for a successful guidance of the PhD thesis. About half of the participants fully agree that their supervisor has excellent knowledge on his field and 29% partially agree (Fig. 2.2). Overall 10% rate the scientific knowledge of their supervisor rather low.

Being informed about the current research of the field is not enough. An up-to-date knowledge of the researchers work is essential to push the project forward and give constructive support. 68% of the PhD students fully or partially agree that the supervisor is informed about their thesis (Fig. 2.3) and 78% think that he/she gives helpful feedback on it (Fig. 2.2). However, almost 20% of the participants believe or at least partially agree that the supervisor is not informed about their current research. 12% state that the supervisor gives rather unhelpful feedback.

It does not really matter how good the supervisor is when he/she is not available for his/her students. 4% of the PhD students miss the help of their supervisor, for he/she is not accessible. 16% report that their advisor is not available in many cases. 66% can reach their supervisor most times they need help (Fig. 2.3).

A supervisor should support his/her PhD students in the preparation of their further careers. To progress their scientific career, PhD students need to establish contacts with other workgroups for example by collaborations or conferences. 60% of the participants feel supported by their supervisor on that matter (Fig. 2.2). A scientific career also requires the ability to write scientific papers. In many cases starting a postdoc requires an application for a grant. About a quarter of the PhD student state that their supervisor does not or only poorly teach them how to write a paper (Fig. 2.2). Only 10% report that their supervisor does teach

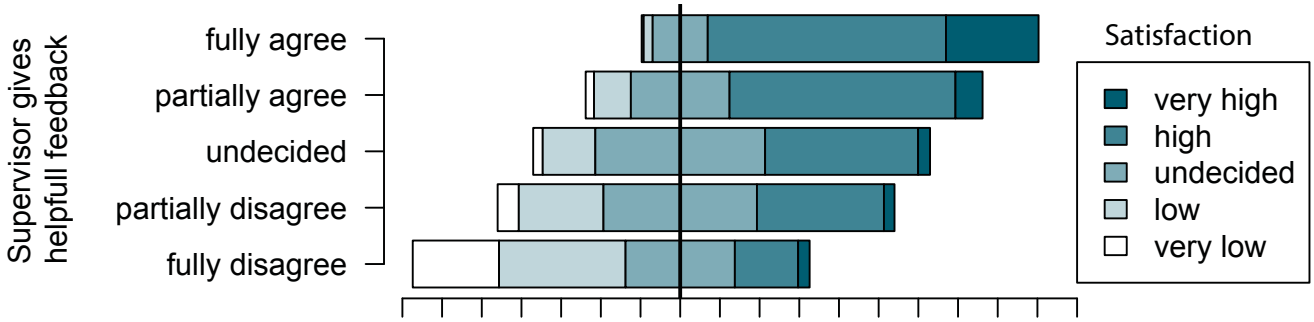

Fig. 2.5. Effects of supervision on overall satisfaction: “My supervisor gives helpful feedback on my research”. Each bar illustrates 100% of the responses respectively, the distance between two ticks of the x-axis is 10%. The baseline is set in the middle of undecided. Left from the baseline: unsatisfied participants; Right from the baseline: satisfied participants.

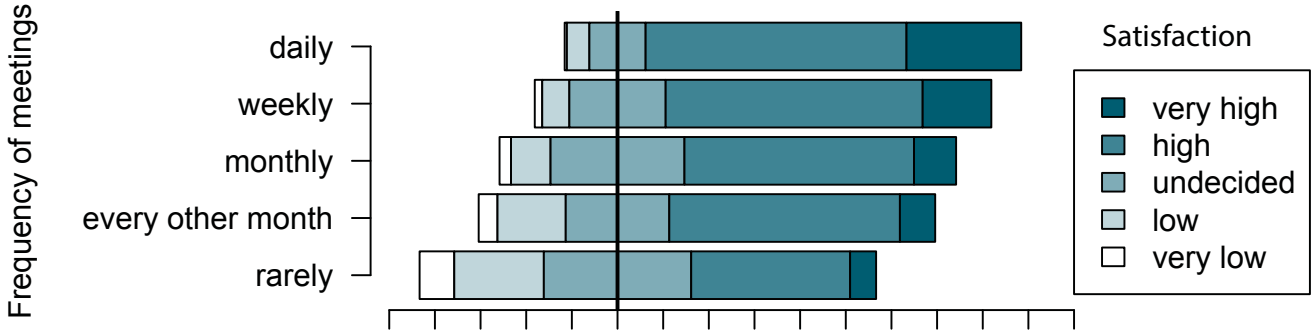

Fig. 2.6. Effects of supervision on overall satisfaction: Frequency of meetings. Each bar illustrates 100% of the responses respectively, the distance between two ticks of the x-axis is 10%. The baseline is set in the middle of undecided. Left from the baseline: unsatisfied participants; Right from the baseline: satisfied participants.

them how to write proposals for grants. However, 30% indicate that they do not need this soft skill by marking "not applicable".

Most PhD projects should be overseen by an experienced supervisor on a regular basis [2]. It is highly common to have a weekly meeting with the supervisor (47%) (Fig. 2.4). However, 9% of the participating PhD students discuss their project only rarely with their advisor.

Happily ever after - Effects of Supervision on Satisfaction

Proper supervision plays an important role for a successful PhD thesis. Thus, the effects of supervision on overall satisfaction were evaluated. As Fig. 2.5 indicates, helpful feedback is related to overall satisfaction. Around 80% of the participants, who think their supervisor gives helpful feedback, report their overall satisfaction is very high or high. In contrast only around 20% of the PhD students who disagreed on those matters are very highly or highly satisfied.

The effects of the supervisor´s knowledge of the research field are lower, but still distinct. Around 75% of the participants who believe their supervisor´s knowledge is excellent, state a very high or high overall satisfaction. This is the case for only 33% of the PhD students who rate their supervisor´s state of knowledge negatively[1].The analysis for the statement "My supervisor is open to and respects my research ideas" shows a similar pattern[2].

Not only the quality but also the frequency of the feedback might have an impact on the overall satisfaction of the PhD students. Fig. 2.6 illustrates that participants who often encounter with their supervisor are most satisfied. More than 80% of the PhD students who talk with their advisor on a daily base are very highly or highly satisfied. In contrast this is the case for only 40% of the participants who meet their supervisor rarely.

Another important issue for the satisfaction of our participants is the availability of the supervisor and his/her interest in the thesis research. Fig. 2.7 shows the effect of availability on satisfaction. The supervisor´s interest on the current state of the thesis was evaluated, and showed a similar pattern. Again around 80% of the participants who believe that their supervisor is informed about their research are very highly or highly satisfied (data not shown). This high percentage also applies when their supervisor is available for help (Fig. 2.7). In contrast only 40% of the students who can not reach their advisor when support is needed, report an overall satisfaction which is very high or high. 45% of the participants who fully agreed, that their supervisor is not informed about their current state of research, report a very high or high overall satisfaction.

[1]"Overall Satisfaction" and "My supervisor has excellent knowledge of my field research" significantly correlates with each other, r=0.25.

[2] "Overall Satisfaction" and "My supervisor is open to and respects my research ideas" significantly correlates with each other, r=0.37.

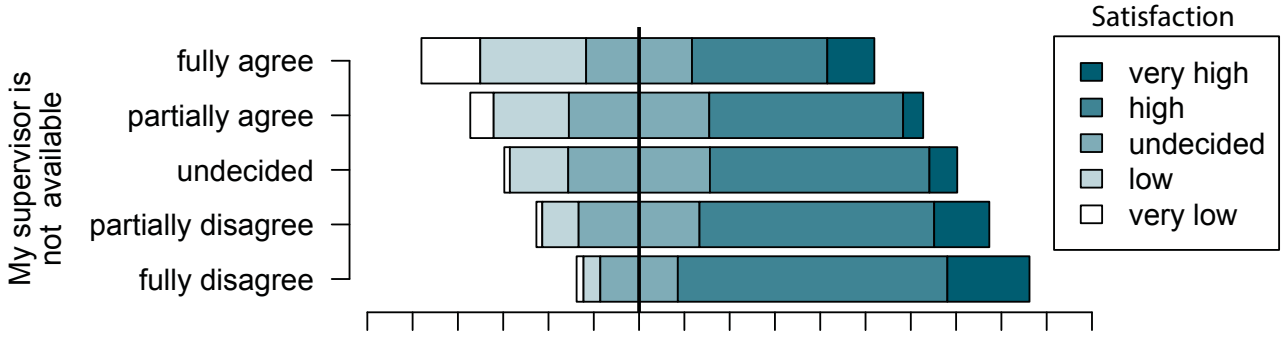

Fig. 2.7. Effects of supervision on overall satisfaction: "My supervisor is not available when I need help". Each bar illustrates 100% of the responses respectively, the distance between two ticks of the x-axis is 10%. The baseline is set in the middle of undecided. Left from the baseline: unsatisfied participants; Right from the baseline: satisfied participants.

Conclusions

- The majority rates the scientific competence of their supervisor high.
- 20% have difficulties to contact their advisor when they need help and also 20% talk to their supervisor every other month or rarely.
- PhD students who evaluate their supervision positively are more satisfied in general.

2.3. Work life balance

The balance between work and life can be hard to hold. If work dominates too much, it will potentially lead to dissatisfaction or psychological disorders. Work life balance can be affected by workload, available holidays and access to stress relieving offers like sport facilities or rooms to relax. One way to minimize stress at working places can be to optimize the working conditions. More and more employers provide work life balance offerings to make sure that their employees can work efficient and stay healthy. This section evaluates the work life balance situation for PhD students in the Max Planck Society.

Time flies - How do we spend our working hours?

Workload is an important factor for work life balance. The PhD contract states that the working time should be 38.5 or 40 hours depending on the contract and the pay scale area. Additional working hours are not paid in general. For scholarship holders there is no fixed working time.

Fig. 2.8 (a) shows that only 20% of the participants work between 37 and 40 hours and a minority of 6% works less. 74% report that they work more than 40 hours per week and 9% even more

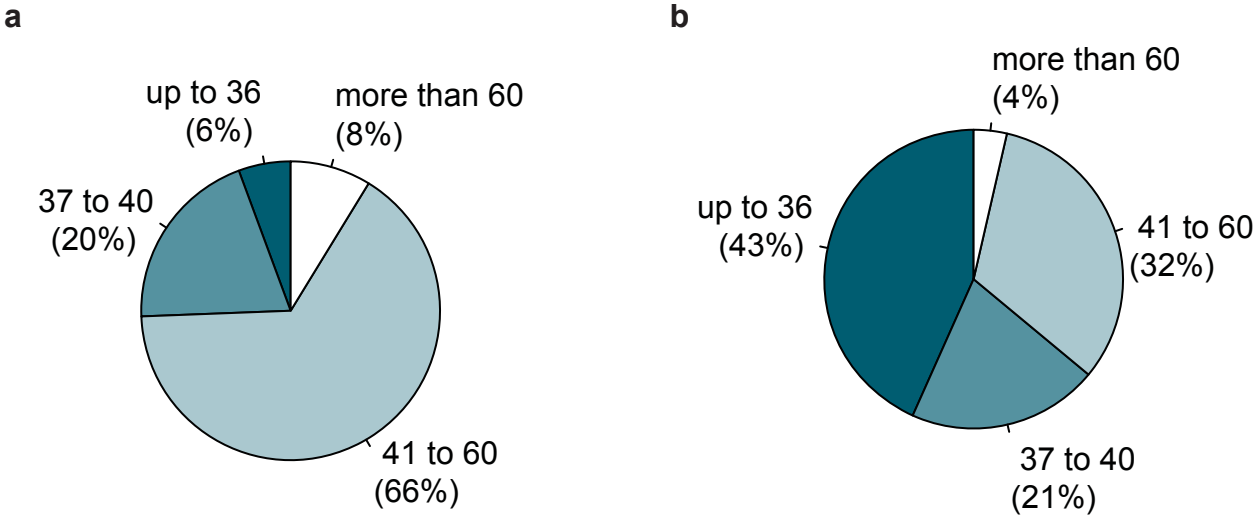

Fig. 2.8. (a) Total working hours per week; (b) Working hours of scientific work directly related to the PhD project per week.

Voices of the survey

How could the working conditions in your institute be improved to increase your scientific performance?

"Having more postdocs, experts who work in my speci c area, so I can learn more from them"

"If people were approved for what they are doing, life would be much more pleasant."

"Sport facilities"

"Hire less people, give them better supervision."

"Accept more innovation from PhD students"

"Institute resources, that are managed by the admisinstration should not be prefferentially given to administrators, e.g. apartments."

"I see a culture of independent attempts of getting papers, rather than a culture of learning."

"Doing research in groups, not individually."

"PhD projects should be clearly de ned at the beginning of the project, as it is common for scienti c grants, deviations from the plan should be in accordance with the supervising committee."

"More trainings on eldwork methodology, project managment, relevant software."

"I think it is not healthy if your supervisor, your director (and thus employer) and your PhD main examiner are united in one person."

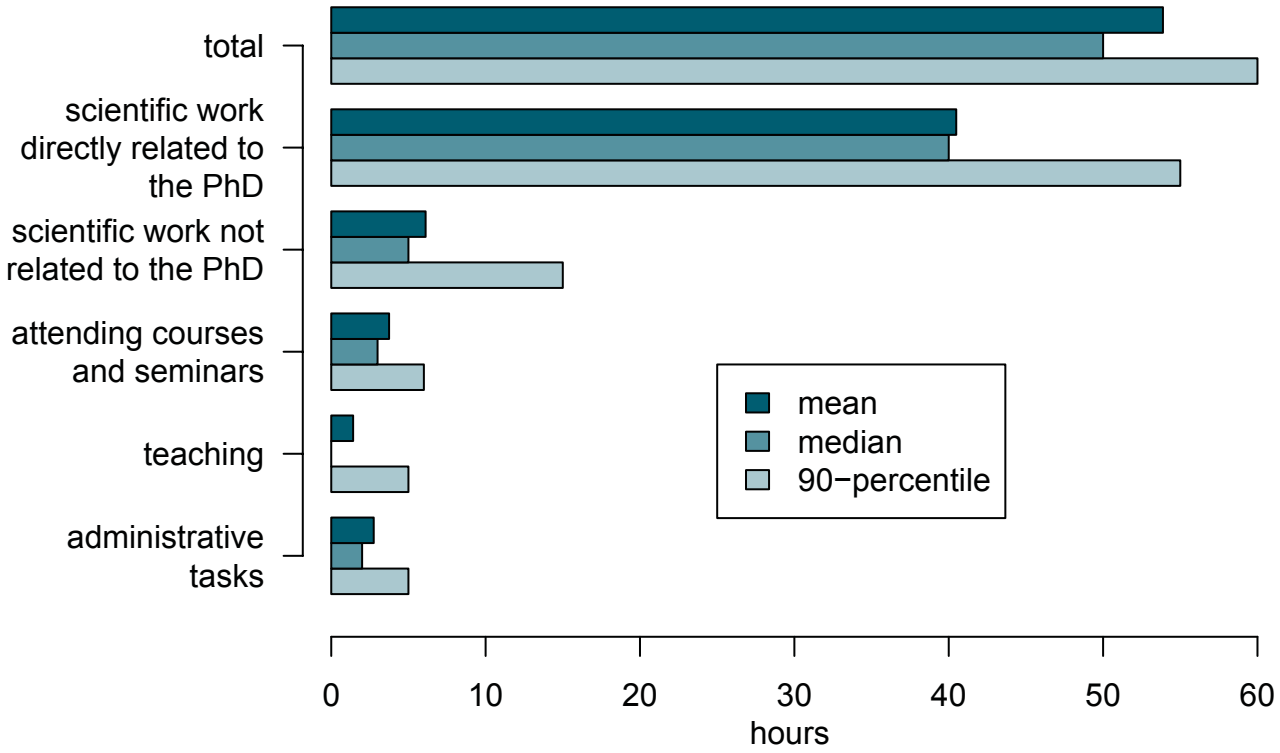

Fig. 2.9. Mean, median and 90% percentile for working hours on different tasks. Although the working hours are not normal distributed, the average is close to the median in most cases.

than 60 hours. The median is 50 working hours per week, which is equivalent to 10 hours per workday.

According to the Max Planck contract, the majority of the work hours should be spent on scientific work and at least half of it for the PhD project itself. Only 36% of the participants spend more than 41 hours of their labour time for scientific work directly related to their PhD (Fig. 2.8 (b)). 21% report to spend 37-40 hours and 43% less than 37 hours. The median working hours per week are 40, which is 8 hours per workday. This means that the scientific work directly related to the PhD project accounts for 80% of the general labour time. The median value for scientific work that is not related on the PhD project is 5 hours per week.

Beside scientific tasks, there are further responsibilities that PhD students have to attend. PhD students visit seminars and courses for 3 hours per week (6%). Administrational tasks consume 2 hours per week (4%) and the median for teaching equals zero. Nevertheless 10% of the participants spend at least 5 hours per week for teaching (Fig. 2.9).

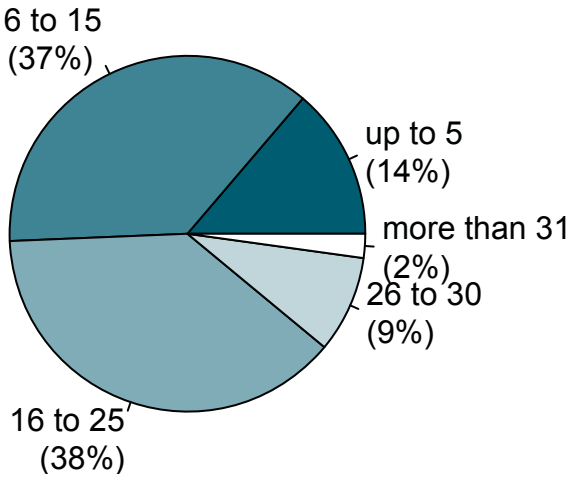

Fig. 2.10. Taken vacation days in 2011

Give me a break – about holidays

The number of available vacation days depends on the type of contract and the state of the institute. It is usually around 20 days in the PhD contracts and up to 29 for TvöD contracts. Scholarship owners should have the freedom to take vacation days without applying for them.

Fig. 2.10 shows that 38% of the participants took 16 to 25 holidays at 2011, which is around the granted number of vacation days. 51% of the PhD students took less than 16 days and 14% of

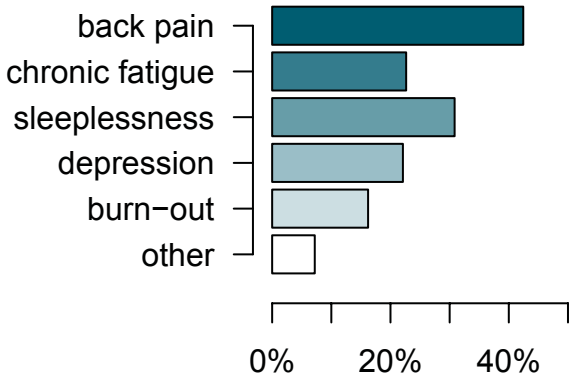

Fig. 2.11. “Have you had problems with any of the following?” 33% report no problems with any listed illnesses.

them only up to 5 days. More than 26 vacation days were taken by 11% of the participants. 2% of them took more than 31 days. The median is 15 days.

Sick and Tired – Stress induced illnesses

In this survey we asked the participants if they suffered illnesses that are typical consequences of overloaded work time, stress, and poor work life balance. Those complaints are self-reported and not necessarily diagnosed by a medical doctor.

Back pain is a widespread affliction that can be induced by very different causes. For example stress, too little movement or remaining in sitting position for long periods can be possible causes. In our case 42% of the participants suffer from back pain (Fig. 2.11).

Sleeplessness, chronic-fatigue and depression are in many cases consequences of mental distress and can be part of the burn-out syndrome. The burn-out syndrome is an emotional, mental and physical exhaustion. It is a consequence of high stress levels and missing reward and acknowledgement. It has mental and emotional symptoms like depression, listlessness, loss of motivation and cynicism. There can also be physical symptoms, which vary quite a lot and are typical stress symptoms in general [3]. Some of those were reported by the participants (7%) as “other” symptoms for example stomach pain, chronic headaches, eye problems and tinnitus. Burn-out syndrome often has a severe course of disease and can lead to an inability to work for years. In

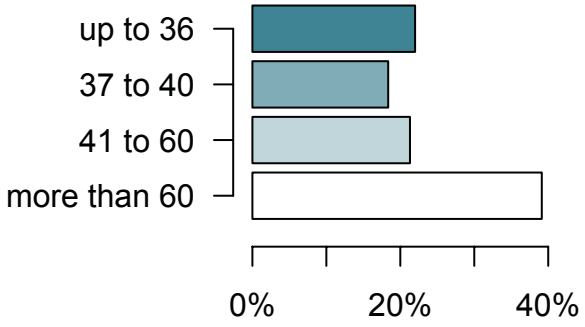

Fig. 2.12. Effects of working hours on depression: proportion of PhD students who suffer depression, that work up to 36, 37 to 40, 41 to 60 or more than 60 hours..

our survey, 16% of the participating PhD students suffer burn-out. 23% report chronic fatigue, 31% sleeplessness and 22% depression.

High stress can lead to an accumulation of stress symptoms. Many participants complain about more than one illness (42%), but few suffer more than three (8%). Only 33% of the participants reported no health problems.

Given the frequency of stress induced illnesses, it becomes obvious to ask about possible correlations. Students that are highly satisfied suffer less health problems in general. For example only 46% burn-out affected students report “high” or “very high” satisfaction. In contrast participants that are not suffering burn-out syndrome are 70% “highly” or “very highly” satisfied. A correlation between supervision and health condition is indicated, too. About 90% of the PhD students, who fully agree that their supervisor gives helpful feedback, do not suffer from burn-out. This is the case for only 59% that fully disagree on that matter. Regarding the general workload, the PhD students that report to work more than 60 hours, experience stress induced illnesses more frequent than others. This trend is apparent for all surveyed illnesses, but most distinct for depression (Fig. 2.12).

Work life balance options at Max Planck Institutes

There are several ways to avoid health problems due to high workload and intense stress. Some of them can be provided or at least supported by employers. The survey specifically asked for a few possibilities. Most common within the PhD students of the Max Planck society are informal get-

Voices of the survey

Which offers concerning an improved work-life balance would you like to see in your institute?

"A gym and outdoor sport facilities."

"Better/more daycare facilies."

"First of all: sticking to basic rules of work, i.e. weekends, accepting working hours etc."

"Music room, tness room, game room."

"Social gatherings and more tness activities."

"Stress management seminars, yoga classes, tness courses."

"After school activities for kids and a room for the kids to meet and do homework."

"Be able to access institute-network from home."

"Showers would be great to get to the institute by bike or running."

togethers, which are reported by 70% of the participants. Around 50% have access to a childcare facility. 26% report offered fitness courses and 21% can use a gym. Stress management courses are reported by only 7% participants. 13% state that their institute provides none of those options. Interestingly, in many cases members of the same institute answered those questions differently. This suggests that many PhD students are not aware of the offers their institute provides.

The survey also asked which other options for work life balance improvements institutes offer for PhD-students. Some reported support for massages, sauna, back pain courses, sport events, excursions and happy hours. Many participants stated, that their institute has a social room, a lounge and/or kicker tables/table tennis. Some of the students are glad about German courses that help them to integrate into the German culture. However, many students could not report about any support by their institute.

Of course the survey participants also had the opportunity to express wishes about offers concerning work-life balance they would like to receive. An overwhelming majority wishes for physical training. They want well equipped gyms, fitness courses, access to sport facilities, dancing courses, a discount for nearby gyms and so on. Many students wish for stress management and work life balance courses or psychological counseling. Additionally, some of them need childcare options and more support for childcare issues in general. Others want more informal get-togethers, like for example beer hours. Some require a bed or a couch to rest and sleep on. A few want more social rooms like lounges, cafeterias, game rooms, kitchens and access to better food. Also a few need more possibilities to manage their time and the opportunity to work at home (See also Voices of the survey on this page).

Let´s make a change – Increasing the performance

Another interesting question in the survey was "What could be done to increase your scientific performance?". Here, the answers were also given in written form and are very diverse. Anyway, we attempt to give a short overview of the most frequent wishes. Numerous students want better communication in general and more feedback from their supervisor. They wish for more support and fairness from their supervisor and would like to see him/her more often. They also think that better organisation of the PhD project would help them a lot. A few PhD students desire better work atmosphere and teamwork (See also Voices of the survey on page 14).

Also few think that more money for lab equipment, scientific work and technicians would promote their scientific work. Also more postdocs could help to improve their scientific performance. Some want less pressure and more opportunities for work life balance.

Several PhD students require offices with less people to be able to work concentrated. In many cases they would even accept smaller workspace for this. Others need more workspace in general.

Another thing that could be improved in the eyes of a lot of participants is the administration, especially its transparency. Some think that higher salary and more contracts would improve scientific performance.

Conclusions

- Over 80% of the PhD students work more than 40 hours. The majority of their time is spent on the PhD project.
- The median of taken vacation days is 15.
- Two thirds of the PhD students report stress induced illnesses, over 40% even more than one.
- PhD students who are satisfied with their supervision are less likely to suffer from burnout.
- Over 60 hours of work per week is associated with high rates of depression.
- The most wanted work life balance option is the opportunity for physical training.

2.4. Parenthood

Providing a decent balance between work and life becomes especially complicated when employees have to take care of children. Raising a child requires a great deal of time and money. Given that PhD students often lack both, the next section will reveal a small part of their life situation. Of all participants only 7%, which means 123 PhD students, reported to have at least one child.

Doing it for the kids – consequences of parenthood

Most of the participants feel their supervisor (68%) as well as their colleagues (78%) appreciate them having a child. A small proportion of the participating parents (10%) partially or fully agrees that their supervisor does not. Even less (3%) feel that their parenthood is not appreciated amongst their colleagues.

Although a majority thinks their parenthood is appreciated, still about 35% female and 10% male parents at least partially agree that they experienced discrimination due to their parenthood (Fig. 2.13).

How the support for families is provided, depends on the offerings of the institutes. As Fig. 2.14 illustrates, the satisfaction with the support for parents is rather equally distributed. There are basically as many parents happy with the support as unhappy.

Parents generally believe (57%) that their parenthood has a negative impact on their scientific careers. This is particularly prominent among women, were the number reaches 75%, while among males it stays at 44% (Fig. 2.15).

The survey also asked the participating parents to comment how the working conditions could be improved for parents. The given statements clearly outline the needs of parents (See also Voices of the survey on page 19).

During working hours parents need a childcare nearby. By far most of the statements gather around this issue. Many do not find a place for their child at all. But even when available, those

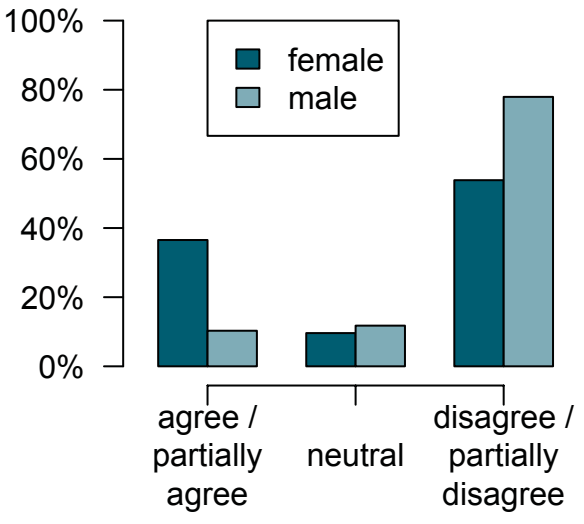

Fig. 2.13. “I experienced discrimination due to my parenthood.”

Voices of the survey

How could your institute improve the working conditions for parents?

"I appreciate the introduction of 400 € child bonus. However, I cannot see why its fair to make this available only for new stipend holders."

"Giving one extra year of contract per child, at least if it's born during the PhD."

"Recommending some childcare companies charging up to 30 Euro a day and even not covering the full work day is NO support"

"The nearby campus childcare is completely overcrowded, and you have to enlist way before the child is born to have at least a chance."

"Provide the possibility to apply for extra-money for a babysitter"

"Offer seminars in the morning, not the late afternoon."

"A kids playroom in the institute where kids could stay for some time would be helpful."

"Childcare not just for kindergarten children. A 12 year-old boy is to young to be alone all day."

"Give adaptive funding to parents that they can handle even sickness of the children which is most dif cult because every sickness pulls out one without preparation"

childcare places, like nursery school, are mostly not for very young children or school children. In some cases childcare costs a lot of money and the additional money parents get is not always enough. In case of a conference, parents have difficulties to attend because they can not afford a babysitter for several days.

Another often mentioned issue is time. It is very clear that having a child means having less time to work. That is why many parents, especially parents of very young children, wish to have more time to finish their PhD. But also scheduling group meetings and talks within the working hours of the childcare could help them a lot. Some parents would appreciate more flexible working hours and the opportunity for home office.

The third big problem is money. According to the written comments, not all PhD students receive the 400 € supporting money, but only PhD students who began after a certain date [4]. Even with this money, taking care of a child is very expensive. That is why it is very important that childcare is affordable or even free.

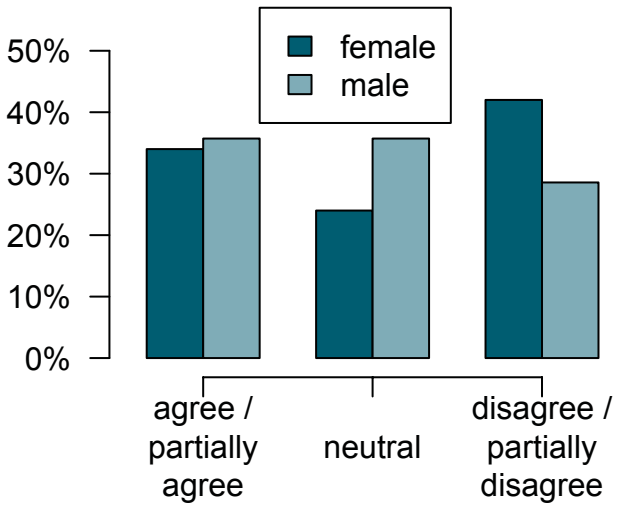

Fig. 2.14. "I´m happy with the support from my institute for parents."

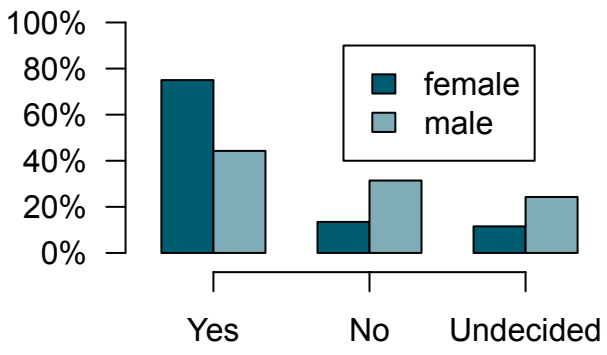

Fig. 2.15. "Do you think being a parent effects your opportunities to pursue a scientific career negatively?"

International parents are even more challenged. Especially for parents from other countries it is difficult to find a childcare. They do not have the opportunity to apply early for a childcare place and do not necessarily know how it has to be done in Germany. Some wish a childcare place that is bilingual or English. Also the already mentioned health care problems are especially delicate for foreign parents. Parents that chose an inappropriate health insurance, are not able to pay their children´s health care or find a decent doctor.

Conclusions

- The majority feels that their parenthood is appreciated by their colleagues and their supervisor.
- 37% of female and 10% male parenting PhD students report discrimination due to parenthood.
- More than half of the PhD parents think their career is negatively influenced by their parenthood.
- Most needed among parents are childcare facilities or funding for those during the day or even for several days.

2.5. References

1. Max Planck PhDnet – 3rd PhDnet Survey 2009/2010 http://www.phdnet.mpg.de/documents/PhDnet-Survey_2009.pdf
2. Guidelines for Doctoral Training at Max Planck Institutes", Intranet of the Max Planck Society, 2012
3. Burnout-Zentrum e.V. http://www.burnoutzentrum.com/
4. Max Planck Society, Circular 74/2011

3. Career perspectives

A PhD is not only a project during which a young researcher can independently explore an exciting field of interest, a PhD is also a qualication which makes the candidate eligible for certain jobs in academia as well as higher salary levels in industry. In this section we want to take a closer look at how PhD students assess their own career perspectives.

3.1. Have you thought about giving up your PhD?

For many students, writing a PhD thesis is the biggest project they ever started. While doing independent research can be very rewarding, certain moments of frustration are part of the daily routine.

We asked "Have you ever thought about giving up your PhD?". According to Fig. 5.1, 35% have responded "Yes, briefly" and 13% have responded "Yes, often". That is, almost half of all PhD students have at least briely thought about quitting their PhD project before their defense.

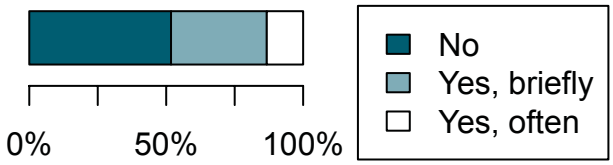

Fig. 3.1. Percentage of students that have thought about giving up their PhD

We further asked "Why did you think about giving up your PhD?" and provided the respondents with a list of options to choose from. Multiple answers were possible. Surprisingly, the main reason for thinking about giving up is the perceived "uncertain career path". This is true in both groups of respondents who answered "Yes, often" and "Yes, briefly". Further commonly stated reasons for giving up include "no or poor results", "too high pressure", and "difficulties with the supervisor". "Not enough money" or even "poor working conditions" are among the least frequent reasons for thinking about giving up the PhD (Fig. 3.2).

Answers in the category "other" included a variety of personal factors related to frustration, health issues, loss of interest, and problematic work life

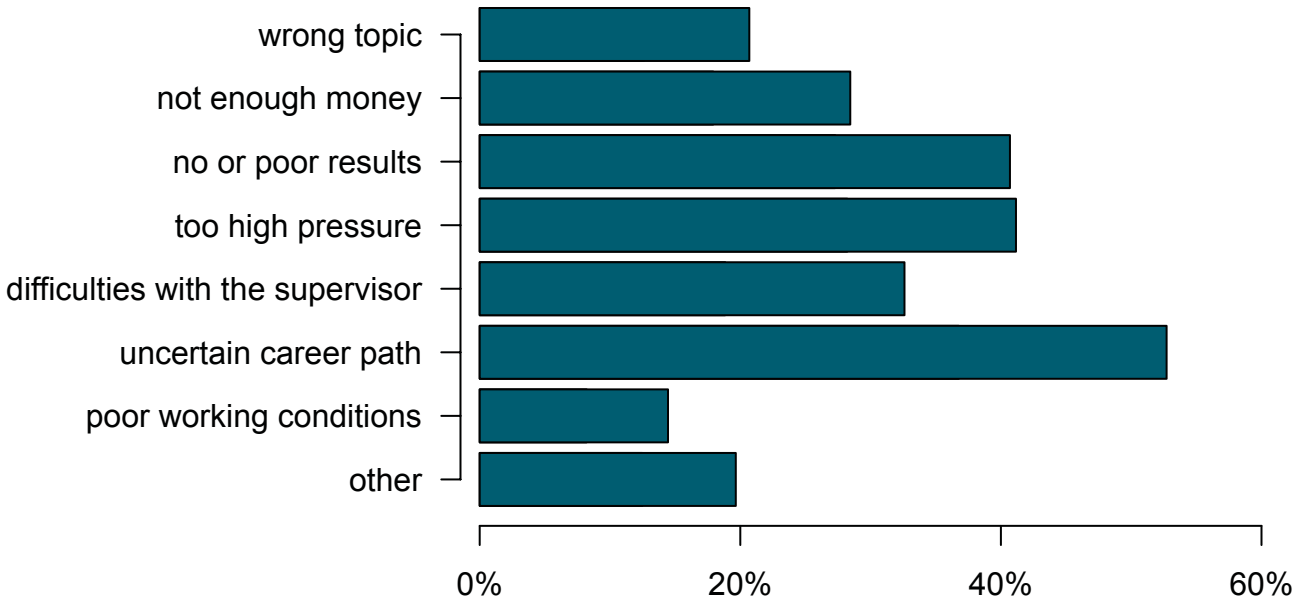

Fig. 3.2. Different reasons that made students think about giving up their career with their percental frequency.

Voices of the survey

Have you ever thought about giving up your PhD? If yes, why did you think about giving up your PhD?

"Absent supervisor"

"Atmosphere among members of the group"

"Dif culties with the group leader"

"Frustration due to experiment failures"

"General unhappiness"

"Lots of work, hard to publish in established eld, bleak career outlook"

"No other persons working in the eld at the institute"

"No positive feedback"

"No supervision at all"

"Stress related migraine"

"Too low salary"

"Felt overcharged, too much other scienti c work for a long time; nding out, that I don't want a career in science, questioning the use of the PhD for me"

"I think that I am not developing as a scientist. PhD students should participate in establishing collaborations with other people. They should go to meetings and know people from their eld. They should know more or less in which lab they want to do a postdoc."

balance, as well as professional factors related to the scientific environment and work load (See also Voices of the survey on this page).

3.2. Career plans

We asked "Do you intend to pursue a career in Germany after finishing your PhD?" Almost 3 out of 4 respondents answered yes to this question, according to Fig. 3.3. This shows that not only for German but also foreign PhD students, Germany is attractive as a place to work.

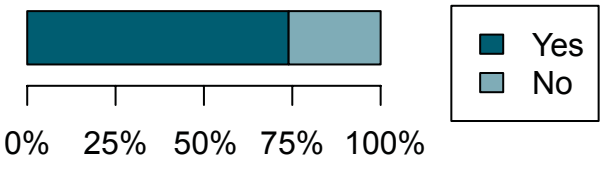

Fig. 3.3. Percentage of students that want to stay in Germany after finishing their PhD.

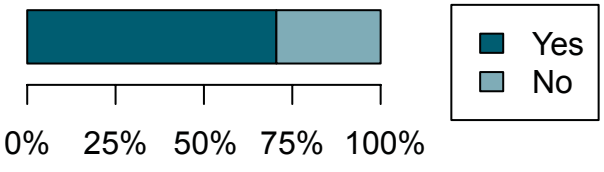

Fig. 3.4. Percentage of students that want to stay in science after finishing their PhD

Furthermore, we asked "Do you intend to pursue a career in science after finishing your PhD?" According to Fig. 3.4, more than 70 percent of all respondents answered "Yes". Despite the uncertain career path being the number one reason for PhD students to think about quitting their PhD, a scientific career seems to be an attractive option to most students.

In Fig. 3.5 we took a closer look at how many PhD students from different groups want to keep working in science, and whether there are differences. No difference can be observed between mens' and womens' desire to pursue a career in science. The percentage of students who want to stay in science is slightly higher in the BM section than in the other two sections. A significant difference can be observed between Germans and non-Germans, the latter being more inclined to keep working in science. It seems as though the decision to move to a foreign country to do a PhD is related with a strong motivation to follow a scientific career. Lastly, we observe that the desire to stay in science decreases as the time

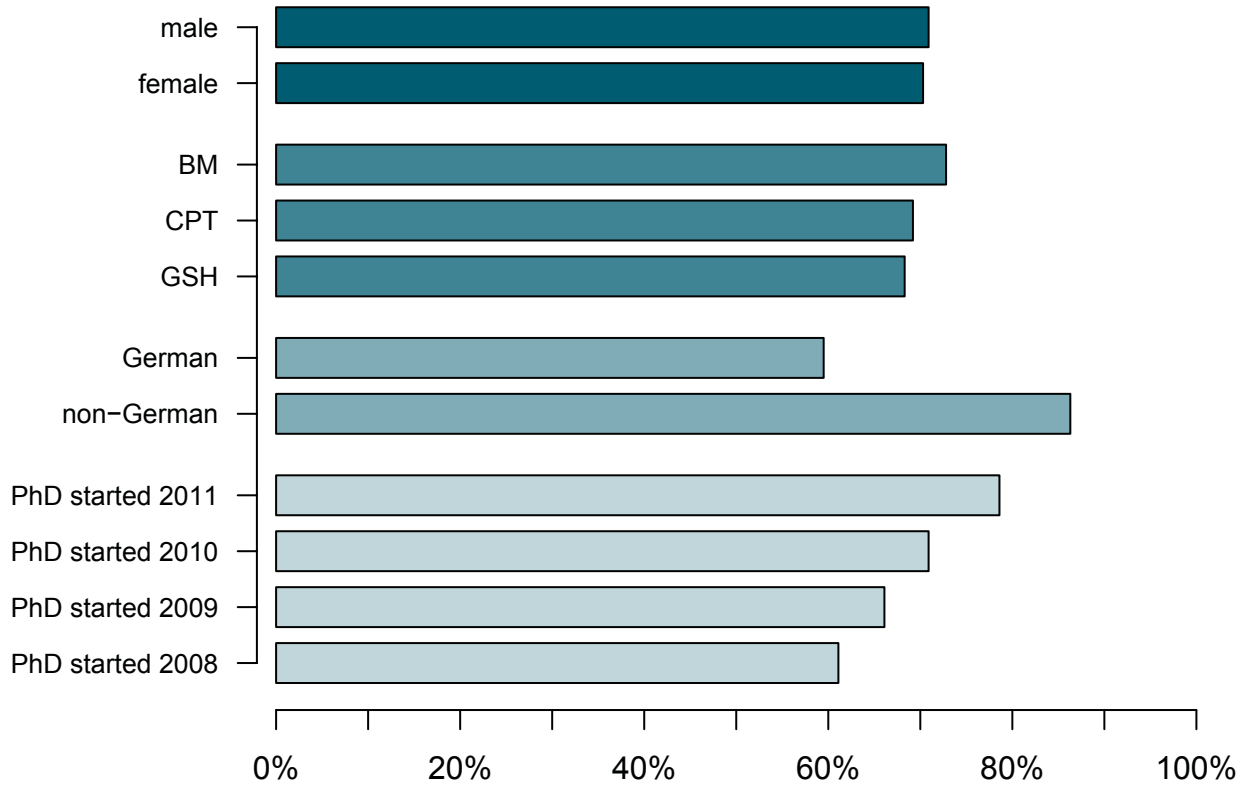

Fig. 3.5. A closer look at how many PhD students from various groups want to continue working in science.

since the start of PhD increases. Relating to section 5.1, we analyzed how thoughts about giving up the PhD is related to career plans in science. Fig. 3.6 shows that the majority of those students who never thought about giving up their PhD indeed want to stay in science. The fraction of positive answers decreases among those students who briefly thought about giving up and in the group of students who have often thought about giving up, more respondents do not want to stay in science.

3.3. Supervisor support

To better understand the role of supervision in the life of PhD students, we asked "How does your supervisor support you on your way to an academic career?" The answers are summarized in Fig. 5.7. More than half of all respondents say that their supervisor recommends conferences to participate, which highlights the perceived importance of personal relations and exchange in scientific communities. Introducing their students to important people working in the field and presenting and highlighting the students' contributions to scientific work are likewise frequently stated answers. The recommendation of postdoc positions is less frequently stated, but this option

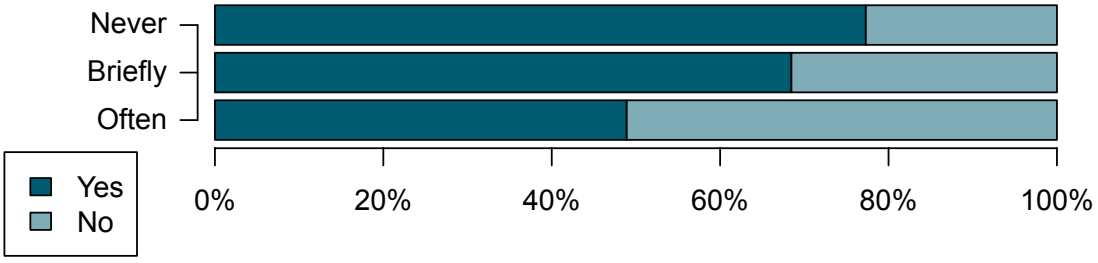

Fig. 3.6. Percentage of students that want to stay in science, separated by their thoughts about giving up their PhD.

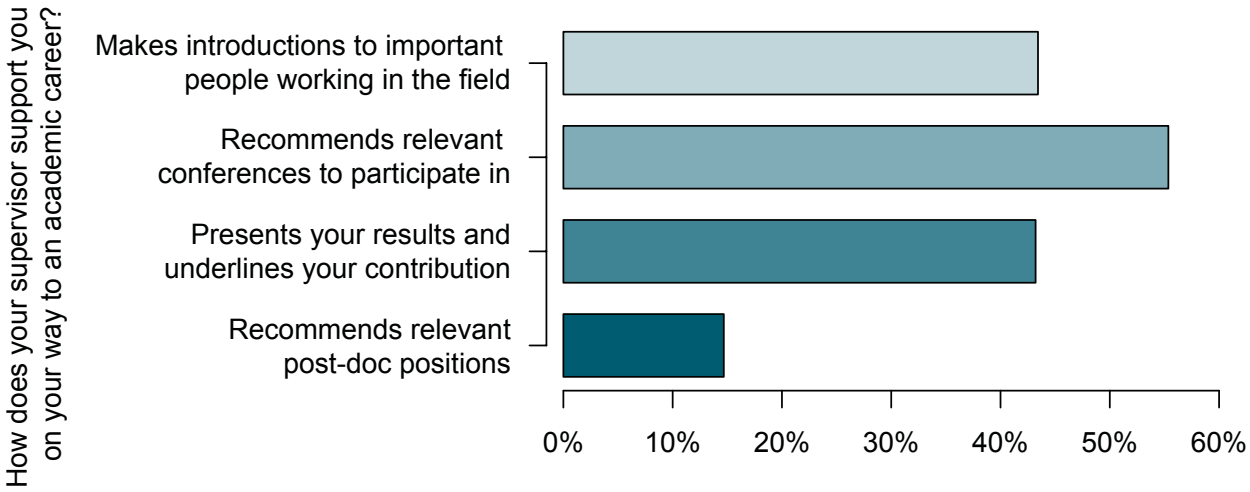

Fig. 3.7. Different ways in which supervisors support their students.

becomes only relevant towards the end of the PhD and therefore does not apply to all respondents (See also Voices of the survey on this page).

3.4. Conclusions

- Almost half of the students have thought about quitting, mostly because of an uncertain career path.
- Still, more than 70% intend to pursue a career in science.
- Supervisors support this academic pursuit mostly by recommending conferences.

Voices of the survey

How does your supervisor support you on your way to an academic career?

"In our institute, PhD students are supposed to work with post-docs."

"He lets me develop my own ideas."

"My career is not important for his research!"

"Nothing, not even present, contact about 3 times a year."

"Personal guidance, career planning, administration advices."

"Did not get support in the ways mentioned above. Only scienti c support, such as proofreading paper/thesis."

"Pays a lot attention to details, but not to a result (that every or most of the graduate students publish at least once). Doesn´t care about people, but cares about having something for the lab in total."

"Actively sets out to teach me how to do things like write abstracts, edit my writing etc.. Discusses future career options."

"Council/advice, commentaries on drafts, patience, con dence in my person and work, and general strategic hints, references."

"Brainstorming and troubleshooting."

4. Funding of the PhD students

What type of financing a PhD candidate receives is a very important part of their life as students. Fundings at a Max Planck Institute can be of three different types: contracts, stipends, or independent funding. While independent fundings are diverse in source and coverage, contracts and stipends offered by the Max Planck Society have well defined differences. For example, the benefits they offer students are not the same, contract holders having a more extensive social coverage. They are also different in the obligations they imply for PhD students: stipend holders do not have to apply for holidays or perform non-academic tasks. In this section we investigate the funding of students: what their preferences are, the differences between the tasks they perform, how the type of funding depends on nationality, and what impact funding has on their satisfaction.

4.1. Types of funding

As mentioned above funding can be of three types: contracts, stipends, and independent funding. In economic terms the net income corresponding to each funding is quite similar, as shown in Fig. 4.1.

As we see the distribution of contracts has peaks around 1,100 and 1,400 €, which correspond to typical salaries given by the MPS. The stipends distribution also has peaks around three salaries typically offered: 1,100, 1,300, and 1,465 €. Overall, the average income of stipend and contract holders is barely distinguishable. With stipend holders having an average monthly salary of 1,239 €, and contract holders 1,236 €.

It is important to note that this distribution extends to quite low salaries, thus up to 10% of survey respondents were paid less than 1,000 € per month. Furthermore, around 5% of the students answered that they were not paid at all.

When looking at Fig. 4.1 one should bear in mind that contracts include several social benefits that stipends do not. In particular, stipend holders have no extra pay in Christmas, no unemployment or pension benefits, they can be fired with

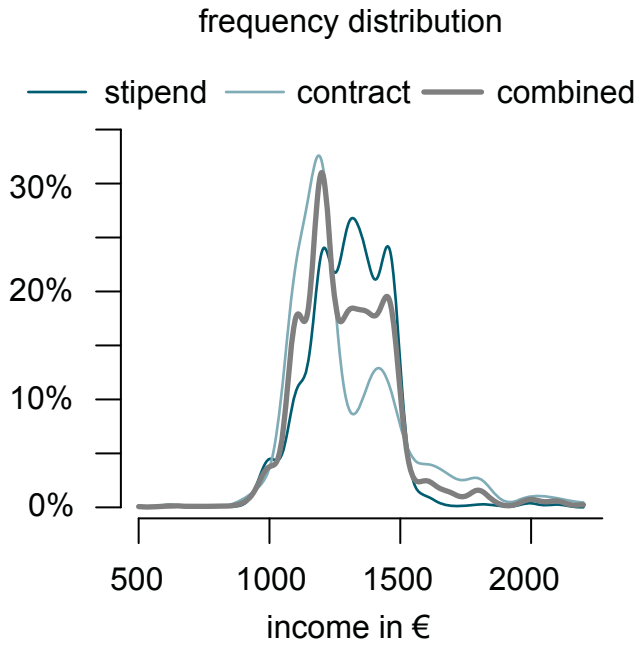

Fig. 4.1. Distribution of net income (excluding health benefits) for students with a contract (dark blue), a stipend (light blue), and total (gray).

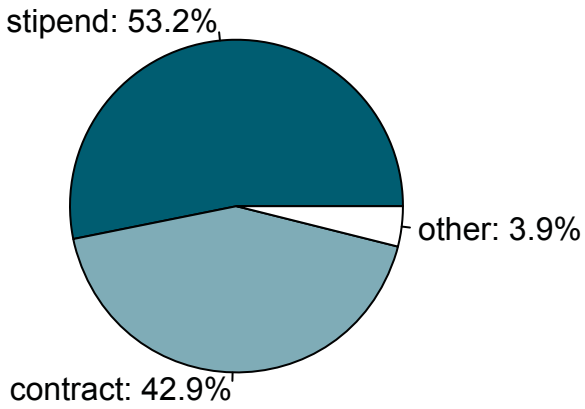

Fig. 4.2. Percentage of students funded with stipends (dark blue), contracts (light blue) or another type of funding (white) as can be an external fellowship or a project grant.

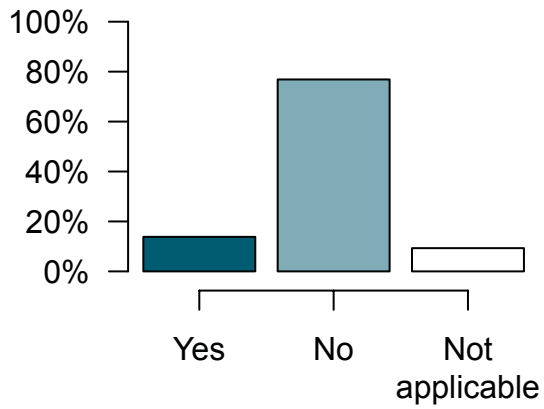

Fig. 4.3. Percentage of students that had the choice of either being financed by a contract or a stipend.

only six weeks notice (three months for contract holders), and they have to pay the full price of their health insurance out of their net income[1]. Overall, a contract costs the MPS 50% more than what the student perceives [1].

Today, funding through stipends dominates over funding through contracts by more than 10%, while a very small percentage of students (less than 5%) is financed by means other than a stipend or a contract (see Fig. 4.2 for funding distribution).

This distribution however has not been constant over time. Data is available which describes the evolution over time of contracts as the number of PhD students grew in the MPS [2]. Interestingly, while the number of contracts stayed constant over the last ten years, the number of stipends in this time period has steadily increased, until almost tripling from 2002 to 2011.

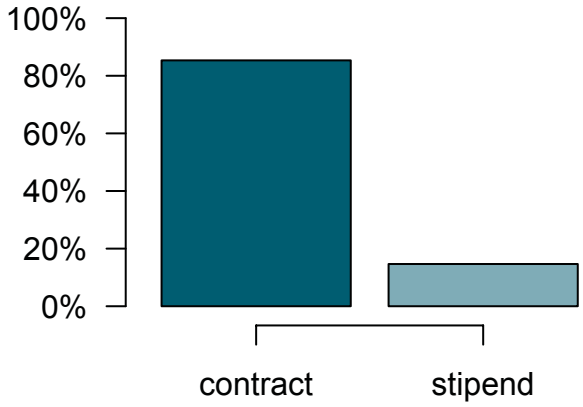

Fig. 4.4. Percentage of students that would have chosen a contract if given the choice.

4.2. Students preferences

It is important to note that most students (more than 75%) were not given a choice on their funding (see Fig. 4.3). That is, they were not asked whether they wanted to have a contract or a stipend. But while they were not asked on their type of funding, the majority of the students have the same preference, contracts. In Fig. 4.4 we see that more than 80% of the PhD students would have chosen a contract if they were given the possibility to choose.

4.3. Did students know?

Because of the differences between contracts and stipends, it is important to know whether PhD students with a stipend were aware of the implications of having a stipend. In Fig. 4.5 we see that roughly 40% of stipend holders were not informed about what it meant to be financed via a stipend. About an equal amount of them were only partly informed. This means that more than

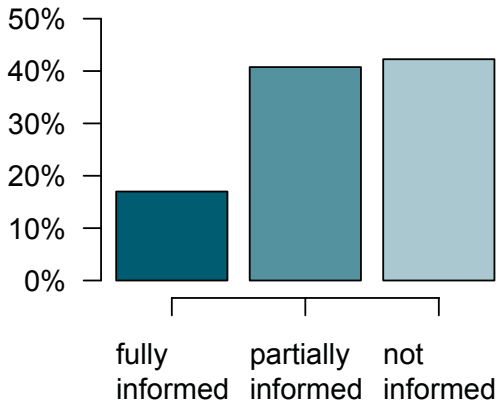

Fig. 4.5. Proportional answer among stipend holders to the question: “Were you informed of what it means to have a stipend?“ Note that less than 20% of the students have been fully informed.”

[1]While this was true at the time when the survey was taken, currently stipend holders get a financial support of up to 100 € for their health insurances.

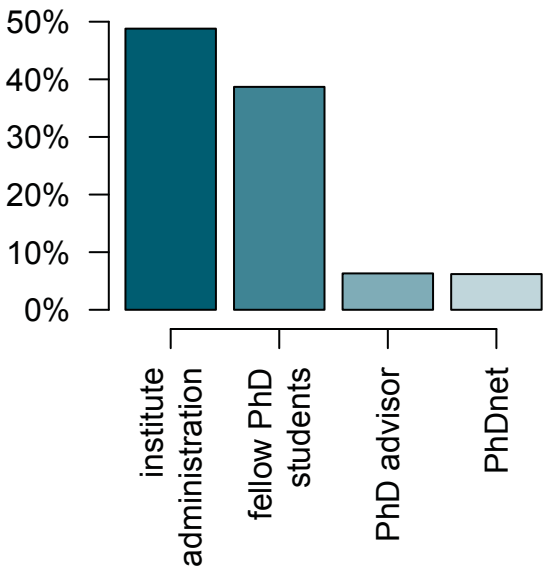

Fig. 4.6. Proportional answer among stipend holders to the question "Who informed stipend holders of their conditions"

80% of stipend holders were not adequately informed about the type of funding they were getting.

When information did arrive to students: where did it come from? Fig. 4.6 shows that of those PhD students holding a stipend that were indeed informed, less than half of them were informed by the institute's administration. The rest, were informed mostly by PhD students (around 40% of the total), and in a smaller amount by their PhD advisor or the PhDnet (about 5% each).

4.4. Relationship between funding and nationality

The role of nationality in determining whether a PhD student is financed by a stipend or a contract is a controversial long-standing issue, which even reached the European Court [2].

The current state of affairs is summarized in Fig. 4.7. On the left panel we see that about half of German PhD students are financed through a contract. This roughly doubles the percentage of non-German students with a contract (Fig. 4.7, right)[1]. It can thus be concluded that there is a strong correlation between being German and being funded via a contract.

An analysis of the three sections shows that in the CPT and BM sections a majority of non-German citizens are funded by stipend. Furthermore, in both these sections the percentage of Germans with a contract doubles that of non-Germans with a contract. This is however not the case for the GSH section, where German and non-German citizens have virtually the same distribution of funding method Fig. 4.8.

It has been suggested [3] that non-Germans prefer to be financed by stipends, which may explain the nationality dependence in Fig. 4.7. In this case the trend showed in Fig. 4.4 would change depending on nationality. However the data indi-

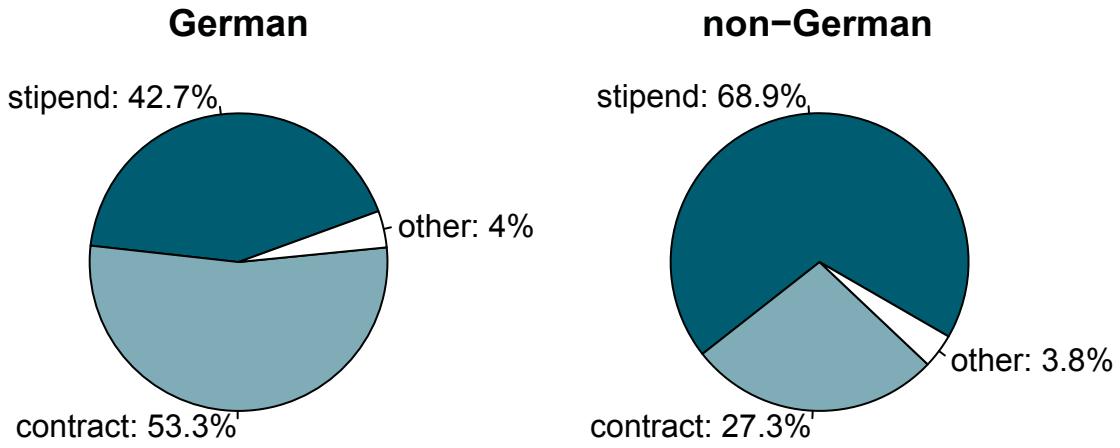

Fig. 4.7. Pie-charts representing the percentage of German and non-German students that are financed through a contract, stipend or other type of funding. Note that non-Germans are much more likely to have a stipend and much less likely to have a contract than Germans.

[1] Further separating the data, among non-europeans only 18% have a contract, while among non-German europeans the figure doubles to 36%.

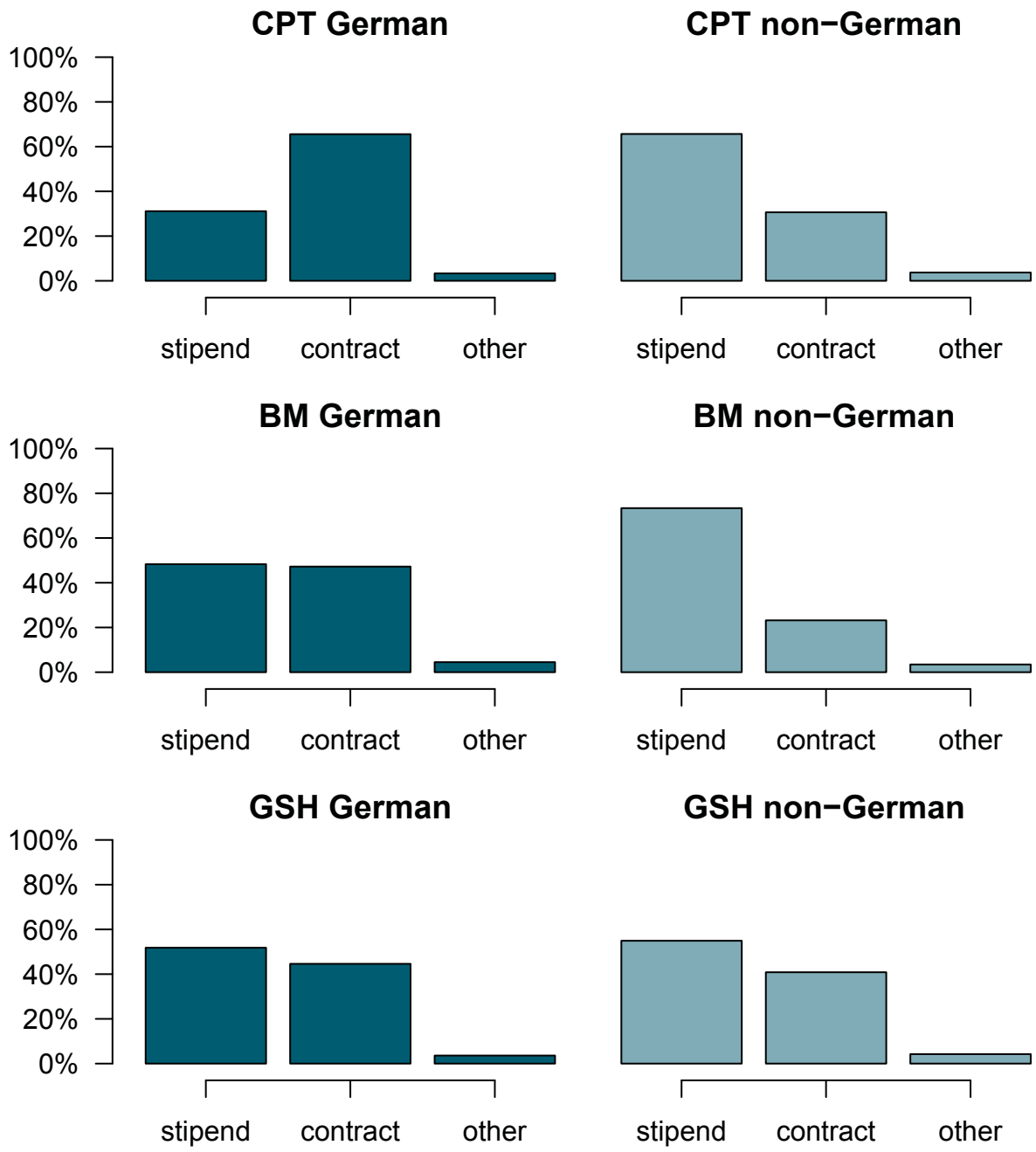

Fig. 4.8. Funding distribution depending on nationality and section. Note that the nationality bias regarding the type of funding is very visible in the CPT and BM sections, while on the GSH sections it is not.

cate otherwise: among Germans 90% prefer to be financed by a contract, among Europeans 80%, and among non-Europeans 70%. So while it is true that a smaller percentage of non-Germans than of Germans prefer a contract, the difference of preference is too small to account for the large nationality correlation in Fig. 4.8.

Finally, it is also interesting to note that whether a student is offered a choice between a stipend and a contract (that is, Fig. 4.3) also depends on nationality, particularly for non-Europeans. Indeed, 16% of Germans are offered a choice, 11% of non-German Europeans, and 10% of non-Europeans (almost fifty percent less than for Germans).

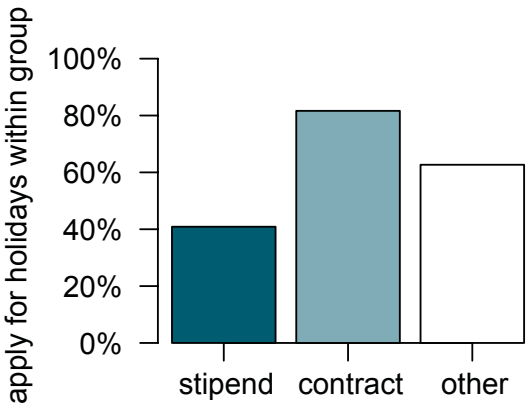

Fig. 4.9. Percentage of students with different funding that have to apply for holidays. Note that a large percentage of stipend holders have to apply for holidays.

4.5. Do different fundings imply different tasks?

Contracts and stipends differ in the duties to which they bind the students. Thus not only the salary and social benefits of contract and stipend holders are different, but also their professional obligations. Stipend holders should not hand in holiday sheets, they can perform independent research, and they should not perform non-scientific activities [3].

To address this issue data of working hours for different types of funding were compared. We report that stipend and contract holders work equally long, spending weekly on their PhD an average of fifty hours (more precisely, 49.8 hours and 48.5 hours respectively).

But not only do stipend and contract holders work roughly the same amount of hours per week, they also invest similar amounts of time in administrative tasks. Indeed, contract and stipend holders invest 3 hours per week on administrative tasks. The students were asked which tasks were they instructed to do by their supervisors. The percentages were similar for stipend and contract holders in tasks such as showing guests around the institute (14 % of the stipend holders had to do this task, against 18 % of contract holders), maintaining lab devices (34 % for stipends vs 39 % for contracts), or doing IT support (8 % vs 12 %).

Finally, Fig. 4.9 shows the percentage of students with stipends, contracts and others that have to apply for holidays. Students with a contract have to apply more often than those with a stipend for holidays, 80% vs. 40%. However, 40% is still a large fraction of stipend holders that have to apply for holidays, since it's legally not required of them. All of this shows that, while stipend and contract holders have in principle different tasks and obligations, in practice they do very similar work and have similar obligations.

Nevertheless, there is little difference in satisfaction between contract and stipend holders. Roughly two thirds are either highly or very highly satisfied with their PhD (66% for stipend holders and 67% for contract holders).

Differences appear in other aspects. For instance, stipend holders are more willing to pursue a career in science than contract holders. Of stipend holders 76 % want to stay in science, compared to 64 % among contract holders. On the other hand, they are less willing to pursue a career in Germany: 68 % of stipend holder want to stay in Germany as compared to 82 % of contract holders. It is worth noting that, since the majority of contract holders are German, it is natural that they are more willing to pursue a career in Germany.

4.6. What are the opinions of students?

One of the questions of the survey allowed students to add their opinion to the stipend/contract debate. In their answers students are very critical of several aspects of the current system, and show a high understanding of issues regarding funding.

They demand more transparency, alleging not being adequately informed on their arrival at the institutes. Students with stipends frequently claim the private insurances suggested to them by the institutes are cheap but offer low coverage (see also section 5). They also complain that those with high coverage are too expensive. Many students state that they prefer a contract due to the social coverage: benefits in health insurance, pension, unemployment and paternal guarantees. Furthermore, several report that the treatment for stipends and contract holders is the same in their institutes, deeming the conditions "unfair" (a

word which appears often). There are also some reports of institutes where stipends are systematically given to foreigners. Overall the system is described as shameful, unacceptable for an institutions such as the MPS, with dubious legality, and perpetuated by the passive complicity of institute directors (see also "Voices of the survey" on page 31).

But while there are many complaints, there are also signs of solidarity from students with contracts towards students with stipends. Furthermore, there are even some suggestions, such as a system in which each student could be funded for the first years by a stipend and then by a contract.

4.7. Conclusions

- Over time, students are financed more and more via stipends and rarely given the chance to choose. Non-Europeans particularly suffer from this lack of choice.
- If students had the chance to choose, most would choose a contract over a stipend. This strong preference is independent of nationality.
- Stipends are preferentially given to non-Germans, contracts are preferentially given to Germans.
- While in theory stipend holders have different obligations than contract holders, in practice they often apply for holidays, and they dedicate significant time to non-scientific activities (both duties of which they are contractually exempt).
- Students expressed their dissatisfaction with the stipend/contract state of affairs.

4.8. References

1. Estimates done using as reference a TVOeD-13/1 contract of 50%, with no kids, and no church contribution. Yearly brutto salary: 21,469.33 €. Netto: 14,646.27 €. The difference Brutto – Netto: 6,823.06 €. The costs shared by the employer are roughly equal to this difference, thus the total sum is estimated to be 28,292.39 €. See http://oeffentlicher-dienst.info/c/t/rechner/tvoed/bund?id=tvoed-bund&g=E_13&s=1&zv=VBL&z=50&zulage=&stj=2014&stkl=1&r=0&zkf=0&kk=15.5%25 for details (2014)
2. In 2004 the discrimination controversy regarding the employment of foreign workers was taken to court (see www.discriminationatmpg.info, 2014). The court ruled that the MPG must observe the principle of non-discrimination in relation to workers (see http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62007J0094:EN:HTML, 2014). Further details appear in the wikipedia entry of the Max Planck Society (2014)
3. This is one of the reasons officially given by the Max Planck Society for the different types of funding, see http://www.mpg.de/5724370/scholarships (2014)

Voices of the survey

"The stipend system is legalized black labour."

"I guess one should still think about the great working environment and the career kick, a MPI offers and compare this to much worse conditions at a university."

"I'm very disappointed that there isn't a more universal and well explained, detailed guide for non-German students and health insurance within the MPG."

"The same, old PhD student problems: Low income after long times of studying (independent from contract or stipend), no unemployment insurance, costly health insurance, no pension fund... The system relies on the idealism of young researchers."

Do you have any further comments concerning the stipend vs. contract discussion or did you have any problems with your health insurance?

"I think it is in general an unfair system, unless the stipends are paid at the maximum level. The MPS should stop calling stipends 'awards' but should rather confess that they are just cheaper..."

"I would convert all stipends into contracts and explain foreign students that a stipend does not contribute to the year needed to apply for a permanent residence, pension and work-related accidents."

"It would be great if the Max Planck Society would have an arrangement with an health insurance company"

"I think stipends should be given preferably to foreigners, because most of them leave the country after PhD or PostDoc. Therefore they dont need to pay health insurance or into the german pension fund."

5. Health insurance

Being in good health is vital to guarantee good working conditions among PhD students. But to keep a good health, it is important to have an adequate health insurance. Students have several options when it comes to health insurances, each with different coverage and different price, depending on whether they are financed via a contract or a stipend. This chapter explores how much money students spend on their health insurance, what is the incidence of gender and funding type, and what coverage the health insurances offer.

5.1. Insurance options for PhD students

In Germany there are two types of health insurances: public and private ones. Roughly speaking, public health insurances, such as AOK or TKK, have a very wide coverage. Private insurances vary very much in their coverage. Expensive ones offer extensive coverage, but cheap ones such as some offered by Mawista or Europa have a very limited coverage.

To what extent this crude distinction applies to students in the MPS can be learned by looking at the chart in Fig. 5.1. It shows that on average students with private insurances have lower coverage rates in all the areas considered than those with a public health insurance. It is also substantial that many students are poorly informed about the areas covered by their health insurances, as one can note by the high percentanges that answered “no idea”. Taking this as an indicator, we can conclude that generally students with a private health insurance are better informed than those with a public one.

We have seen that there are differences in coverage between public and private health insurances, but there is also a difference in cost. The answer to how much health insurances cost is not straight-forward. For contract holders, who are automatically granted public health insurances, the costs of their insurance is split in equal parts [1] between the institute and their own income. This means that only a fraction of the actual cost of a public health insurance is paid by contract holders. If stipend holders obtain a public health

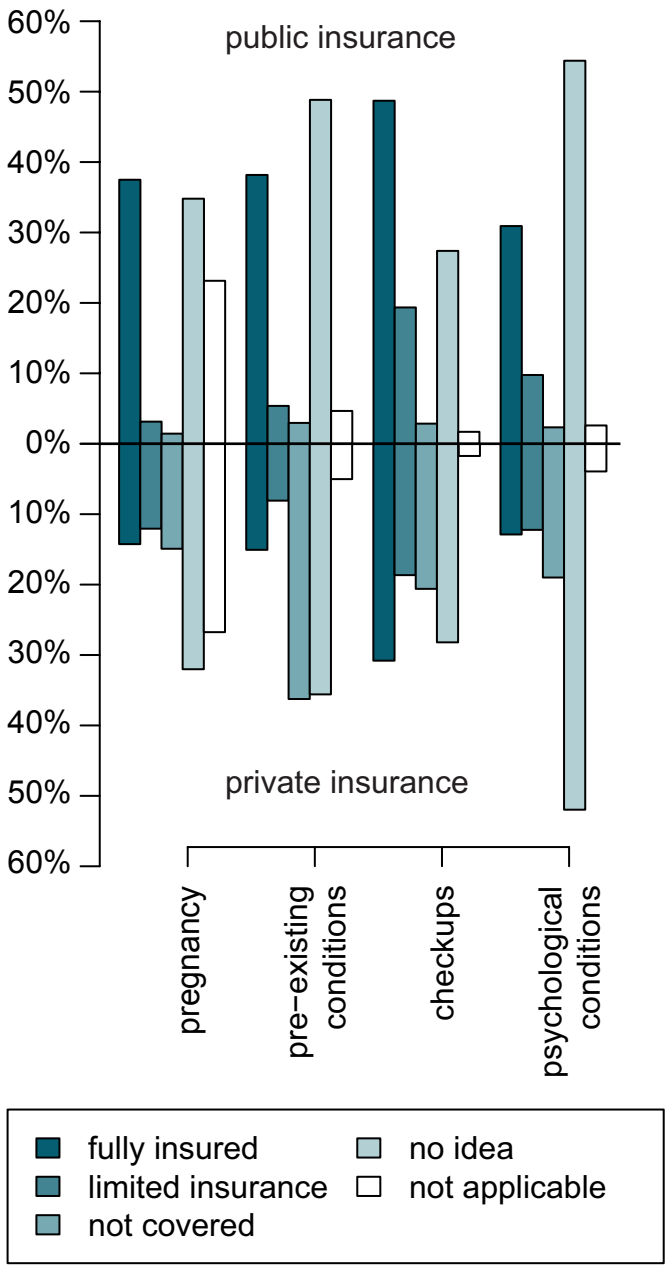

Fig. 5.1. Coverage of health insurances, as reported by students. In the upper panels the answer of PhD students with a public health insurance, and in the lower those from students with a private insurance. Note that public health insurances have on average higher coverage.

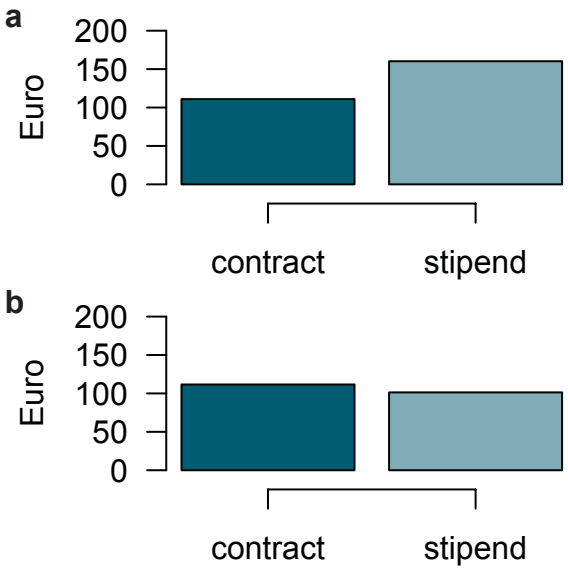

Fig. 5.2. Cost of a health insurance for students. In panel [a] for students with a public insurance, and in [b] for students with a private one.

insurance, they have to pay the full cost from their own income, which is roughly 15% of their net salary [2][1]. Private health insurances (paid entirely by the student) are mostly cheaper than public ones, if the costs paid by the institute for the public insurances are considered. In Fig. 5.2 a the difference in the cost of a public health insurance among stipend and contract holders is quantified. As we can see the costs are higher for stipend than for contract holders, since they are not shared by the institute. The average health cost of a public health insurance is around 108 € for a contract holder, and around 160 € for a stipend holder. The cost of a private insurance is shown in Fig. 5.2 b. In this case the difference between stipend and contract holders is smaller. Stipend holders pay around 101 € for private health insurances, while the number among contract holders is 117 €[2].

5.2. Who has what and for how much

So far we analyzed the different types of insurances, and how students were informed about them. In this section it is analyzed how these types of health insurances reflect on the budget of different students.

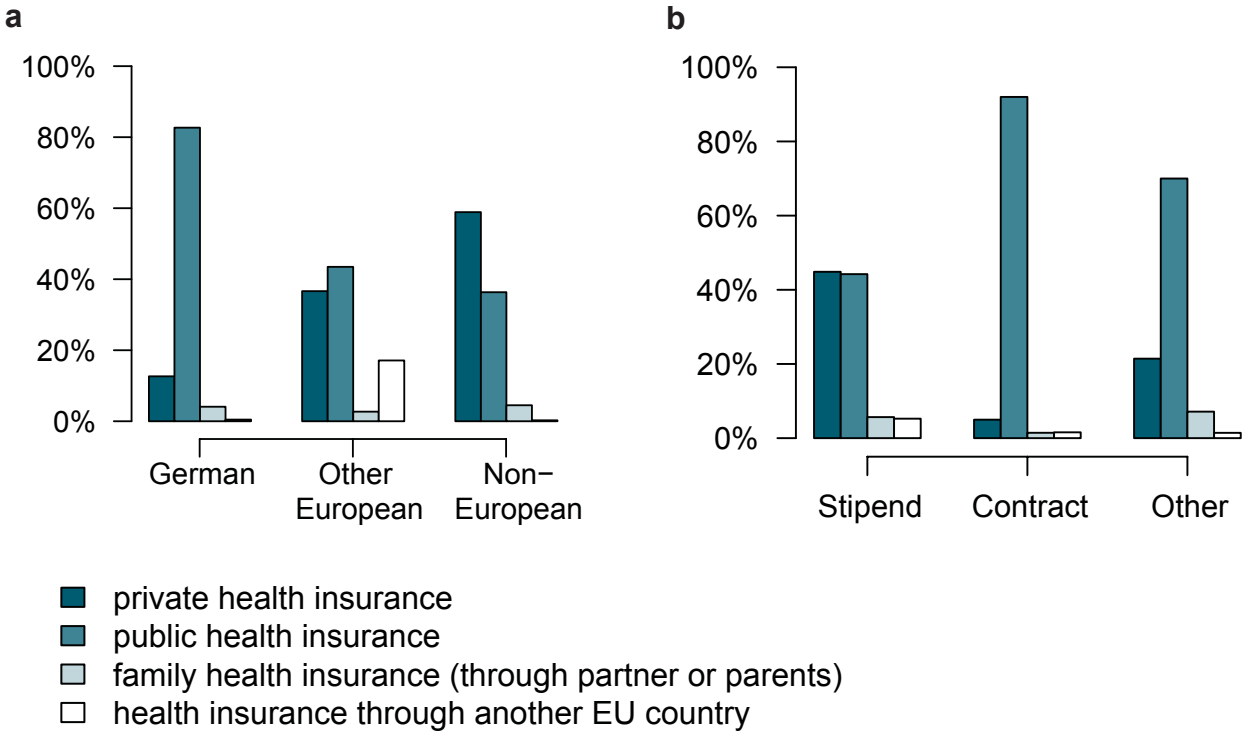

Fig. 5.3. Distribution of PhD students with different types of health inssurances separated by nationalities (a) and type of funding (b). Note that a high percentage of both German students and contract holders have public health insurance.

[1]After this survey took place, the MPS introduced a policy by which stipend holders would get up to 100 € of support for their health insurance when it's public or offers at least equal coverage.

[2]Only 24 contract holders that answered the survey had a private health insurance.

First, it is shown which students have which health insurance. It was mentioned before that by default contract holders have a public health insurance, whereas stipend holders can choose. This is verified in Fig. 5.3 a, where there is a visible separation between students with stipends and contracts on whether they have a public health insurance. More than 80% of contract holders have a public health insurance, while the figure drops to about half in the case of stipend holders. Students with other types of funding have predominantly (around 60%) a public health insurance.

Furthermore, given the correlation (shown in section 4.4) between nationality and type of funding, it is not surprising that most German nationals have a public health insurance (more than 80%), with much lower percentages for other Europeans (around 30%) and non-Europeans (around 20%)[1].

This distribution of health insurances among PhD students raises the question of how much of their net income goes toward their health insurance costs. Fig. 3.4 shows that after rent health is the biggest spending, roughly 10% of the student's income. Pension constitutes about half of this.

While this 10% spending in health and 5% in pensions is rather uniform among different types of students, some noticeable differences exist[2]. Perhaps the most remarkable one is among PhD students that are parents and those that are not. Parents spend roughly 20% more than non-parents in both health and pension insurances. That is, health insurance is roughly 12% of their salary, and pensions 6%. Similarly, women spend more than men in both insurances. Finally, there is also a difference of spending by nationality: Germans spend on average 12% of their net income in their health insurance, while foreigners roughly 8% (non-German Europeans and non-Europeans alike). There are several possible explanations for this. One is that German students are better informed about health insurances, and willing to pay more for a better health insurance. Another is that Germans are more likely to have a contract,

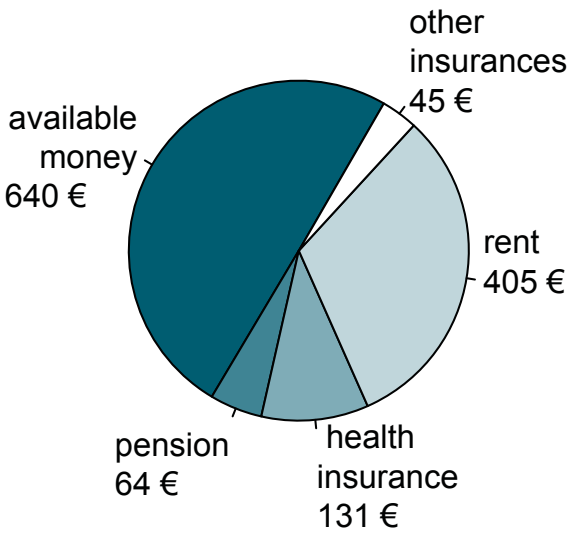

Fig. 5.4. Pie chart showing average spending of student's salary.

as was shown in section 4.4, which offers public health insurances at a much lower price (fifty per cent less, see Fig. 5.2) than a stipend does; on the other hand foreigners tend to have a stipend, for which a public health insurance is expensive, and thus revert to cheap private ones.

5.3. Conclusions

- Students with private travel insurances pay less for their health, but they have lower coverage.
- Most stipend holders have private health insurances with low coverage.
- Students spend 10% of their salary in health insurance and 5% in pensions, with higher numbers for parents.

[1]Since the distribution of salaries is not normal, the value of the mean and standard deviations are comparable, which goes against the usual intuition of mean.

[2]See previous footnote.

5.4. References

1. While before 2003 this division was exact, currently it's approximate. For example in the period 2011-2014 from the 15,5% total cost of a public health insurance over the salary, 7,3% is paid by the employer and 8,2% by the PhD students. See, for example, http://de.wikipedia.org/wiki/Gesetzliche_Krankenversicherung#Beitragss.C3.A4tze (2014).

2. Under a stipend students that opt for a public health insurance need to subscribe as "Freiwillig versichert". Under this status, the cost of the health insurance is roughly 15% of their net salary. For example, for AOK it is 14,9% (see https://www.aokplus-online.de/tarife beitraege/beitraege/beitraege-fuer-sonstige-freiwillige-mitglieder.html , 2014).

6. Not all institutes are created equal

The basic principle of the Max Planck Society is to collect world leading researchers and give them freedom. They shall get the opportunity to organize institutes as they see fit. The directors have the liberty and the responsibility to hire staff, buy equipment and frame the working conditions they estimate appropriate. That is the reason why a variety of issues facing PhD students differ between institutes.

This survey highlights the five best evaluated Max Planck Institutes in different categories. In the next chapter some of the key points of the survey are presented resolved by institute. To maintain anonymity, institutes with less than 10 participants were not included in the evaluation.

6.1. Institutes that prefer contracts over stipends

One very encouraging finding was that it is possible to fulfill the research activities expected of a Max Planck Institute without strongly relying on stipends - in the following five institutes, less than 10% of the responses indicated that the PhD student receives a stipend:

- **Bremen,** MPI for Marine Microbiology
- **Halle/Saale,** MPI for Social Anthropology
- **Garching,** MPI for Plasma Physics
- **Greifswald,** MPI for Plasma Physics
- **Nijmegen,** MPI for Psycholinguistics

6.2. Institutes with many non-German PhD students

Another interesting point is how successful different institutes are at recruiting international PhD students. The following five institutes have the lowest fraction of German participants in our survey:

- **Saarbruecken,** MPI for Software Systems
- **Bonn,** MPI for Radio-Astronomy
- **Heidelberg,** MPI for Astronomy
- **Saarbrücken,** MPI for Informatics
- **Dresden,** MPI for Cell Biology and Genetics

In all these institutes the number of German participants was below 35%. The institute in Nijmegen was excluded from this list, as it is not located in Germany and we do not have a suitable method to quantify “non-local” students. In the increasingly competitive international market for talent, these institutes set an example by recruiting PhD students beyond the local skill pool.

6.3. Institutes with the highest overall satisfaction

Not only the amount of stipends, but also the overall satisfaction varies strongly between institutes. In the following five institutes, the PhD students were especially satisfied:

- **Frankfurt/Main,** MPI for European Legal History
- **Düsseldorf,** MPI for Iron Research
- **Halle/Saale,** MPI for Social Anthropology
- **Stuttgart,** MPI for Intelligent Systems
- **Heidelberg,** MPI for Astronomy

In all of these institutes, the overall satisfaction was “high” or “very high” for more than 80% of the responses.

6.4. Institutes with the most successful supervision

A fruitful collaboration between supervisor and PhD students in many cases requires frequent discussion. More than 80% of the participants in the following institutes meet their supervisor daily or weekly.

- **Saarbrücken,** MPI for Software Systems
- **Greifswald,** MPI for Plasma Physics
- **Erlangen,** MPI for the Science of Light
- **Garching,** MPI for Astrophysics
- **Heidelberg,** MPI for Astronomy

Not only the quantity of meetings is of importance, also the quality of the supervisor´s feedback is crucial for the work of PhD students. In the following institutes more than 94% fully or partially report that their supervisor gives helpful feedback.

- **Cologne,** MPI for Plant Breeding Research
- **Greifswald,** MPI for Plasma Physics
- **Garching,** MPI for Astrophysics
- **Nijmegen,** MPI for Psycholinguistics
- **Frankfurt/Main,** MPI for European Legal History

Note that the Max Planck Institute for Plasma Physics in Greifswald and the Max Planck Institute for Astrophysics in Garching are in both top lists. Thus in those institutes the supervision quality is evaluated eminently positive.

6.5. Institutes with the healthiest PhD students

Bad working conditions can lead to severe illnesses. One of them is the burn-out syndrome. The following institutes have remarkable healthy working conditions for PhD students.

- **Freiburg,** MPI for Foreign and International Criminal Law
- **Hannover,** MPI for Gravitational Physics
- **Garching,** MPI for Plasma Physics
- **Mainz,** MPI for Polymer Research
- **Heidelberg,** MPI for Astronomy

All those institutes had less than 5% burn-out reports. Interestingly, four of those institutes belong to the CPT section.

6.6. Institutes with highest percentage of students that want to stay in science

The pursuit of a doctoral degree implies the start of a career in science. But not all PhD students feel encouraged to push this career after their thesis defense and move on to another path. Below is a list of institutes with a high percentage of PhD students that do wish to stay in science.

- **Cologne,** MPI for the Study of Societies
- **Golm,** MPI for Gravitational Physics
- **Garching,** MPI for Extraterrestrial Physics
- **Leipzig,** MPI for Mathematics in the Sciences
- **Potsdam,** MPI of Molecular Plant Physiology

More than 85% of the PhD students in those institutes want to pursue a career in science.

6.7. Institutes with PhD students that will not give up

The path to a doctoral degree can be difficult and unrewarding. That is why many PhD students consider leaving their PhD project. However, the PhD students in the following institutes have no doubts about their graduation.

- **Heidelberg,** MPI for Astronomy
- **Potsdam,** MPI of Colloids and Interfaces
- **Halle/Saale,** MPI for Social Anthropology
- **Golm,** MPI for Gravitational Physics
- **Dresden,** MPI for the Physics of Complex Systems

The question “Have you ever thought about giving up your PhD?” is answered with “no” by more than 65% of the PhD students within those institutes.

Voices of the survey

"Extension of Canteen/Cafeteria service until 21.00h"

"Group leaders should start to think that PhD students can also have a private life."

Any further feedback or comments?

"It would be helpful to have the option to work from home."

"A dedicated and con den- tial professional contact (probably outside the institute itself) to contact in case of signi cant problems with the working conditions."

"More support in all matters of life: e.g. help with nding a school (we really had trouble settling down because of the school situation, we solved it by sendin our son to a very expensive private school (about 650 Euro/ month)"

"Organize more social event, like parties, music, foot- ball... Nowadays there is no money for this."

"More get-together activities can be orgnaized. The institute can spend 10 thou- sands of euro on useless decoration thing. But when it comes to supporting socializing activities, or even scienti c meeting, then there is no funding at all."

"Renting an apartment is a big problem, please organize a working help with it."

"I think that prices in cafeterias are extremely high and MPI administrations does not care about this. The prices are ne for people on con- tracts but for stipend holders and students far too high."

7. Methods

The data for the survey was collected from March 2 to July 3 2012 using surveygizmo (http://www.surveygizmo.de). We thereby did not track IP addresses nor ask for names or email addresses. To further ensure the anonymity of the participants, the raw data were only accessible to and analyzed by members of the survey group of the PhDnet. In particular the general administration of the MPS had no access. We used SPSS and R to analyze the data with a focus on simple evaluations such as using frequencies and cross tabulations. In few cases we have calculated Spearman's correlation coefficient. However, a deep analysis of the data is beyond the scope of this report.

Figure Reference

7.1. Who are the PhD students of the Max Planck Society? (page 6)

Fig. 1.1 Distribution of nationalities. On the piechart up we have the global distribution, while down we see the data separated for each of the three sections. (page 6)

QUESTION: What is your nationality? (N= 1804)

ANSWER: German; EU-European; Non-EU-European; North American; South American; Asian; Australian; African; If you don't fit into any of these categories, please specify

Nationality divided by QUESTION: To which section does your institute belong?

ANSWER: CPT (Chemistry, Physics, Technology) (N= 689); BM (Biology and Medicine) (N= 757); GSH (Social Sciences) (N= 210); I don't know (N=130) (not shown)

Fig. 1.2 Distribution of PhD student responses over Germany. Small circles (< 10), stripped circles (10 - 50) and big circles (> 50) correspond to increasing population. The three colors correspond to the three sections as indicated in the legend. (page 7)

QUESTION: Which MPI are you working in? (N= 1752)

Fig. 1.3 Age distribution of PhD students. Notice that most students are in the range 25-30, with the peak age being 28. (page 7)

QUESTION: In which year were you born? (N= 1786)

ANSWER: Before 1972; every year between 1972 and 1996

Fig. 1.4 Year of starting the PhD. Even if the survey was taken in early 2012, there is still a large percentage of PhD students that have begun in 2008 or earlier. (page 7)

QUESTION: In which year did you start your PhD? (N= 1796)

ANSWER: Before 2007; every year between 2007 and 2012

Fig. 1.5 Distribution of genders, total and over sections. The number of males in the CPT section roughly doubles that of females. (page 8)

QUESTION: Are you male or female?

ANSWERS: male (N= 1004); female (N= 770)

7.2. Working Conditions (page 9)

Fig. 2.1 Satisfaction with working conditions. Each bar illustrates 100% of the responses respectively, the ticks of the x-axis measure 10% sections. The black line indicates the base line. (page 9)

QUESTION: Please rate your current satisfaction with the following aspects of your PhD.

Overall satisfaction (N= 1778); laboratory equipment (N= 1708); work environment (N= 1790); workload (N= 1770); scientific support (N= 1785); administrative support (N= 1782); salary / benefits (N= 1784)

ANSWER: very high; high; undecided; low; very low

Fig. 2.2 Supervision for the Max-Planck PhD students I. Each bar illustrates 100% of the responses respectively, the distance between two ticks of the x-axis is 10%. The base line is set in the middle of undecided. Left from the baseline: participants that disagree with the statement; Right from the baseline: participants that agree with the statement. “Not applicable” is sited at the end of the left side. (page 10)

QUESTION: Please rate how well the following statements apply to your PhD advisor.

My supervisor has excellent knowledge of my field of research (N= 1787); My supervisor is open to and respects my research ideas (N= 1777); My supervisor gives helpful feedback on my research (N= 1778); My supervisor supports my professional development (establishing contacts, recommending conferences, ...) (N= 1777); My supervisor teaches me how to write grant proposals (N= 1762)

ANSWERS: fully agree; partially agree; undecided; partially disagree; fully disagree; not applicable

Fig. 2.3 Supervision for the Max-Planck PhD students II. Each bar illustrates 100% of the responses respectively, the distance between two ticks of the x-axis is 10%. The base line is set in the middle of undecided. Left from the baseline: participants that disagree with the statement; Right from the baseline: participants that agree with the statement. “Not applicable” is sited at the end of the left side. (page 10)

QUESTION: Please rate how well the following statements apply to your PhD advisor.

My supervisor is not available when I need help (N= 1780); My supervisor is not informed about the current state of my thesis research (N= 1779); My supervisor does not teach me how to write papers (N= 1777)

ANSWERS: fully agree; partially agree; undecided; partially disagree; fully disagree; not applicable

Fig. 2.4 How often do you meet and talk about your project with your supervisor? (page 11)

QUESTION: How often do you meet and talk about your project with your supervisor? (N= 1792)

ANSWERS: daily; weekly; monthly; every other month; rarely

Fig. 2.5 Effects of supervision on overall satisfaction: "My supervisor gives helpful feedback on my research". Each bar illustrates 100% of the responses respectively, the distance between two ticks of the x-axis is 10%. The baseline is set in the middle of undecided. Left from the baseline: unsatisfied participants; Right from the baseline: satisfied participants. (page 11)

QUESTION y-axis: My supervisor gives helpful feedback on my research: Please rate how well the following statements apply to your PhD advisor.

ANSWERS: Fully agree (N= 793); partially agree (N= 571); undecided (N= 166); partially disagree (N= 150); fully disagree (N= 69)

QUESTION x-axis: overall satisfaction: Please rate your current satisfaction with the following aspects of your PhD.

ANSWERS: very high; high; undecided; low; very low

"Overall Satisfaction" and "My supervisor gives helpful feedback on my research" significantly correlates with each other, r= 0.43.

Fig. 2.6 Effects of supervision on overall satisfaction: Frequency of meetings. Each bar illustrates 100% of the responses respectively, the distance between two ticks of the x-axis is 10%. The baseline is set in the middle of undecided. Left from the baseline: unsatisfied participants; Right from the baseline: satisfied participants. (page 12)

QUESTION y-axis: How often do you meet and talk about your project with your supervisor?

ANSWERS: daily (N= 203); weekly (N= 858); monthly (N= 358); every other month (N= 194); rarely (N= 158)

QUESTION x-axis: overall satisfaction: Please rate your current satisfaction with the following aspects of your PhD.

ANSWERS: very high; high; undecided; low; very low

"Overall Satisfaction" and "How often do you meet and talk about your project with your supervisor?" significantly correlates with each other, r= 0.24.

Fig. 2.7 Effects of supervision on overall satisfaction: "My supervisor is not available when I need help". Each bar illustrates 100% of the responses respectively, the distance between two ticks of the x-axis is 10%. The baseline is set in the middle of undecided. Left from the baseline: unsatisfied participants; Right from the baseline: satisfied participants. (page 13)

QUESTION y-axis: My supervisor is not available when I need help: Please rate how well the following statements apply to your PhD advisor.

ANSWERS: Fully agree (N= 77); partially agree (N= 271); undecided (N= 163); partially disagree (N= 386); fully disagree (N= 783)

QUESTION x-axis: overall satisfaction: Please rate your current satisfaction with the following aspects of your PhD.

ANSWERS: very high; high; undecided; low; very low

"Overall Satisfaction" and "My supervisor is not available when I need help" significantly correlates with each other, r= -0.18.

Fig. 2.8 (a) Total working hours per week; (b) Working hours of scientific work directly related to the PhD project per week. (page 13)

QUESTION A: How many hours per week do you usually work for your PhD, the institute or the university (courses, teaching, etc included)? (N= 1772)

ANSWERS: Numbers were typed in. Only responds between 0 and 91h were considered.

QUESTION B: scientific work directly related to the PhD: How many hours per week do you spend on average on the following tasks?

Scientific work directly related to the PhD (N= 1728)

Fig. 2.9 Mean, median and 90% percentile for working hours on different tasks. Although the working hours are not normal distributed, the average is close to the median in most cases. (page 15)

QUESTION "total": How many hours per week do you usually work for your PhD, the institute or the university (courses, teaching, etc included)? (N= 1772)

QUESTION: scientific work directly related to the PhD: How many hours per week do you spend on average on the following tasks?

Scientific work directly related to the PhD (N= 1728); scientific work not related to the PhD (N= 1423); attending courses and seminars (N= 1575); teaching (N= 1122); administrative tasks (N= 1325)

Fig. 2.10 Taken vacation days in 2011 (page 15)

QUESTION: How many days of holidays have you taken during the last calendar year? (N= 1599)

Fig. 2.11 "Have you had problems with any of the following?" 33% report no problems with any listed illnesses. (page 16)

QUESTION: Have you had problems with any of the following? (N= 1819)

ANSWERS: back pain; chronic fatigue; sleeplessness; depression; burn-out; others, please specify

Fig. 2.12 Effects of working hours on depression: proportion of PhD students who suffer depression, that work up to 36, 37 to 40, 41 to 60 or more than 60 hours. (page 16)

QUESTION: How many hours per week do you usually work for your PhD, the institute or the university (courses, teaching, etc included)?

ANSWERS: Numbers were typed in. Only responds between 0 and 91h were considered.

<36h: N= 100; 37-40h: N= 354; 41-60h: N= 1164; >60h: N= 154

Fig. 2.13 "I experienced discrimination due to my parenthood." (page 18)

QUESTION: Would you agree or disagree with the following statements: I experienced discrimination due to my parenthood. (N= 120)

ANSWER: agree; partially agree; neutral; partially disagree; disagree

Divided by QUESTION: Are you male or female?

ANSWERS: male (N= 68); female (N= 52)

Fig. 2.14 "I´m happy with the support from my institute for parents." (page 19)

QUESTION: Would you agree or disagree with the following statements: I'm happy with the support from my institute for parents. (N=120)

ANSWER: agree; partially agree; neutral; partially disagree; disagree

Divided by QUESTION: Are you male or female?

ANSWERS: male (N= 70); female (N= 50)

Fig. 2.15 "Do you think being a parent effects your opportunities to pursue a scientific career negatively?" (page 19)

QUESTION: Do you think being a parent effects your opportunities to pursue a scientific career negatively? (N= 122)

ANSWERS: Yes; No; Undecided

Divided by QUESTION: Are you male or female?

ANSWERS: male (N= 70); female (N= 52)

7.3. Career (page 21)

Fig. 3.1 Percentage of students that have thought about giving up their PhD (page 21)

QUESTION: Have you ever thought about giving up your PhD? (N= 1793)

ANSWERS: No; Yes, briefly; Yes, often

Fig. 3.2 Different reasons that made students think about giving up their career with their percental frequency. (page 21)

QUESTION: If yes, why did you think about giving up your PhD? N_{yes}= 865

ANSWERS: check or uncheck

wrong topic; not enough money; no or poor results; too high pressure; difficulties with the supervisor; uncertain career path; poor working conditions; other, please specify

Here only PhDs who answered "Have you ever thought about giving up your PhD?" with Yes, briefly" or "Yes, often" (N_{yes}= 865) are considered

Fig. 3.3 Percentage of students that want to stay in Germany after finishing their PhD. (page 22)

QUESTION: Do you intend to pursue a career in Germany? (N= 1759)

ANSWERS: Yes; No

Fig. 3.4 Percentage of students that want to stay in science after finishing their PhD (page 22)

QUESTION: Do you intend to pursue a career in science after finishing your PhD? (N= 1756)

ANSWERS: Yes; No

Fig. 3.5 A closer look at how many PhD students from various groups want to continue working in science. (page 23)

QUESTION: Do you intend to pursue a career in science after finishing your PhD?

ANSWERS: Yes; No

Combined with

1. QUESTION: Are you male or female?

   ANSWERS: male (N= 986); female (N= 755)

2. QUESTION: To which section does your institute belong?

   ANSWER: CPT (Chemistry, Physics, Technology) (N= 665); BM (Biology and Medicine) (N= 743); GSH (Social Sciences) (N= 202); I don't know (N=128) (not shown)

3. QUESTION: What is your nationality?

   ANSWERS: German (N= 1040); (EU-European; Non-EU-European; North American; South American; Asian; Australien; African; If you don't fit into any of these categories, please specify) = Non-German (N= 714)

4. QUESTION: In which year did you start your PhD?

   ANSWERS: 2008 (N= 229); 2009 (N= 401); 2010 (N= 467); 2011 (N= 459)

Fig. 3.6 Percentage of students that want to stay in science, separated by their thoughts about giving up their PhD. (page 23)

QUESTION x-axis: Do you intend to pursue a career in science after finishing your PhD?

ANSWERS: Yes; No

QUESTION y-axis: Have you ever thought about giving up your PhD?

ANSWERS: No (N= 903); Yes, briefly (N= 612); Yes, often (N= 229)

Fig. 3.7 Different ways in which supervisors support their students. (page 24)

QUESTION: How does your supervisor support you on your way to an academic career?

ANSWERS: check or uncheck

- makes introductions to important people working in the field (N_{check}= 790)
- recommends relevant conferences to participate in (N_{check}= 1007)
- presents your results and underlines your contribution (N_{check}= 786)
- recommends relevant post-doc positions (N_{check}= 267)

7.4. Funding of the PhD students (page 25)

Fig. 4.1 Distribution of net income (excluding health benefits) for students with a contract (dark blue), a stipend (light blue), and total (gray). (page 25)

QUESTION: How much money do you receive (after tax deductions etc) per month in Euro from the Max Planck Society?

ANSWERS: Numbers were typed in. Only responds between 0 and 5000 € were considered.

Divided by QUESTION: What is the type of funding for your PhD?

ANSWERS: scholarship/stipend (N= 936); contract (N= 722)

Fig. 4.2 Percentage of students funded with stipends (dark blue), contracts (light blue) or another type of funding (white) as can be an external fellowship or a project grant. (page 25)

QUESTION: What is the type of funding for your PhD? (N= 1819)

ANSWERS: scholarship/stipend; contract; (contract below 400 € + stipend; contract above 400 € + stipend other, please specify) = other

Fig. 4.3 Percentage of students that had the choice of either being financed by a contract or a stipend. (page 26)

QUESTION: Where you offered a choice between a contract and a stipend? (N= 1794)

ANSWERS: Yes; No; Not applicable, since the funding is extern.

Fig. 4.4 Percentage of students that would have chosen a contract if given the choice. (page 26)

QUESTION: If offered the choice, what form of funding would you prefer? (N= 1549)

ANSWERS: contract; stipend

Fig. 4.5 Percentual answer among stipend holders to the question: “Were you informed of what it means to have a stipend?“ Note that less than 20% of the students have been fully informed.” (page 26)

QUESTION: For stipend holders: Have you been informed about your options concerning health insurances (i. e. difference between public and private health insurance, contractual limitations) and other implications of the stipend (pension, work obligations) before signing the contract? (N= 930)

ANSWERS: Yes, I have been fully informed; I have been partially informed; I didn’t receive any information

Fig. 4.6 Percentual answer among stipend holders to the question “Who informed stipend holders of their conditions?” (page 27)

QUESTION: For stipend holders: Who supplied you primarily with information about the insurance situation and legal implications of a stipend? (N= 871)

ANSWERS: institute administration; PhD advisor; fellow PhD students; PhDnet

Fig. 4.7 Pie-charts representing the percentage of German and non-German students that are financed through a contract, stipend or other type of funding. Note that non-Germans are much more likely to have a stipend and much less likely to have a contract than Germans. (page 27)

Divided by QUESTION: What is your nationality? (N= 1804)

ANSWER: German (N= 1080); Non-German: (EU-European; Non-EU-European; North American; South American; Asian; Australien; African; If you don’t fit into any of these categories, please specify) (N= 724)

Fig. 4.8 Funding distribution depending on nationality and section. Note that the nationality bias regarding the type of funding is very visible in the CPT and BM sections, while on the GSH sections it is not. (page 28)

QUESTION: What is the type of funding for your PhD?

ANSWERS: scholarship/stipend; contract; (contract below 400 € + stipend; contract above 400 € + stipend; other, please specify) = other

Combined with QUESTION: To which section does your institute belong? AND QUESTION: What is your nationality?

ANSWERS: CPT (Chemistry, Physics, Technology) AND German (N=388); CPT (Chemistry, Physics, Technology) AND Non-German (N= 297); BM (Biology and Medicine) AND German (N= 463); BM (Biology and Medicine) AND Non-German (N= 287); GSH (Social Sciences) AND German (N= 138); GSH (Social Sciences) AND Non-German (N= 71)

Fig. 4.9 Percentage of students with different funding that have to apply for holidays. Note that a large percentage of stipend holders have to apply for holidays. (page 29)

QUESTION: Do you have to apply to take holidays/personal time off? (N= 1742)

ANSWERS: Yes; No

Combined with QUESTION: What is the type of funding for your PhD?

ANSWERS: scholarship/stipend (N= 932); contract (N= 727); (contract below 400 € + stipend; contract above 400 € + stipend; other, please specify) = other (N= 83)

7.5. Health insurance options (page 32)

Fig. 5.1 Coverage of health insurances, as reported by students. In the upper panels the answer of PhD students with a public health insurance, and in the lower those from students with a private insurance. Note that public health insurances have on average higher coverage. (page 32)

QUESTION: Which kind of health insurance do you have?

ANSWERS: private health insurance (public health insurance, full rate; public health insurance, student rate)= public health insurance

Combined with QUESTION: Are the following issues covered by your health insurance?

Pregnancy AND private health insurance (N=456); Pregnancy AND public health insurance (N=1115)pre-existing conditions AND private health insurance (N=458);pre-existing conditions AND public health insurance (N=1116); checkups AND private health insurance (N=461); checkups AND public health insurance (N=1121); psychological conditions AND private health insurance (N=458); psychological conditions AND public health insurance (N=1116)

ANSWERS: fully insured; limited insurance; not covered; no idea; not applicable

private insurance AND pregnancy (N= 456); private insurance AND pre-existing conditions (N= 458); private insurance AND checkups (N= 461); private insurance AND psychological conditions (N= 458); public insurance AND pregnancy (N= 1115); public insurance AND pre-existing conditions (N= 1116);); public insurance AND checkups (N= 1121); public insurance AND psychological conditions (N= 1116)

Fig. 5.2 Cost of a health insurance for students. In panel [a] for students with a public insurance, and in [b] for students with a private one. (page 33)

QUESTION: How many Euro per month do you spend on the following expenses: health insurance

ANSWERS: Numbers were typed in. Only responds between 0 and 1000€ were considered.

Fig. 5.3 Distribution of PhD students with different types of health inssurances separated by nationalities (a) and type of funding (b). Note that a high percentage of both German students and contract holders have public health insurance. (page 33)

QUESTION: Which kind of health insurance do you have?

ANSWERS: private health insurance; (public health insurance, full rate; public health insurance, student rate)= public health insurance

- Combined with QUESTION: What is the type of funding for your PhD?

ANSWERS: scholarship/stipend (N= 848); contract (N= 712); (contract below 400 € + stipend; contract above 400 € +; other, please specify) =other (N= 79)

- Combined with QUESTION: What is your nationality?

  ANSWERS: German (N= 1026); EU-European (N= 267); other (Non-EU-European; North American; South American; Asian; Australien; African; If you don't fit into any of these categories, please specify) (N= 358)

Fig. 5.4 Pie chart showing average spending of student's salary. (page 34)

QUESTION: How many Euro per month do you spend on the following expenses Rent (N= 1723); health insurance (N= 1448); pension scheme (N= 1046); other insurances (N= 1132)

ANSWERS: Numbers were typed in. Only responds between 0 and 800 € were considered.

8. Acknowledgements

It would not have been possible to conduct this survey without the help and support of many people. Here, we wish to take the opportunity to acknowledge those contributions.

The majority of the written comments of the participants were carefully read and selected by Rohit Jain. Dagmar Popke, Scott Kilpatrick and Andreea Scacioc proofread most of the survey´s text and were assisted by Sonja Neumann, Ole Herud and Veronika Fitz. The survey was re-read by Mathis Trautwein, Martin Grund and Roman Prinz in regards to its content. The analysis itself was assisted by Beke Kremmling, Ole Herud and Nina Höhne with double checks. The Layout was designed and provided by Ole Herud. The Max Planck society supported the PhDnet inclusive this workgroup.

We would like to point out, that we had a great contact with all organs of the PhDnet. Especially the steering groups and financial officers of 2013 and 2014 worked closely with us.

Last but not least we thank everyone that put awareness on the survey and of course all participants. Without them there would be no survey.

9. About the authors of this survey

From designing the original questions to proofreading the final text, the development of this survey and its report extended around two years. Many people contributed in its making with different degrees of involvement, and it is thanks to all of them that this survey was possible. In this section we give some brief information about the main authors of the survey.

The main authors of this survey were responsible for designing the questions asked to the students, performing data analysis, producing figures, designing the structure of the report, writing it and proofreading it. While some specialized more in certain aspects than others, feedback was always welcomed and encouraged, making it impossible to assign specific names to specific contributions.

Overall this work is mainly a collaborative effort among the following people:

Rosa Glöckner

Rosa was born in 1985, went to school near Frankfurt am Main and to university in Mainz. At the time of writing this survey, she does her PhD in München at the Max Planck Institute of Quantum Optics. There she develops methods for cooling and manipulating the internal state of polyatomic molecules. When she's not cooling molecules or working on this survey, Rosa likes to go rowing and play the violin in an orchestra.

Fig. 9.1. Rosa Glöckner

Fig. 9.2. Daniel Herde

Daniel Herde

Daniel is the youngest in the group, born in Luxembourg in 1986. He studied Physics in Dresden and spent his PhD working on the question "how droplets run down on dirty windows" (as he explained to his grand- mother). In January he defended his thesis, which he did at the Max Planck Institute for Dynamics and Self-Organization in Göttingen. When not working, he eats, codes, sleeps, and moves every now and then. His message for fellow PhD students is bluntly existential: "one must imagine Sisyphus happy" (Camus, *The Myth of Sisyphus*).

Julia Holzmann

Julia was born, raised, and studied in Frankfurt and surroundings. For her PhD she also stayed in Frankfurt, where she works on Developmental Neurobiology in the Max Planck Institute for Brain Research. When she is not trying to unravel the development of the peripheral nervous system, she enjoys reading, writing, dancing, performing improvisation theatre, and keeping secret that her middle name is Anna.

Fig. 9.3. Julia Holzmann

Pablo Sartori

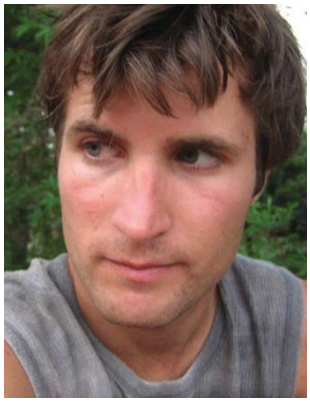

Fig. 9.4. Pablo Sartori

Pablo was born in Granada (Spain) in 1984, where he also studied. After a stop in New York, he went to the Max Planck Institute for Physics of Complex Systems in Dresden to pursue his PhD. There he studies "how an algae swims and how looking at things costs energy" (or *Chlamydomonas cilia* dynamics and thermodynamic costs of sensory systems). He likes to read dense prose and light poetry, listen to a vast music collection and travel as far as possible.

Fig. 9.5. Stefan Siegert

Stefan Siegert

Stefan wrote his own blurb, that we paraphrase. "He was born in 1984 and received his Master degree from the University of Chemnitz. He finished his PhD at the Max Planck Institute for the Physics of Complex System in Dresden in 2013 and is currently a postdoc at the University of Exeter in England. His research is on the verification of seasonal-to-decadal climate forecasts. He enjoys juggling, reading, running and spending time with his 2 months old son [who was conceived and born during the lengthy development of this survey]."

Layout

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