Antero Puhakka: Doctoral Candidates and Junior Researchers in 2016 membership survey of the Finnish Union of University Researchers and Teachers

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Foreword

In the early 1990s, Finnish economy plunged into economic crisis. The traditional paper and metal industries had lost their international competitiveness. The government responded by investing in research, including new doctoral programmes, hoping to renew the knowledge-base and create innovations. As a continuation of these policies, the Finnish state university system was privatised in 2010.

This background explains many of the issues confronted by today's Doctoral Candidates and Junior Researchers. The number of PhDs has multiplied in the last two decades, reaching now almost 2.000 per year. The newly privatized universities act in many ways like big firms, which also means the possibility of big layoffs.

While the investments in R&D created benefits – consider, for example, the former mobile phone giant Nokia in the early 2000s – they have not necessarily improved the life of the individual researcher. The negative trends were accentuated after the last European economic crisis, which in Finland led to the Sipilä government's massive cuts in higher education during 2015–19.

The surveys conducted by the Finnish Union of University Researchers and Teachers (FUURT) confirm the precarious life-situation of researchers in Finnish universities. The early stages of career are made of combinations of short-term contracts, foundation grants, and even periods of unemployment. If the researcher succeeds in getting a post-doc contract with a university, her salary even then barely matches the Finnish average salary.

Not surprisingly, Doctoral Candidates and Junior Researchers report increasing work stress. More than half of them have during the last two years considered quitting their careers in research. Alarmingly, the negative responses are more common among international researchers who are in Finland to earn their PhDs. Much still remains to be done by the unions, universities and the national authorities.

The FUURT series of surveys for university researchers and teachers goes back to 1998. It provides an extensive and reliable database of the work and living conditions of academics working in Finland.

Petri Koikkalainen

President, Finnish Union of University Researchers and Teachers

1 Introduction

The Finnish Union of University Researchers and Teachers (FUURT) is a labour organisation of Finnish academic experts founded in 1967; most of its members work in the university sector in research, teaching or other expert positions. The total number of members at the end of 2016 was 7,082. In the autumn of 2016, for the seventh time in its history, FUURT conducted a survey covering all of its members. The survey was carried out anonymously, which means that it is not possible to do a reliable non-response analysis. Altogether 6,755 questionnaires were mailed. The number of responses was 1,906, which means that 28% of the FUURT members answered the survey. The original survey was conducted by DSSc Antero Puhakka from the University of Eastern Finland and DEd Juhani Rautopuro from the University of Jyväskylä. The data was analysed primarily with descriptive statistical methods.

The main emphasis in this report is on Doctoral Candidates and Junior Researchers. However, in the beginning some basic information about all respondents is presented. More extensively the results for all respondents have been reported in Finnish. When examining Doctoral Candidates and Junior Researchers, special attention is paid to questions that relate to the challenges of a research career and employment as well as to the questions that relate to well-being at work.

2 Respondents of the survey

Of those who responded to the survey, 63.4% were female, 36.2% male and 0.6% answered to be of other gender. The share of women in the whole membership is 59%, which means that females are slightly "over-represented" among the respondents. This was the first time that a membership survey was conducted also in English. The Finnish science world has been internationalising rapidly and this can be seen in the membership survey as well. Most of the respondents come from Finland (88%), the rest from EU/EEA countries (6%) and from other countries (6%). All in all, the respondents came from 56 different countries. The members with foreign origin were clearly younger than their Finnish counterparts, as can be seen in Table 1.

Significant differences can also be seen between EU/EEA countries and Other countries. This could imply that those who are recruited to the first stages of a researcher's career come from different countries than the ones recruited for later stages.

Table 1. The respondents' age distribution by place of origin (%)

Age group	**Finland**	**EU/EEA**	**Other**	**All**
Younger than 30	4%	9%	16%	5%
30–39	33%	56%	47%	36%
40–49	30%	22%	22%	29%
50–59	24%	10%	10%	22%
60 or older	9%	3%	5%	8%

The level of education among the members of FUURT has been on the constant increase (Figure 1). In 1998, slightly more than one quarter (27%) had taken a doctoral degree. In the most recent survey, the proportion of doctorate holders is 61%. In previous surveys the differences between genders were statistically significant.

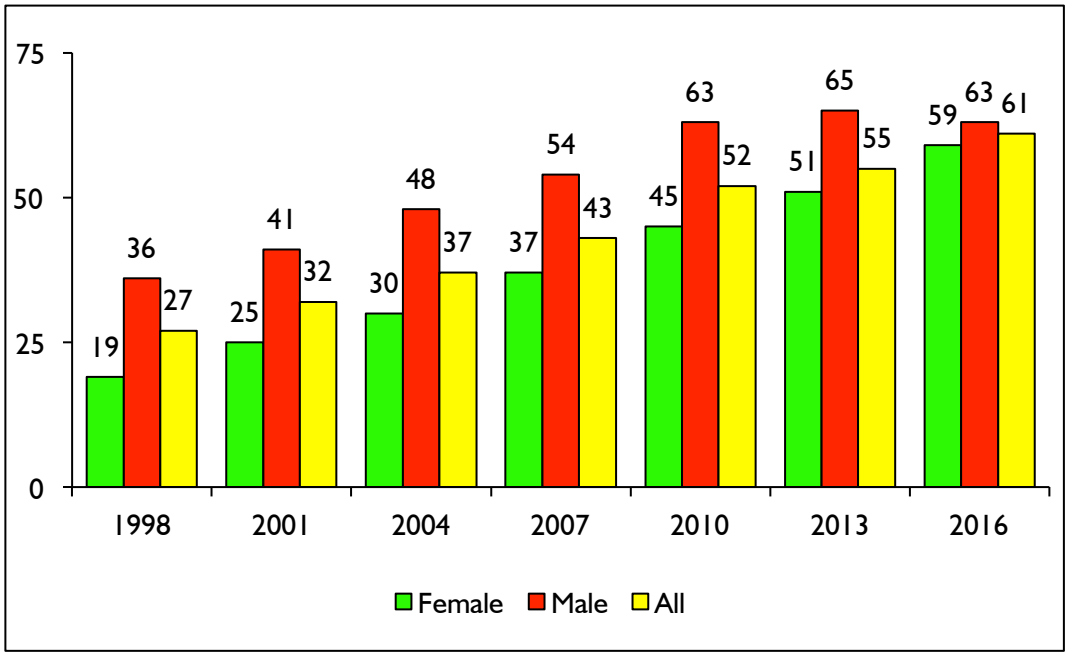

Figure 1. Doctorate holders in the 1998–2016 surveys by gender (%)

2.1 Employment situation

Almost four out of five respondents (78%) were in paid labour in October 2016. In this report, the employers are classified into four groups. Research institutes here refer to other than academic institutions, and the public sector covers all other tasks organized by the state or the municipalities. The university sector is clearly the most important employer of the FUURT members (80%), as Figure 2 shows.

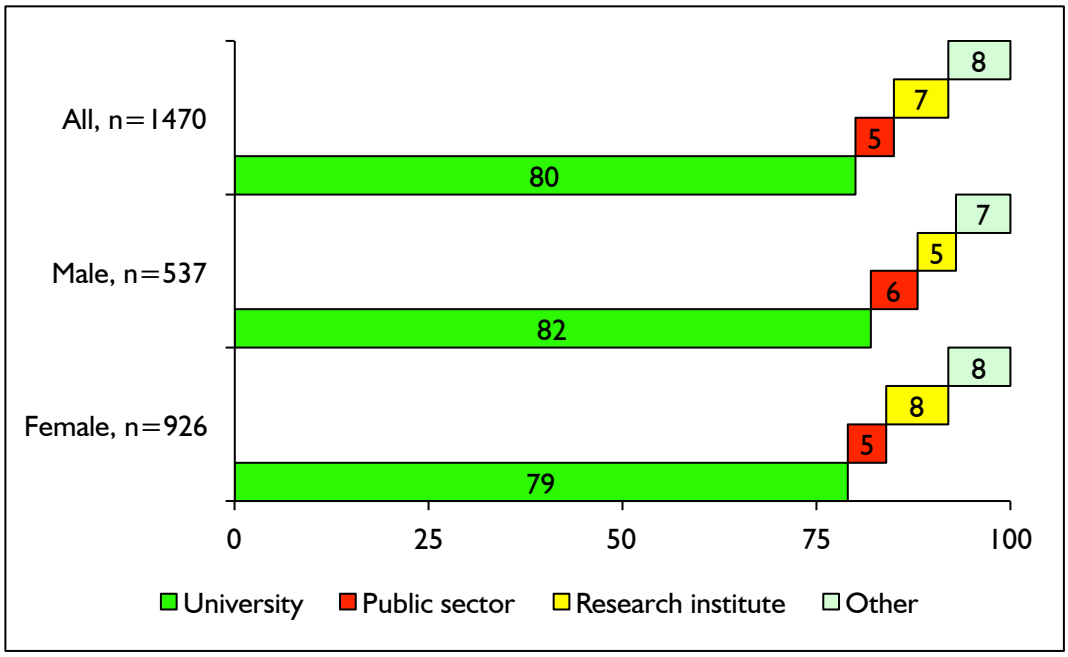

Figure 2. Respondents by employer sectors (%)

The duties of the respondents were classified into four groups; the three main groups were *Researchers, Teachers*, and *Experts*. Table 2 presents the key figures for all the groups. They differ from each other to a large extent. The average age of Researchers is significantly lower than the average age of professionals in the other two groups. Teachers, on the other hand, have taken a postgraduate degree more often than the respondents in other groups, and this difference is statistically significant. The Experts have a slightly higher average age and a clearly lower level of education than the other groups, and the group also includes more women.

Table 2. Key figures of different professional groups

Professional group	Average age	Females	Postgradu-ate degree	Permanently employed
Researchers (n=651)	39.3	59%	64%	16%
Teachers (n=388)	47.9	63%	88%	61%
Experts (n=416)	48.5	69%	46%	81%
Others (n=21)	43.1	71%	33%	65%

The increased number of women at the universities can clearly be seen in the changes that have occurred in the professional groups. In 1998, 49% of Teachers were females, in 2007 56% and in this survey 63%. The number of female Researchers has also increased. In 1998, 52% of Researchers were female and in this survey 59%.

In table 3, we can see that the professional groups differ with respect to where they come from. Three fourths of the respondents from both EU/EEA and Other countries are working as Researchers. As this is the first time the question about the place of origin was asked, it is not possible to say anything about whether there have been any trends or changes over the years. However, it seems clear that when people are recruited from abroad to work in Finland they find their position at universities as temporary researchers.

Table 3. Professional groups by place of origin (%)

Place of origin	Researchers	Teachers	Experts
Finland (n=1301)	40%	28%	30%
EU/EEA (n=85)	74%	14%	12%
Others (n=79)	77%	11%	10%

The members of FUURT clearly differ from other employees with respect to the type of job in which they work. Less than half (45%) were working in a permanent and 55% in temporary jobs. There were no differences between the sexes in the temporariness of work. The fact that one has a postgraduate degree does not seem to increase the possibility for permanent employment. Among those FUURT members who had a doctoral degree, 55% work under a temporary contract.

One explanation for the infrequency of permanent positions is the fact that four out of five FUURT members (80%) work in the university sector. The type of employment is largely dependent on the employer; workers in the university sector

are clearly more often in temporary positions than others, and this difference is statistically significant.

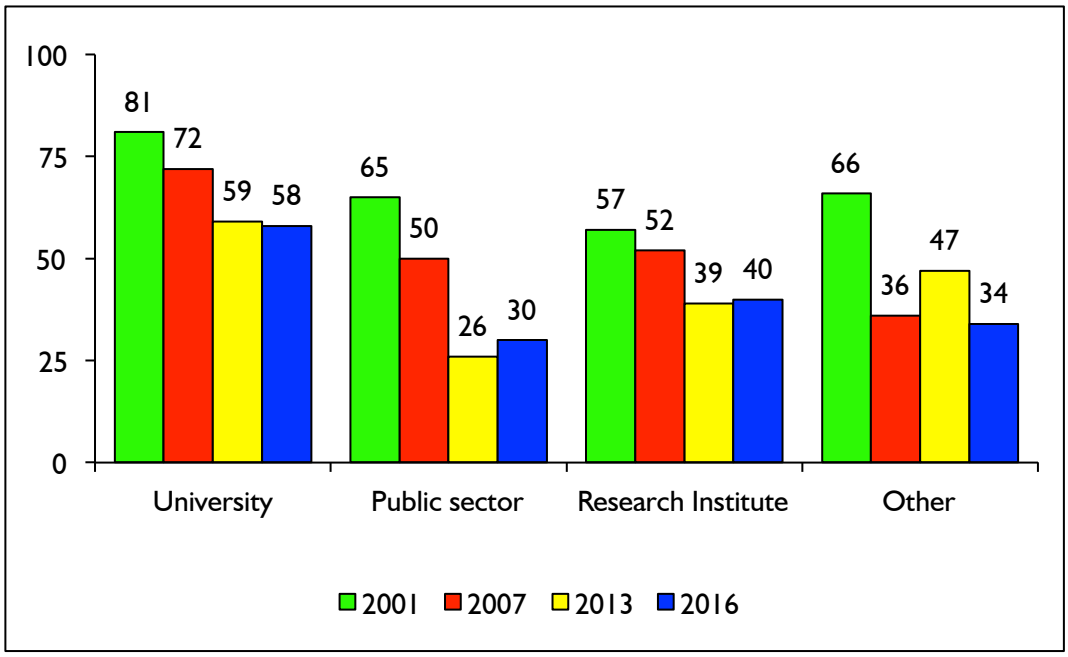

Figure 3. Temporary employment by employer sector, 2001–16 (%)

At universities, the share of temporarily employed workers has slightly decreased, as we can see in Figure 3, but still most of the FUURT members who work at universities have temporary employment relationships.

2.2 Non-workers

There were 421 respondents (22%) who were not in an employment relationship in October 2016 (Table 4). Most of them were unemployed. The second largest group were those who were doing research on a scholarship. Of the respondents, 9.6% were unemployed. Among those who had a Master's degree or equivalent, 9.7% were unemployed in October 2016. High level of education does not seem to protect workers from experiencing unemployment; as many as 9.1% of the doctors were unemployed at the time of the survey.

Table 4. Non-workers

Position	N	% of all respondents	% of non-workers
Unemployed	183	9.6	43.5
Grant researcher	150	7.9	35.6
Maternity/paternity leave or equivalent	46	2.4	10.9
Other	42	2.2	10.0
TOTAL	421	22.1	100.0

2.3 Working on research scholarships

Since they have begun their career, almost three fourths (72%) of the FUURT members have been working on a scholarship at some point. Working on a grant has clearly become more common and the periods that people spend o a scholarship have been extended (Figure 4).

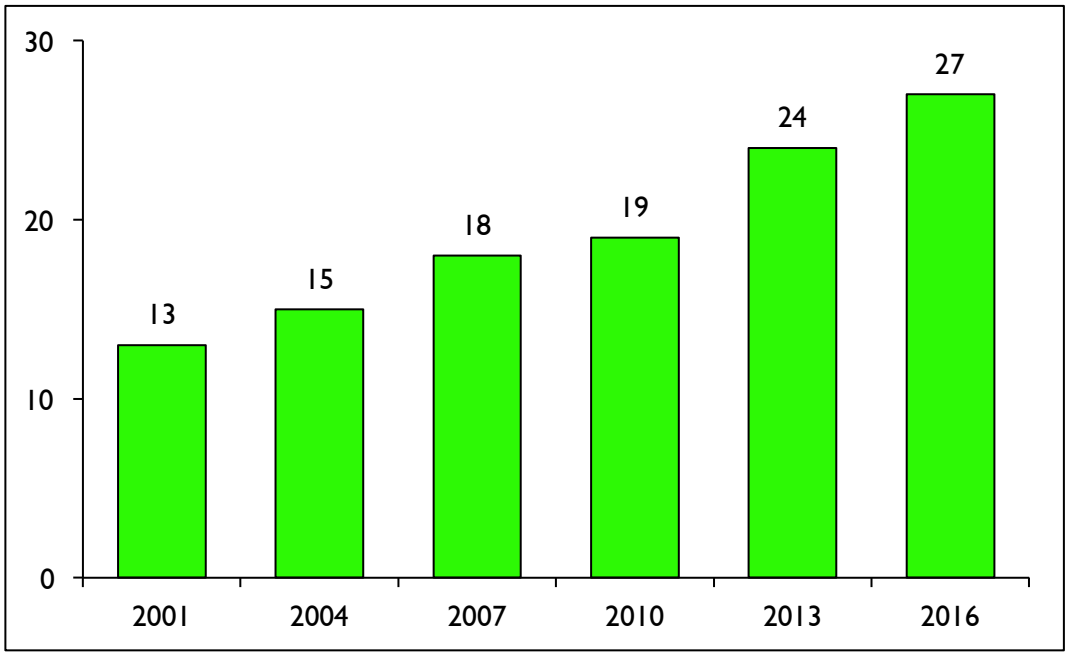

Figure 4. Working on a scholarship more than three years (%)

While, in 2001, it was every eigth (13%) that had been working on various grants for more than three years, in 2016 every fourth (27%) had a similar experience. There is a significant difference between the different professional groups with respect to how long they have been working on a grant. As many as 27% of Researchers and Teachers had been working on a grant for more than 3 years, while the corresponding figure for Experts was 16%.

Since there are not enough researcher and teacher positions available at universities and research institutes, those who want to do research are obliged to apply for funding through other channels. Consequently, the career development in the Finnish academic world cannot be regarded as very professional-like.

3. Doctoral Candidates and Junior Researchers in FUURT survey

In order to better analyse the challenges of researcher careers, the following examination concentrates on Doctoral Candidates and Junior Researchers. The category of Doctoral Candidates consists of those who are employed with job titles such as Doctoral Students, Early Stage Researchers, or Research Students. Researchers who are conducting postgraduate studies and those who work on a grant while conducting postgraduate studies are also classified as Doctoral Candidates. Junior Researchers, on the other hand, include those who work as Research Fellows, Researchers or Project Researchers, and who have completed their doctorate less than 5 years ago. Also those who work on a grant and have received their doctorate within 5 years are classified as Junior Researchers. There are altogether 282 Doctoral Candidates and 249 Junior Researchers whose answers are now analysed more thoroughly.

Basic information on Doctoral Candidates and Junior Researchers is presented in the next table. Every fifth (20%) of the researchers have come to Finland to conduct research in Finnish universities or research institutions. As Doctoral Candidates represent 53% of the respondents it is not a surprise that the educational level is lower in comparison with the respondents of membership survey.

Table 5. Basic information on respondents, n =531 (%)

Gender	
Female	59.3
Male	39.2
Other	0.9
Missing information	0.6
Place of origin	
Finland	79.7
EU/EEA country	8.9
Another country	10.7
Missing information	0.8
Highest degree	
Doctorate	48.4
Licentiate	1.1
Master's degree	50.3
Other	0.2
Researcher career position	
Doctoral Candidates	53.1
Junior Researcher	46.9
Employment situation	
Employed	73.6
On a grant	21.7
Other	4.7

Employment sector	
University	77.8
Research institution	1.9
Public sector	0.6
Other	1.9
Missing information	17.9
Marital status	
Married/cohabitation	75.1
Single	20.5
Divorced	3.8
Missing information	0.6
Children	
No children	55.0
Children	43.7
Missing information	1.3
Age	
Younger than 30	14.3
30–39	62.1
40–49	19.2
50–59	2.6
60 or older	0.8

3.1 Funding of postgraduate studies

The respondents were asked whether they were doing postgraduate studies when the survey was being conducted. Then they were asked about how they had financed their postgraduate studies and which was the main source of funding at the moment. Figure 5 shows the ways in which the respondents have funded their postgraduate studies.

There were no statistical differences by gender or place of origin. Most of the respondents had had to finance their postgraduate studies through various means. Less than every fifth (19%) Doctoral Candidates had been able to finance their postgraduate studies from a single source, most commonly by acquiring a position in a research school. On the basis of these results, a researcher's career development cannot be regarded as very professional-like.

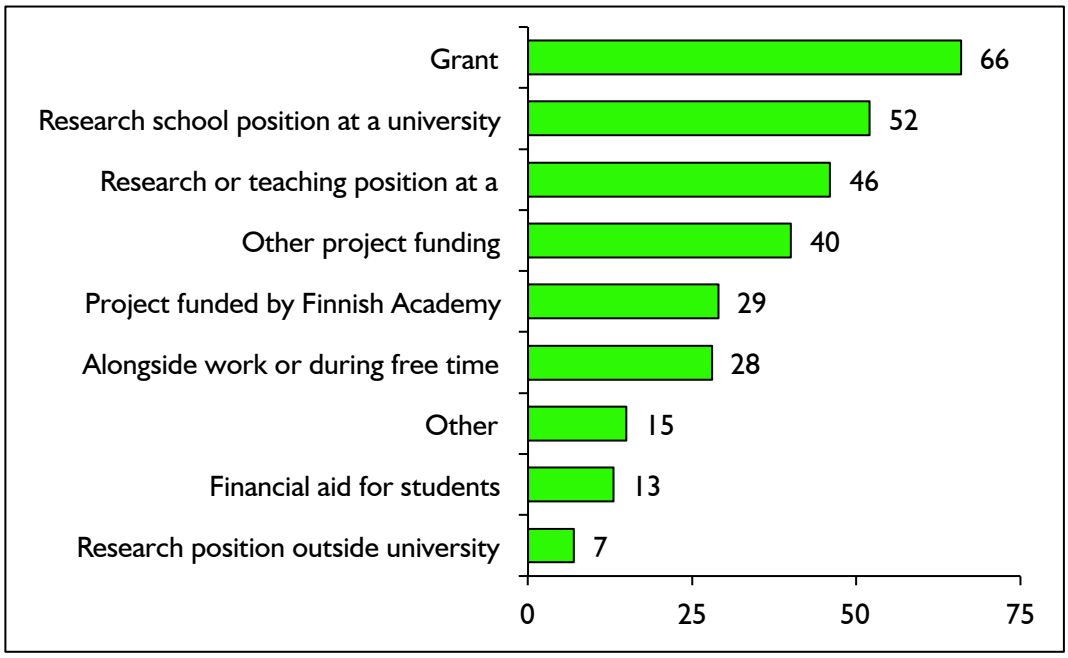

Figure 5. The source of funding for postgraduate studies (%)

The main sources of funding for postgraduate studies at the survey moment were Doctoral school position (36%), grant (30%) and research or teaching position at the university (13%). There were significant differences between genders concerning the main source of funding at the survey moment: 42% of women were employed in a research school position at the university, while 27% of men were working in the same position. Men were working on a grant more often than women (35% vs. 27%). When the place of origin was taken into account, it was found out that Finnish Doctoral Candidates were employed more often in research school positions than Doctoral Candidates with a foreign origin (39% vs. 28%). Foreign Doctoral Candidates, on the other hand, worked more in research or teaching positions at universities than their Finnish counterparts (22% vs. 8%).

3.2 Working on research scholarships

After beginning their work career, more than three fourths (77%) of the respondents had worked at least some time on a research scholarship. Every fourth (25%) had worked abroad on a grant. As many as 68% of Doctoral Candidates and 88% of Junior Researchers had been working on a grant (Figure 6). Every fifth (21%) Doctoral Candidate and almost every third (30%) Junior Researcher had worked on a grant abroad. There were no gender differences with respect to working on a grant.

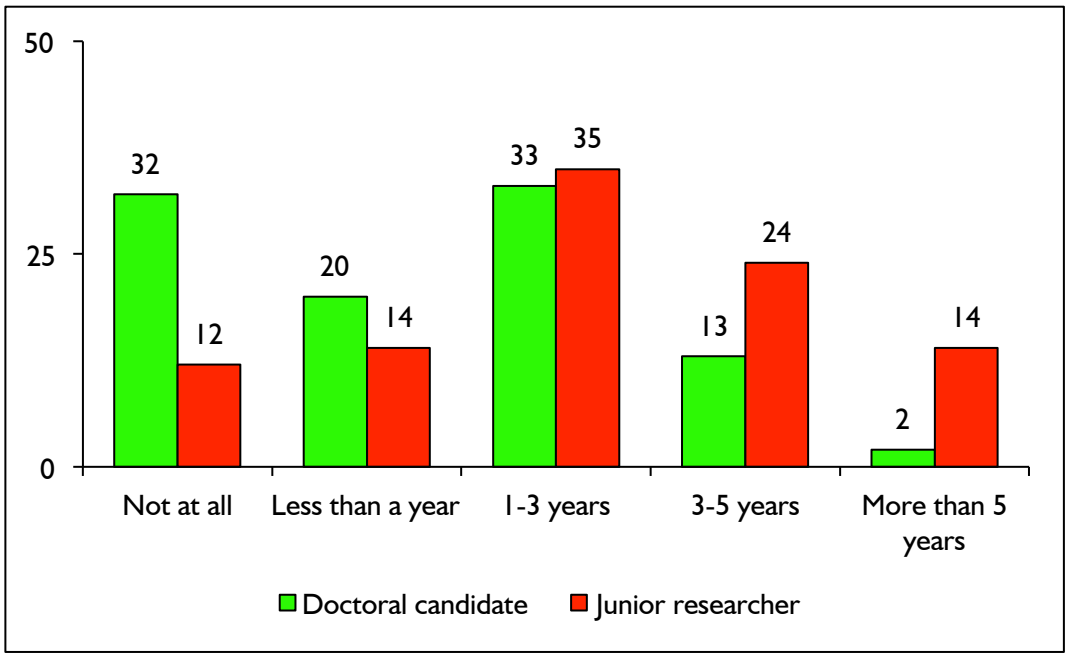

Figure 6. Working on a scholarship by research career stage (%)

Clearly, working on a grant is very common. There are significant differences between research career stages in the length of scholarships. One in seven (15%) Doctoral Candidates and more than every third (38%) Junior Researcher had worked on a grant for more than three years. This clearly demonstrates the problems in the advancement of research careers. Since there are not enough researcher and teacher

positions available at universities and research institutes, those who want to do research are obliged to apply for funding through other channels. Consequently, we cannot talk about a very professional career development in the Finnish academic world.

3.3 Employment history and situation in October 2016

As Junior Researchers are typically older than Doctoral Candidates, it is not a surprise that Junior Researchers' careers have started earlier and that they have had more work contracts during their career. As most of the Doctoral Candidates (81%) have been in working life for less than 10 years, the corresponding figure for Junior Researchers is 47%. For the number of work contracts during the whole career, the figures are as follows: 31% of Doctoral Candidates have had at least 7 separate work contracts, while as many as 57% of Junior Researchers have also had as at least 7 work contracts. More than half (56%) of the Junior Researchers and almost half (45%) of Doctoral Candidates have been unemployed during their work career (Figure 7). Within the past two years, 23% of Doctoral Candidates and 24% of Junior Researchers had been unemployed for at least some time.

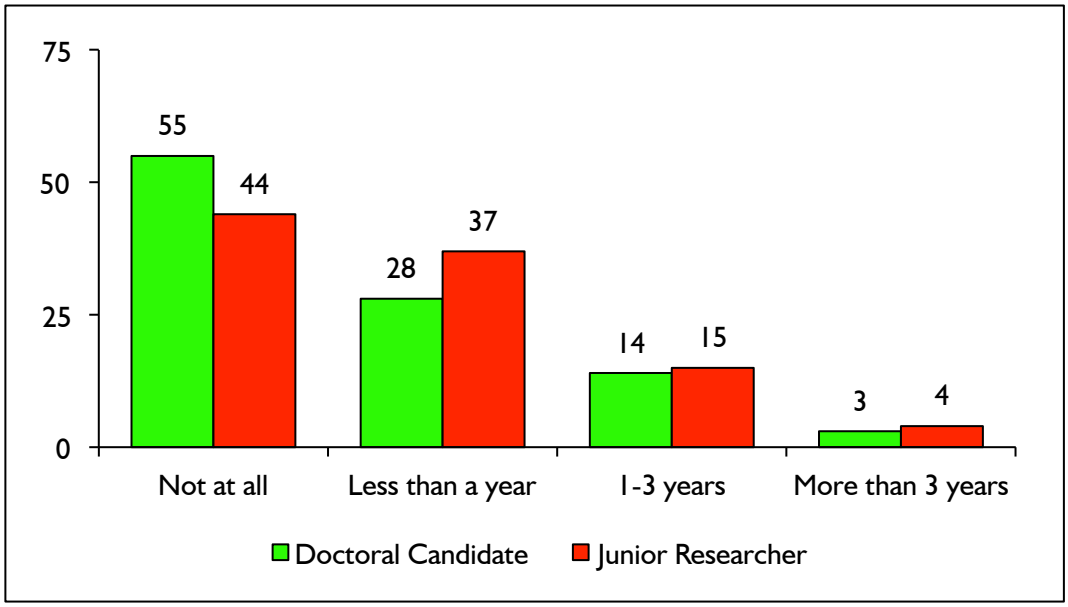

Figure 7. The length of unemployment during work career by research career stage (%)

According to the survey, 78% of Junior Researchers and 70% of Doctoral Candidates were employed in October 2016. Most of those without a work contract at the survey moment were on a grant (Figure 8).

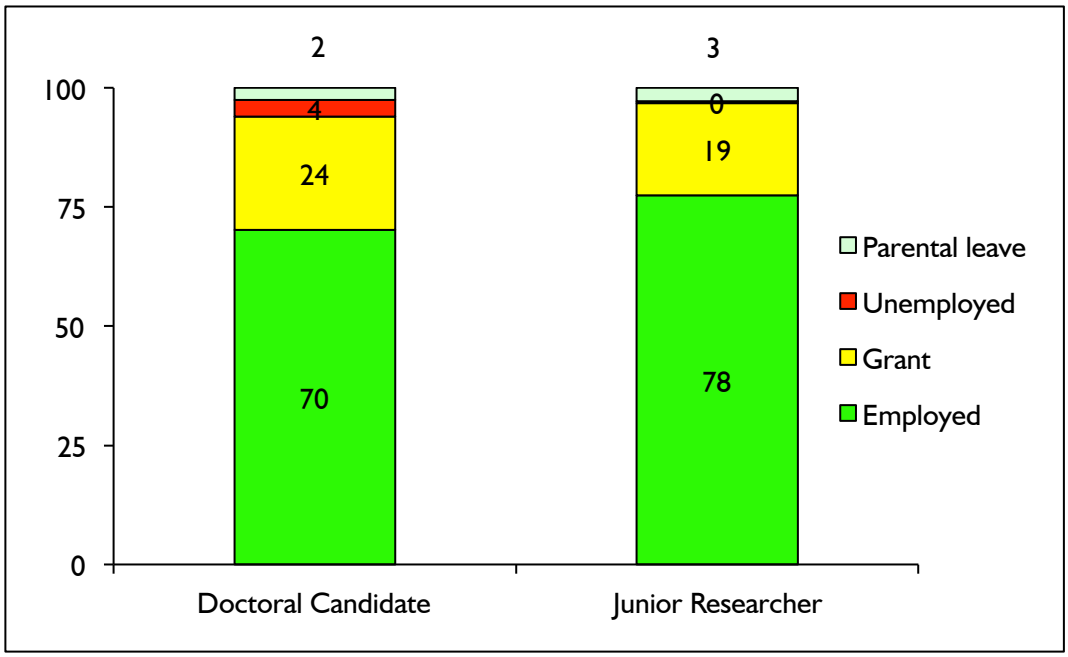

Figure 8. Employment situation by research career stage (%)

The current employment situation, and the number of consecutive work contracts will shed light on how secure the researcher career is. All of the respondents were working on a temporary contract. There are significant differences between the research career stages concerning their employment history, as can be seen in Table 6.

Table 6. Number of work contracts with the same employer by research career stage (%)

	1 contract	2–3 contracts	4–6 contracts	More than 7 contracts
Doctoral Candidate	35%	34%	20%	11%
Junior Researcher	19%	28%	18%	35%

As Table 6 shows, there are clear problems with the research career. When analysing those who have had only one work contract with their current employer, we can evaluate how committed the employers are to their researchers. There were altogether 68 Doctoral Candidates and 37 Junior Researchers who were on their first work contract with the current employer. The average length of the work contract for Doctoral Candidates was 32 months and for Junior Researchers 28 months. Every fifth Doctoral Candidate (21%) and Junior Researcher (22%) had a work contract that lasted for 12 months or less. All in all, 38% of Doctoral Candidates had signed a work contract that was longer than three years, while only 11% of Junior Researchers had a similar contract.

The employers do not seem to be willing to make long-term investments in researchers. This interpretation is confirmed by examining the length of current work contracts (Figure 9). When the estimated time to complete postgraduate studies is 4 years, the fact that more than half of Doctoral Candidates have a work contract that is less than two years long indicates the attitude of the employers.

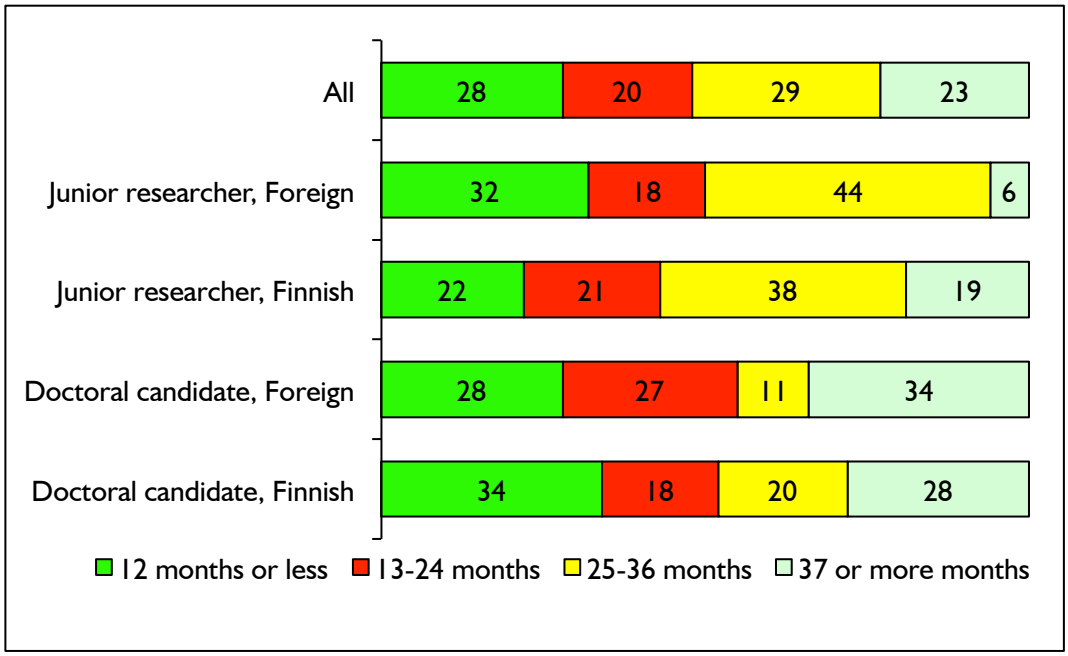

Figure 9. The length of current work contract by research career stage and place of origin (%)

3.4 Payment

The average salary of employed respondents was €2,895 per month in October 2016 (median €2800, standard deviation €668). One quarter earned no more than €2,400/month, while the best-paid quarter earned at least €3,400. When compared with the mean and median salaries of all workers in Finland (mean €3333, median €2963), we see that research work is not appreciated in the Finnish society. The average salary for employed Doctoral Candidates was €2413, and for Junior Researchers, who were all PhD holders, the average salary was €3385 (Figure 10). This means that Junior Researchers earned a little more than the average worker in the Finnish society. When we take into consideration that less than 1% of workforce has gone through research education, we see that research work is undervalued in Finland.

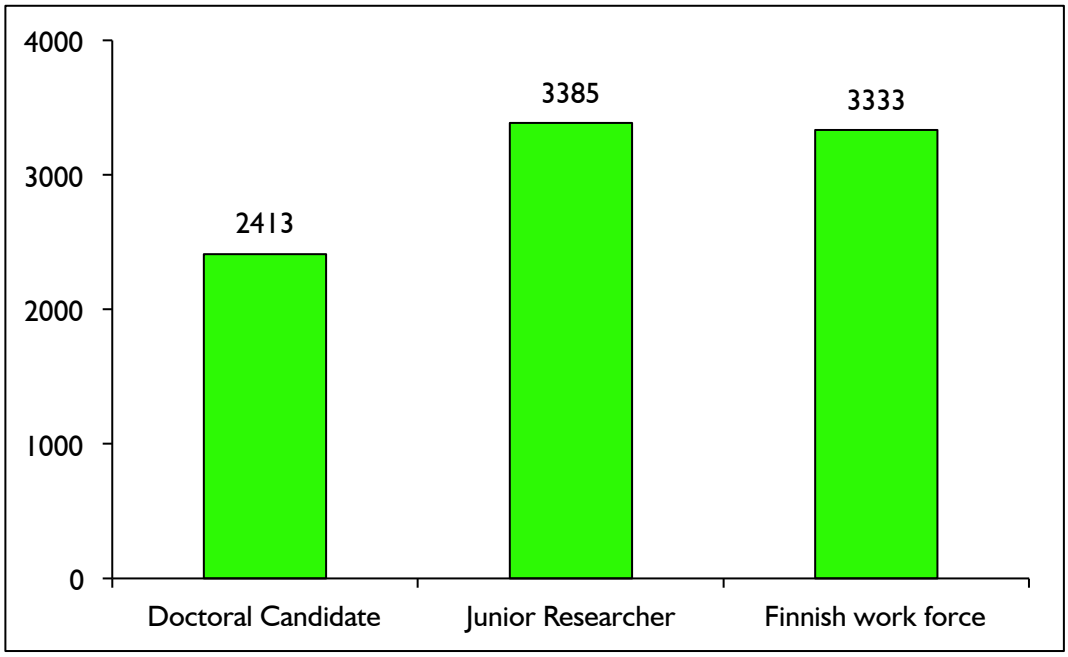

Figure 10. The average salaries by research career stage €/month

There were no salary differences between the origin of the respondents or between genders. When asked about how the salary corresponds to the current work, 36% of the respondents answered that their salary was too small, while 63% considered it appropriate and 1% thought that it was too big.

Significant differences were seen only in Doctoral Candidates: 44% of Finnish and only 17% of foreign Doctoral Candidates thought that their salary was too small.

3.5 Working hours

Standard weekly working hours and standard annual working time within the 1,624-hour system[1] seem almost unknown concepts to the respondents of the survey. As Figure 11 shows every fourth (25%) of the respondents work more than 48 hours per week.

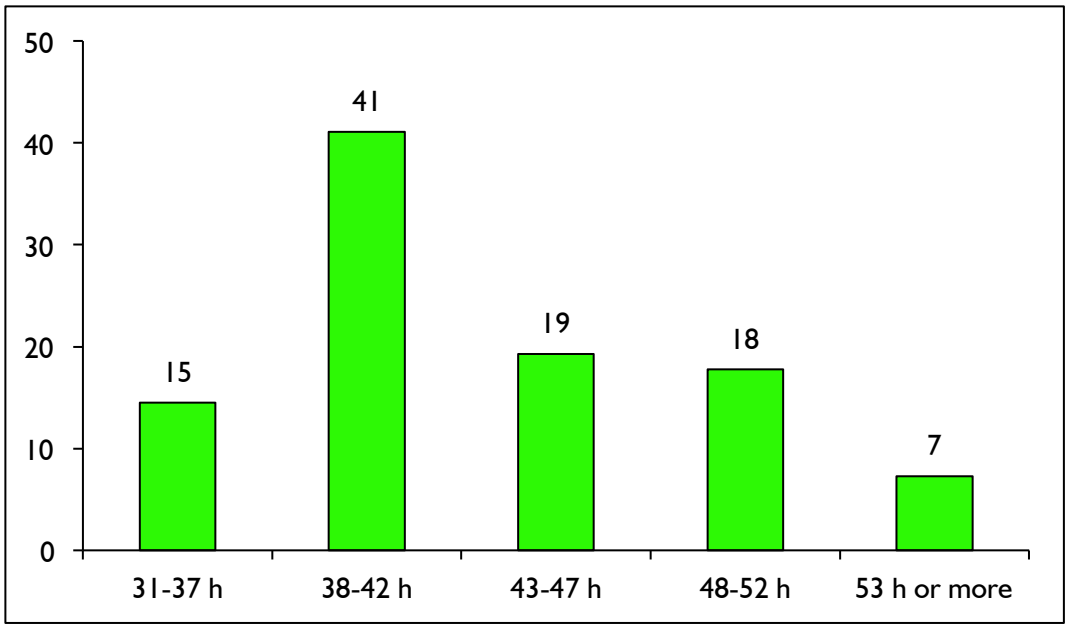

Figure 11. The weekly working hours (%)

The employed respondents estimate their average weekly working time to be 42.5 hours (median 40 hours, SD 9.7 hours). The average weekly working hours for Doctoral Candidates were 41.9 hours (SD 9.6 hours) and for Junior Researchers 43.1 hours (SD 7.4 hours)

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[1] In Finland, the annual working time of a university teacher or researcher is, according to the collective agreement, 1,624 hours. For most teachers and researchers, this is allocated between research, teaching and counselling, and various administrative tasks. However, according to the results of a survey by Statistics Finland, university teachers and researchers work on average more than 2,000 hours per year; this means that in practice they do c. 400 hours of unpaid overtime work every year.

The average weekly working hours for men were 43.5 hours (SD 10.3 hours) and for women 41.8 hours (SD 7.4 hours). The gender differences within weekly working hours mainly derive from the group of Junior Researchers, in which men worked 44.5 hours (SD 9.2 hours) and women 42.2 hours (SD 5.9 hours). Only 0.6% of the respondents said that they got compensation for their overtime work. More than half (55%) claimed they work overtime with no extra compensation. There were significant differences between research career stages in the overtime work. Less than half (48%) of Doctoral Candidates were doing overtime, while almost two thirds (63%) of Junior Researchers were doing this extra work without compensation. There were significant differences between men and women in terms of overtime work only in the group of Doctoral Candidates, where 42% of women and 58% of men answered that they did extra work without compensation.

The researcher's work is not necessarily bound to the physical premises of the work place, as work can be done in various other places as well. This can be seen in the fact that more than two thirds (68%) of the respondents do extra work-related tasks at home at least once a week (Figure 12).

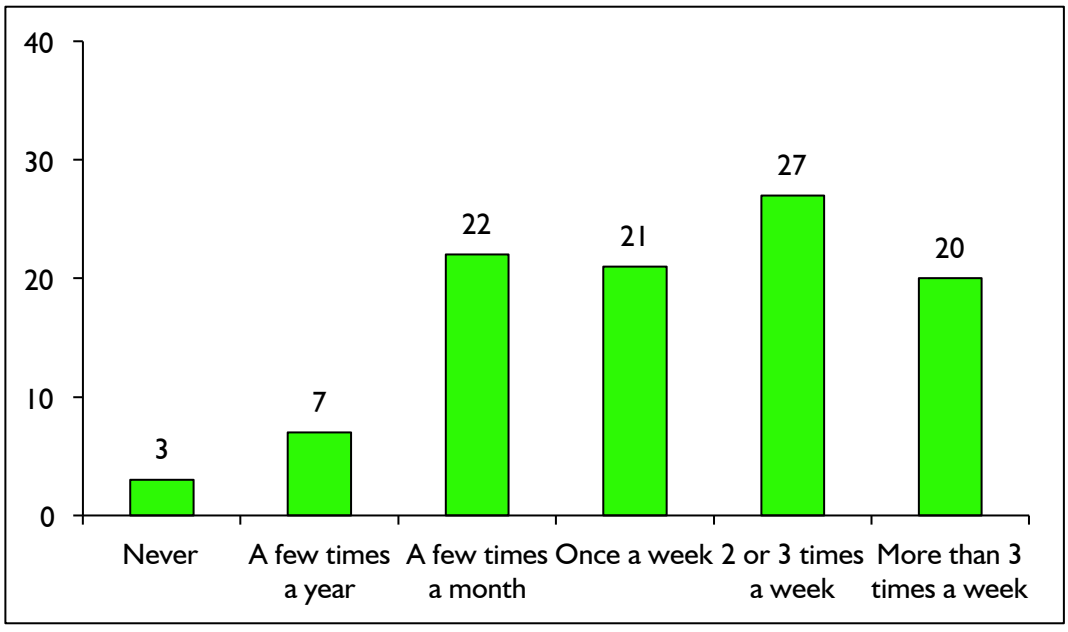

Figure 12. The frequency of working at home in the evenings (%)

There were no statistical differences between the research career stages or genders. However, when the respondents' place of origin was taking into account, significant differences could be detected in the group of Doctoral Candidates: 38% of Finnish and 57% of foreign Doctoral Candidates worked at least twice a week at home.

More than two thirds (69%) of the respondents told that they also performed work-related tasks at least during one weekend a month, and every third (34%) respondent worked almost every weekend (Figure 13). There were no statistical differences between research career stages. However, when the respondents' place of origin was taken into account, significant differences were found in the group of Doctoral Candidates: 29% of Finnish and more than half (51%) of foreign Doctoral Candidates worked almost every weekend. Could this imply that there are problems with the integration of international researchers into the Finnish science world?

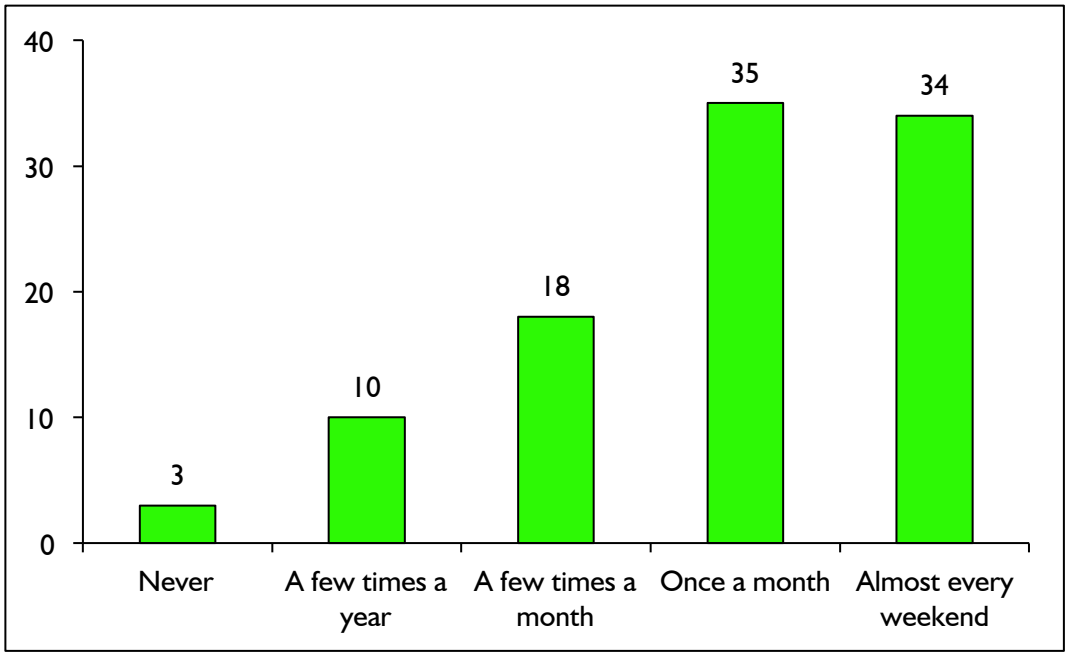

Figure 13. The frequency of weekend work (%)

3.6 Teaching, administration and acquisition of funding

Most of the respondents (64%) have participated in teaching and more than half (57%) in guiding and supervising students during the past two years. Junior Researchers had participated in supervision more often than Doctoral Candidates; 70% of Junior Researchers and 46% of Doctoral Candidates had supervised students (Figure 14). Since student guidance is important for the researcher's career advancement, it is understandable that Junior Researchers, who hold a PhD, attend to it more. There were no differences between the origins of the respondents or between genders. During the past two years, the amount of teaching had increased for every fifth (21%) respondent. At the same time, there was an increase in the guidance of students; this increase was 19% for Doctoral Candidates and of 34% for Junior Researchers.

Teaching makes it is possible for a researcher to gain important work experience, especially if a researcher wants to pursue an academic career. However, as Doctoral Candidates and Junior Researchers are recruited to do research, we can ask whether their involvement in administrative duties is beneficial for either their work or their career advancement.

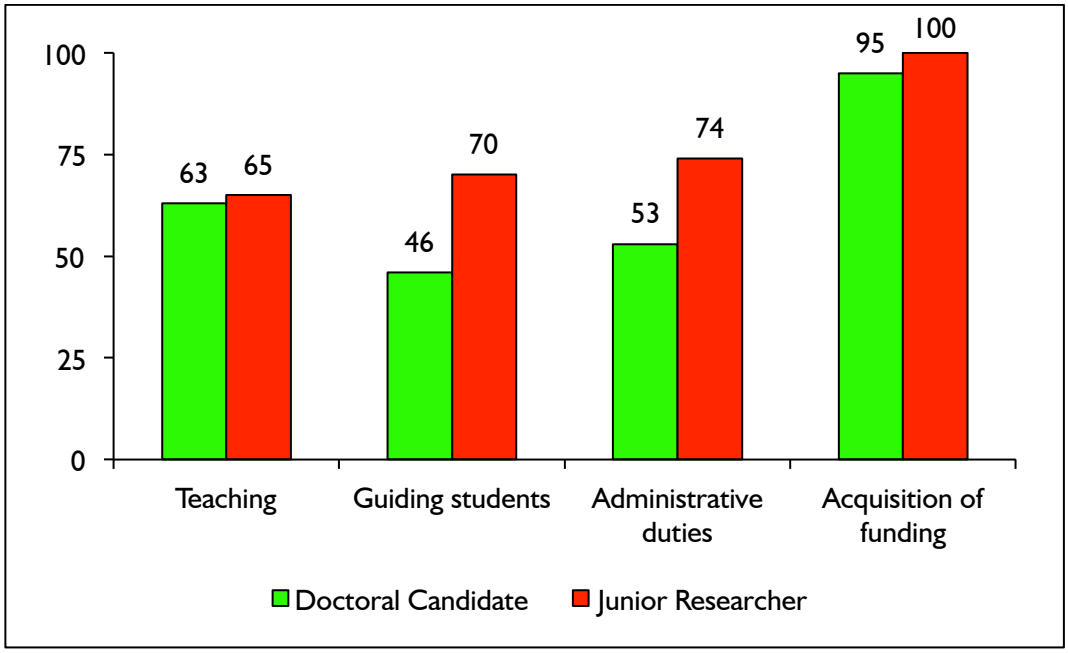

Figure 14. Participating in teaching, guiding students, administration and acquisition of funding by research career stage (%)

Almost two thirds (63%) of the respondents have been given administrative duties. Junior Researchers have administrative duties more often than Doctoral Candidates (74% vs. 53%). There were no differences between the genders or the respondents' places of origin. Almost all (96%) of the respondents participate in applying funding for research. It can be argued that it is vital to learn how to write funding applications if one wants to pursue a research career. However, the time spent on writing funding applications is time taken away from one's own research. As almost all researchers have to participate in applying for funding, this implies that researchers are like entrepreneurs who need to market their own research potential for possible funders. It seems almost like the employer would take no responsibility of the continuation of the researcher's employment. If researchers are successful in obtaining funding, there is a chance that they will be offered a new temporary work contract.

3.7 International mobility

During the past three years, 85% of the respondents had taken part in some type of international cooperation. It was only one in five (21%) Doctoral Candidates and one in twelve (12%) Junior Researchers who had not participated in international cooperation in the past three years. Of the non-mobile researchers who were employed at the survey moment, more than half (52%) had been with the same employer for less than a year.

When analysing those who had been internationally active in the past three years (n=443), we notice that 92% of the respondents had participated in international conferences or project meetings in Finland and 94% had attended international conferences or project meetings abroad (Figure 15).

On average, the respondents had participated in conferences in Finland 4.1 times (SD 3.8) and abroad 4.6 times (SD 4). Almost every third (32%) had made visits abroad that had lasted for more than two weeks but less than three months and 18% of the respondents had been working abroad for more than 3 months within the past three years. There were no statistical differences between genders, research career stages or the respondents' places of origin.

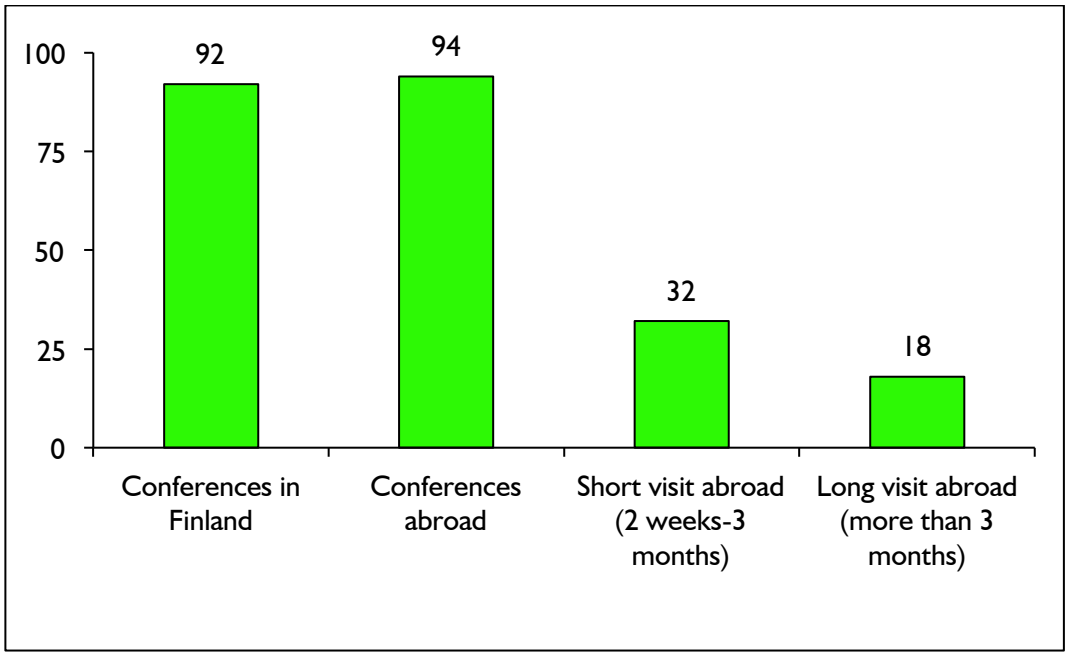

Figure 15. Participating in international activities in the past three years (%)

At the moment, it seems that international mobility is a prerequisite for a research career, at least in the science policy discourse. As can be seen from above, most of the respondents had been internationally active. However, there are problems connected with international mobility as well. FUURT wanted to analyse the factors that prevent international mobility for Finnish respondents. For foreign respondents, who obviously had been internationally mobile, since they had come to Finland for work, the survey wanted to analyse the problems they had encountered in the country.

For Finnish Doctoral Candidates and Junior Researchers, there are two key issues preventing international mobility: the uncertainty of whether there would be sufficient income if one were to move to another country and the obscure career prospects in the future (Figure 16). The problems with the research career itself, its vagueness and uncertainty concerning future career opportunities, are also factors hindering international mobility. The decision of moving abroad affects other people in addition to the researchers themselves. If a spouse has a job in Finland, it can be risky to move abroad.

The possibility of a spouse finding a job abroad is something that needs to be taken into account when considering moving abroad. There were no gender differences as regards the hindering factors.

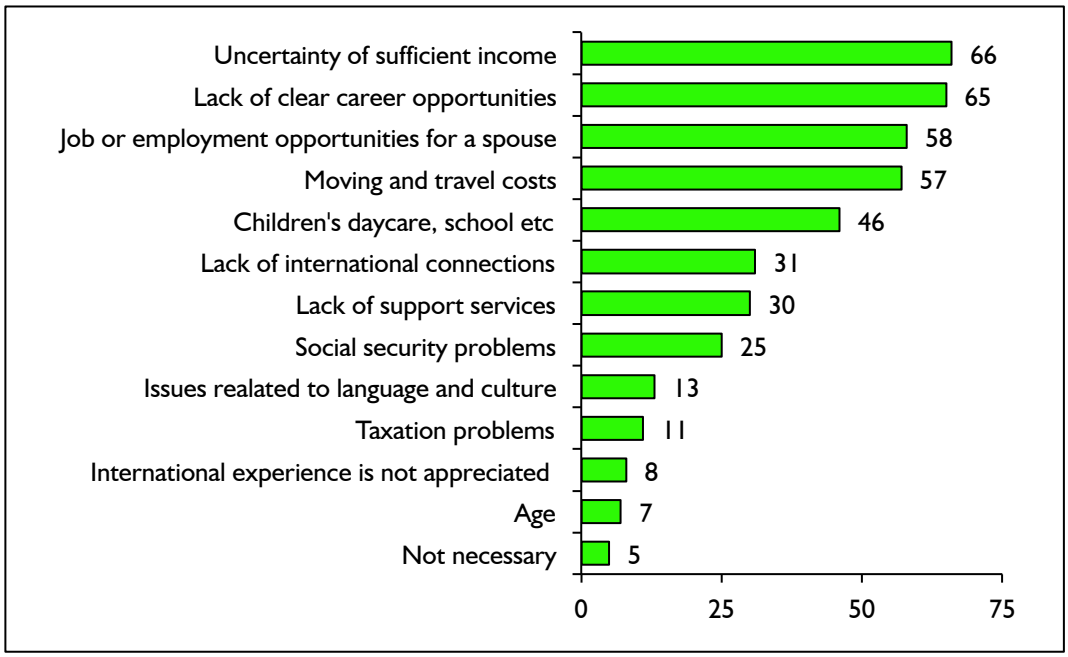

Figure 16. The factors preventing the international mobility of Finnish researchers (%)

When the preventing factors were analysed together with the different research career stages, it could be noticed that 59% of Junior Researchers and 33% of Doctoral Candidates regarded their children's day-care, school and other matters as a factor that affects their mobility. There was also a clear difference in the lack of international connections, since every fourth (25%) Junior Researcher and more than every third (37%) Doctoral Candidate viewed this as a preventing factor for their mobility. As only 5% of the Finnish respondents thought that international mobility is not necessary for them, we can conclude that researchers consider international mobility and cooperation as a natural part of a research career.

As the issues above were regarded as preventing international mobility, it is interesting to analyse what have been the reasons for internationally active researchers to move to Finland to work (Figure 17). The necessity of international experience in building the research career can be seen one of the reasons for moving to Finland.

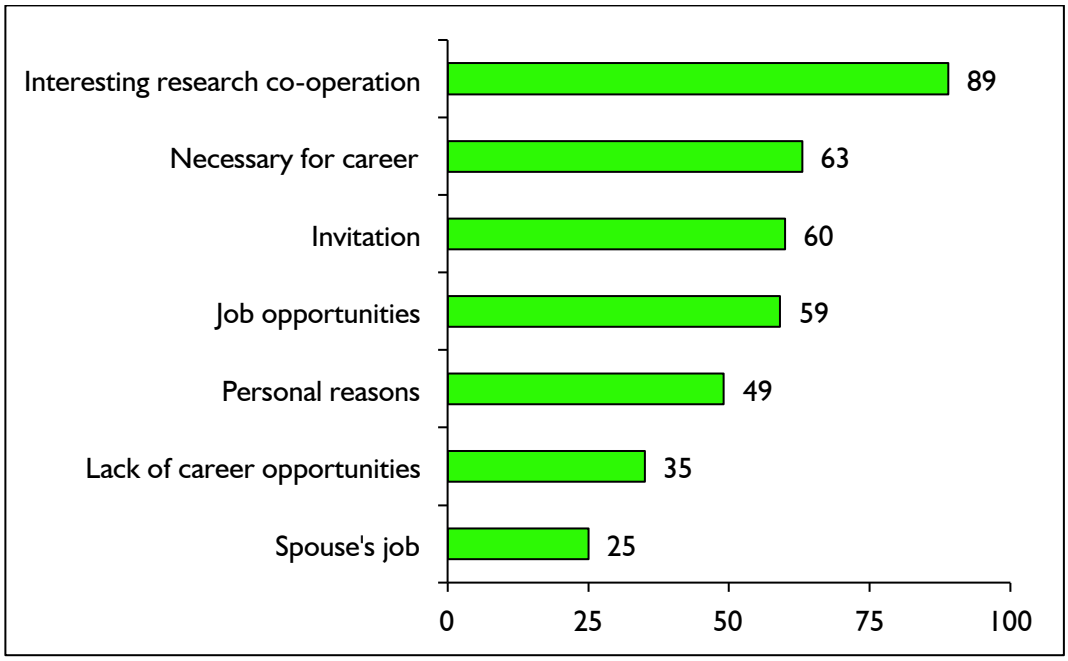

Figure 17. The reasons to move to Finland (%)

It is also interesting to analyse what kind of problems the internationally active researchers have encountered, when they have indeed moved to Finland for work (Figure 18).

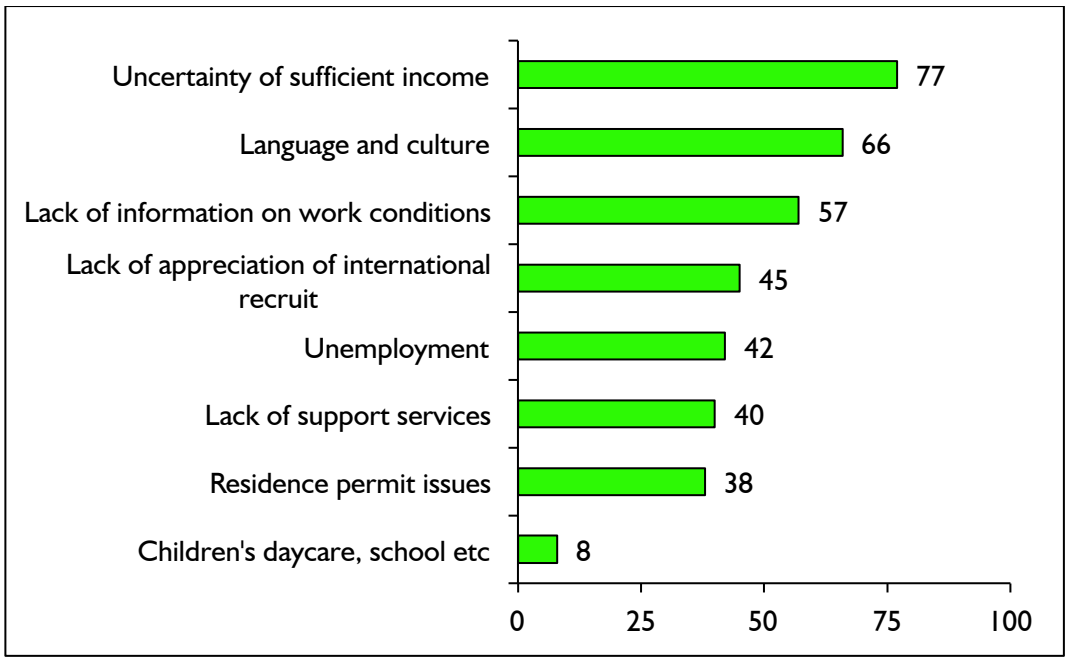

Figure 18. The problems foreign researchers have encountered (%)

More than three fourths (77%) of the foreign respondents had encountered problems with insufficient income while being in Finland. The language and culture issues had caused problems for 66% of the respondents. As many as 42% of the respondents had experienced unemployment while in Finland, which can at least partly explain the problems with their insufficient income. However, this also underlines the problems with a research career. Finland has aimed at internationalising its research and university environment, but it seems that not enough attention has been paid to the problems that arise.

There were no differences between genders or research career stages. However, the origin of respondents is a contributing factor to some of the problems. Those who have come to Finland from outside EU/EEA countries have more often encountered problems. Almost two thirds (63%) of the researchers coming from Other countries have had problems with their residence permits. They had been unemployed more often than the respondents from EU/EEA countries (57% vs. 20%). This is also a contributing factor for the problems with insufficient income, since 88% of the respondents from Other countries had faced these problems, whereas the corresponding figure for the respondents from EU/EEA countries was 62%.

3.8 Integration into current place of work

It is alarming that every eleventh (9%) employed respondent did not know what kind of salary system was used in their workplace. Moreover, there seemed to be other problems concerning their integration into their current place of work. Most of the respondents (82%) had been received in a friendly manner, when they started their current work. On the other hand, every twelfth (8%) respondent disagreed with this statement. There were no differences between the respondents' gender, research career stage or place of origin.

Less than half (45%) of FUURT members said that they had received sufficient information on the terms and conditions regarding their employment, while 29% of the respondents claimed they had not received enough information. There were no differences between the respondent's gender, research career stage or origin. Employers thus seem to have neglected their responsibilities to tell the employees

about their rights and duties. Even if the basic employment information had been conveyed, there seem to be problems with the orientation to workplace practises such as ICT issues, keys, etc., as Figure 19 shows. However, perhaps contrary to expectations, it was the Finnish Doctoral Candidates who were the most dissatisfied with the orientation to practical issues they had received.

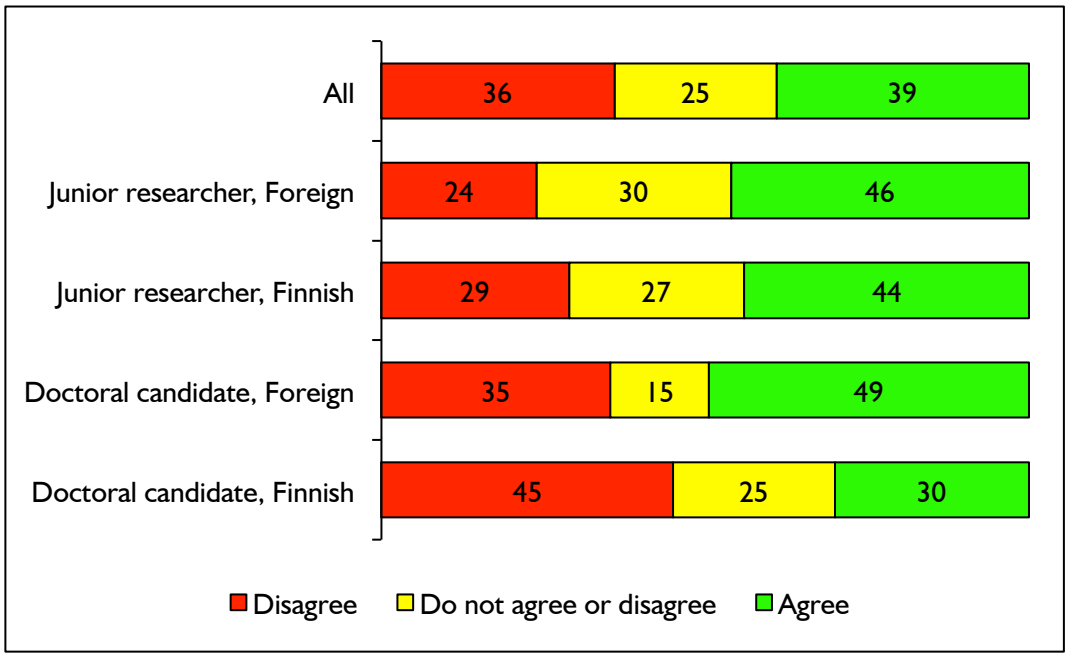

Figure 19. Received sufficient orientation to workplace, by research career stage and place of origin (%)

Even if the Finnish respondents were more dissatisfied with their workplace orientation, they had clearly adjusted to their workplace more easily than the foreign members, as can be seen in Figure 20.

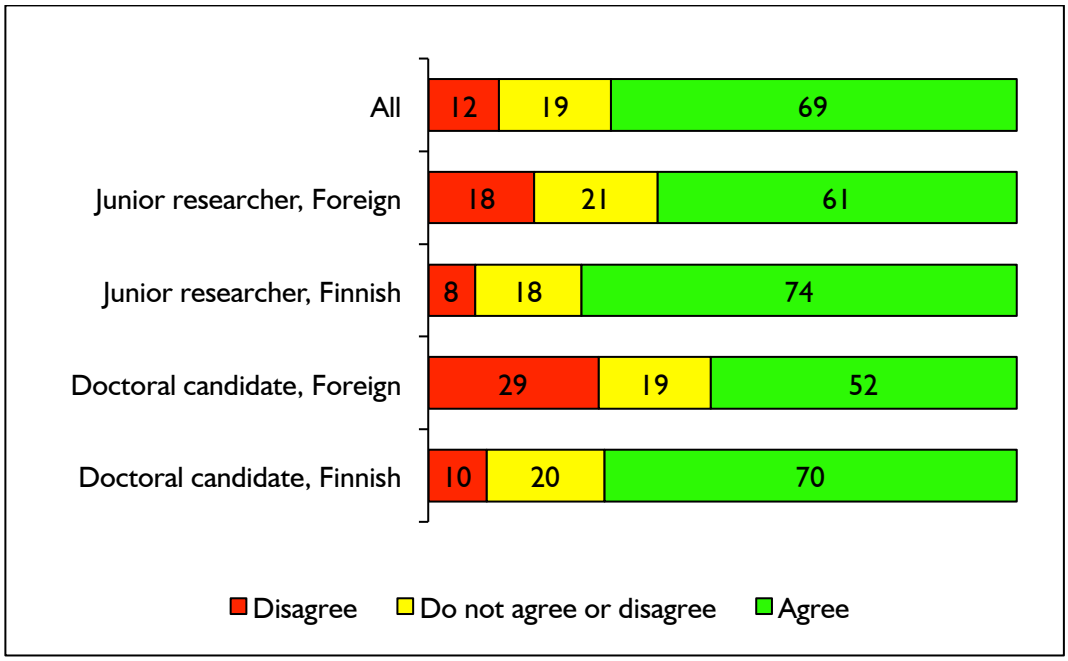

Figure 20. Adjusting to workplace was easy, by research career stage and place of origin (%)

Research is a collaborative action. It is therefore important that researchers feel that they belong to their work community (Figure 21).

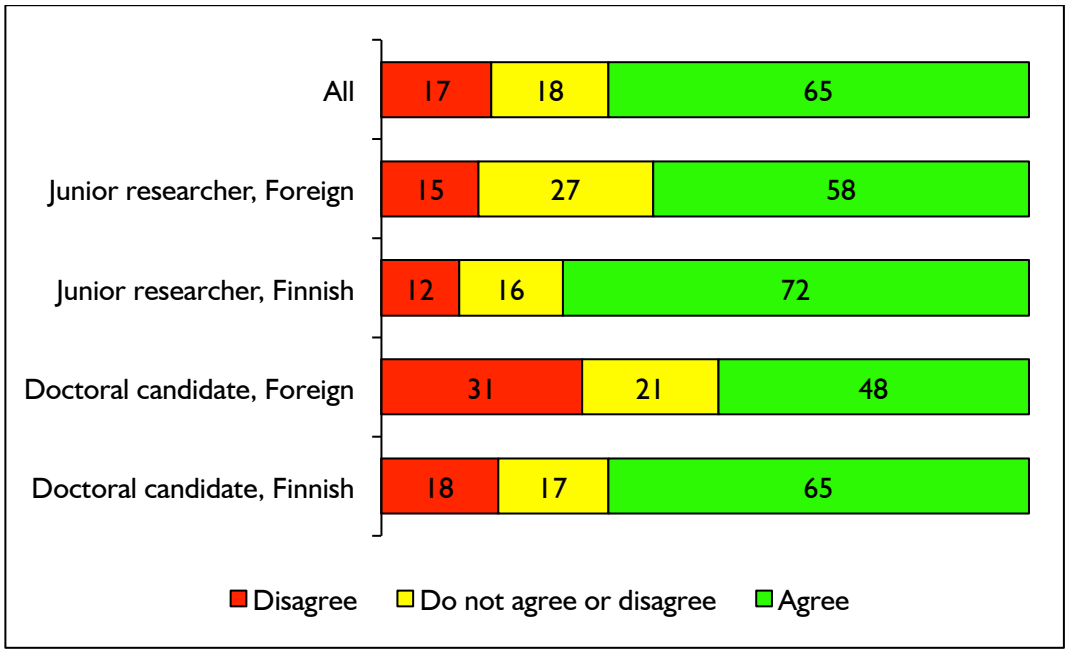

Figure 21. Feeling part of one's work community, by research career stage and place of origin (%)

It is very problematic that almost every third (31%) foreign Doctoral Candidate informed that they do not feel like they belong to their work community (Figure 21).This is alarming for the Finnish Science world. However, most (63%) of the Doctoral Candidates and (71%) of Junior Researchers said that they were somewhat or very satisfied to their current workplace (Figure 22). There were no differences between genders or origins.

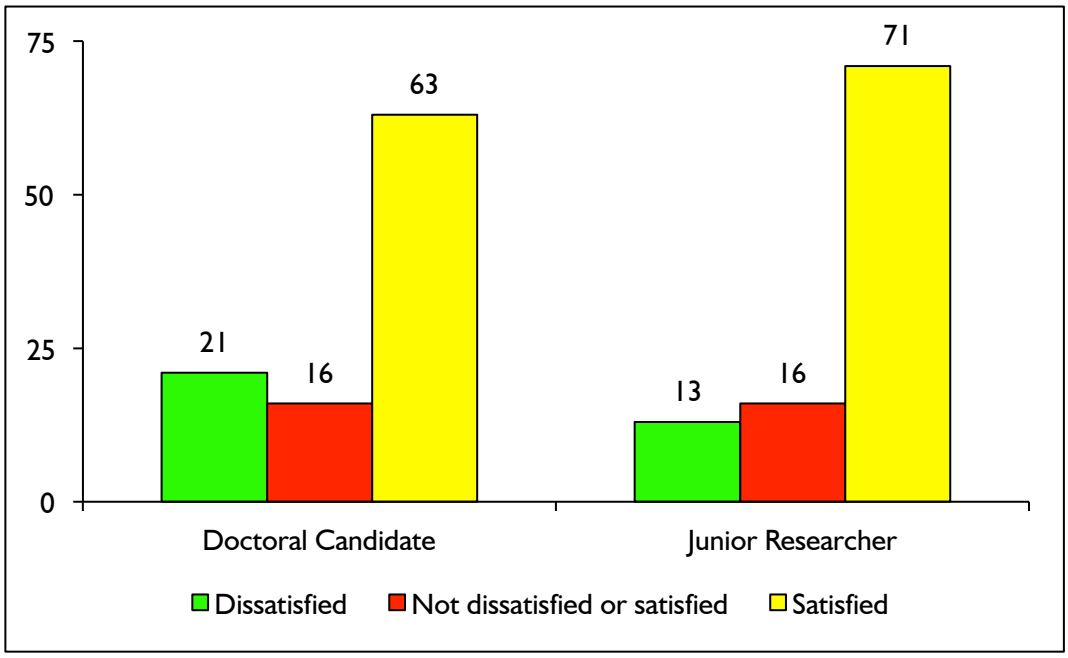

Figure 22. The satisfaction to current workplace by research career (%)

3.9 Work-related stress and exhaustion

The membership surveys of FUURT have regularly paid particular attention to work exhaustion and work-related stress among the members, the causes of this stress, and the ways in which well-being at work could be improved. Almost half of the members (40%) claimed that they had experienced work exhaustion to some degree or to a large extent. There were no differences between the genders, the research career stages or the origins of the respondents in experiencing work exhaustion.

As many as 44% of the respondents claimed to suffer from stress much or very much. There were no differences between the genders, research career stages or origins in experiencing work exhaustion. The connection between the number of working hours per week and feelings of work exhaustion and stress was statistically significant. When the weekly workload increased, this multiplied work-related stress and exhaustion (Figure 23).

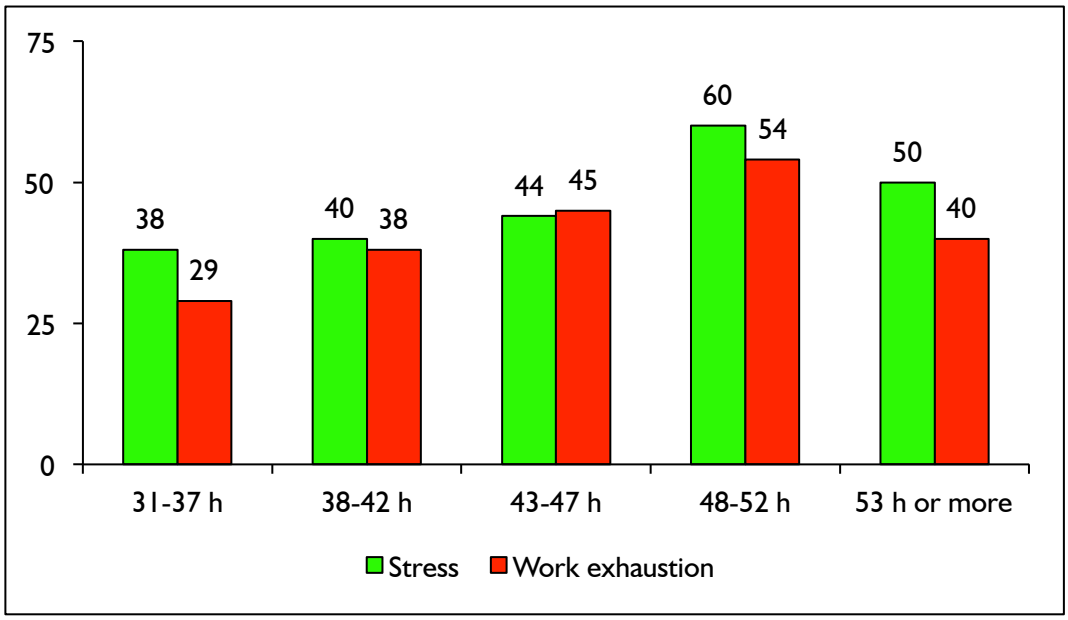

Figure 23. Feelings of stress and workexhaustion by weekly working hours (%)

From the perspective of the employees' well-being, working at home in the evenings and on weekends is problematic. Those who work almost every weekend experience symptoms of work exhaustion clearly more often than the other groups. As many as 58% of those who work almost every weekend experience either much or very much stress, while 49% of those who belong to this group feel work exhaustion to some extent or much. A similar connection to evening work at home can also be noticed, since more than half (56%) of those who work at home in the evenings more often than three nights a week have experienced stress much or very much and 47% of this group feel work exhaustion to some extent or much.

Figure 24 presents the most common causes of detrimental work-related stress. Temporary employment, uncertainty about the continuity of work and pressures to acquire funding are clearly the three most common causes of detrimental work-related stress among the members of FUURT.

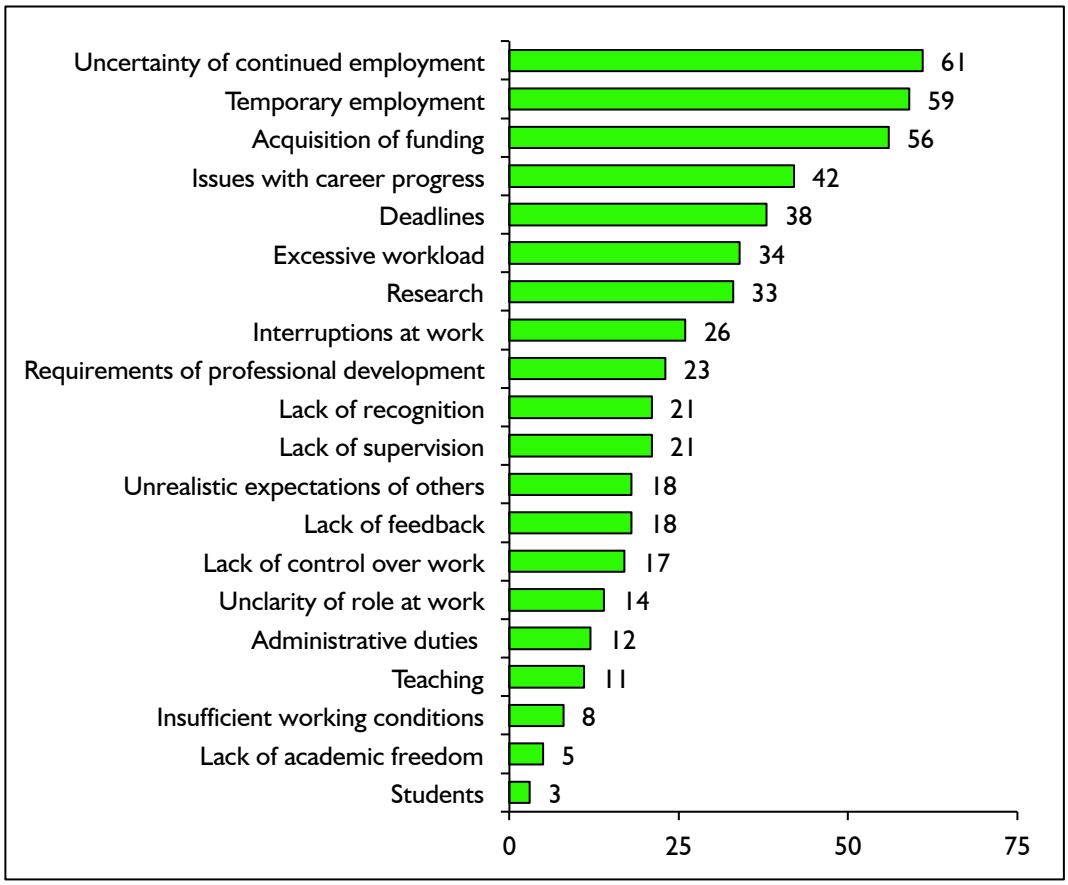

Figure 24. Factors that cause detrimental work-related stress (factors that cause stress often or almost constantly) (%)

Table 7 presents the four most detrimental reasons for work-related stress of Doctoral Candidates and Junior Researchers while taking into account their place of origin and the extent to which each group feels that these factors cause detrimental stress often or almost constantly. For example, 75% of foreign Doctoral Candidates feel that the uncertain continuity of employment causes detrimental work-related stress often or almost constantly for them.

Table 7. The main causes of work-related stress in different research career stages (%)

Doctoral Candidate, Finnish	Doctoral Candidate, Foreign	Junior Researcher, Finnish	Junior Researcher, Foreign
Uncertainty of the continuity of work 54%	Uncertainty of the continuity of work 75%	Temporary employment 66%	Uncertainty of the continuity of work 70%
Temporary employment 49%	Acquisition of funding 64%	Uncertainty of the continuity of work 62%	Temporary employment 65%
Acquisition of funding 49%	Temporary employment 63%	Acquisition of funding 60%	Acquisition of funding 60%
Research 40%	Issues with career progress 50%	Issues with career progress 46%	Deadlines 57%

As more than half of the researchers feel that the temporary nature of employment causes detrimental work stress often or almost constantly, we may ask whether this type of working environment makes it possible to reach the high international level of research that Finnish society is aiming at.

3.10 Uncertainty of the future

As can be seen from previous figures and tables the uncertainty of the continuity of work is a factor that causes detrimental work stress to researchers often or almost constantly. As all Doctoral Candidates and Junior Researchers were working with temporary employment contracts, it is no wonder that this is the main reason why the respondents feel their job being threatened (Figure 25). There were no differences between the genders or origins. Despite being in a temporary employment every fourth (26%) of Doctoral Candidates and every seventh (15%) of Junior Researchers felt that their job is not threatened in the future. On the basis of the survey, we are not able to analyse the reasons for this.

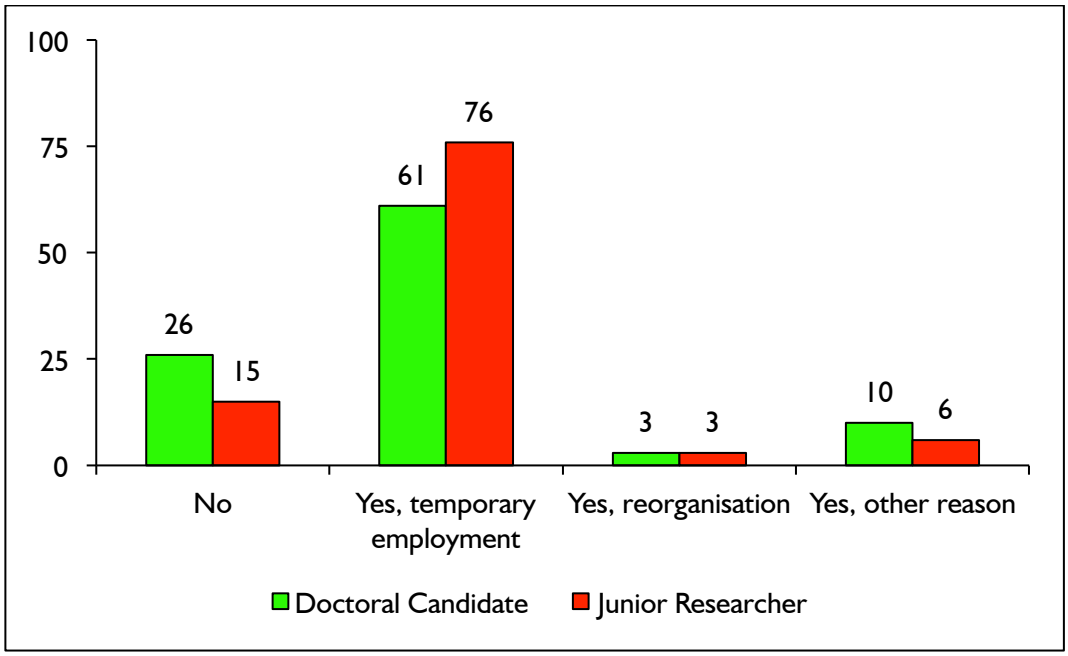

Figure 25. The reasons why job feels threatened by research career stage (%)

3.11 How to improve well-being at work

This survey aimed at finding ways in which well-being at work could be improved. The suggestions that the respondents gave for amending well-being at work can be seen in Figure 26. As one notices, improvements in the communication and interaction within the work community, improving the superiors' management practices and increased support by superiors are regarded as factors that are very important for enhancing well-being at work.

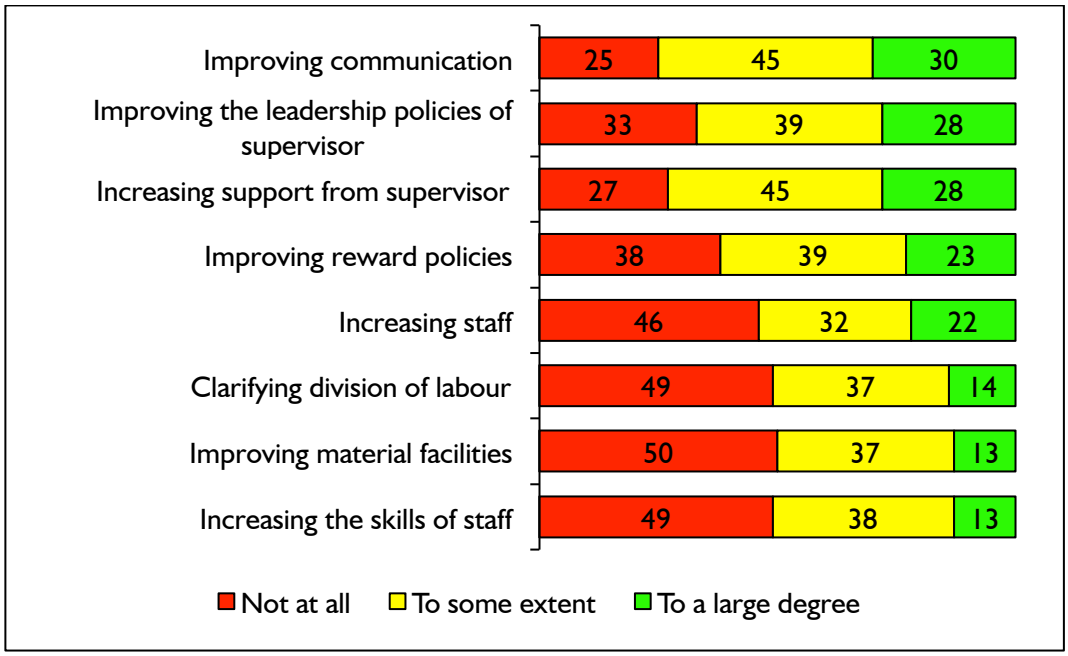

Figure 26. The rating of means for improving well-being at work (%)

There are some notable differences between the different research career stages. One in every three (33%) Doctoral Candidates felt that increased superior support would improve well-being to a large extent, while only one in every four (23%) Junior Researchers agreed to that. 34% of Doctoral Candidates felt that improvements in the communication and interaction within the work community would enhance their well-being at work to a large extent, while 26% of Junior Researchers felt the same. On the other hand, more than every fourth Junior Researcher (27%) answered that increasing the number of personnel would improve their well-being at work, while less than every fifth (19%) Doctoral Candidate indicated the same.

For Doctoral Candidates, there were significant differences between genders in two of the statements: for the increased superior support (women 41% vs. men 23%) and for the improved management practices by the superiors (women 33% vs. men 19%). When the respondents' place of origin was taken into consideration, some significant differences were found. Almost half of the foreign Doctoral Candidates (49%) declared that improvements in the superior support would enhance their well-being at work significantly, while a little more than every fourth (28%) Finnish Doctoral Candidate felt the same. A similar result could be found as regards the improvements made in the communication and interaction policies within the work community (foreign Doctoral Candidates 52% vs. Finish Doctoral Candidates 29%).

3.12 Career plan changes

Almost two thirds (60%) of the survey respondents have thought about abandoning research work and considered moving to a completely different line of work (Figure 27).

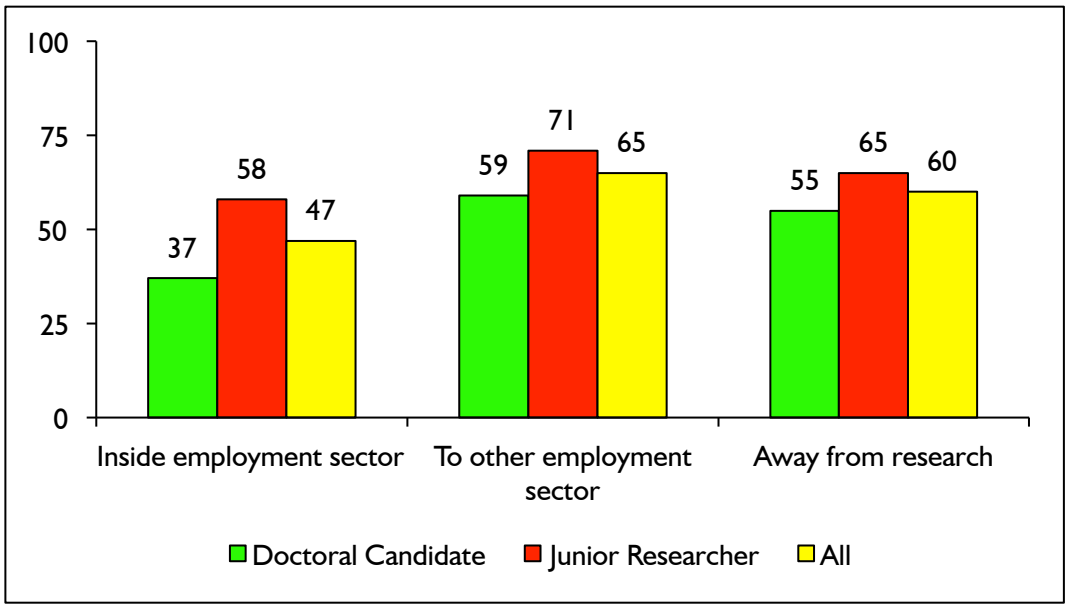

Figure 27. Career plan changes by research career stage (%)

Almost half (47%) have considered changing the work place within the same employment sector (for example, from one university to another), and 65% have thought about changing the employment sector (for example, from a university to a research institution). These figures clearly demonstrate that there are big problems related to a research career in Finland.

In the light of this membership survey, the possible lack of interest in a research career cannot be regarded as a big surprise. Anyone who fantasises about a career as a researcher must make great sacrifices, if they wish to strive for the top of the research community. Short-term contracts, poor salaries, the pressures of acquiring external funding, the constant uncertainty of future work with no clear criteria that could be fulfilled to guarantee the continuity of one's employment are all factors that force one to ask why it would be worthwhile for anybody to get interested in a research career. When all this is combined with the fact that a researcher's work seems to require a great deal of unpaid overtime work and various work-related tasks

at home in the evenings and on weekends, which further complicates the integration of family life and work, it is no wonder that so many are planning a career change.

Afterword

As this report has shown, Research career as a concept in Finland is an illusion. We have researchers, who are conducting research with short-term contracts, poor salary and little prospects of the future advancement. Employers don't seem to be interested in building proper research career models. Even if 10 out of 14 Finnish universities have been awarded HR Excellence in Research award, this can hardly be seen in reality. Finland has not been willing to ratify the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers although all Finnish Universities have declared to endorse these principles.

The internationalisation of universities is a common agenda for many European countries. In Finland, the Ministry of education and culture published "Better together for a Better" document, which includes policies to promote internationalisation in Finnish Higher Education and research 2017-2025. Various university rankings emphasize the international outlook of universities, which can be defined as the proportion of international faculty or international-to-domestic-staff-ratio. As this report has shown researchers are aware of the need to do international co-operation, but they do acknowledge the problems that are linked with international mobility. This report has also revealed the problems, international researchers have encountered while working in Finland. These problems need to be solved in order for a research career to become a reality in the Finnish science world.