

**SURVEY FOR EARLY CAREER RESEARCHERS CONDUCTED BY THE FINNISH
UNION OF UNIVERSITY RESEARCHERS AND TEACHERS IN 2020-2021**



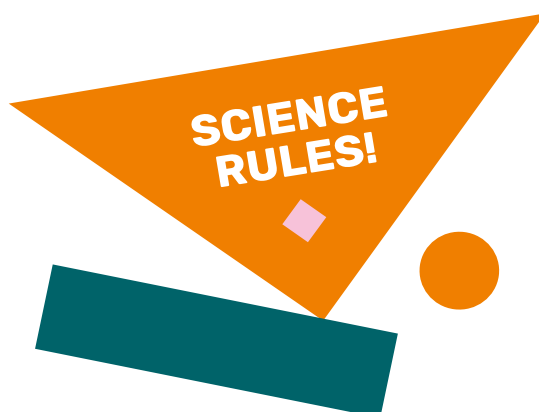
AT A CAREER CROSS- ROADS



TIETEENTEKIJÄT
FORSKARFÖRBUNDET FUUT

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SUMMARY

The Early career researchers' working group of the Finnish Union of University Researchers and Teachers (FUURT) conducted a survey for doctoral researchers and those who have recently completed their doctorate around the turn of 2020–2021. The survey clarified the work situation, research funding, work prerequisites, future prospects and career plans of early career researchers. In this report, the term early career researcher refers to doctoral researchers and those who have recently completed their doctorate (within 1–4 years). The survey is a continuum of the surveys conducted in 2012 and 2017. This time the survey was conducted by Aula Research Oy in co-operation with FUURT.

Altogether 1,517 early career researchers responded to the survey. Of the respondents, 64 % were female and 32 % male. The mean age of the respondents was 35.3 years. A total of 80 % of the respondents were under the age of 40 and the largest group represented adults aged 30–39. In terms of nationality, 83 % of the respondents were Finnish and 17 % were citizens of other nations.

The time that the respondents spent completing their doctorate was longer than the often recommended target time of 4 years. Newly graduated doctorate holders took an average of 5.7 years (median 5 years) to complete their doctorate, which is somewhat less than the results of the previous survey. The time used to complete the dissertation differs between the different branches of science. In the fields of technological sciences and natural sciences, the dissertation is completed, on average, faster than in other fields. On the basis of this survey, the longest time to complete a dissertation was seen in the fields of humanities and medicine.

The survey showed that doctoral researchers who are in a full-time employment relationship at a university receive a median salary of EUR 2,000–2,500 per month, while those who recently completed their doctorate receive a median salary of EUR 3,300–4,200 per month. The income of those working full-time at places other than a university is slightly higher. Of those respondents who are in an employment relationship, approximately half (51 %) feel that their salary corresponds to their work tasks, while the other half (48 %) do not. The viewpoints of grant-funded researchers are also divided: 47 % view their grant as being insufficient for their research work, while 52 % feel that their grant is sufficient. However, 80 % of those in employment relationships and 74 % of grant-funded researchers report that they have enough income for housing and living.

Most have had multiple funding sources (employment, grant or similar) while working on their doctoral thesis. More than half (58 %) of the respondents report that they have 1–3 funding sources and nearly one third report having 4 or more. A clear majority of the respondents (65 %) agree with the claim 'applying for funding takes too much time away from research'. At the time of the survey, 4 % of the respondents were unemployed, but 30 % report that they had experienced unemployment during the doctoral thesis work. Also, 30 % of the respondents report that they had experienced unemployment after receiving their doctorate.

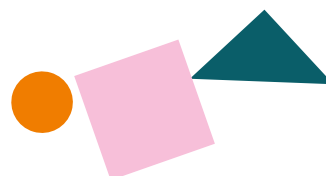
Early career researchers had taken varying amounts of holiday time during the 12 months prior to the survey. Respondents who work at a university report that they have taken an average of 3.3 weeks of holiday in the past year. Slightly less than half have taken less than four weeks of holiday and 16 % did not even take one week of holiday. Grant-funded researchers have taken an average of 3.1 weeks of holiday during the current year, but slightly over one fifth (22 %) did not take any holiday time during the past year. Altogether 40 % of the respondents in an employment relationship feel that they have enough time for holidays and recovery. However, nearly the same amount (39 %) feel that they do not have enough time for holidays and recovery. A total of 43 % of grant-funded researchers are of the opinion that they have time for holidays and recovery, but nearly half of them disagree with the claim.

More than two thirds of the respondents are concerned about the uncertainty related to their career, even though the majority are relatively positive about their career prospects. A general feeling of uncertainty concerning research careers was emphasised in the open-ended responses. Many are worried about finding employment as a researcher, since there is a lot of competition for jobs at universities and research institutes. On the basis of the open-ended responses, the COVID-19 pandemic and its impacts have increased uncertainty in terms of employment possibilities and the general development of research funding.

Early career researchers look at their career views broadly and see that there are, indeed, options. More than half (56 %) of the respondents had, at the time of the survey, considered transferring to the private sector during the previous 12 months and 53 % considered transferring to the public sector (incl. research institutes). Altogether 44 % had considered applying for a completely different job. The majority (86 %) of the respondents, however, expressed that they would gladly work at a university in the future.

Early career researchers strongly view themselves as researchers. Altogether 76 % of the respondents fully or somewhat agreed with the claim 'I think of myself as a researcher'. However, only half of the respondents feel that they are part of the work community in their workplace. On the basis of the survey, those in an employment relationship think of themselves more strongly as a part of the university work community than grant-funded researchers. A total of 62 % of the respondents felt that the title of doctoral researcher is the best title for someone working on their dissertation.

Breaks in a career can be challenging for early career researchers. Of the unemployed respondents, 28 % have had difficulties in obtaining unemployment benefits. Additionally, 40 % felt that they had not received competent service from the employment services for their situation.





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1 INTRODUCTION

The Finnish Union of University Researchers and Teachers (FUURT) is an active trade union that represents all those working in science, research and higher education. It is Akava's largest personnel organisation within the university sector as well as a significant influencer within science and higher education policies. Union members are increasingly employed also outside of the university sector. FUURT represents all academics regardless of branch of science, workplace or career stage. The Union members also include grant-funded researchers, and the Union actively advocates on behalf of their interests both within the scientific community and society in general. As the Finnish scientific community becomes more internationalised, the FUURT membership also includes an increasing number of foreign researchers. A significant portion of the Union's new members are early career researchers from countries other than Finland.

FUURT endeavours to promote and support the employment of doctorate holders broadly within the different sectors of working life. This is important in order to ensure that research-based knowledge is utilised even more strongly in decision-making and other activities. It is truly necessary to ensure the smoother employment and integration of foreign researchers and international personnel in Finland.

The Early career researchers' working group of FUURT supervises the interests of doctoral researchers and those who have recently completed their doctorate, both within the universities and in society in general. The activities of the working group support the supervision of interest work carried out by the Union regarding issues specifically relevant for early career researchers, grant-funded researchers and international researchers. The primary endeavour of the working group is to improve the position of early career researchers, particularly by establishing the professionalism of the first stages of their research career.

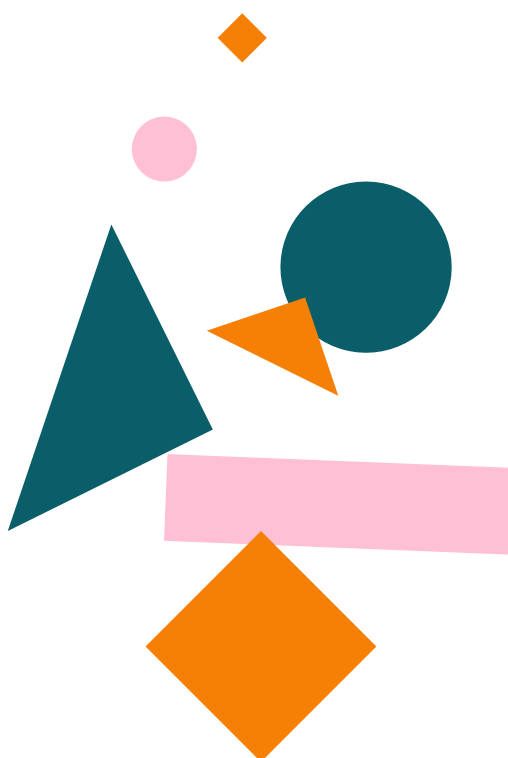
In this report, the term early career researcher refers to doctoral researchers and those who have recently completed their doctorate (within 1–4 years). This corresponds to the term recognised internationally: early stage/career researcher. The term junior researcher or early career researcher does not, thus, refer to the individual's age, but rather to their career stage. In accordance with the four-level career path for researchers applicable to universities, these researchers are those in the first and second levels. The first level refers to researchers who are doctoral researchers and part of the research training, while the second-level researchers are those who have recently received their doctorate. The latter group is often referred internationally as postdoctoral or postdoc researchers; in other words, a researcher whose task it is to conduct research after receiving their doctorate. In Finnish, the corresponding title is *tutkijatohtori*. In addition to academic titles, it should be noted that the tasks and titles of early career researchers can be highly diversified outside of the university sector.

The FUURT survey specifically targeting early career researchers was conducted for the third time at the turn of the year 2020–2021. The first survey was conducted in 2012 and the second in autumn 2017. The purpose of the survey

was to clarify the work situation, research funding, work prerequisites, future prospects and career plans of early career researchers. Some of the questions were specifically directed at those in employment relationships, grant-funded researchers and unemployed early career researchers. The latest survey also clarifies more closely the career counselling for doctoral researchers and working life connections outside of the university, and the mobility and inclusion of early career researchers within different forms of international co-operation. The COVID-19 pandemic that broke out in 2020 was taken into consideration, for example, through questions related to digital and remote forms of mobility and co-operation.

This survey was conducted by Aula Research Oy in co-operation with FUURT. The survey data was collected through an online questionnaire between 8 December 2020 and 22 January 2021. The link to the survey was distributed through, for example, FUURT's communication channels and the email lists of different universities. The questionnaire did not only target Union members, but was, rather, intended to reach all early career researchers working in Finland, including those in different language groups. As earlier, the survey could be completed in Finnish, Swedish or English.

The survey was comprised primarily of multiple-choice questions, but also included several open-ended questions as well. For clarity, the figures in the report have been rounded to the closest whole number, the result of which may be that in some tables, the percentages will exceed 100 %. The open questions were analysed by the means of thematic analysis (categorising the answers according to the themes arising from the data). These responses are highlighted in the report. The text presented in sections 2–6 was primarily drafted by Aula Research Oy. The Early career researchers' working group of FUURT wrote the conclusions in the final section of the report.



2 BASIC INFORMATION ABOUT RESPONDENTS

2.1 Age, gender distribution and living situation of respondents

Altogether 1,517 early career researchers responded to the survey. The response rate decreased from the previous survey (2017), which drew responses from 1,870 researchers.¹ Of the respondents, 64 % are female and 32 % male. The distribution is nearly the same as that of the survey in 2017. Two per cent of the respondents did not wish to state their gender and two per cent described their gender as 'other'. Due to the small size of these respondent groups, they were not included in the comparisons between the groups. Their responses are, however, included in the consideration of all responses as a whole.

In 2020, females comprised approximately 47 % and males 53 % of the person-years in the universities at the first career level (those working under the title of doctoral researcher or similar). At the second career level (postdoctoral researchers), the corresponding shares in 2020 were females 52 % and males 48 %.² There were no corresponding public statistics available concerning early career researchers working by virtue of grant funding. However, the statistics of the Farmers' Social Insurance Institution of Finland (Mela) showed that the majority of the grant recipients insured under YEL insurance were female.³ On the basis of the aforementioned figures, we can state that women were significantly over-represented in the data.

The mean age of the respondents is 35.3 years (median 34 years). The mean age of men and women is 34.4 years and 35.8 years, respectively. Table 1 shows the age distribution of respondents by age group and gender. As is seen from the table, 80 % of the respondents are under the age of 40. The largest group represents adults aged 30–39. The respondents are slightly younger in comparison to those who responded to the survey in 2017.

Table 1. Age distribution of respondents by gender

AGE GROUP	FEMALE %	MALE %	TOTAL %
Under 30	33 %	38 %	34 %
30–39 years	44 %	48 %	46 %
40–49 years	18 %	11 %	15 %
50–59 years	5 %	2 %	4 %
60 and over	0 %	1 %	1 %

In terms of nationality, 83 % of the respondents are Finnish and 17 % are citizens of other nations. Foreign nationals comprised approximately 36 % of the person-years in the universities at the first and second career levels,⁴ and the share of foreign nationals who completed a doctorate in Finland in recent years has been one fourth.⁵ Hence, we can state that Finns are over-represented in this data. Compared to the previous survey, however, the share of foreigners has increased.

Table 2 presents the living situation of the respondents. Slightly more than two thirds (68 %) of the respondents live with a spouse or a spouse and children. Nearly one fourth live alone: living alone is equally popular among men and women. The previous survey found that living alone was clearly more common among men. More than three per cent of the respondents live as a single parent with children, and this is more common among women than men. The survey showed that it is more common for foreign respondents to live alone (31 %) or in a shared residence (11 %) than among the Finnish respondents. Of the foreign respondents, 33 % live with a spouse and 20 % with a spouse and children.

Table 2. Living arrangements of respondents by gender

LIVING ARRANGEMENTS	FEMALE %	MALE %	TOTAL %
With a spouse	38 %	39 %	39 %
With a spouse and children (incl. joint care and reconstituted families)	31 %	29 %	29 %
Alone	24 %	24 %	24 %
Single parent (incl. joint care and reconstituted families)	3 %	1 %	3 %
Shared residence	2 %	5 %	3 %
With parents or relatives	0 %	1 %	0 %
Other, specify	2 %	1 %	2 %

2.2 Educational information and scientific activities of the respondents

Of the survey respondents, 79 % are currently working on their dissertation and nearly one fifth (19 %) have recently received their doctorate. The rest of the respondents are either undergraduate students or those who provided insufficient information and, thus, their responses could not be included in the analyses. Nearly one fifth of the sample (18 %) started working on their dissertation in 2020. Responses were received from all the Finnish universities with the exception of the National Defence University. Additionally, slightly more than one per

cent of the respondents have completed their doctorate at a foreign university. The respondents primarily attended the largest universities in Finland, namely the universities of Helsinki, Turku and Tampere as well as Aalto University.

Table 3 shows the most common branches of science of the respondents in accordance with gender and nationality. Women are the majority in all fields except for the technological sciences. In the field of technological sciences, 61 % are male and 37 % female. In the field of natural sciences, the gender distribution is relatively even. The field of technological sciences also has the most foreign early career researchers, altogether 30 %. In the natural sciences, slightly more than one fifth of the respondents are foreigners as opposed to, for example, the field of humanities, in which nearly all the respondents were Finnish.

Table 3. Respondents' branch of science by gender and nationality

BRANCH OF SCIENCE	GENDER		NATIONALITY		RESPONDENTS
	Female	Male	Finnish	Foreign	
Natural sciences	56 %	42 %	77 %	23 %	298 (20 %)
Humanities	69 %	24 %	95 %	5 %	281 (19 %)
Social sciences	71 %	24 %	83 %	17 %	202 (13 %)
Medicine	70 %	28 %	93 %	7 %	162 (11 %)
Technological sciences	37 %	61 %	70 %	30 %	148 (10 %)
Educational sciences	75 %	22 %	93 %	7 %	88 (6 %)
Other	70 %	29 %	79 %	21 %	336 (21 %)
TOTAL	64 %	32 %	83 %	17 %	1517

The time that the respondents spent completing their doctorate is longer than the often recommended target time of 4 years. The time it took for recently-graduated respondents to complete their doctorate was an average of 5.7 years (median of 5 years). Those who are still working on their doctorate estimate that it would take an average of 5.1 years (median of 5 years) to complete their doctorate. Based on the survey from 2017, respondents who had their doctorate report that it took an average of 6.3 years to complete their doctorate and those who were still working on their doctorate at that time estimated that they would graduate in an average of 5.3 years. These figures indicate the time spent on completing the doctorate has somewhat decreased. The completion of a doctorate takes longer in Finland in comparison to other countries, and this has been taken into account in higher education policies.⁶ The endeavour

to shorten the completion time without sustainable solutions for funding dissertation work may, however, be detrimental for researchers. In the open-ended questions, in particular, respondents expressed a concern about their own health in light of the unreasonable work pace and burdens.

My biggest concern is that I will burn out while working on my dissertation. I am particularly concerned, because both I and my entire family are already suffering from my long days and weekend work.

Fatigue is constantly a threat, since I have to do my best all the time in order to stay in the race and even then my head is on the chopping block whenever my employment contracts end. The constant state of uncertainty is scary.

There are differences between the branches of science as regards the time it takes to complete a doctorate, as shown in table 4. In the fields of technological sciences and natural sciences, the dissertation is completed, on average, faster than in other fields. On the basis of this survey, the longest time to complete a dissertation was seen in the fields of humanities and medicine. As with the previous survey, men graduated, on average, faster (mean 4.8 years) than women (6.1 years). At the same time, foreigners (mean 4.6 years) graduated, on average, clearly faster than Finnish doctoral researchers (mean 6.1 years).

Table 4. Time spent completing dissertation by branch of science

BRANCH OF SCIENCE	MEAN 2020	MEAN 2017
Humanities	6,8	6,9
Medicine	6,2	6,7
Social sciences	5,8	6,9
Other	5,6	6,0
Educational sciences	5,4	6,2
Natural sciences	5,0	5,4
Technological sciences	4,8	4,9
All	5,7	6,3

Of the respondents, 62 % say that they are satisfied with the quantity of dissertation supervision and 63 % with its content. Just under one fifth of the respondents were not satisfied with the supervision they received. Although a higher proportion of the respondents were satisfied with the quantity and content of their supervision, the majority of doctoral researchers rarely have discussions with their supervisors (table 5). Only 14 % say that they discussed their doctoral thesis with their supervisor once a week or more. Up to 26 % only had discussions with their supervisor up to 5 times a year.

When examined by branch of science, the closest contact with a dissertation supervisor was seen in the fields of veterinary science and dentistry, psychology, medicine, natural sciences, sports and physical education as well as pharmacy. With the exception of dentistry, the survey showed that these are fields in which the respondents feel that they generally conduct their research as part of a research team. Correspondingly, in those fields in which research is generally carried out alone, the doctoral researchers have fewer discussions with their supervisors. On the basis of this survey, such fields include, for example, business, law, applied art and humanities.

It is, of course, worth remembering that the quantity of supervision does not directly correspond to the quality of the supervision, but rather to the regularity of the supervision. Regular supervision can, however, positively influence the time it takes to complete the dissertation.

Table 5. How often do you discuss your dissertation with your supervisor?

	SHARE OF RESPONDENTS %
Once a week or more often	14 %
2–3 times a month	25 %
Once a month	21 %
Every other month	11 %
1–5 times a year	26 %
Less frequently than once a year	3 %

The survey responses show that early career researchers are active members of the scientific community who produce scientific publications and are avid presenters and attendees of conferences and similar events. Of those who had recently received their doctorate, only 2 % had not published a single scientific article, while 68 % had published 5 or more articles. Just over one fifth of the group report that they had already published more than 10 articles. When the

results are analysed for all respondents, 74 % had published at least one scientific article. A total of 80 % of all respondents also report that they have had their articles published in foreign journals or platforms during the past 24 months.

Two thirds of doctoral researchers and 83 % of postdoctoral researchers have given a lecture or lectures at scientific conferences. Due to the COVID-19 pandemic, the survey question dealing with lectures at scientific conferences concerned a period of 24 months, while the corresponding question in the previous survey gave a time period of 12 months. In this longer review period, the participatory activity of the respondents is the same as in the previous survey.

For the first time, the survey also inquired about the respondents' different forms of international co-operation. Of the respondents, 67 % had participated in an international conference abroad and 56 % in Finland over the past 24 months. Altogether 27 % of the respondents report that they had participated in an international project or research group coordinated in Finland, and 17 % in an international project or research group coordinated abroad. Additionally, approximately one tenth of the respondents had done research or teaching visits or data collection or field work abroad.

As a result of the COVID-19 pandemic, the forms of international co-operation were also handled increasingly through digital or remote solutions, which is reflected in the results. More than half of the respondents (58 %) have participated remotely in international conferences held abroad and 41 % in remote conferences arranged in Finland during the past 24 months. A total of 27 % participated remotely in an international project coordinated from Finland and 22 % in projects coordinated abroad. Only a minimal percentage of the respondents report that they had participated in research or teaching visits remotely.

Future remote conferences also interest people, since nearly all of the respondents (94 %) report that they could participate remotely/digitally in international conferences arranged abroad in the future. A total of 87 % could participate digitally/remotely in conferences held in Finland in the future. The majority of the respondents could also participate remotely/digitally in a project or research group coordinated or managed in Finland or abroad. Slightly more than one third of the respondents are interested in a remote research or teaching visit abroad of less than 2 weeks and more than one fourth in a remote visit abroad of 2 weeks–3 months. The corresponding figure for those interested in a remote research or teaching visit abroad for more than three months is 19 %.

3 RESEARCH FUNDING

3.1 Respondents' earnings level and sources of funding

Early career researchers work within different work and life situations, which is reflected in their primary sources of income. Two thirds of the respondents report that their salary is their primary source of income. As table 6 shows, the largest group (44 %) represents those who received their salary from a university with work duties including writing a doctoral thesis or conducting post-doctoral research. These represent a minor increase from the previous survey, when the figure was 38 %. The next most common source of income is a grant, as received by 23 % of the respondents. This share has remained the same in comparison to the previous survey. Salary (employer is not university) can, in this context, refer to an employment at a research institute or company. The 'Other' category covers, for example, those doing research on their own funding and those whose salary is comprised of multiple different sources. A total of 4 % of the respondents were unemployed at the time of the survey, which is a slightly lower figure than that (6 %) in the previous survey. The unemployment rate among the respondents is notably lower than that of the overall population in Finland. The general unemployment rate in Finland was 8.7 in January 2021.⁷

Table 6. Primary source of income

	SHARE OF RESPONDENTS %
Salary from the university with work duties including doctoral or postdoctoral research	44 %
Grant	23 %
Salary (employer is not university)	17 %
Other	7 %
Salary from the university, but doctoral/post-doctoral research is not included in work duties	5 %
Unemployment benefit	4 %

Although less than 4 % of the respondents were unemployed at the time of the survey, a clearly higher number of respondents have had experiences with unemployment. As much as 30 % of the respondents have experienced unemployment while working on their doctoral thesis. This share is precisely the same as in the previous survey. Also, 30 % of the respondents report that they have experienced unemployment after receiving their doctorate. The mean estimate for the period of unemployment of those with their doctorate is 10.6 months with a median of 10 months. The periods of unemployment for foreign respondents were longer than those of the Finnish respondents. The mean estimate for the period of unemployment of foreigners with a doctorate is 14 months with a median of 8 months.

Table 7 shows the number different funding sources while working on the doctoral thesis (employment relationships, individual working grants or similar). A significant part of the respondents have had more than one source of funding. More than half (58 %) of the respondents report that they have 1–3 funding sources and slightly less than one third report having 4 or more. A clear majority of the respondents (65 %) agree with the claim ‘applying for funding takes too much time away from research’. Additionally, up to 61 % of the respondents have a negative attitude towards the general development of research funding.

Table 7. Number of different funding sources during the doctoral thesis work

NUMBER OF DIFFERENT FUNDING SOURCES	SHARE OF RESPONDENTS %
None	7 %
1–3 sources	58 %
4–6 sources	20 %
7–10 sources	8 %
More than 10 sources	3 %
Cannot say / Not applicable	4 %

The open-ended questions drew repeated responses concerning the anxiety the respondents feel about the continuous search for research funding and the endless chain of fixed-term employment relationships or funding periods.

Grant applications and the continuous need for one after the other consume an enormous amount of resources (from the applicants and reviewers). [...] Increasingly more time is being spent on grant applications and the stress concerning them and the sufficiency of the group funding, which, in the end, weakens the productivity of the research (and research funding).

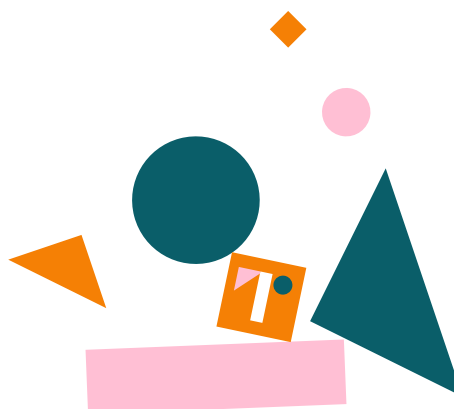


Figure 1. Gross annual income of those in full-time employment at a university by career stage

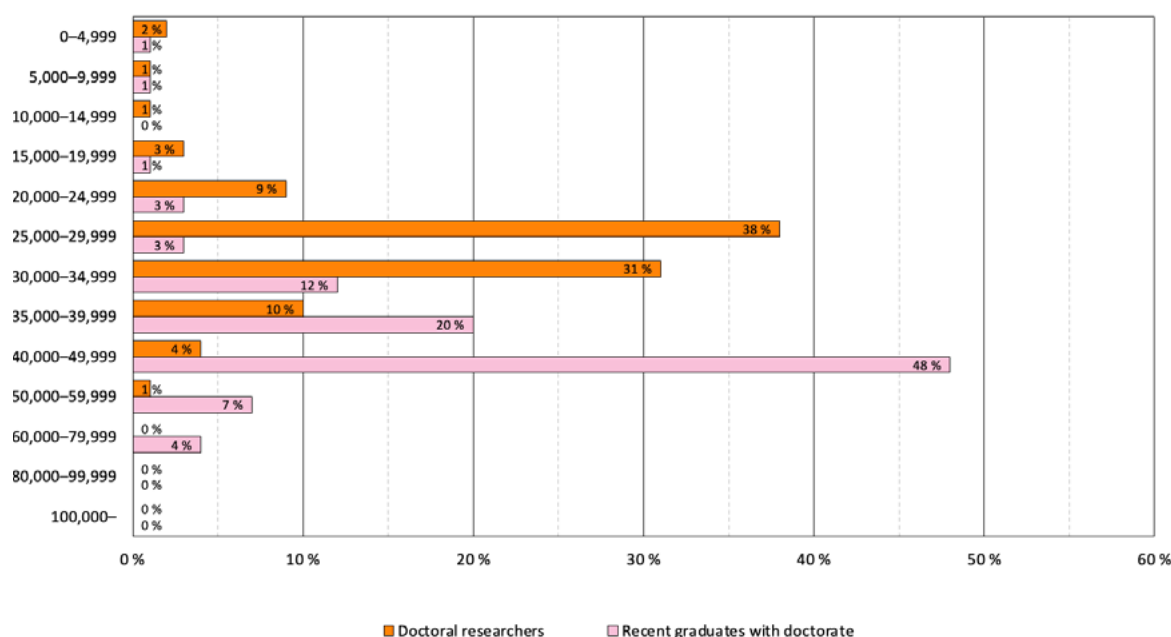


Figure 1 shows the annual income of respondents employed by a university in accordance with their career stage. The survey did not separately ask about the type of the employment relationship, but as with the previous survey, anyone who works more than 25 hours per week is considered to be full-time. The median annual income for doctoral researchers who are in a full-time employment relationship at a university is between EUR 25,000–29,999, which is an approximate gross salary of EUR 2,000–2,500 per month. The median annual income for those with a doctorate is EUR 40,000–49,999, which is an approximate monthly salary of EUR 3,300–4,200. No significant change has occurred in the results since the 2017 survey. On the basis of the survey, the annual income of those working full-time at places other than a university is slightly higher. The median income for both doctoral researchers and those with a doctorate, who are employed somewhere other than a university, is EUR 40,000–49,000 per year. Of those with a doctorate who work somewhere other than a university, 69 % report that their annual income is more than EUR 40,000, while the corresponding figure for doctoral researchers is 63 %.

Grant-funded researchers were also asked about the duration of their grant period and the amount of their grant funding. The respondents report grant periods that varied between 1–48 months with a mean of 14.8 months and median of 12 months. The mean value of grants is EUR 2,136 per month with a median of EUR 2,033 per month. The earnings of those working with a grant were lower than, for example, those in employment relationships at a university. No significant changes in the duration of the grants and earnings level have occurred since the previous survey.

The earnings level of the early career researchers who responded to the survey remains lower than the earnings of other highly educated Finns. In 2019, the median salary in Finland for those who had completed a master's degree was

EUR 4,210 and for those under the age of 40 who had completed a degree, EUR 3,804. The median salary for those with a doctorate was EUR 5,002 per month.⁸

The respondents were asked how many hours on average they work per week. Doctoral researchers in an employment relationship report that they work an average of 40.3 hours per week (standard deviation of 8.1, median 40). The average working hours of those with a doctorate is 41.5 hours per week (standard deviation of 7.7, median 40). For working hours, there are no differences in terms of gender, career stage or nationality. Grant-funded researchers also estimated that they work approximately 38 hours per week with a median of 40 hours. The annual working hours for those working in research and teaching positions at the universities is 1,612 hours (in accordance with the collective agreement for universities), which equates to 36.25 hours per week.

Respondents in an employment relationship report that they spend an average of 26.5 hours per week (median 30 hrs) on research. Those in an employment relationship at a university spend on average 10 hours per week on teaching and other tasks with a median of 6 hours. Foreign researchers report that they spend slightly more time on research than the Finnish respondents and, correspondingly, less time on teaching and other tasks. Grant-funded researchers report that they spend an average of 31 hours per week (median 30 hours) on research. Grant-funded researchers spend an average of 5.6 hours per week (median 5 hours) on teaching and other tasks.

The respondents were asked whether their fixed-term employment relationship has been extended for a family leave. Altogether 75 % of respondents who are employed at a university have not been on family leave. Of those respondents employed at a university who have been on family leave, 21 % report that their fixed-term employment relationship was extended due to the family leave, while 79 % report that this was not the case.

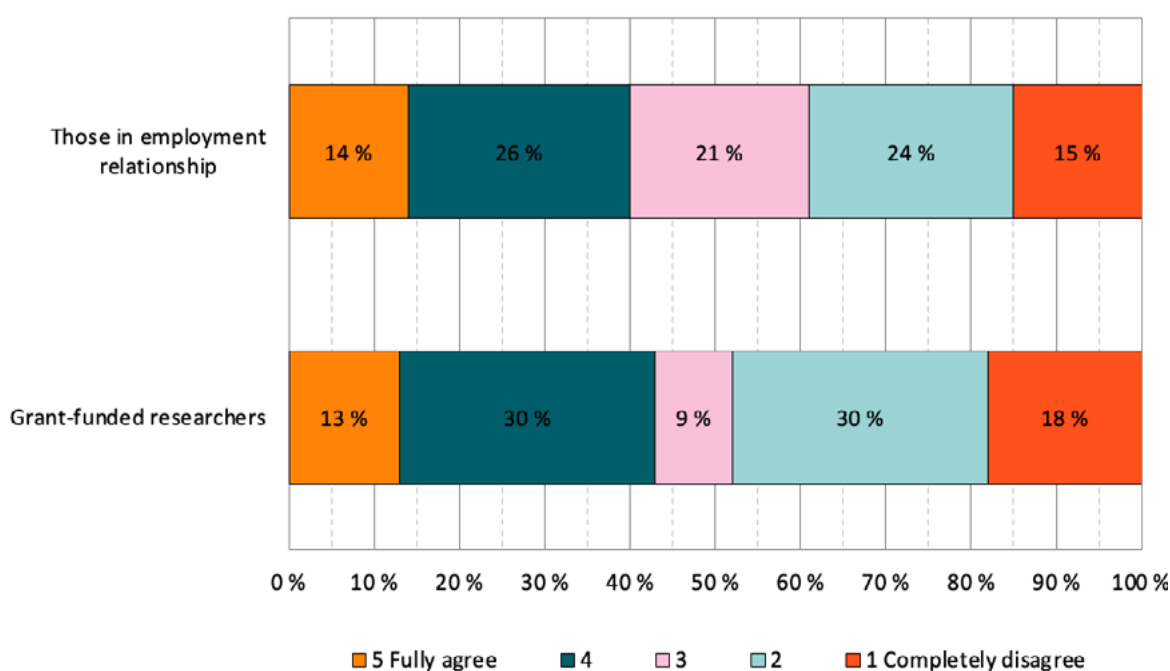
Respondents who work at a university report that they have taken an average of 3.3 weeks of holiday in the past year. Slightly less than half have taken less than four weeks of holiday and 16 % did not even take one week of holiday. No differences were observed as regards career stage or gender, but the survey showed that foreign respondents have taken clearly less holiday time than Finnish respondents, with an average of only 2.2 weeks over the past year. Grant-funded researchers have taken an average of 3.1 weeks of holiday time during the year, but slightly over one fifth (22 %) did not take any holiday time during the past year.

In accordance with the collective agreement for universities, the Annual Holidays Act (162/2005) is not applicable to full-time teaching and research personnel. Rather, they have the broad freedom but also the responsibility regarding their use of working hours and time off. University employers of full-time teaching and research personnel do not monitor the use of working hours, but rather the completion of tasks included in the work plan. Although the duration of time off is not specifically defined, the annual working hours are dimensioned so that the employee has the right and possibility to take time off that is equivalent to a standard annual holiday. In other words, the holidays and time off are

not included in the annual number of working hours, or 1,612 hours. An employee's supervisor shall ensure that the employee has the possibility to take time off to the extent equivalent to the standard annual holiday. Responses to the open-ended questions indicated, however, that many respondents feel uncertain about whether they have the right to a holiday or time off, how long the time off can be and how it is applied. Many also expressed that they have a very bad conscience if they take a holiday. At their worst, the consequences are serious:

In our research group, early career researchers were made to feel guilty about taking a holiday and, during the past 6 years, four persons have left our research group due to mental health problems. One of them even had to be admitted to a facility for treatment.

Figure 2. Responses to the claim 'I feel that I have enough time for holidays and recovery'



As seen in figure 2, altogether 40 % of the respondents in an employment relationship feel that they have enough time for holidays and recovery. However, nearly the same amount (39 %) feel that they do not have enough time for holidays and recovery. Of those in an employment relationship at a research institute, 56 % feel that they have enough time for holidays and recovery, while the corresponding figure for those employed in a university is 42 %. Those in employment relationships elsewhere feel more strongly that they do not have enough time for holidays and recovery.

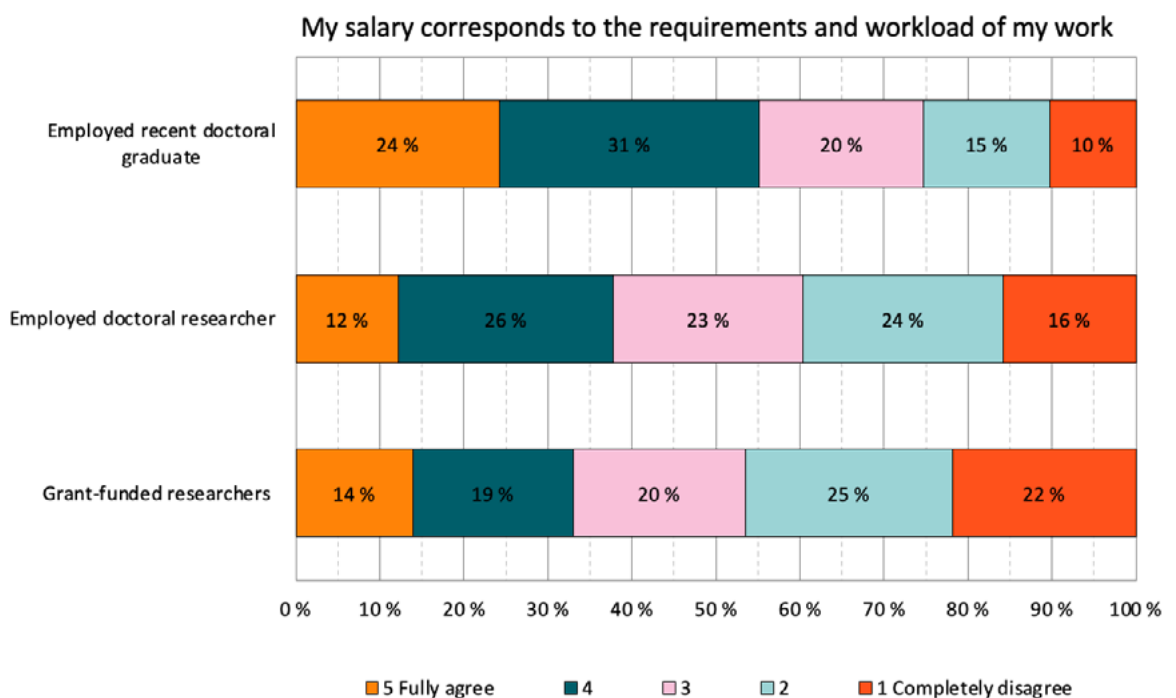
Of the grant-funded researchers, a slightly higher share (43 %) are of the opinion that they have time for holidays and recovery, but nearly half of them (48 %) disagreed with the claim. The results of this question are slightly weaker compared to the results from the 2017 survey.

I know that young people do good work and I also have a heightened sense of duty, but I am continuously pressured by the research group to do more and faster and asked why the results from this and that project are late. There is no appreciation for holidays or free time outside of working hours. Rather the attitude seems to be that we should also be working on our own time.

3.2 Sufficiency of income and equality between early career researchers

Even though research work carried out during the dissertation stage is already considered demanding expert work, we have seen that the earnings level of early career researchers is lower than that of other highly educated persons. Yet the perception of the sufficiency of one's income varies among the respondents. Of those respondents in an employment relationship, 48 % feel that their salary is too little in relation to their work tasks, while 51 % feel it is enough. Those in an employment relationship at a university are slightly less satisfied with their salary than those who are in an employment relationship elsewhere. The salary of those employed by universities is also, on average, lower than that of those employed elsewhere. The viewpoints of grant-funded researchers are also divided: 47 % view their grant as being insufficient for their research work, while 52 % feel that their grant is sufficient. No significant changes have occurred in comparison to the 2017 survey.

Figure 3. Correspondence of the salary/grant to the requirements and workload of the research work



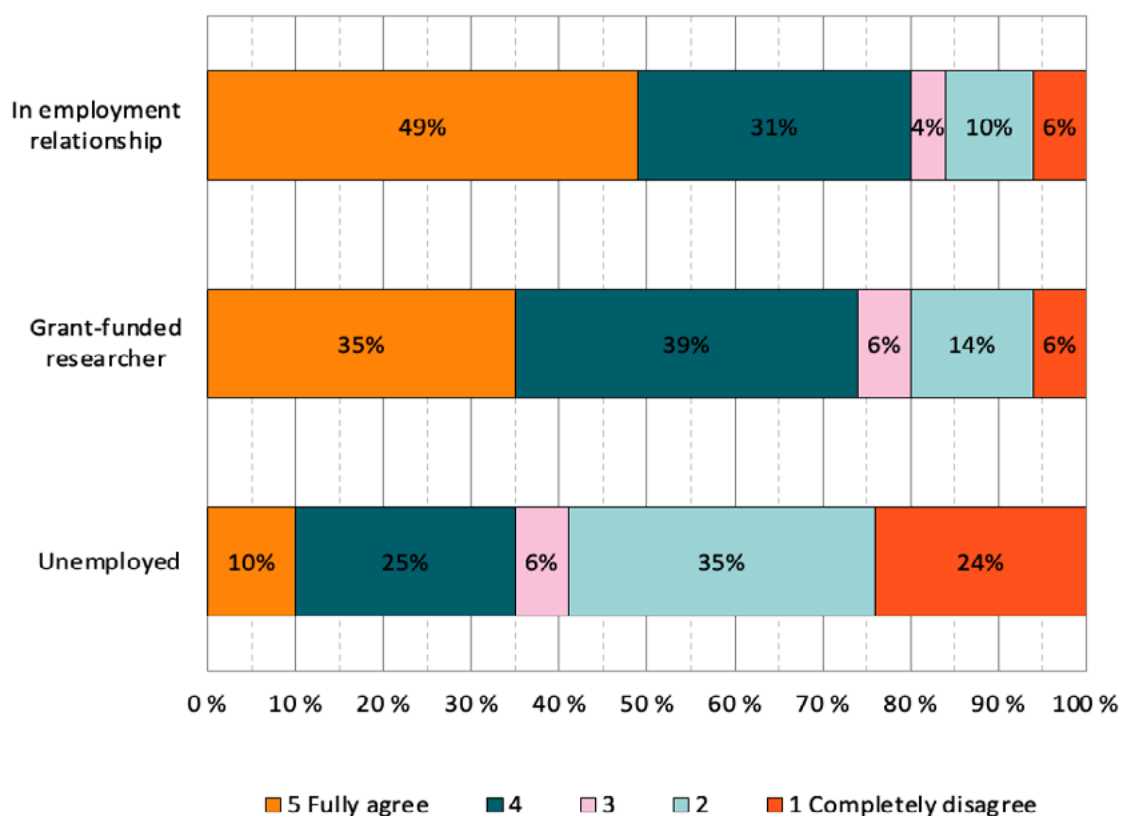
Of the doctoral researchers in an employment relationship, 40 % feel that their salary does not correspond to the requirements and workload of their work (figure 3). Nearly the same amount (38 %) feel that the salary corresponds to their workload. Of those who have recently completed their doctorate, a clearly larger percentage (55 %) feel that their salaries correspond to the workload of their work. On the other hand, one fourth of those with a doctorate feel that their salary does not correspond to the workload of their work. The results have remained unchanged in comparison to the previous survey.

Nearly half (47 %) of grant recipients feel that their grant does not correspond to the requirements and workload of their work, as is shown in figure 3. Only one third of the respondents feel that their grant corresponds to the requirements and workload of their work. However, a total of 61 % fully or somewhat agree that the grant is sufficient to guarantee their concentration on research. This was also the case in 2017.

As concerns the sufficiency of income for housing and living, there were differences as relates to the primary source of income (figure 4). The income of those in an employment relationship is more sufficient for housing and living than that of grant-funded researchers. The situation of unemployed respondents is the weakest, which is not surprising. A total of 74 % of grant-funded researchers and 80 % of those in an employment relationship report that their income is enough for housing and living. These figures are a clear improvement over those of the previous survey. It should, however, be noted that a significant amount – 20 % of grant-funded researchers and 16 % of those in an employment relationship – have difficulties making their income cover all their housing and living needs. These figures have not improved from the previous survey.

Because of the size of our family and our household expenses, I have pressure to make money, so I have had to do other work in addition to my research in order to get my income to be even close to sufficient. Doing two different jobs slows the dissertation progress and also wears one out in the long run. I also need to find time to spend with my family.

Figure 4. Responses to the claim 'I have enough income for housing and living.'



The university salary comprises a requirement component (vaati-taso in Finnish) and personal performance component (henki-taso in Finnish). The survey clarified the respondents' levels with regard to these components. Slightly over half (55 %) of those in an employment relationship at a university have a requirement level of 2–5. Up to 37 % of the respondents did not know the requirement level for their salary. This lack of knowledge regarding the requirement level of the salary cannot be explained by the relatively large proportion of respondents that started as doctoral researchers in 2020, since their knowledge of the requirement level of their salaries is at the same level as those who started as doctoral researchers earlier. More than half (52 %) of the foreign respondents do not know the requirement level for their salary. This result is clearly weaker in comparison to the previous survey. Approximately one half (46 %) have a personal performance level of 1–2 and nearly the same amount (44 %) do not know the personal performance level for their salary. Of the foreign respondents, up to 58 % do not know their own personal performance level. Although 68 % of those with an employment relationship at a university report that they have read the salary table that determines the job's requirement level and requirements for personal performance, the responses to the open-ended questions reveal that many respondents are uncertain about how the university's salary system works or how one might request a review of their own salary and tasks.

It still isn't entirely clear to me how, for example, the personal performance level is determined or how and on what grounds one can possibly request that it be increased. I feel that the employer is not always particularly inclined to ensure that the employees' rights are being realised well or that they receive the proper compensation for their work.

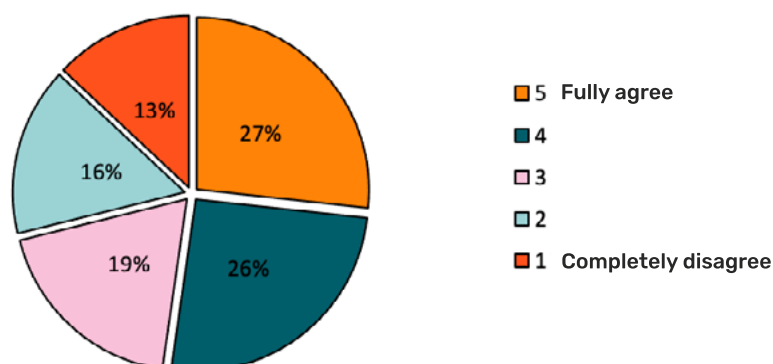
I was not all informed about my salary increment how it works. Simply get contracts once a year with slight change in salary but not explained why that increment and is it right and all. I also found that many people were not informed clearly about this and there was huge difference in gross salary between people who are also in the same group with similar work or category. I feel like I was cheated.

Slightly less than one third (29 %) of the respondents feel that when they came to work at a university or for their current employer, they were not informed of their rights as an employee (figure 5). Knowledge of employee rights has not improved in comparison to the 2017 survey. Of those employed at a university, 51 % feel that they have been informed of their rights as employees, and the corresponding figures for those employed at research institutes and elsewhere are 65 % and 59 %, respectively. In this respect, foreign respondents feel slightly more often than the Finnish respondents that they have been informed of their rights as employees. On the other hand, work induction seems to be lacking, at least to the extent that foreign respondents are unaware of the requirement and personal performance level for their salary, or that they have taken relatively little time off of work. The open-ended questions also elicited responses concerning examples of problem situations in which the terms of an employment relationship and an employee's rights were unclear, particularly for researchers with a foreign background.

At the moment, the situation is quite chaotic and the professors who serve as supervisors don't sometimes even know about the personal privacy of employees (reason for sick leave cannot be asked or, especially, told to others), holidays, working hours, grounds for fixed-term employment relationships. I was also pressured to quit my job at the university so that my existing fixed-term employment contract would end and they could give me a new one.

We are expected to work extra hours just because we are doing our PhD, otherwise we are considered lazy.

Figure 5. Responses to the claim ‘when I came to work at the university/ my current employer, I was informed of my rights as an employee and the services provided by the employer such as occupational healthcare.’



The principle of the salary system is that the requirement level rises as one's career advances and the demands of the tasks increase. The survey revealed, however, that the requirement level of 49 % of those working at the university has not increased within their current employment relationship – it has only increased for 31 %. Of the doctoral researchers, 47 % report that their requirement level has not increased within their current employment relationship at a university, while it has increased for 32 % of this group. The figures for doctoral candidates have weakened from the previous survey, since in 2017, 40 % of them reported that their requirement level increased along with the progress of their doctoral thesis.

Nearly half (47 %) of those in an employment relationship at a university also report that their performance-based salary has not increased within their current employment relationship. Just under one fourth (24 %) report that their performance-based salary has increased and 3 % report a decrease. Altogether 47 % of doctoral researchers report that their performance-based salary has not changed, 22 % report an increase and 4 % a decrease. Also these figures for doctoral researchers have slightly weakened in comparison to the 2017 survey.

On the basis of the results, the career of early career researchers is still characterised by uncertainty about funding and a lower than average earnings level. This will likely affect the motivation to complete a doctorate and to pursue a career in research.

There should be more resistance to the ongoing chain of intermittent employment contracts and low pay offered to early career researchers. The work is extremely loading, the pay is poor considering the educational level and researchers are kept in a limbo of short-term employment contracts. This is a clear recipe for the fatigue and burnout of employees.

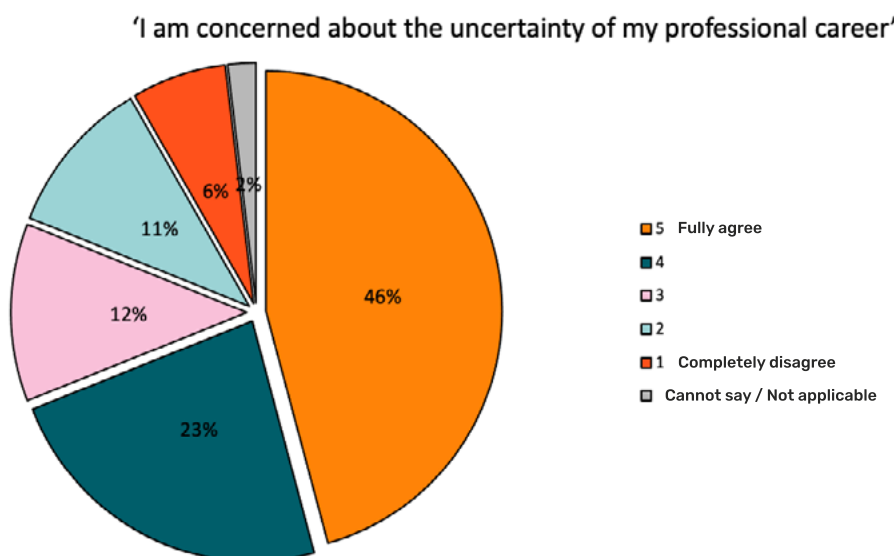
4 CAREER PROSPECTS

Early career researchers feel uncertainty when it comes to their work career, as is shown in figure 6. Up to 69 % of the survey respondents agreed with the claim 'I am concerned about the uncertainty of my professional career'. In terms of those concerned about the uncertainty of their career, the figures were as much as 73 % for those working at a university, 58 % for those working in research institutes and only 41 % for those working elsewhere. The results show a clear disparity between those working at a university and those working elsewhere. Above all, those working at a university (22 % of respondents) and research institutes (25 %) are concerned about co-operation procedures/layoffs at work. Only 14 % of those working for another employer are concerned about co-operation procedures/layoffs at work.

An academic career looks to be quite uncertain. Sometimes there are periods when I believe in it and others when I don't. Unemployment and unsteady periods of work decrease one's commitment to the dissertation process and disrupt the progress of the work.

A university career is a type of ninja warrior challenge, where my approach has been to see how many obstacles I can overcome before I collapse. This career seems impossible. I hope to find some other employment, as soon as my life situation allows for it.

Figure 6. Responses to the claim concerning career-related uncertainty



A general feeling of uncertainty concerning research careers was emphasised in the open-ended responses. Many are worried about finding employment as a researcher, since there is a lot of competition for jobs at universities and re-

search institutes. On the basis of the open answers, the COVID-19 pandemic and its impacts have increased uncertainty in terms of employment possibilities and the general development of research funding. Of the respondents, 80 % report that they prefer to work in an employment relationship and only 18 % would prefer to work with a grant. Additionally, the limited and highly sought research funding concerns respondents. The process of applying for funding consumes resources and increases mental loading. Many of the respondents are worried that, in order to avoid becoming unemployed, they will be driven to intermittent work and odd jobs that have nothing to do with research.

I would like to continue working at the current university/department, but nothing is certain. And otherwise, working at the university based on fixed-term employment relationships is stressful: ten years in the same unit, probably around twenty fixed-term periods and no talk of getting a permanent job.

The responses to open-ended questions particularly brought forth the poor work atmosphere that sometimes exists within the academic world as well. Many respondents report feeling like an outsider, experiencing a lack of caring or respect, and unequal treatment or discrimination. For example, of those in an employment relationship, only half report that they have regular development discussions with their supervisor. Often, the dissatisfaction is also linked with the uncertain nature of the work.

I am so tired of the domineering attitude I encounter at the university, the unreasonable demands concerning dissertation work, the financial insecurity, minimal earnings and the continuous applications for grants that I just can't see any solution for the situation. Something does need to be done, however, so that this career path doesn't end up taking both my soul and my health.

The continuous applying for new funds is exhausting and even the thought of it consumes energy that should be used on research. I can only get an employment relationship from the university if I acquire the salary funds myself. For this reason, it feels that I am not at all appreciated on the university level, even though my close colleagues are nice and supportive.

Despite these viewpoints, the survey respondents have relatively positive views concerning the continuity of their own career and career prospects (figures 7 and 8). However, the attitude towards career prospects does appear to be more negative among those who recently completed their doctorates as compared to doctoral researchers. This was also the case in the previous survey. When comparing the responses based on the primary source of income, it was noted that grant-funded researchers are somewhat more negative about their career prospects than those in employment relationships. The unemployed have the most negative attitude towards their career prospects, which is not surprising. Slightly more than half (53 %) of the respondents believe that they will work in research in Finland, but, on the other hand, also more than half (57 %) believe that they will work in other positions in Finland. Of the foreign respondents, fewer believe they will work in research in Finland, but many more believe they will work outside of Finland in the future.

Figure 7. Responses to the claim: 'I see my career prospects in a positive light.'

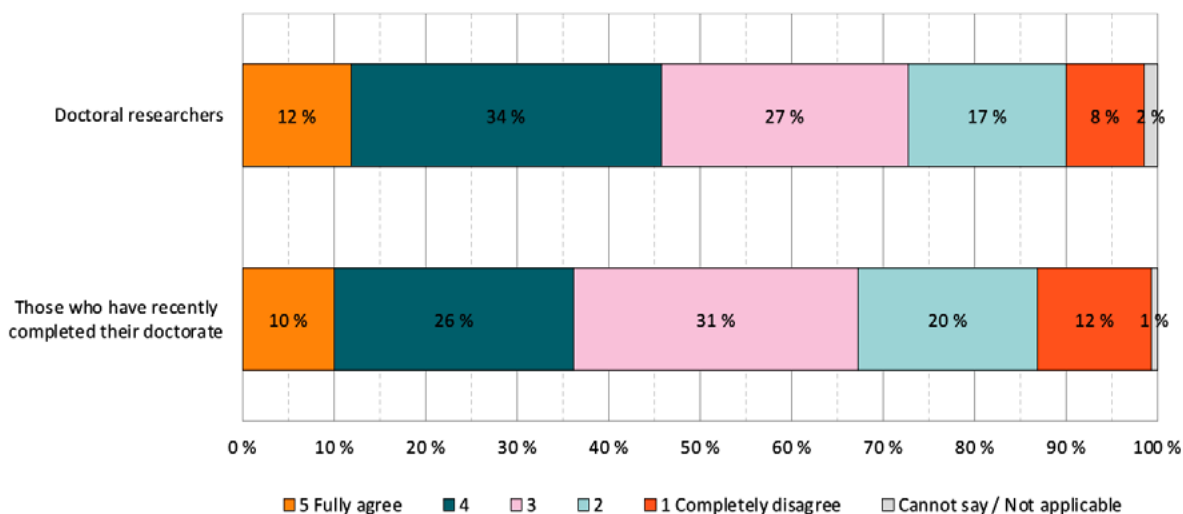


Figure 8. Respondents' assessments of the development of their career over the next five years

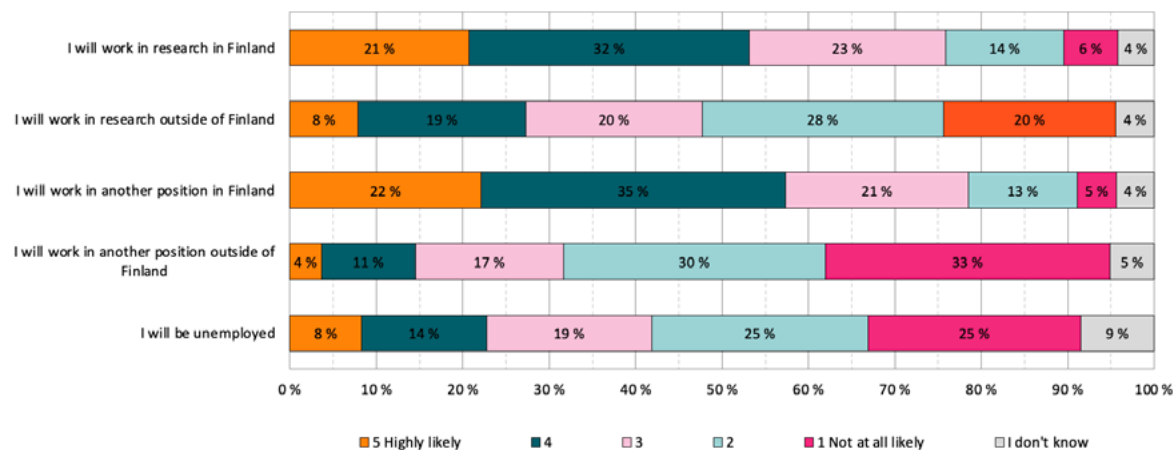


Table 8. Future employment options (respondents could select all options of interest)

IN THE FUTURE, I AM INTERESTED IN WORKING...	SHARE OF RESPONDENTS %
At a university	86 %
In the public sector, incl. research institutes	85 %
In an employment relationship in the private sector	68 %
In the third sector (e.g., associations)	49 %
At a university of applied sciences	35 %
As an entrepreneur	26 %
Other, specify	3 %

Despite the fact that people experience problems in academic work, the respondents are still interested in working at a university and in the public sector, as shown in table 8. As much as 86 % could envision themselves working at a university in the future and 85 % in the public sector, including research institutes. The private sector also interests around two thirds of the respondents. Just over one fourth of the respondents could see themselves working as an entrepreneur.

On the other hand, plans for career changes are quite common among the respondents. Just over half of the respondents have considered changing to the private sector during the past 12 months, as is shown in table 9. A total of 53 % of the respondents had considered changing to the public sector (incl. research institutes). Altogether 44 % of the respondents had considered changing to a completely different position. There have been no changes to these figures since the previous survey.

I am lucky that I received competitive four-year funding for my dissertation. However, working away year after year at the university has become more mentally draining due to the weak work conditions and a work culture that pushes you to overachieve. I don't intend to continue my academic career once my employment relationship ends, because I fear for my health and ability to cope.

Of the respondents, 60 % perceive that they have sufficient work experience to be employable, while slightly less than one fifth (18 %) do not feel that they have sufficient work experience. Of the foreign respondents, up to 72 % feel that they have sufficient work experience, while only 58 % of Finnish respondents feel the same way. The majority of the respondents (80 %) feel that they have sufficient language skills to be employable. Altogether 57 % of the foreign respond-

ents feel this way, while 83 % of Finnish respondents are confident with their language skills.

Table 9. Early career researchers' plans to change careers (respondents were able to select more than one option)

HAVE YOU CONSIDERED THE FOLLOWING CHANGES TO YOUR CAREER IN THE PAST 12 MONTHS?	SHARE OF RESPONDENTS %
Changing to the private sector	56 %
Changing to the public sector (incl. research institutes)	53 %
Changing to a completely different position	44 %
Changing workplaces within the same sector	33 %
Changing to the third sector	25 %
Starting as an entrepreneur/starting a business	24 %
Changing to the university sector	20 %
Other, specify	5 %

It is encouraging that, in comparison with the previous survey, a clearly higher percentage of respondents now report that they have received career counselling during their doctoral research or doctoral training. Additionally, 61 % of respondents report that their dissertation supervisor has encouraged them to pursue an academic career. The most typical form of career counselling is still a discussion with one's own supervisor: 64 % of respondents report that they discussed their postdoctoral career plans with their supervisor. On the other hand, only 8 % of the respondents report having discussed employment and career plans with an actual career counselor. Furthermore, slightly more than one fourth of the respondents have attended networking events organised by their university, and one fifth have used the university's career guides and materials intended for early career researchers. Just under one fifth (19 %) of the respondents report that their advisory or monitoring group (or equivalent) within their own university has included a representative from an external university or research organisation, and only 6 % report that the group has had a representative from an organisation other than a research organisation.

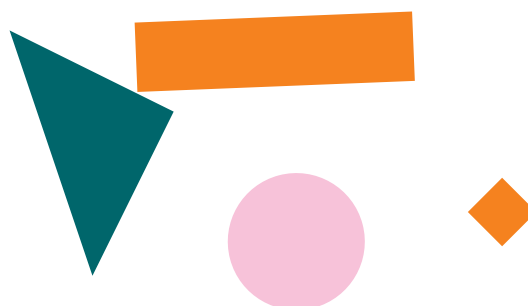
The survey also clarified whether the respondents' doctoral thesis or doctoral training included co-operation or mobility outside their own university (table 10). Nearly two thirds of the respondents have otherwise co-operated with actors outside the university sector. The phrase 'otherwise co-operated' is not defined more specifically, so it likely includes different forms of co-operation with actors outside the university sector. A total of 39 % of the respondents report that they have worked outside their own university or visited as part of their doctoral training/doctoral thesis at another university abroad.

Even though the amount of career counselling has increased, there is still a clear need for more, since the majority of those who graduate with a doctorate enter working life outside of the university sector.

It would be good to get more information about career opportunities and paths outside of the university sector. At this moment, I don't see a future in an academic career (for many reasons) and I am worried that my doctorate might hinder my employment opportunities outside of the university sector.

Table 10. Co-operation outside of one's own university

DID YOUR DOCTORAL THESIS OR DOCTORAL STUDIES INCLUDE CO-OPERATION OR MOBILITY OUTSIDE YOUR OWN UNIVERSITY?	SHARE OF RESPONDENTS %
I have otherwise cooperated with actors outside the university sector	65 %
I have worked outside my own university or visited as part of doctoral training/doctoral thesis at another university abroad	39 %
I have worked outside my own university or visited as part of doctoral training/doctoral thesis in a research organisation other than a university (in Finland or abroad)	12 %
I have worked outside my own university or visited as part of doctoral training/doctoral thesis at another university in Finland	8 %
I have visited as part of doctoral training/doctoral thesis in an organisation other than a research organisation (in Finland or abroad) outside my own university	6 %



5 EARLY CAREER RESEARCHERS' EXPERIENCES WITH UNEMPLOYMENT

The survey also contains questions specifically for unemployed respondents. For early career researchers in particular, unemployment and the process of applying for unemployment benefits can involve challenges and confusion, since short-term employment relationships do not necessarily enable them to meet the employment condition for an earnings-related unemployment allowance, or their research has been done with a grant that inherently is governed by different rules than those of employees. On the other hand, an existing right to pursue doctoral studies may, in certain situations, be interpreted as full-time studies.

A total of 28 % of the unemployed respondents report that they have had difficulties obtaining unemployment benefits (table 9). Furthermore, 40 % of the respondents report that they have not received competent service from the employment services (TE Office) for their situation. The results have not improved from those of the 2017 survey.

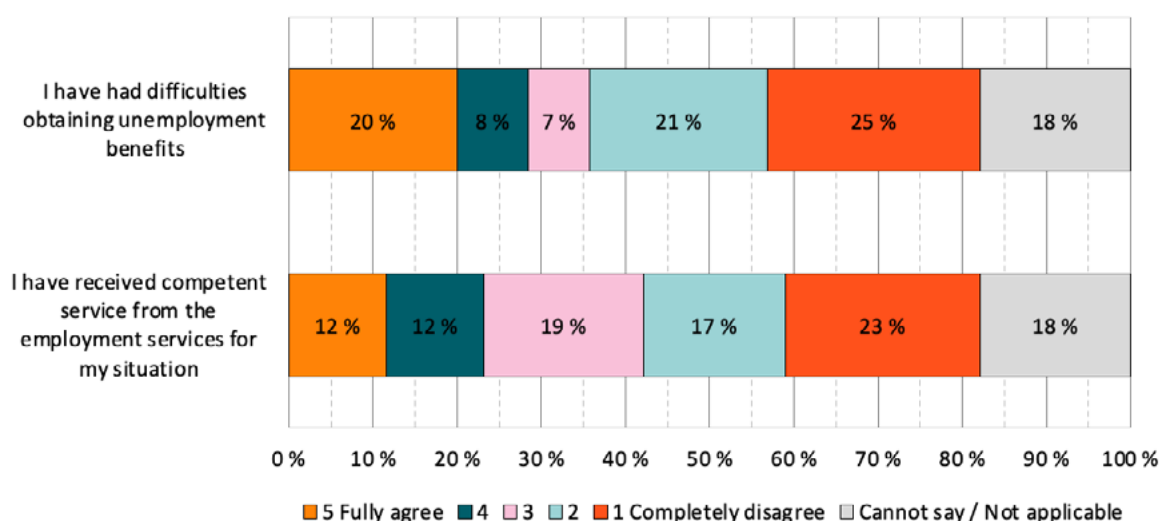
The unemployed respondents reported, in the open-ended questions, about their poor experiences dealing with a TE Office. Some respondents wished that trade unions would even provide training for employees of the TE Offices, so that they would better understand the challenges faced by grant-funded researchers. Respondents also asked the trade unions for clear guidelines for how to manage matters with the TE Offices.

I don't dare to complete the courses within the doctoral training or to do anything related to the dissertation for risk of losing my unemployment benefits or finding myself with even greater financial struggles. I don't dare to say anything about my doctoral studies to the TE Office.

I am afraid to go to the TE Office, since I don't know how they will interpret my right to pursue doctoral studies. They may demand, for example, that I discontinue them in order to get unemployment benefits.

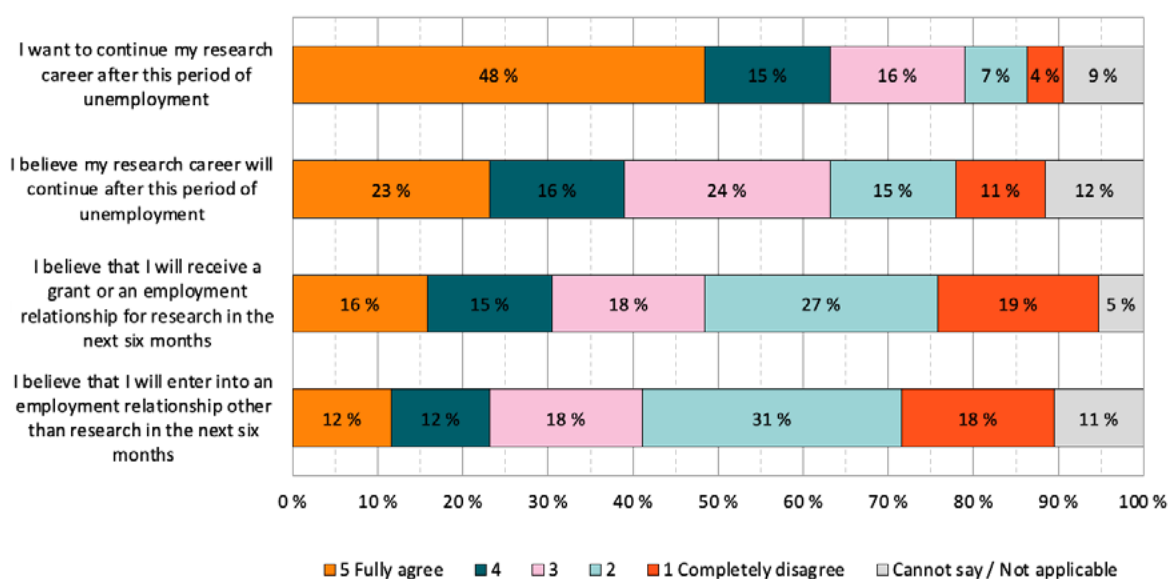
When one becomes unemployed, it would be good to tell them how to communicate with the TE Office, or at least what should not be said. I haven't dared to mention to the TE Office that I am applying for research funding, since I fear they will use some excuse then to deny me any unemployment compensation. In practice, employment services aren't very applicable to researchers, since the TE Offices don't know much about research careers. Seems it is best to try to keep as low a profile as possible in order to avoid problems.

Figure 9. Response distribution of the unemployed to claims concerning unemployment benefits and services provided by the TE Offices



As shown in figure 10, the majority of the unemployed respondents would like to continue with a research career after their period of unemployment, but they are relatively pessimistic about their possibilities to get, for example, a grant or employment relationship for research in the next six months. They are, however, slightly more positive about their research career continuing after the period of employment than they were in the previous survey. Slightly more than one fourth of the unemployed respondents, on the other hand, do not believe that their research career will continue after the period of unemployment.

Figure 10. Responses of the unemployed to claims concerning career prospect



6 EARLY CAREER RESEARCHERS WITHIN THE UNIVERSITY WORK COMMUNITY

Early career researchers strongly view themselves as researchers. Altogether 76 % of the respondents fully or somewhat agreed with the claim 'I think of myself as a researcher'. Only 9 % of the respondents disagreed with the claim. Those with doctorates view themselves, more often than those working on their doctoral thesis, as researchers. However, only half of the respondents feel that they are part of the work community in their workplace. Altogether 56 % of those working at a university feel that they are part of the work community, 22 % do not feel like part of the work community and the rest could not say. On the basis of the survey, those in an employment relationship think of themselves more strongly as a part of the university work community than grant-funded researchers. In the open-end questions, grant-funded researchers expressed a desire for improvements to inclusion in the work community.

The more the trade union can get the universities to view doctoral researchers as full-fledged members of the work community, the better. Many problems concern a certain detachment from the work community – for example, supervisory work is decentralised so that no one has the overall responsibility for a doctoral researcher as a new employee.

I am completely isolated from the work community and it feels like all the tacit knowledge is out of my reach.

A grant-funded researcher works on the outskirts of the research community, whereby the sense of community and research identity are weakened. The key things for future researchers are career planning and an increase in the sense of community.

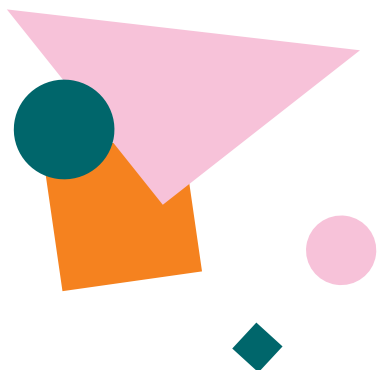
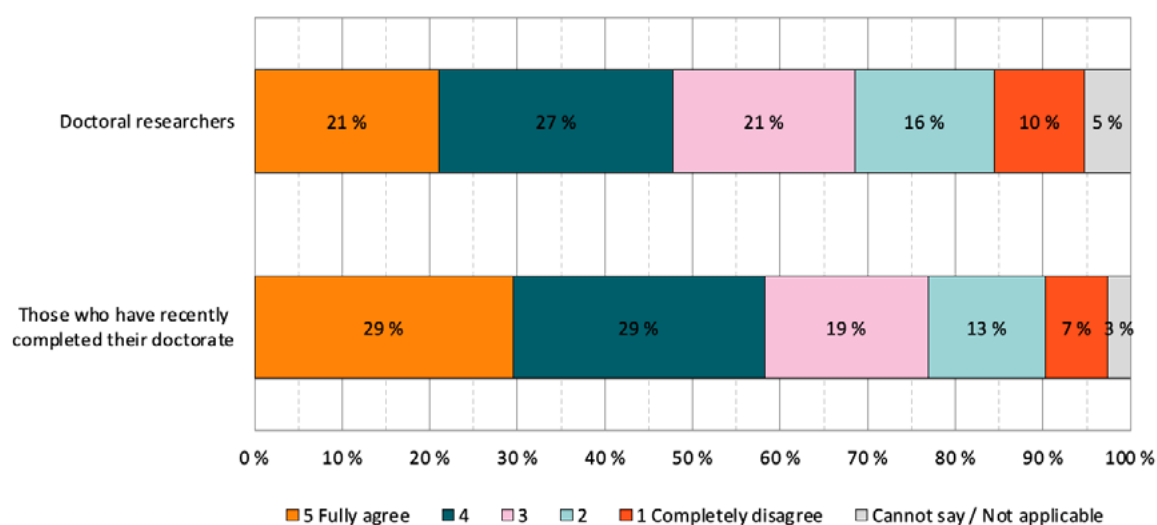


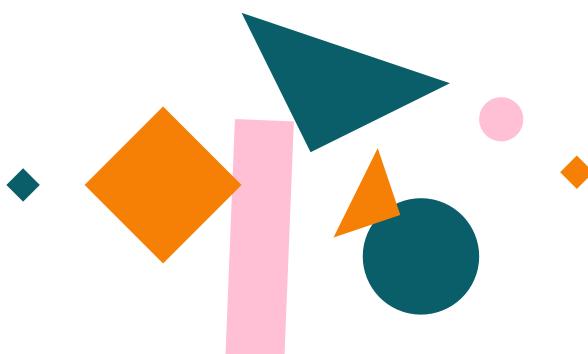
Figure 11. Response distribution to the claim 'I feel that I am part of the work community in my workplace.'



The range of titles for early career researchers is very broad. The survey clarified what the respondents thought would be the best title for those working on their doctoral dissertation. A total of 62 % of the respondents felt that the best title would be doctoral researcher (väitöskirjatutkija). Of the rest of the respondents, 20 % chose doctor-in-training (tohtorikoulutettava), 9 % junior/early career researcher (nuorempi tutkija), 6 % doctoral student (tohtoriopiskelija) and 2 % researcher-in-training (tutkijakoulutettava).

A total of 19 % of the grant-funded researchers who responded to the survey report that they pay rent for their workspace. This figure is slightly higher than that of the previous survey, in which 13 % of the grant recipients reported paying rent for their workspace. The most typical amount of rent is EUR 1,501–2,000 per year. There are significant differences between universities regarding the practices of paying rent, but grant-funded researchers may also be treated very differently within a university.

Researchers cannot do their work without the necessary resources. Altogether 7 % of all respondents reported difficulties getting the access rights to facilities, such as laboratories, electronic systems (such as email) or even a copier, which are essential for their research.



These types of problems can be typical, particularly for grant-funded researchers:

The position of grant-funded researchers should be defended within the academic community and openings created to promote equality between researchers, regardless of their funding sources. For example, access to health care services, the right to a workspace in the same place as salaried employees, the right to a computer, a daily allowance for travel days, and other factors create inequality between salaried employees and grant-funded researchers. And a broader right to earnings-related unemployment benefits is essential. It is partially a matter of community: are grant-funded researchers viewed as a valued component of 'us'?

Another problem related to work community that particularly concerns grant-funded researchers is the disparity between the grounds of compensation or no compensation for teaching and other work they are asked to do for the university. As seen in table 10, 21 % of grant-funded researchers report that they do work for their department or faculty without receiving any financial compensation. This result is worrisome, since the figure has slightly increased from the previous survey, when nearly 17 % reported doing work without receiving financial compensation. Female and foreign respondents are clearly more often doing work without compensation than male or Finnish respondents.

Table 10. I work for my department/faculty (e.g. administrative, teaching and research tasks).

I WORK FOR MY DEPARTMENT/FACULTY (E.G. ADMINISTRATIVE, TEACHING AND RESEARCH TASKS)	SHARE OF GRANT-FUNDED RESEARCHERS
Yes, and I receive financial compensation for the work	17 %
Yes, but I do not receive any financial compensation for the work	21 %
No	57 %
Other	5 %

The advancement of equality and non-discrimination are key ways to facilitate one's inclusion in a work community. For this reason, it is concerning that nearly half of the female respondents feel that being male is a benefit for an academic career (figure 14). The reasons behind the aforementioned responses cannot comprehensively be examined here, but one concrete example of inequality is that, more often than men, women report that they postpone having children due to career-related factors. This response was elicited from more than one third of the women and slightly more than one fifth of the men. The responses to the open-ended questions indicate that many respondents struggle with deciding between establishing a family and pursuing a career in research. There has been no change in these figures from the previous survey.

Many also consider the idea of having a family in relation to the career path for researchers. There is particularly concern over how to combine having a family with the research career stage that comes after receiving a doctorate.

The relative 'smallness' of the grant and the intermittent periods of funding hinder the establishment of a family.

I am beginning to accept that the research sector is unpredictable and you can't just 'change your field' or 'workplace', because you always have to be open to every direction and you never know where the next period of employment will come from. Occasional salaried work enables the earnings-related unemployment allowance, as there will surely be periods of unemployment. I don't even really know what kind of permanence I want: sometimes it's nice to do a variety of things, but sometimes it makes me anxious because I don't know what the future holds. I am young and active, but I have postponed my dreams of a family for a long time already because of my work.

For example, one has to consider whether to have children or the timetable for having children depending on one's career stage.

Figure 12. Responses to the claims: being a) male or b) female is a benefit for an academic career.

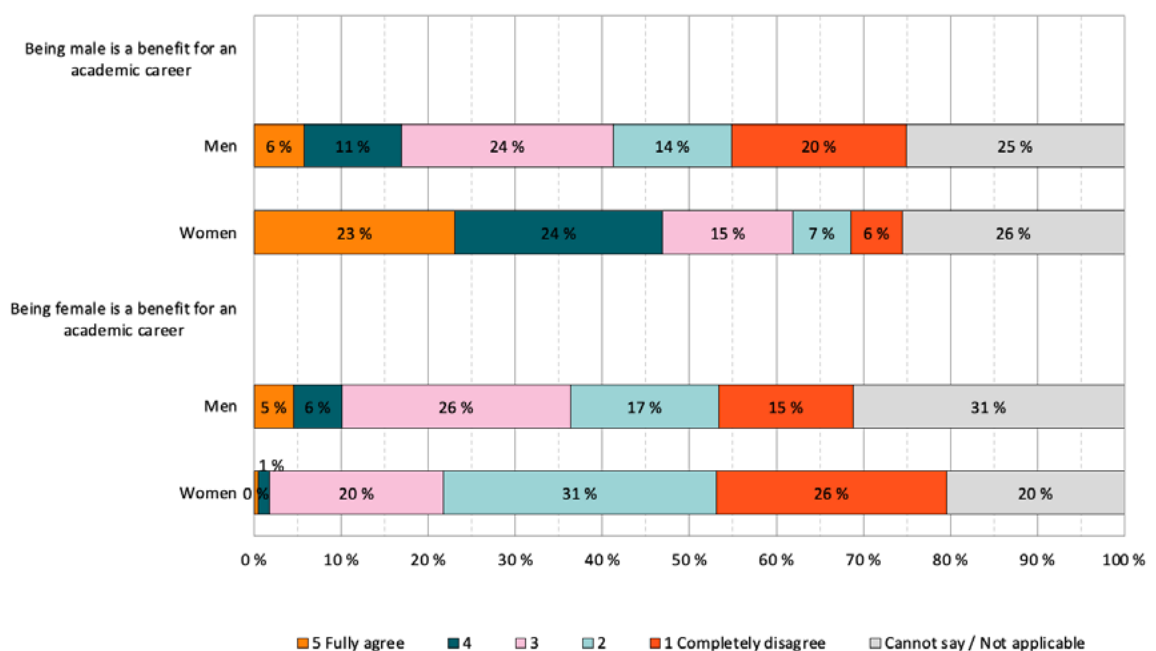
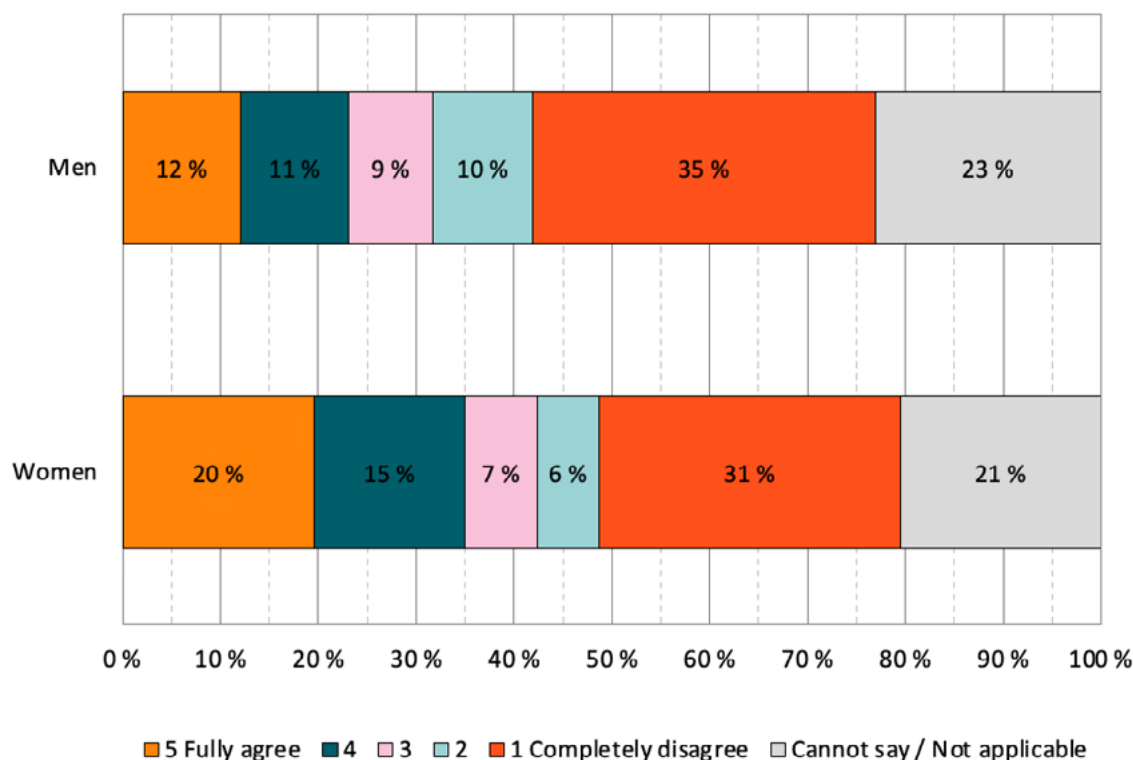
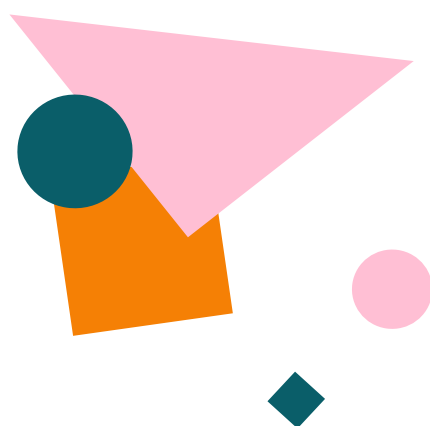


Figure 13. Responses to the claim 'I have postponed having children due to career-related factors.'



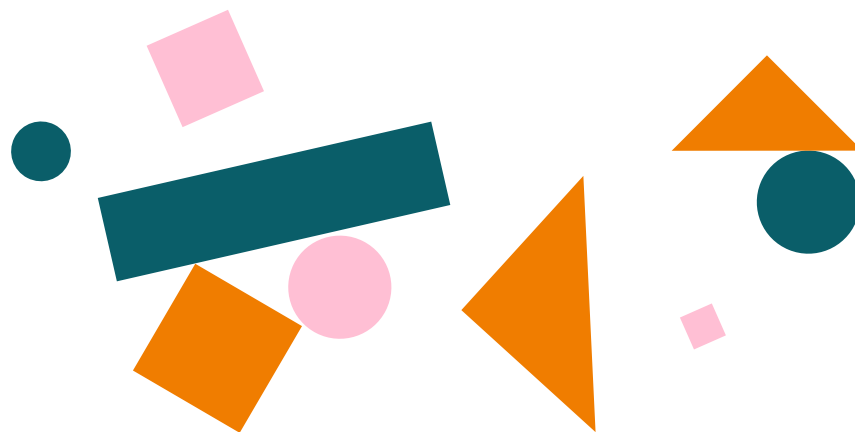
As we have seen earlier in this report, the open-ended questions of the survey highlight the concerns and problem situations encountered in working life. Amid uncertain conditions, early career researchers, however, have a shred of hope when it comes to a research career and future prospects. Particularly the content of the work is often viewed as being satisfying and at least some of the respondents' experiences of their work community and peers are positive. The life of early career researchers is, however, still overshadowed by many issues related to working conditions – especially in terms of finding jobs or research funding – as well as to possibilities for other aspects of life outside of work. The dreams of early career researchers concerning the future are not distant pipe dreams, but rather very reasonable hopes for the basic requirements that secure a good life.



I dream of even some degree of stability when it comes to employment relationships. During my dissertation work, I have had employment relationships that lasted from six months to a year and it has caused me stress and worry. I also feel that I have done too much work considering my earnings level. I have, however, been able to do work that interests me, so I haven't gotten fatigued. I have also received recognition and support from my dissertation supervisor, which has helped me to keep going. I hope that, in the future, I will receive similar support from my work colleagues. I am afraid, however, that the competition will intensify and my colleagues will not necessarily want to support me as we move forward, since we will essentially be competing for the same salary and grant funding.

I hope that I am able to complete my dissertation alongside my other project and teaching work. After I complete my dissertation, I would like to work at a university, but I would also like to partly work through my own company within the private sector.

Just now a research career seems like a dream profession, but, at the same time, I feel continuous stress over how long I will be able to continue in this profession and how it will affect the rest of my life (having children, living arrangements, etc.). I get a lot from my work and I enjoy it, but the ongoing financial insecurity makes it difficult to plan the future.



7 FUURT'S CONCLUSIONS BASED ON THE RESULTS OF THE SURVEY

Doctorates are completed more quickly, but the work remains fragmented

In comparison with FUURT's previous survey (2017), many issues for early career researchers have only changed minimally or not at all. This is true, for example, when it comes to working conditions and the content of the work of early career researchers. The key issues remain the intermittent nature of research funding and employment relationships: doctoral and postdoc research are split into multiple different funding periods or employment relationships. The fragmentation of the work is reflected in the number of funding sources as well as the fact that as much as 30 % of the respondents report being unemployed at some point during their doctoral research. Of those who recently graduated with a doctorate, 30 % have experienced periods of unemployment since graduation. The uncertainty of research funding and intermittent periods of work are serious problems for researchers, even though the unemployment rate of early career researchers – and more specifically those with research training – is lower than the population in general.

It is no wonder that a clear majority (65 % of respondents) feel that applying for funding takes too much time away from research. Despite intermittent periods of funding, our data shows that the time spent on completing the doctorate has decreased in comparison to the previous survey. The differences between the branches of science remain considerable, however. The responses to the open-ended questions also highlight the fact that the hectic work pace during doctoral research can be extremely stressful and even exhausting. In the current fragmented research funding situation, limiting the time frame for the completion of one's doctorate is not a viable option. Even though the better organisation of research training and thesis supervision might facilitate the progress of the thesis process, it should be assured that when one is working full-time on their thesis, they are guaranteed funding for the entire process so that such full-time work is possible.

Working conditions must be comprehensively developed

On the basis of our survey results, it is clear that the induction of early career researchers in terms of their rights as part of the university's scientific and work community is lacking. As regards employment relationships, it is striking how many of the respondents working at a university report that they are unsure how their pay is determined within the university's salary system: up to 37 % of the respondents do not know the requirement level that serves as the basis of their salaries and 44 % do not know their personal performance level. For foreign respondents, the situation is even worse, since more than half of them don't know the requirement level or personal performance level connected with their salaries.

Another problematic factor is that very many early career researchers report that they have taken relatively little holiday time or time off, or they have reported that they haven't taken any time off during the 12 months prior to the survey: 16 % of those in an employment relationship at a university and 22 % of grant-funded researchers report that they have not taken any holiday time. Foreign respondents report shorter holidays than Finnish respondents. When we also take into account the fact the respondents report that their weekly working hours exceed the calculated regular working hours, we can clearly conclude that many early career researchers are doing more work than is intended. This also emphasises that the induction for early career researchers and new employees should be realised better. In an employment relationship, the employer and supervisor have the responsibility to ensure the sufficient induction of employees and that each employee has the right and possibility to take an adequate amount of time off work, even though the total full-time hours (1,612 hours per year) for university teaching and research personnel leave a significant amount of responsibility and freedom as to the use of working hours to the employees themselves. Grant providers could also clarify their guidelines and promote a healthy work culture by emphasising that even though a grant-funded researcher is responsible for the realisation of their work plan, this does not mean working without any breaks or time off. There is no obligation to work either when one is sick, regardless of one's source of funding.

One problem related to the working conditions may also be the feeling of exclusion from the work community. Based on the European Charter for Researchers (2005), researchers should be recognised as professionals throughout all stages of their career.⁹ One factor that speaks to the professional aspect of their position is the title used for early career researchers. On the basis of our survey, the clear majority (62 %) report that they prefer the title of doctoral researcher for those working on their dissertation. Contrary to different titles that include the words 'student' or 'trainee/in-training', doctoral researcher clearly expresses the career stage to which the researcher belongs. Early career researchers should not be undervalued or seen as a precarious group operating somewhere between students and personnel, but rather should be viewed as full-fledged members of the scientific and work community.

Grant-funded researchers, in particular, encounter different problems related to the work community.¹⁰ As the grant does not constitute an employment relationship with the university or grant provider, the working conditions for grant-funded researchers are organised very differently at universities and research institutes. This theme has been actively discussed lately both nationally and locally, and many universities have also begun to improve and clarify the working conditions for grant-funded researchers. For example, at the time this report was being written, the University of Eastern Finland had committed, as of 1 June 2021, to offering a 10 % part-time employment relationship to researchers affiliated with the university who have grant funding for at least 12 months. This provides grant-funded researchers at the University of Eastern Finland with, among other things, a workspace and access to occupational health care. The Tampere University will begin to offer health care services to grant-funded researchers as of 1 August 2021 on the condition that they have

a grant period of at least six months and a resource agreement with the university. The University of Helsinki announced in spring 2021 that it would be eliminating the office fees for all grant-funded researchers and giving them the right to vote and run as a candidate in university elections. Other actions to improve the position of grant-funded researchers were also undertaken. There is, however, still room for much improvement, both within the scientific community and within other areas of society. The COVID-19 crisis of 2020–2021 has shown how desperately grant-funded researchers need their social and unemployment security to be further safeguarded. FUURT is actively addressing these issues.

One worrisome issue concerning grant-funded researchers is the fact that approximately one fifth of them reported that they do work for their university without receiving financial compensation. This should naturally not be the case. Any work for the university outside the scope of the grant research should be agreed upon in an employment contract and compensated appropriately. This type of employment contract could be, for example, a working hour or part-time employment contract covering teaching or administrative tasks. One alarming realisation, in terms of equality, is once again that the foreign respondents report, more often than Finnish respondents, that they are doing work for the university without compensation.

Career counselling is taking on new forms

Career counselling and support for career planning for early career researchers consistently rose to the forefront after the publication of our previous survey (2017) results. The research training and doctoral programmes at different universities have since invested in, for example, the strengthening of corporate and working life collaboration, the establishment of mentoring programmes and the provision of information on the employment of doctorate holders within different fields and sectors. In comparison with our previous survey, it is a joy to note that different options for career counselling are being offered more comprehensively as part of the doctoral training and thesis work. The most typical form of career counselling is still, however, a discussion about career plans with one's own supervisor. The most diverse forms of support for career counselling and planning are still only available to a relatively small group of early career researchers. The next goal should be the expansion of access to career counselling and working life collaboration for more early career researchers regardless of field.

A large group of the respondents (39 %) report that they had visited at a university abroad during their doctoral thesis work. Also otherwise, the survey material shows that the international co-operation of early career researchers in Finland is at a good level. It is also encouraging that up to 65 % of this survey's respondents report that they have otherwise co-operated with actors outside the university sector in relation to their doctoral thesis. We might, therefore, state that although different forms of co-operation and networking are taking place during doctoral training and doctoral thesis work, perhaps the creation and facilitation of such contacts could be made more systematically acces-

sible to all doctoral researchers. Early career researchers with a foreign background, in particular, need support to establish connections with working life, outside of the universities, too. This would help to facilitate their integration and recruitment in Finland, also after completing their doctorate.¹¹ As this survey indicates, foreign early career researchers are, more often than their Finnish counterparts, ready to leave Finland to find work abroad, whether in the field of research or outside of it. Proactive and effective methods for integration are needed, including Finnish or Swedish studies, so that foreign researchers might find employment more easily in Finland.

It is unfortunate that the career prospects of early career researchers are overshadowed, as in the previous survey, by uncertainty and concerns about finding employment and, as a result, by concerns about their financial prosperity and families. We know, from the career tracking surveys of those with doctorates and the State of scientific research reports of the Academy of Finland, that less than 40 % of those who graduate with a doctorate are employed in the universities. The majority of those who complete a doctorate transfer, either immediately or at a later stage of their career, to work outside the university sector. Yet, for many, research training and a doctorate still primarily signify an aspiration for an academic career and, for that reason, it is hardly a surprise that our survey material shows that the clear majority (approximately 85 %) of early career researchers are interested in working at a university or in the public sector in the future. Early career researchers are, however, keeping their minds open to other career options. On the basis of this survey, jobs within the private sector interest the majority (68 %) of respondents, while one fourth expressed interest in entrepreneurship, which can be considered a significant percentage.

On the one hand, it appears that early career researchers have a realistic and fairly diverse view of their career prospects and future employment. On the other hand, the prospects are also characterised by negativity concerning, in particular, worry and uncertainty about career opportunities and a stable livelihood, as expressed in the responses to the survey's open-ended questions. Early career researchers should be offered counselling and support for career planning as well as the related resources and funding in order to facilitate their employment in different sectors. For example, doctoral researcher positions that are jointly funded by a university and a company may be a good means of strengthening corporate co-operation and promoting employment after completing a doctorate. Akava and FUURT have proposed a new financial instrument that would finance the employment of those who have recently completed their doctorate in different sectors of working life.¹² This type of investment is worthwhile, since the aim of the national research, development and innovation (RDI) roadmap¹³ is to increase Finland's expenditure to GDP ratio for research and development to 4 per cent by 2030, and this will only be achieved if new research activities are generated within the private sector. For this reason, the private sector needs even more personnel with research information expertise.

What is the attraction of a career in research?

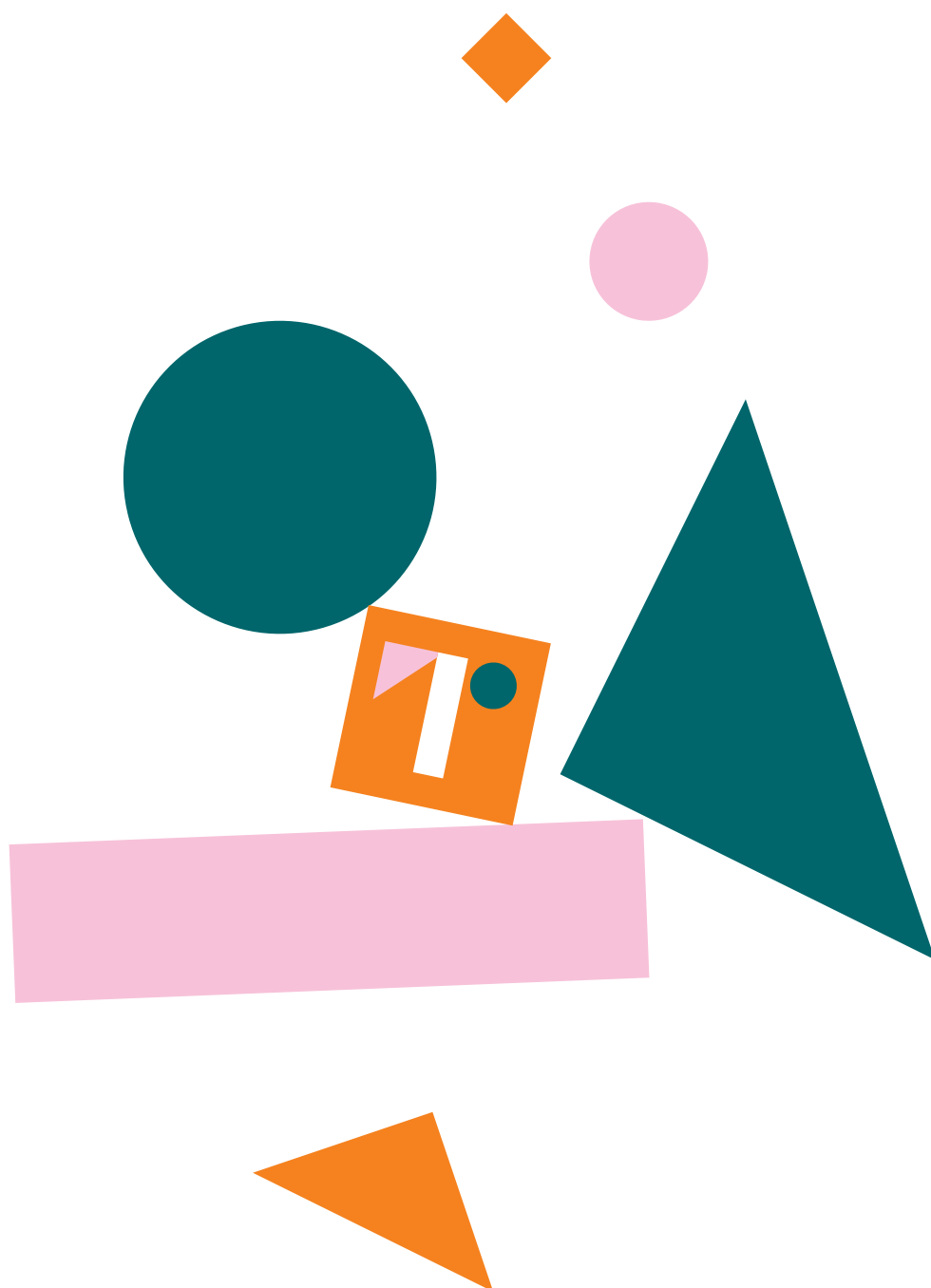
Issues that weaken the attractiveness of careers in research have recently been gaining attention both in Finland and internationally. In Finland, the discussion culminates in the fixed-term problem within universities; in other words, the high percentage (70 %) of fixed-term employments among teaching and research personnel. FUURT organised a campaign on the issue (Why not permanent?) in autumn 2020.¹⁴ The purpose of the campaign was to spark discussions and raise awareness concerning the prevailing work culture and recruitment practices of universities in relation to other aspects of working life and legislation. The campaign achieved a fine milestone in spring 2021 when the University of the Arts Helsinki announced it was making 80 fixed-term teaching and research positions permanent at the same time.¹⁵

In accordance with the national RDI roadmap, the research career working group set up by the Ministry of Education and Culture has examined the research training at universities and drawn up procedural proposals for ways to support the mobility of researchers between different sectors. The final report of the working group was published in June 2021. On the international level, the uncertain working conditions of researchers have been highlighted in, among others, the Research precariat project of the OECD, for which a report and procedural proposals primarily focusing on postdoctoral researchers were published in May 2021.¹⁶ During spring 2021, the Portuguese EU Presidency set, as one of its key goals for the development of the European Research Area, the promotion of the professionalism and attractiveness of research careers.

The attractiveness of research careers should be strengthened by creating such work conditions within universities that would enable researchers to focus on their long-term research. This calls for predictable and long-term funding, personnel policies that support employees (in particular, ending the practice of handing out unfounded fixed-term contracts one after the other), competitive pay, clear opportunities for career advancement and the possibility to find a balance between work and life outside of work. On the other hand, the mobility of researchers between different sectors should be supported and facilitated: research and research-based knowledge can be utilised in many ways within different organisations and this should open clear and motivating career prospects for researchers. In terms of the attractiveness of research careers, it is also worrisome that many researchers are postponing the establishment of a family because they view it as impossible to combine having children with the demands for career advancement or they feel that the uncertainty of the work and low income level are not enough to secure the livelihood of a family. The attractiveness of research careers is not promoted by the unreasonable criteria set for career advancement.

In order to improve the attractiveness of research careers, pervasive actions must be taken within universities and workplaces and as a part of science and higher education policies. The government spending limits discussion in spring 2021 included plans to cut 35 million euro in research funding, primarily as cuts in the funding allocated to the Academy of Finland. This was a heavy hit for the

Finnish scientific community and places the RDI goals in question. These types of conflicting messages about, on the one hand, the increase in RDI intensity and, on the other, cuts in research funding, are not likely to strengthen the faith of researchers working in Finland and those endeavouring to come here that the conditions for research will improve. Altogether 61 % of the respondents to this survey have a negative attitude towards the general development of research funding. We can state that researchers, and early career researchers in particular, need a strong message from decision-makers and concrete actions to show that Finland truly wants to invest in science and research and that there is a future for researchers in Finland.



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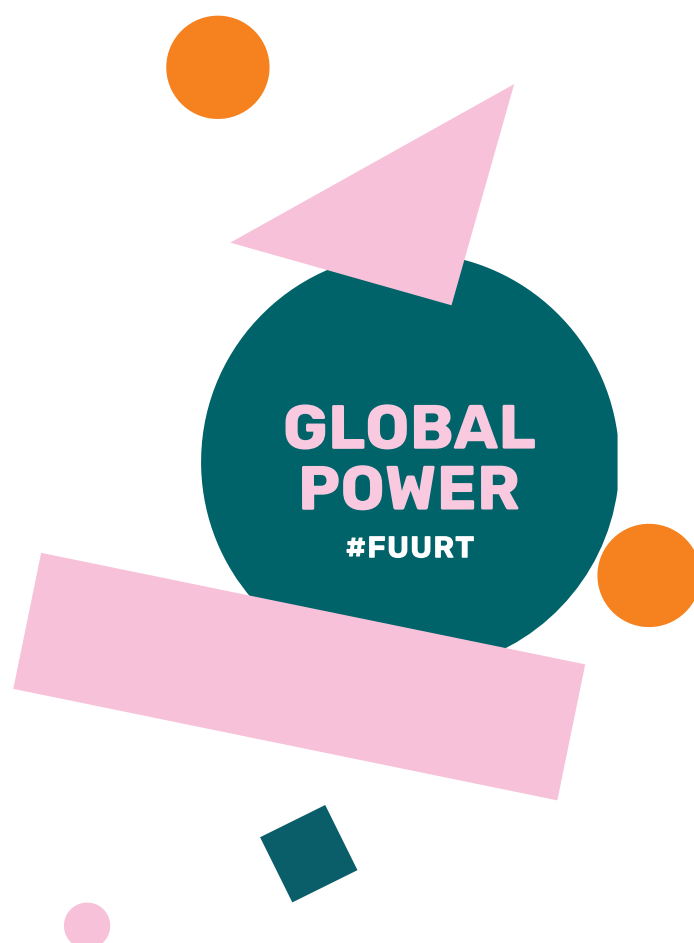
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