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# **Working outside academia? Perceptions of early-career, fixed-term researchers on changing careers**

**Melina Aarnikoivu, Terhi Nokkala, Taru Siekkinen, Kari Kuoppala, Elias Pekkola**

## **Abstract**

This article examines the perceptions of early-career, fixed-term researchers in Finnish universities towards changing careers. It maps out the reasons this group has considered the change and where they see themselves in five years. As a theoretical framework, a synthesis of variables related to career change, created by Ryan et al. (2011), was used. The results show that the most common reasons for early-career researchers to change careers are job-security related stress, job-related dissatisfaction, and salary. Over half of the respondents would like to work at a university in five years; however, half of the respondents would also be happy to work in industry. Further examination of the responses highlighted the polarisation of those academics who were optimistic about their future employment opportunities in academia and those with highly pessimistic outlooks. The results of the study bear crucial importance when addressing the current discussion and issues related to the career paths of early-career researchers in Europe.

Keywords: academic staff, career change, early-career stage, fixed-term employment

## **Introduction**

Around the turn of the millennium, the drive of societies to become more knowledge intensive led to increasing demands for universities to produce more doctorate holders. In

many European countries, this was accompanied by policies to foster employment of these doctorate holders primarily in the private sector. However, while European higher education institutions (HEIs) strived to accommodate these needs, there was no parallel increase in permanent or tenure-track jobs in the higher education sector. Instead, the increase in available vacancies was channelled to research positions with short, fixed-term contracts. The tightening situation of researchers, manifesting as increasingly uncertain future prospects and poor working conditions<sup>1</sup>, was further fuelled by the global economic recession that cut government budgets to HEIs so that they became more dependent on external funding. This has had a major impact on career prospects of academic workers, and particularly of those in the early-career stage (Brechelmacher et al. 2015; Goastellec et al. 2013; Huisman et al. 2002).

These recent changes within academia have made employment in other sectors an attractive and viable option for academics. A voluntary faculty turnover, career change, and the factors leading to these have been widely studied and theorised, mainly in the fields of business management and psychology (Ryan et al. 2011). There is not much qualitative research done on this topic, however, although the variables affecting career change and faculty turnover have been examined for decades. As Ryan et al. (2011) point out, further qualitative inquiry on the 'hows and whys' behind faculty members' thought processes is therefore needed. In this article, we offer such inquiry by examining the perceptions of early-career academics towards leaving academia and changing careers in the Finnish context. As a theoretical framework, we use an existing synthesis on the variables related to academics'

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<sup>1</sup> The International Labour Organization (ILO) has defined working conditions as 'a broad range of topics and issues, from working time (hours of work, rest periods, and work schedules) to remuneration, as well as the physical conditions and mental demands that exist in the workplace' (2016).

intentions to leave created by Ryan et al. (2011). The synthesis is based on theories and empirical studies conducted over several decades and includes four main variables: stress, (dis)satisfaction, faculty productivity, and fit/support, all of which have been studied to affect voluntary turnover. Empirically, our data is comprised of responses to two open-ended questions on leaving academia and one's career prospects in five years' time. These questions were a part of a large survey which targeted the academic staff working at eight Finnish universities, conducted in 2013 (see Kuoppala et al. 2015).

### **Career prospects of early-career researchers: the European context**

The percentage of fixed-term contracts (as opposed to indefinite contracts) at universities in different European countries varies extensively: from 70 % or more (e.g. in Germany, Austria, Finland) to 20 % or less (e.g. in France, Malta, Turkey). Fixed-term contracts are more and more often associated with positions at the early-career stage (Eurydice 2017). To tackle this negative development, new types of career models have been introduced in many European universities. For example, the European Science Foundation (2009) has recommended implementing a four-stage career model, which aims to make the different stages of academic careers in universities clearer and more attractive. In addition, many universities have implemented varying tenure-track models to attract and invest in top researchers (Brechelmacher et al. 2015; Kwiek and Antonowicz 2015; Pietilä 2015; Henningsson et al. 2017). However, a recent report by Eurydice (2017) revealed that the working conditions of the academic staff are declining in several European countries (see also Kwiek and Antonowicz 2015).

Numerous studies conducted on early-career researchers and their career prospects in different European countries also reveal that job insecurity and difficulties in planning one's career persist (see e.g. Hakala 2009; Waaijer 2017). For example, van der Weijden et al. (2015) discovered that as many as 85% of all Dutch postdocs wanted to stay in the academic field but less than 3% were offered a tenure-track position. The high percentage might be due to internal motivational factors (cf. March and Olsen 1989) or 'an inner calling' (Weber 1958); academics are typically committed to their work and find it meaningful (Siekkinen et al. 2016a). Many early-career researchers are willing to take on short and badly paid positions because they feel it is a personal investment for the future (e.g. Brechelmacher et al. 2015; Kwiek and Antonowicz 2015). Finally, in their recent study, Ortlieb and Weiss (2018) provide an interesting approach on early-career insecurity by examining its antecedents while drawing on concepts of boundaryless (Arthur 1994) and protean (Hall 1996) careers. Their study found that an individual's willingness to be geographically mobile is closely related to academic career insecurity, which, as they point out, is problematic considering the mobility requirements of the postdoctoral phase..

There is also research on the types of doctoral students or postdocs regarding career prospects. For example, Fitzernberger and Schultze's (2013) quantitative study examined the interplay between academic and non-academic career prospects and identified three types of postdocs: 1) motivated optimists, 2) confident academics and 3) frustrated pessimists. Enright and Facer (2017) have distinguished four types of early-career researcher identities: the disciplinarian, the freelancer, the worker bee, and the social activist, all of whose orientation or attitude towards academic work is slightly different. Their study was qualitative but as it examined the identity work of the participants, its focus was slightly different from ours. Finally, Ylijoki and Henriksson (2017) studied the career building of early-career academics.

By drawing on the narrative approach, they constructed five different career stories (the novice of the academic elite, the victim of the teaching trap, the academic worker, the research group member and the academic freelancer), each of which were analysed with regard to core commitment, career risk, career support, and stance towards the university. However, their focus was on understanding the *academic* career and how to build it, whereas we focused on alternative career paths as well.

*Research context: early-career, fixed-term researchers in Finland*

In Finland, the group of fixed-term, early-career researchers has emerged due to the changes in the (public) funding of Finnish universities. From the beginning of the 1990s, the share of the so-called external funding has increased steadily from almost nothing to a recent 40%. External funding is competitive (research) funding derived mostly from public sources such as the Academy of Finland or Business Finland, a technology and innovation funding agency. It is not part of the funding derived from the government's funding formula (Pekkola et al. 2015). In 2016, about 70% of the Finnish research and teaching staff of universities worked on fixed-term contracts (AFIEE 2016). The best understanding of the development of this group can be obtained from the member survey (see Puhakka and Rautopuro 2001, 2004, 2007, 2011, 2013) conducted by the Finnish Union of University Researchers and Teachers, which currently has over 6500 members. Comparing the newest survey to the oldest, the fixed-term researchers today are 1) older, 2) better educated (more often holding a doctorate), 3) more often female, 4) more satisfied with their salaries, 5) have more short employment contracts, 6) face more severe distress regarding non-secure employment and career development, 7) less stressed on average, and 8) more often have careers that include

unemployment periods and periods funded by scholarships in addition to short work contracts (Pekkola et al. 2015).

### **Theoretical perspectives on changing careers**

In this article, we refer to *career change* as movement to a new occupation that is not part of typical career progression, as opposed to *job change*, which is typical for career progression and usually within the same institution (Lawrence 1980; Rhodes and Doering 1983). Career change and faculty turnover have been studied and theorised for decades. Some of the most notable examples of voluntary turnover theories and conceptualisations include the ones by Curry et al. (1986), Johnsrud and Rosser (2002), Lee and Mitchell (1994), Mobley et al. (1978), Smart (1990), and Steers and Mowday (1981). There is also a great number of empirical studies that have been conducted to test, challenge and support different turnover models and/or to develop them further, including Miller et al. (1979), Bluedorn (1982), Zhou and Volkwein (2004), Ochola (2008), Ryan et al. (2011) and Lawrence et al. (2013). The theories of career change and faculty turnover often present a different number and type of variables that predict turnover, one of the most important ones being job (dis)satisfaction, which is included in most of the abovementioned models. Other variables include personal characteristics and demographics, perceptions, performance, institutional environment, its structure, and rewards, as well as market forces, which create both constraints and opportunities for professionals of a certain field (Ryan et al. 2011).

Due to the vast amount of literature on career change, instead of using any one specific theoretical framework – most of them developed 20 to 30 years ago when working life was very different – we base our current study on the synthesisation of different variables based

on an extensive literature review by Ryan et al. (2011). Their review and empirical study combined the different predictive variables found in previous studies that are behind academics' intentions to leave. They divide these variables into four larger groups: 1) stress, 2) satisfaction, 3) faculty productivity and 4) fit/support, thus including both individual and institutional-level variables. The first, stress, according to Ryan et al (2011), includes occupation specific stressors, for which they cite Beehr et al.'s (2000) work, quantity and nature of the work (Thorsen 1996; Dee 2004), time constraints, pressure, a lack of personal time (Dey 1994; Thorsen 1996), faculty rank and tenure status (Thorsen 1996; Zhou and Volkwein 2004), family/household obligations, and health concerns (Dee 2004).

The second, satisfaction, includes several different factors, which Ryan et al. (2011) enumerate as: expectations of the job and the actual experience of the job (Vroom 1964; Locke 1975), role of compensation, satisfaction with supervision and the work itself (Cotton and Tuttle 1986), and commitment to an organisation (Curry et al. 1986; Smart 1990). Here, Ryan et al. (2011) also specifically mention the work by Johnsrud and Rosser (2002) and Hagedorn (2000): Johnsrud and Rosser suggest that perceptions of work life and morale have significant direct impacts on faculty members' intent to leave. In turn, Hagedorn connected the work itself, salary, relationships with administration, student quality and relationships, and institutional climate and culture being the most highly predictive factors of faculty turnover.

In terms of the third variable, faculty productivity, Ryan et al. (2011) highlight, for example, Fairweather's (2002) work on the publications (books, book chapters, journal articles) of a faculty member within a certain timeframe. Ryan et al. (2011) also interestingly note that Smart (1990) and Zhou and Volkwein (2004) have found contradictory results on the



relationship between faculty productivity and intent to leave, the first study finding a positive and significant, and the latter a non-significant relationship.

Finally, fit/support refer to how well a faculty member and their program, department, and institution fit together, for example, whether a faculty member feels their work is valued by the institution or their peers and if there is congruence between institutional and individual priorities and values (Ryan et al. 2011). These are summarised below.

Table 1. Variables that have been identified to be related to academics' intentions to leave academia (adapted from Ryan et al. 2011)

<b>Variable</b>	<b>Sub-variable</b>	<b>Examples</b>
<b>1) Stress</b>	a) Family stress	Household responsibilities, child care, children's problems, being part of dual-career couple
	b) Publishing-related stress	Review/promoting process, research/publishing demands, job security, self-imposed high expectations, change in work responsibilities
	c) Workplace related stress	Committee work, faculty meetings, institutional procedures and bureaucracy, teaching load, lack of personal time, working with underprepared students
<b>2) Satisfaction</b>	a) Dissatisfaction (job)	Salary and fringe benefits, opportunity for scholarly pursuits, teaching load, autonomy and independence, overall job satisfaction, prospects for career advancement
	b) Dissatisfaction (institution)	Quality of students, office/lab space, visibility for jobs at other institutions, relationships with administration, availability of childcare, clerical/administrative support
	c) Dissatisfaction (people)	Professional relations with faculty, social relations with faculty, competency of colleagues
<b>3) Faculty productivity</b>		The number of chapters in edited volumes, articles in academic/professional journals, publications within a certain timeframe, books, manuals and monographs
<b>4) Fit and support</b>	a) Fit	An individual feeling good about the direction of his/her life, feeling the work adds meaning to their life and having alignment between work and personal values

	b) Support	Faculty sufficiently involved in campus decision making, congruence between an individual's and institution's values, faculty at odds with administration (reversed), adequate support for faculty development, respect for diverse values and beliefs, faculty respecting each other, an individual's research/teaching valued by faculty in their department
<b>5) Control variables</b>		Marital/partner status, gender, ethnicity, years at institution, rank, discipline (soft/pure, soft/applied, hard/pure, hard/applied)

In the empirical part of their work, Ryan et al. (2011) studied tenured/tenure-track faculty members at a large, public research university in the Midwestern United States and included both those who were considering leaving their university for another institution and those who wanted to leave academia completely. For the first group, the higher the workplace-related stress (1c) and faculty productivity (3), the more likely the faculty member was to consider leaving. Ryan et al. (2011) discuss their findings in relation to some other previous, well-known research in the field, such as Zhou and Volkwein's (2004) study of the influences of faculty departure intentions and Smart's (1990) study of the relative influence of different individual, institutional, and work-related factors on the intentions of faculty to leave their current institutions. They noted that their result related to faculty productivity is interestingly supported by Smart (1990) but contradicts with the null findings by Zhou and Volkwein (2004). Furthermore, fit, support, or satisfaction factors were not significant, which also contradicts earlier studies by Johnsrud and Rosser (2002) and Zhou and Volkwein (2004), for example. With the second group, leaving academia completely, Ryan et al. (2011) discovered that the higher the stress associated with family (1a) and dissatisfaction of with one's job (2a), the more likely academics were to consider leaving. These findings, as Ryan et al. (2011) confirms, are in line with the findings of Smart (1990), Johnsrud and Rosser (2002), Zhou and Volkwein (2004), and Matier (1990). The higher the fit (4a) and support (4b), the less likely the academic was to consider leaving. These, in turn, are in line with the results of

Smart (1990), Johnsrud and Rosser (2002) and Dee and Daly (2006), for example, which discuss the role of institutional governance, sense of community and institutional fit, administrative relations, administrative support and communication respectively. Based on these findings, Ryan et al. (2011) concluded that if institutional leaders as well as faculty members pay careful attention to the factors associated with faculty intent to leave, it might influence the future rates of success and departure.

We would like to note, however, that when examining the theories and empirical research on faculty turnover, there is a division between ‘the intentions to leave’ and ‘actual turnover’ (Mitchell and Lee 2001; Ochola 2008). In other words, intentions to leave do not always lead to turnover. One challenge when studying actual turnover is that it is often difficult to locate those who originally were thinking of leaving and who ultimately left the organisation (Johnsrud and Rosser 2002; Ochola 2008). However, there are studies that show a heavy correlation between the intentions and actual turnover and some studies that have distinguished those variables that are meaningful when examining the relationship between these two (see e.g. Bluedorn, 1982; Steers and Mowday, 1981).

## **Data and methods**

The data for this study comes from an electronic survey conducted in 2013 (see Kuoppala et al. 2015) to study the working conditions of fixed-term researchers and their positions in the knowledge-based economy. The population of the survey included fixed-term academic staff including both those with a master’s and doctoral degrees working at the eight largest Finnish universities. Thus, in this study we include doctoral students as part of ‘early-career researchers’ due to the similar nature of their work and the fact that, in Finland, doctoral

students are usually considered ‘researchers’ alongside postdocs. However, treating doctoral students as early-career researchers is not exceptional as can be seen in previous literature (see e.g. McAlpine and Emmioglou 2015; Ortlieb and Weiss 2018).

The survey revealed that up to 76% of the respondents had considered working outside academia and that almost half of those had also acted to that end (i.e. searched for a new job or been in a job interview). In 2018, the Finnish Union of University Researchers and Teachers, representing approximately 50% of the universities’ teaching and research staff, excluding full professors, received parallel results from a survey aimed at its early-career members – over half of them had considered leaving academia and seeking private-sector employment (Alhonnoro and Kokkonen 2018). This suggests that young academics working in Finnish universities actively consider different types of career alternatives, further increasing our interest in examining their perceptions towards different options.

To study the perceptions of early-career researchers regarding leaving academia and changing careers, we needed to separate early-career researchers from the original survey data (n=810). Although being an early-career researcher is not strictly tied to age, it is a good indicator. Since the median age when receiving a doctorate is generally between 30 and 35 years in Europe (Auriol et al. 2013), we decided to examine the respondents between 25 and 40 years of age. It should be noted here that in the Finnish system, the use of academic job titles is still rather versatile and non-unified: This group had over 20 different job titles but the most common ones were “doctoral student”, “junior researcher”, “post-doctoral researcher”, “project researcher”, and “researcher”. Moreover, the respondents who had received permanent employment contracts between the point in time when the survey was sent out and respondents answering the survey were excluded (14 individuals). Finally, as we

specifically wanted to study those fixed-term researchers who had considered working outside academia, we further narrowed the data to those who had responded accordingly in the survey. Of the 518 fixed-term respondents between 25 and 40 years of age, there were 401 (~77%) who had considered working outside academia.

The data were analysed by using qualitative content analysis (e.g. Hsieh and Shannon 2005; Mayring 2000). We analysed the responses to two open-ended survey questions.

Table 2. Analysed questions and codes

Analysed question	Type of content analysis	Used codes
1) Why have you considered working elsewhere and what concrete steps have you taken to further this intention? (Please specify the work places you have considered).	Directed content analysis, predetermined codes based on Ryan et al. (2011)	1. Stress (a. family, b. career advancement (renamed), c. work) 2. Dissatisfaction (a. job-related, b. institution-related, c. people-related) 3. Fit 4. Support 5. Other (code added by the analysts)
2) Think about your future around five years forward. In what organization and in what duties you would like to work then and why?	Conventional content analysis, codes determined during the coding process by the analysts	1. One's current university 2. Another university / research centre 3. Industry / enterprise 4. One's own business 5. Not sure yet

Regarding Question 1, we renamed the code 1b *publishing-related stress* to *career-advancement-related stress*. This was because Ryan et al.'s (2011) original definition is based on the practices of the American tenure-track system, which emphasises the need to publish to progress on the tenure track. However, 'publication-related stress' might not be the most descriptive label for job insecurity in the Finnish context because there are also other factors related to one's career advancement, such as funding and networks (Brechelmacher et al. 2015; Siekkinen et al. 2016b). We also left 'faculty productivity' of Ryan et al.'s (2011)

synthesis out because it is tied to numerical data rather than academics' perceptions. Once the coding was done, we examined the relationship between these two sets of results, meaning we examined each respondent's replies in parallel. As a way of triangulation, both questions were coded separately by two individual researchers.

The methodological limitations of this study include those of secondary data analysis (e.g. Boslaugh 2007; Nathan 2011). For example, the first open-ended question we examined had two parts: Why have you considered working elsewhere, and what concrete steps have you taken to further this intention? Many respondents only replied to the latter part, not explaining the reasons behind their intentions. The original questionnaire was also rather long (with almost 80 multiple choice or open-ended questions), which may be why the respondents did not provide very elaborate responses to the open-ended questions or did not provide an answer at all.

## **Results**

As explained above, the number of analysed responses was 401. With the first question, there were 54 blank responses and 83 responses that only specified the actions the respondent had taken in order to work elsewhere and could thus not be coded (see the methodological limitations above). Out of the remaining respondents (n=256), 147 mentioned only one reason, whereas the rest, 109, mentioned two or more reasons. The responses were coded in the following way:

Table 3. Why early-career, fixed-term researchers have considered changing careers

<b>Reason</b>	<b>Number of respondents (n=256) who mentioned this reason</b>	<b>More specific reason (number of mentions)</b>	<b>Most common examples (number of mentions in parentheses)</b>
<b>1) Stress</b>	132 (52%)	a) Family-related (8)	Need to be able to support one's family (5); worries regarding maternity leave (3)
		b) Career advancement-related (121)	Lack of job-security (115); impact of publications (6)
		c) Workplace-related (24)	Nature of work (10); bureaucracy (7); stiffness/stiff systems (3); workload (3); competition (2)
<b>2) Dissatisfaction</b>	169 (66%)	a) Job-related (154)	Poor career prospects at university (82); bad salary/benefits (55); nature of work (15); mobility demands (2); overall job dissatisfaction (2); unclear tasks (2); dislike towards academic practices (2)
		b) Institution-related (24)	Administration/institution issues (13); dislike towards universities' funding model (5); university policies/politics (4); lack of university reciprocity (2); bad facilities (2); leadership culture (2); the academic system (2)
		c) People-related (15)	Lack of good atmosphere (7); individual people (5)
<b>3) Fit</b>	41 (16%)		Lack of interest in academic career/work/lifestyle (14); will to do more practical/useful work (5); business/freelance-oriented personality (4); wrong type of personality (4); contradicting values (3) personal interests/wanting some change (2); lack of interest to be a group leader (2)
<b>4) Support</b>	14 (5%)		Lack of appreciation (in general, from colleagues, of one's skills, from management) (8); lack of good atmosphere (institution) (2); lack of support (institutional/dissertation) (2)
<b>5) Other</b>	25 (10 %)		Personal interests (8); both academia and industry are good options (6); wanting some change (3); versatile experience (3)

Based on these results, stress and dissatisfaction are clearly the most common reasons why early-career academics have considered working elsewhere, with 132 and 169 mentions respectively. The first, stress, was mostly caused by the lack of job-security, which received a

total of 115 mentions (45% of the respondents). The second most common reason for early-career researchers to consider career change was job-related dissatisfaction; poor career prospects at the university was mentioned by 82 respondents (32%). The third most common reason was poor salary or benefits, mentioned by 55 respondents (21%). The rest of the reasons (family-related stress, workplace-related stress, institution-related dissatisfaction, people-related dissatisfaction, fit, support, and other reasons) were mentioned by less than 16% of the respondents.

The most common examples of each reason (stress, dissatisfaction, fit, support and other) are listed in Table 3 (the right-most column). However, the analysis revealed that the breadth of different experiences and perceptions was even larger: a total of 73 different types of examples were mentioned by the respondents. This highlights the complexity of the studied phenomenon, and thus offers a further argument for the benefits of a qualitative approach.

Regarding the second analysed question about where the respondents wish to work in five years' time, there were 128 blank responses. The remaining 273 responses were coded in the following way:

Table 4. Where early-career, fixed-term researchers wish to work in five years' time

<b>Place of work</b>	<b>Number of respondents (n=273) who mentioned this option</b>	<b>Number of respondents (n=273) who only mentioned this option</b>
In one's current university	157 (58%)	21 (7%)
In another university or research centre	148 (54%)	10 (4%)
In industry/enterprise	131 (48%)	65 (24%)



As an entrepreneur	19 (7%)	7 (3%)
Not sure yet	21 (8%)	n/a

The results regarding the respondents' ideas and wishes regarding their future place of work revealed a great variety: while 103 (38%) out of 273 respondents provided only one option (the right-most column), all the rest, 170 (62%), listed several options or were not sure yet. One's current university, another university or research centre, and industry/enterprise all gained significant mentions: 157, 148, and 131 respectively. Only entrepreneurship was not an option or a wish for many (7%).

When examining the responses separately as well in parallel, some interesting further observations could be made:

#### 1. Different groups of early-career researchers

There were three larger groups that could be distinguished from the data based on the parallel examination of the two open-ended questions. The first group are the academics who have considered leaving but would not want to leave because they are passionate about doing research or otherwise at their current university. These respondents often described their intentions in a very negative way, expressing the feelings of frustration, anxiety, sadness or hopelessness:

Example 1 (translated from Finnish): [I have considered leaving] 'because the future prospects at the university are terrible. I already have another half-time job elsewhere (which corresponds to my education and has a good salary).

This company would hire me full-time whenever I want. I'm actually

wondering why I'm still working in academia. After my fixed-term contract ends, I will go and work someplace where my future is more secure'.

When asked about their five-year future wishes, the same respondent, however, explains, 'I'd like to work at the university, with a permanent contract. This, however, is very unlikely'.

Although this respondent does not explicitly say so, it is clear that there is something about academic work that they enjoy because they still have not accepted a full-time job elsewhere. This becomes even more apparent when he/she says that in five years, they would like to work at the university, revealing the mixed feelings regarding his/her career.

The second group that can be distinguished are the academics who have considered leaving but who have considered several different career options and do not exclude any specific places of work. Compared to the first group, their responses are more optimistic and positive:

Example 2 (translated from Finnish): 'I've been looking at jobs in industry, development organisations, and other universities with longer contracts (for example, those of a university researcher with a 5-year contract, which would be extreme luxury!). [In 5 years, I would like to work in] perhaps partly in academia and partly as an expert through my own business. I could also imagine working in some innovative company that understands the strengths of a doctorate and is not afraid to hire doctorate holders'.

Finally, there is a large number of academics who have considered leaving and do not see themselves working in academia in five years. This group, however, was very heterogenous since some of them want to leave academia *because of academia*, after becoming tired of its job-insecurity, bureaucracy/administration, or their colleagues, whereas some want to leave it *because of other employment opportunities*. The following example describes the first:

Example 3 (translated from Finnish): ‘I’ve thought about going and working for the city or the private sector because the work tasks, prospects, working hours, and rules might be clearer. They might also have longer employment contracts. I used to work for the city before my current job so I know how different it is compared to the university. I’ve also lost my faith in actual science because doing research has become so marketised and based on the funders’ wishes, which often doesn’t support good scientific conduct. Also the “wild jungle” system of the university, which is monitored by no one, has destroyed my faith in good university practice’.

## 2. Reasons outside the analytical framework

During the coding of Question 1, we found that the chosen analytical framework was not completely sufficient and therefore added another group (5, Other). The responses coded under this category included people who did not have any specific reason to *not* work in academia but instead thought working in industry would be a nice change. In other words, they did not express stress, dissatisfaction, lack of fit or support; instead, they were merely curious about different options or expressed no strong opinion to either direction. Most of

these responses were also coded under several different options with Question 2. Example 4 represents these types of respondents and their five-year plans well:

Example 4: [In 5 years, I would like to work in] '[d]esign consultancies in Finland, the US, the UK or China. My long-term career goal is academic, becoming a good professor. But design is a special discipline; I would like to gain more industrial experience, which will benefit my future students I believe. Also, a good network in the industry is valuable. After all, most design students will have to find their positions in the industry when they graduate.'

In previous literature, one way of categorising the reasons to leave academia has been with the concepts of 'push and pull factors'; some factors are pushing people away from the university, whereas others are pulling them towards enterprises and industry, and vice versa (Matier 1990; Roach & Sauermann 2010; Zhou & Volkwein 2004). The category 5, Other, thus represents the *pull factors of industry*, something that the chosen analytical framework lacks, whereas all the other categories (1–4) represent *push factors of the university*.

### 3. Context-specific rationales

Finally, it seems that although there are both individual-level and structural-level rationales for considering leaving academia, the rationales pertaining to the structural level are clearly dominant. One such example is the prevalence of responses for factor 1b, career advancement-related stress. As Finnish early-career researchers are mainly employed on project funding rather than the universities' own funding (Kuoppala et al. 2015), their

contract is likely to run out as the project funding runs out. This necessitates the research groups – and often the early-career researchers themselves – acquire further project funding to secure the next contract:

Example 6 (translated from Finnish): [I have considered leaving] ‘mainly because I’m not too enthusiastic about my position after I graduate. There’s a lot of work to get funding so that I can do the actual work. That is also only for one year or two at a time, if you can even get any in the first place’.

Another context-specific reason that emerged in the data as a reason for stress, for example, were the mobility demands related to the academic profession:

Example 7 (translated from Finnish): ‘An academic career is not very appealing to me because it involves mobility, which I don’t want to commit to. You should do research exchange abroad and work in other universities. For personal reasons I don’t want to move away from my home town so it’s natural for me to look for work in engineering or teaching to replace my current work as a researcher’.

Although this respondent only mentions ‘personal reasons’ as a source for their unwillingness to move, it illustrates well how a conflict between one’s own personal circumstances and structural-level requirements (on the international mobility requirements of Finnish universities, see Nokkala et al. *forthcoming*) may force them to change careers.

## **Discussion**

The results of our study showed that among the early-career researchers who were working on fixed-term contracts in Finnish universities, the clear majority had considered leaving academia because of dissatisfaction (66%), stress (52%), or both. The dissatisfaction was mainly job-related (career prospects or salary), and the stress mostly related to job-insecurity. Considering that the studied group consisted of only fixed-term researchers, this is not surprising. The remaining reasons (family-related stress, workplace-related stress, institution-related dissatisfaction, people-related dissatisfaction, fit, support and other reasons) were also found, but were mentioned by less than 16% of the respondents. If we compare these results to the study by Ryan et al. (2011), there are some similarities and differences. Job-related dissatisfaction made it more likely for academics to leave academia entirely, which is in line with our results. However, whereas Ryan et al. (2011) found family-stress to make academics more likely to leave academia, in our study it was mainly career advancement-related stress.

The differences between these two studies can, however, perhaps partly be explained by the differences of the studied groups (tenured/tenure track in the U.S. and early-career researchers in Finland). First, the two academic career systems are different. In a small higher education system where the number of tenure-track places is low, the continuity of employment contracts are highly dependent on the ability of respondents to find funding for themselves (Kuoppala et al. 2015), and career progression largely relies on being able to compete for the scarce open positions at the next level in a relatively small number of universities, rather than for advancement based on merit evaluated at regular intervals, the ‘playing field’ seems very different for an individual than in a large higher education system. Moreover, the calls for international mobility as part of the academic career are

perhaps more pronounced in small, rather than large, higher education systems. In fact, the new mobility requirements in Finnish universities have caused much criticism since it may have a negative effect on those researchers' careers, especially women who have children (Nokkala et al. forthcoming). The differences might also be tied to the social context; for instance, the easy availability of affordable child-care in Finland may contribute to our respondents' relatively few mentions of family-related stress. Moreover, these mentions were mostly related to one's unwillingness to change the place of living, again tying job insecurity to academia's mobility demands, as also pointed out by Ortlieb and Weiss (2018).

We also found that Ryan et al.'s (2011) extensive list of different variables connected to faculty turnover useful in terms of its variety; it includes both individual- and institutional-level factors. However, there were a few problems associated with it. For example, when coding the responses, we found it was sometimes difficult to distinguish between job-insecurity (under career advancement-related stress) and poor career prospects (under job-related dissatisfaction) because they are often closely tied to each other. We also argue that it might be difficult to distinguish stress and dissatisfaction from each other; perhaps stress is the cause for dissatisfaction or the other way around. In this way, poor career prospects might also be caused by several consecutive fixed-term employment contracts.

Our second major finding was that despite of the various reasons to consider changing careers, many early-career researchers could still see themselves working in a university in the future; 58% in their current university, and 54% in another university or research centre, there being some overlap in these two groups of respondents (24% of the respondents mentioned both options). Although relatively high, these percentages are significantly lower than the ones in van der Weijden et al.'s study (2015) where 85% of all the studied Dutch

postdocs wanted to stay in the academic field. Although van der Weijden et al.'s study did not discuss postdocs' perceptions towards industry, it would seem that many of the Finnish early-career researchers are quite open to working in industry or in an enterprise (48%) and some as entrepreneurs (7%).

Finally, our further examination of the two analysed questions in parallel revealed the versatility of the perceptions of early-career researchers who were considering leaving academia. By doing qualitative content analysis on two sets of responses, we discovered that although there were a few clearly more common reasons to consider leaving (job-insecurity, poor career prospects, salary), the high number of different types of examples given was extremely high – 73, most of which only received one to five mentions. We argue that these are the respondents whose voices cannot be heard through quantitative data and analysis. However, their voices are not any less important, even if they do not fall into the same category with most other people or follow general trends. Moreover, collecting and analysing qualitative data enables us asking – and answering – questions that have not emerged before.

## **Conclusions**

To conclude our paper, we argue that the working conditions of both doctoral students and postdocs must be improved, as the stress caused by job-insecurity and the job-dissatisfaction caused by poor career prospects and salary are driving skilled academics away from academia. As Ryan et al. (2011) and Waaijer (2017) also argue, finding and retaining the most skilled and motivated academics – *quality* – should be a priority for universities rather than merely making sure there are enough of researchers – *quantity*. As universities often



invest a great deal of resources in the recruitment process or selecting doctoral students, institutional support, and compensation, they should be alarmed if more than half are considering leaving due to poor working conditions. The improvement also includes the possibilities of combining family with the demands for mobility, which has also been suggested by Fitzenberger and Schultze (2013).

We would like to emphasise, however, that it should not be considered a negative development if, instead of an academic career, a doctorate holder pursues for a career outside academia. However, to accomplish this, the collaboration between universities and industry needs to be strengthened. For instance, it should be examined whether doctoral education answers the versatile needs of working life within and outside academia. For example, if universities and policy-makers want to distribute newly graduated doctorate holders to work both within and outside academia, it would seem that newly recruited doctoral students should include people with a variety of motivations and ambitions. However, as stated earlier, the academic profession and conducting research is not for everyone – it is often more of an ‘inner calling’ (Weber 1958). Therefore, those more eager to conduct research are also most likely the ones who want to complete their degrees and continue in academic careers. Finally, supervisors and universities should sufficiently emphasise that doctoral students should not necessarily expect to find future employment in academia and should increase their knowledge on how to seek employment elsewhere (see also van der Weijden et al. 2015). However, we question whether they have the kind of knowledge and expertise needed to train doctorate holders for non-academic careers. If not, how could this be improved?

To study this topic further, we suggest that a qualitative, longitudinal study combining the intentions, wishes, and actual turnover would help increase the understanding of the topic. For example, in-depth interviews or even ethnography would provide a fruitful method for data collection, and discourse or narrative analysis would be an interesting option for data analysis. Furthermore, examining whether there are differences between genders, disciplines and different European countries would also help to provide more thorough insight on the European level.

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