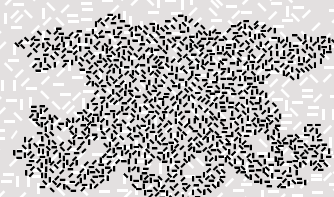
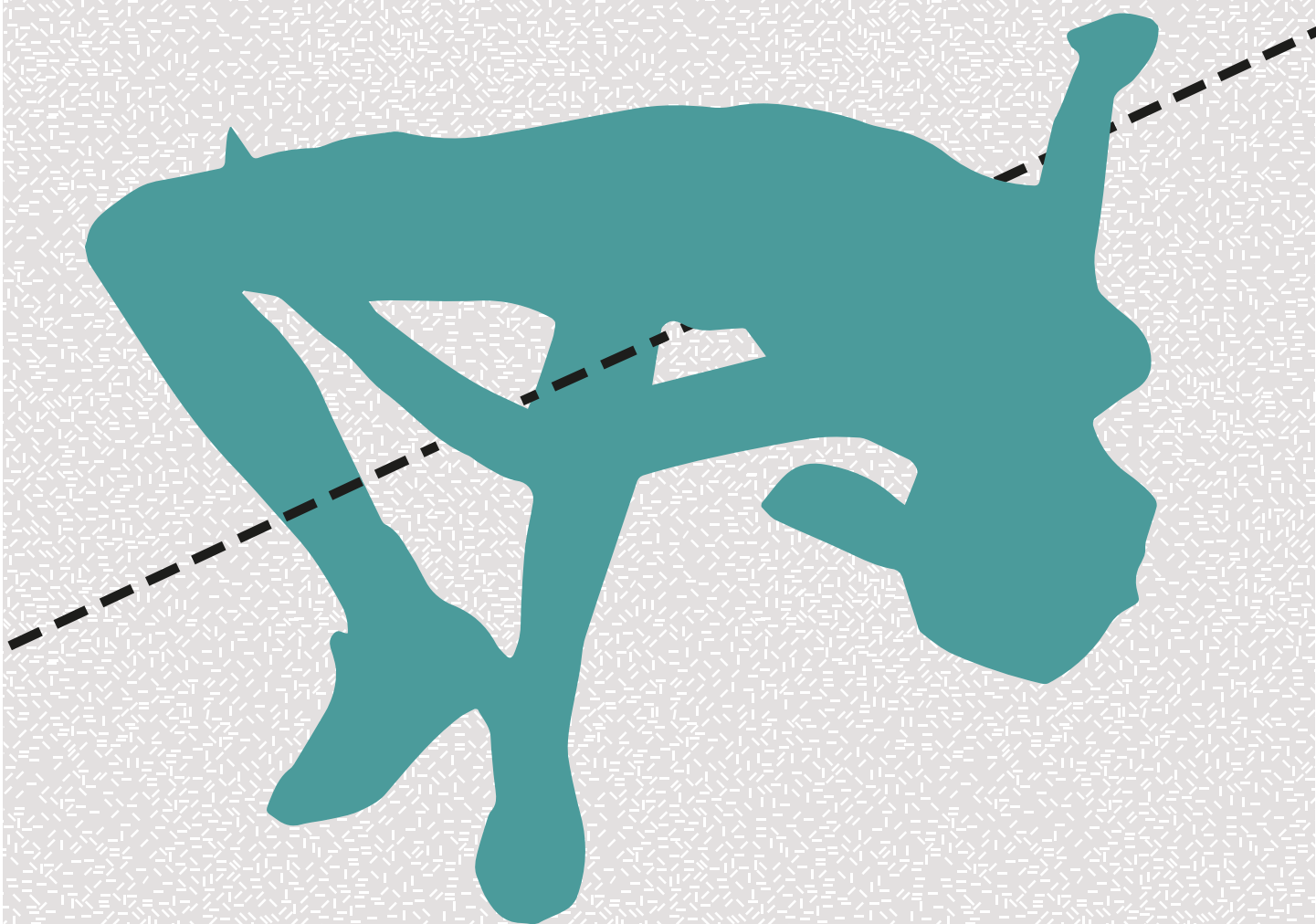


Assistant professorships in Sweden – an evaluation



SVERIGES UNGA AKADEMI

Assistant professorships in Sweden – an evaluation

Published by the Young Academy of Sweden 2020

Project group and authors: Academy members Frida Bender, Ronnie Berntsson, Magnus Jonsson, Aryo Makko, Pontus Nordenfelt, Jakob Nordström, Christian Ohm, Karl Wennberg, Sebastian Westenhoff and Helena Rosik at the Young Academy of Sweden's secretariat.

Project manager: Pontus Nordenfelt

Secretary to the investigation: Helena Rosik

Cover illustration: <https://webstockreview.net>

Graphic design: ©Fräulein Design AB

Translation: Clare Barnes, Åre Translation

Text and diagrams may be freely reused. Please cite this publication: The Young Academy of Sweden. 2020. *Assistant professorships in Sweden – an evaluation*. Report. Stockholm: The Young Academy of Sweden.

THE YOUNG ACADEMY OF SWEDEN is an interdisciplinary academy for a selection of the most prominent younger researchers in Sweden. The academy is an independent platform that provides younger researchers with a strong voice in the science policy debate and which works to disseminate research to children and young adults. At the academy, young researchers meet across disciplinary and institutional boundaries. The academy was founded in 2011 at the initiative of the Royal Swedish Academy of Sciences and has about 35 members who are elected for a five-year period.

Sveriges unga akademi, c/o Kungl. Vetenskapsakademien,
Box 50005, SE-104 05 Stockholm Besök: Lilla Frescativägen 4A +46 8 673 95 00

info@sverigesungaakademi.se | <https://www.sverigesungaakademi.se> | Twitter: @Ungaakademin

Content

Terminology	5
Summary	6
1. Introduction	8
1.1. Historical perspective	8
1.2. Purpose of the survey	9
2. Method	10
2.1. Survey of assistant professorships	10
2.2. Statistical analysis	11
2.3. Delimitations	11
3. Survey of assistant professorships	13
3.1. How far has the reform been implemented?	13
3.2. How has the reform been implemented?	13
3.2.1. Number of applicants per position and discipline	13
3.2.2. Number of applicants per position and university	14
3.2.3. Distribution of external and internal applicants	16
3.2.4. Gender distribution of applicants and employees	18
3.2.5. Announcement and recruitment processes	19
3.2.6. Procedure for promotion	19
3.2.7. The length of employment varies	21
3.2.8. Faculties work actively with competence development	21
3.2.9. Swedish universities are positive about assistant professorships	22
3.2.10. Deadline of five years after doctoral degree is regarded as problematic	22
3.2.11. Demand for combined positions in clinical research	23
3.2.12. Expected high level of promotion to associate professor	24
3.2.13. An expensive form of employment that risks leading to reduced mobility?	25
3.3. Financing of assistant professorships	25
3.3.1. Assistant professorship as a teaching position	26
3.3.2. Assistant professorship as a research position with defined research time	26
3.3.3. Assistant professorship as a research position with flexible research time	27

3.3.4. Special cases for assistant professorships	27
4. Discussion	29
4.1 The use of assistant professorships varies between faculties	29
4.2 Variation in the number of applicants between faculties and subjects	29
4.3 The reform's contribution to increased mobility	30
4.4 Gender differences in the number of applicants and number employed	31
4.5 Transparency and clarity is necessary when financing assistant professorships	31
5. The conclusions of the Young Academy of Sweden	32
5.1. The provisions of the Higher Education Ordinance	32
5.2. The Young Academy's vision for associate professorships	33
1. Recruitment	33
2. Establishment	34
3. After promotion	35
References	36
Reports	36
Government bills, enquiries and legislation	36
Journals	37
Databases	37
Websites	37
Appendices	38
Appendix A: Faculties/higher education institutions in the survey	38
Appendix B: Survey questions	41
Appendix C: Accompanying letter	45
Appendix D: Example financing	46

Terminology

The higher education system is national and international, so therefore, definitions and terminology can vary in different applications. The following terminology is used in this translation:

Assistant professor – Swedish term *biträdande lektor*. Other terms used include associate senior lecturer. The position of assistant professor was introduced in its current form in the Higher Education Ordinance in 2017. It is a position in which an academic can develop as a researcher and gain experience as a scholar and teacher. Everyone who is employed as an assistant professor has the right to apply for, and be evaluated for, promotion to associate professor.

Non-tenure-track assistant professor – Swedish term *forskarassistent*. Other terms used include *postdoctoral research fellow*. A fixed term position that allows someone with a PhD to continue researching to work towards qualifying as a docent. Does not include the right to apply for promotion to associate professor. The 2017 amendment to the Higher Education Ordinance has resulted in this position being replaced by assistant professor (*biträdande lektor*).

Associate professor – Swedish term *lektor*. Other terms used include *senior lecturer*. A permanent position, including teaching and research, which is regulated in the Higher Education Ordinance. Everyone employed as an assistant professor has the right to apply for, and be evaluated for, promotion to associate professor.

Tenure-track position – fixed-term position that offer the possibility of permanent employment at a higher level after evaluation.

Higher education institutions – Swedish term *lärosäten*. Includes universities, university colleges (*högskolor*), institutes of technology (*tekniska högskolor*) and endowed university colleges (*stiftelsehögskolor*).

Direct appropriations – Swedish term *basanslag*.

Summary

A predictable and transparent career system that rewards high quality scholarship is vital to a successful research nation. Unfortunately, the academic career system in Sweden is fragmented, with great variation in its forms of employment and positions, both between and within higher education institutions (HEIs). Career paths and conditions for young researchers have been the subject of multiple inquiries, with the tenure-track position of *assistant professor* being introduced in its current form in the Higher Education Ordinance in 2017. The Young Academy of Sweden (YAS) wants to contribute to this reform being executed in a prudent manner, and has therefore conducted a wide-ranging survey of how the position of assistant professor has been implemented at Swedish HEIs. We have used a questionnaire and analysed 878 positions announced before and after the implementation of the reform, creating a status report on how faculties utilise the position of assistant professor and what they believe are its advantages and disadvantages.

The overall picture is that the implementation of assistant professorships differs widely between the 65 faculties that responded to the questionnaire. Some have come a long way in their work on shaping a tenure-track system, while others have just started. In this report, we analyse the collected data on the basis of the reform's objectives and the current conditions for young researchers in Sweden. Our main conclusions are:

- Many faculties, primarily in medicine, science and technology, state that it is very problematic that the deadline for applying for an assistant professorship is five years after receiving a PhD, compared to seven years before the reform was implemented. Some disciplines feel that this period is too short to allow candidates to build up the track record necessary for adequate evaluation.
- Medical faculties highlight the difficulty of gaining sufficient clinical qualifications within the framework of an assistant professorship, because the Higher Education Ordinance does not allow an assistant professorship to be combined with clinical duties in “combined positions”. Several state that this is a problem for gender equality.
- The forms for financing assistant professorships vary widely, from positions that are fully financed by direct government appropriations (Swedish term *basanslag*) before and after promotion to associate professor, to assistant professorships that are entirely dependent on external funding and where there are no guarantees of financed research time after promotion.
- Many faculties, particularly in the humanities and social sciences, regard assistant professorships as expensive because they often include a sizeable amount of research. These faculties say that there is a risk of lock-in effects, both because faculty recruitment implies long-term commitments to specific research areas and because the promotion of assistant professors to permanent positions at the same institution reduces mobility at the level of associate professorships.
- The number of applicants per announced position varies widely between faculties and disciplinary areas, from one applicant per position to – at the most – 67 applicants per position. On average, an assistant professorship in Sweden has around 15 applicants.
- Our analysis shows that the proportion of external applicants for assistant professorships is high. In the period prior to the reform, from 2012 to March 2018, the proportion of external applicants was 70%, and after the reform this proportion has been

78%. However, the proportion of positions filled by external applicants is considerably lower, 42% for the period from 2012 to March 2018, and 49% for the period from April 2018. It is even more common for an assistant professorship to go to an internal candidate at the faculties which, on average, have very few applicants for their vacant positions.

- Women are overrepresented among those who are employed on assistant professorships compared to the gender distribution of the applicants. At the same time, women are underrepresented among those who apply for the positions compared to the gender distribution of recent doctoral graduates.
- The predicted level of promotion is high, with 96% of all assistant professors who applied for promotion in 2012–2018 being promoted to associate professor. The responses from the HEIs make it clear that most faculties feel that the keenest selection is made on initial employment and that assistant professors are recruited with the ambition of promoting a large proportion of them.

The Young Academy of Sweden sees assistant professorships as an important first step towards a uniform and competitive career system in Swedish higher education, one that can attract and retain the best researchers and lecturers. We hope and believe that assistant professorships can provide better conditions for researchers to develop and to build autonomous and successful careers, benefitting Swedish research and education. A transparent career system with demanding criteria for recruitment and promotion will drive quality. These high requirements should be followed by good basic funding for research, individual competence development and active collegial support.

1. Introduction

A transparent career system for researchers that drives quality is vital if Sweden is to be a leading research nation, competing internationally for the best researchers. Both those who currently teach in higher education and those who are considering an academic career benefit from a clear and predictable career system.¹

Unfortunately, strategies for recruitment and career development have been increasingly side-lined in Swedish higher education, making it difficult to develop strong HEIs.² A number of investigations have shown how the Swedish career system lacks clarity in comparison with other countries, and how working conditions and duties are dependent on the type of financing rather than the type of position a person has.³

The importance of improved career paths and conditions for younger researchers in strengthening the quality of Swedish research has been repeatedly emphasised⁴ and has been a pressing issue for the Young Academy of Sweden (YAS) ever since it was founded in 2011. YAS has been a driving force on the issue of establishing these assistant professorships and, since March 2017, has conducted numerous career seminars at Swedish HEIs. In its position statements to the 2012 and 2016 government research bills, the Academy advocated a clear and transparent career system that would drive quality and that has the position of assistant professor at its heart.

1.1. Historical perspective

Over the years, career paths in Swedish higher education have been the subject of various investigations and actions. The forms for, and regulation of, the various categories of teaching staff in the Higher Education Ordinance have undergone repeated change.⁵ The position of junior research fellow [*forskarassistent*] was introduced in the mid-1950s, but at that time was a position that could also be held by doctoral students. In 1969, the position was converted to a six-year position intended for people with PhDs. Over the years, the length of the position has varied between four and six years, and the deadline for eligibility to apply for these positions has varied from three to seven years after obtaining a PhD.⁶

In 2001, the position of *assistant professor* was introduced in the Higher Education Ordinance as a trial. This trial was to last five years, after which it would be evaluated. The new element in this form of employment was that an assistant professor could, after evaluation, be promoted to associate professor. The “autonomy reform” of 2011 once again deregulated all categories of teaching staff, apart from professor and associate professor. However, some higher education institutions retained the position of assistant professor and the opportunity for promotion to associate professor. In 2012, a text about a *career-development position* was reintroduced in the Higher Education Ordinance, although the position did not provide the right to be evaluated for promotion.⁷ This position was for four years, and those eligible to apply

¹ SOU 2016:29, sections 2.2 and 7.2.

² Bienenstock et al. (2014)

³ Frølich et al. (2018)

⁴ See e.g. Öqvist och Benner (2012), Stampfer (2019), Rönmar (2018)

⁵ Bill 1984/85:57, Bill 1992/93:1, Bill 1996/97:141, Bill 2000/01:3, Bill 2009/10:149, Bill 2016/17:50

⁶ SOU 2016:29

⁷ In the autonomy reform of 2011, in which postdoctoral research fellow and assistant professor were deregulated, it was left to the parties on the labour market to agree on collectively bargained agreements where there was a need for specific fixed-term employment in addition to the Employment Protection Act. They negotiated the issue at a central level, but without reaching an agreement. For the purpose of allowing employment longer than the two years permitted by the Act, a fixed-term career-development position was reintroduced to the Higher Education Act (SOU 2016:29).

must have received their PhD no more than seven years before the application deadline.

The issue was again investigated in 2016⁸ and led to another amendment to the Higher Education Ordinance. This entered into force on 1 October 2017 and has been applied in full since 1 April 2018.⁹ In the current Higher Education Ordinance, the *career-development position* has been replaced by *assistant professorship*, in the form of a four to six-year tenure-track position with the right to be evaluated for promotion to associate professor. At the same time, the time limit for applying for this position has been reduced from seven to five years after receiving a PhD.

One politically important purpose for the introduction of assistant professorships was the creation of a clearer career system. Everyone who is employed as an assistant professor has the right to apply for, and be evaluated for, promotion to associate professor. However, the new provisions in the Higher Education Ordinance do not state the criteria that will apply to promotion, just that HEIs must state them in their announcements for associate professor. HEIs individually decide, when employing an assistant professor, the assessment grounds that will be applied in the evaluation for promotion to associate professor. There is thus a pressing need for the reform to be followed up, so there can be an evaluation of whether the form of employment known as an assistant professorship fulfils its purpose.¹⁰

1.2. Purpose of the survey

Since 2001, the number of assistant professorships in Sweden has gradually increased in number, but has been implemented in different ways at different HEIs, with different forms of financing and varying opportunities for promotion. YAS has therefore conducted a survey covering how assistant professorships are used and how the new rules have been implemented at the HEIs. The purpose of the survey is to provide an overview of how assistant professorships are currently used, the problems reported by the HEIs concerning this form of employment, and to identify good examples of its implementation.

One starting point for the reform was to achieve a clearer and more transparent career system, in which applicants for, and holders of, assistant professorships are informed in advance about the conditions and duties of the announced position, as well as requirements for, and consequences of, promotion.¹¹ Here, conditions and duties may include the allocation of working hours for research, how the position is financed, and what teaching is expected. The criteria for promotion and how the position changes following any promotion are also important. As Sweden's higher education system is heterogenous, it is likely that the position of assistant professor needs to be implemented in different ways at different faculties if it is to have the best effect. If this is done in a transparent and predictable manner, the position may be a good tool for better career paths within academia. However, there is a risk that local implementation is happening *ad hoc* or with a lack of documentation and transparency, which may affect the circumstances of the applicants. In this report, we present the answers from our questionnaire and discuss the results against the background of the reform's aims and YAS's specific starting points in our efforts to guarantee better conditions for young researchers.

With this report, the YAS wishes to contribute to increased knowledge about the reform's introduction and HEIs' opinions about assistant professorships. We also want to provide a basis for continuing discussion about how processes surrounding the format of these positions, the way positions are announced and promotions conducted, can be quality assured and harmonised nationally. Our hope is that we can contribute to the 2018 reform being wisely implemented, and that it has the intended result of making the position of assistant professor the heart of a tenure-track system that is clear, transparent and promotes quality. We also hope that the report will be a useful source of knowledge for everyone who works to develop and improve career paths at Swedish HEIs.

⁸ SOU 2016:29

⁹ SFS 2017:844. During the transitional period of October 2017 – April 2018, higher education institutions could choose whether they wished to follow the new or the old provisions.

¹⁰ SOU 2016:29, sections 2.2, 4.3.2, and 7.2.

¹¹ SOU 2016:29, section 2.2.

2. Method

The report builds upon a questionnaire conducted in the autumn of 2019 at faculties at Swedish HEIs. The main issues that have been highlighted are:

- **recruitment:** announcement and appointments of assistant professorships,
- **the composition** of the group of candidates that applied for assistant professorships,
- **the format of the positions:** funding, duration, support functions, etc.,
- **promotion** from assistant professor to associate professor,
- **strategic work** on assistant professorships at HEIs.

The questionnaire had two sections: one for the faculties' academic management with open free-text questions and one for the administrative management with questions about general statistics. The first section is important in gaining a deeper understanding of HEIs' strategic work with assistant professorships, while the second part is important for gaining an overview of the implementation of assistant professorships at various HEIs and in different disciplinary areas.

As mentioned above, the provision on career-development positions in the Higher Education Ordinance was amended on 1 October 2017 and has been fully applicable since 1 April 2018. The faculties were therefore asked to divide their responses to the questions based on the two groups of assistant professors, one under the current Higher Education Ordinance and the assistant professors with the right to evaluation whose employment started in the period from 2012 to the end of March 2018.

2.1. Survey of assistant professorships

For our questionnaire, we chose to contact the HEIs that the Swedish Higher Education Authority (UKÄ) includes in its statistics. The questionnaire was sent to all the faculties at each HEI. The faculties that were asked to participate in the survey are listed in Appendix A. Because the organisational forms at Swedish higher education institutions differ, designations other than faculty may occur, but the ambition has been to identify and send the questionnaire to the equivalent faculty level at each HEI. Some HEIs have chosen to provide one response for the entire HEI.

The questionnaire was sent to the registrar for referral to the administrative and academic management of each faculty. In total, 101 faculties at 47 HEIs were contacted in the late autumn of 2019. See Appendices B and C for the questionnaire and accompanying letter.

Sixty-five faculties (64% of those asked) at 33 HEIs (70% of those asked) responded. Of these, ten responded that they do not have any assistant professorships. They are therefore not included in the compilation. The range of responses varied from faculties that provided all the requested information to those that only provided some or a few responses.

The questions that had the lowest response rate related to the financing of assistant professorships and associate professorships after promotion, i.e., "*How are salaries for assistant professorships primarily funded?*" and "*How will salaries primarily be funded after promotion to associate professor?*" In these questions, the faculties were asked to provide the proportions of (a) direct government appropriations (basanslag) for the HEI, (b) external funding applied for by the assistant professor, (c) teaching conducted by the assistant professor, or (d)

other. We have identified a number of possible causes why we received few and/or incomplete responses to these questions: (i) financing is not at faculty level and the faculty management does not possess this knowledge; (ii) the question is difficult to answer because the salary is financed through a combination of these, (iii) the question has been misunderstood.

It is apparent that the financing of assistant professorships and associate professorships differs enormously between HEIs, faculties, as well as at lower levels between departments and disciplinary areas. To illustrate these differences, we have supplemented the questionnaire's information about financing; to do this, 13 members of the Young Academy of Sweden investigated how financing is managed at their faculties. The members, who represent all disciplinary areas and several HEIs, were asked to describe the faculties' financing in detail at the level of assistant professor, associate professor and professor. Their reports were then used to exemplify different forms of financing models in Chapter 3.3.

2.2. Statistical analysis

The analysis presents calculations of the number of applicants per announced assistant professorship, the proportion of external and internal candidates among applicants and filled positions, and the number of men and women among applicants and filled positions. The number of announced and filled positions varies widely across the faculties. So the faculties that have had few open positions/filled positions (sometimes just one) do not cause an imbalance in the calculations, we have chosen not to calculate the mean of the distribution within faculties. Instead, we have based our analyses on all the assistant professorships in each area: *Medicine and health sciences*, *Humanities and social sciences*, *Sciences and technology* and *Other*. See Appendix A for the classification of faculties and HEIs.

To evaluate whether there were any systematic differences between positions that were awarded to internal or external applicants, and between positions that were filled by a man or woman, a two-tailed hypothesis test (Z-test) was conducted for the proportion of external applicants

compared to the probability that an external applicant was appointed, and similarly for men/women.¹²

The number of applicants per announced assistant professorship varies hugely between faculties. Previous studies have indicated that "rigged" positions may be announced (i.e. the position is intended for a pre-determined candidate) at the HEIs. These are characterized by a higher proportion of internal recruitments and few applicants for the announced position.¹³ To investigate whether our data support the hypothesis that faculties with on average fewer applicants per announced position were more likely to fill positions with internal applicants, a χ^2 -test was conducted to examine whether it is more likely that assistant professorships were filled by internal applicants at faculties with an average of fewer than five applicants per position, compared to faculties with an average of five or more applicants.^{14, 15}

2.3. Delimitations

In all recruitments, the evaluation of the applicants is just one part of the process. Other important elements in the recruitment process are the choice of research subject for the vacant position, suggested external experts, the position's financing and the initiative to start a promotion or recruitment process.

In this survey, we have compiled data about the recruitment process from the time an advert was published and applications received, to when someone is appointed to the position. We have tried to examine the steps that precede the advert (deciding that a position will be announced, who does this and how it is done) through open questions to the faculties' management. These responses have been analysed separately and related to the faculties' disciplinary area to identify and illustrate possible explanations for the patterns occurring in the quantitative analysis.

In the survey, we have studied the composition of the applicants using gender, among other things. In the context, it is important to highlight that other factors, such as country of PhD, ethnicity, social background, etc., are relevant, and would be valuable to investigate in the

¹² The level of statistical significance for the hypothesis test was set at 1%, which means that the probability that we would observe a difference that is at least as large in the proportion of internal/external and men/women in the appointments is less than 1% if the null hypothesis of no connection is true. Formally: $H_0: p_1 = p_2$ where p_1 and p_2 are the two groups being compared (external applicants/external appointed and women who applied/women appointed).

¹³ Lundgren et al. (2018)

¹⁴ The level of statistical significance was set to 1%.

¹⁵ The limit was set at 5 applicants per position because this is the limit used in the previous study by SULF (Lundgren et al. (2018)).

future. However, such a detailed analysis could not be done within the framework of this survey.

Regarding the information about external or internal applicants, it is important to note there is no unambiguous and established definition of internal recruitment. Different reports and surveys use different definitions depending on the issue being investigated, so comparisons between different surveys are unreliable. This questionnaire asked to distinguish between *applicants from another higher education institution* and *internally from the own higher education institution* (see Appendix B).

The questionnaire also asked faculties to divide the answers according to assistant professors employed under the current provisions of the Higher Education Ordinance (from April 2018) and prior to the reform's introduction. As some faculties have not responded to all the questions and others have not had assistant professorships prior to 2018, it is not always the same faculties that are included in the comparisons of before and after the reform's introduction (Figures 3–7). We have therefore chosen to aggregate the data at a disciplinary level to make the comparisons fairer.

3. Survey of assistant professorships

3.1. How far has the reform been implemented?

According to statistics from Statistics Sweden (SCB)¹⁶, the number of assistant professors has grown at an increasing rate since 2001 (Figure 1). The position of assistant professor has been introduced at many HEIs and appears to have significantly replaced non-tenure-track assistant professorships (*forskarassistent* in Swedish, also sometimes called *postdoctoral research fellowships*). The development in Figure 1 thus indicates that assistant professorships have been widely implemented. This increase in the number of positions also motivates the following analysis of *how* the positions have been implemented.

The 2018 reform extended the position of assistant professor from a maximum of four years to be valid for four to six years. This may affect how many assistant professors are in the system simultaneously, but this will be observable from 2022 at the earliest.

3.2. How has the reform been implemented?

Below, to examine how the reform with assistant professorships has been implemented, we present an analysis of the responses to the questionnaire we sent to all faculties at Swedish HEIs (listed in Appendix A). To study whether there were any effects of the reform, and what these may be, we compare the material collected from 878 announced positions in two time periods: before the reform's implementation (2012–March 2018, 541 announced positions) and after the reform's implementation (April 2018–2019, 337 announced positions).

3.2.1. Number of applicants per position and discipline

There is great variation in the number of applicants per announced position. Figure 2 shows the distribution of the

Non-tenure track assistant professorships and assistant professorships in Sweden, 2001–2018

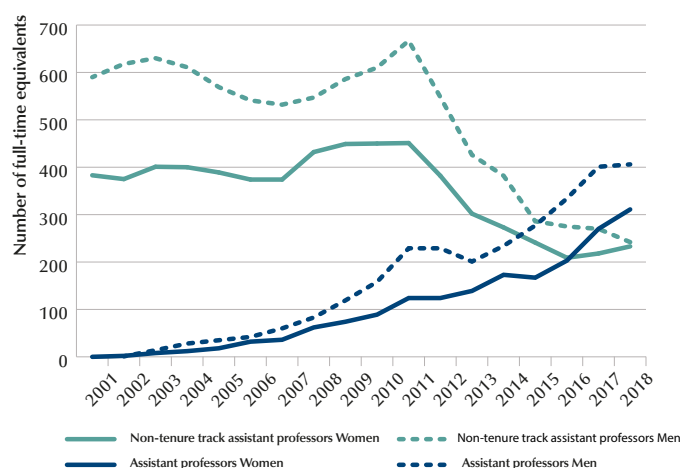


Figure 1. The number of non-tenure track assistant professors and assistant professors at higher education institutions 2001–2018, distributed across employment category and gender, measured in full-time equivalents.

Number of applicants before and after the reform, disciplinary area

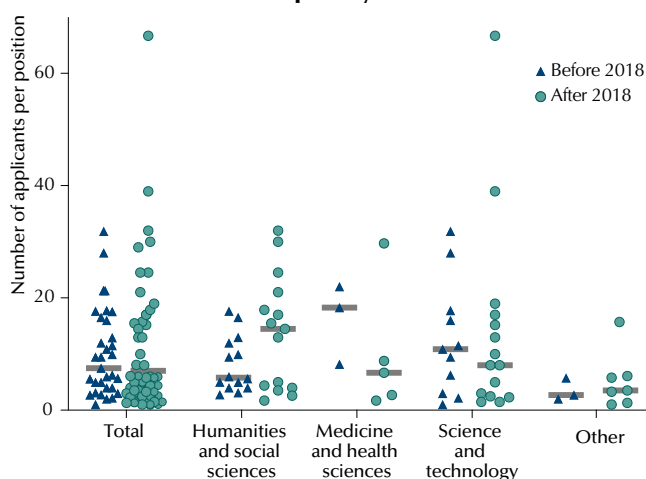


Figure 2. The average number of applicants per announced assistant professorship at the faculties that responded to the questionnaire. Each point represents a faculty at a HEI. The information is divided into before and after 2018's higher education reform, and the horizontal line shows the median value in each disciplinary area. See Appendix A for the disciplinary classification of faculties and HEIs.

¹⁶ SCB (2018)

average number of applicants per assistant professorship at the faculties that responded to the questionnaire, divided into different disciplinary areas. Each point represents one faculty, where blue triangles relate to the period of time before the reform and green circles to the period after the reform entered into force in 2018. The horizontal lines show the median value in each disciplinary area.¹⁷

Across all areas, the number of applicants per position was about the same for the 541 assistant professorships announced before the 2018 reform as for the 337 positions announced after the reform's implementation in 2018.¹⁷

At medical faculties, in general, we see a reduction in the number of applicants after the reform (with a median value of 18 and 6 applicants before and after the reform respectively).¹⁸ At faculties in the humanities and social sciences, we see an increase in the number of applicants for the announced assistant professorships with the implementation of the reform, even if the distribution of the number of applicants is wide. Before the 2018 reform, the median value for the number of applicants within the humanities and social sciences was six applicants, after the reform it is 15. However, care should be exercised when drawing conclusions because it is largely different faculties that have submitted statistics for announced positions before and after the reform. A majority (11/20) of the faculties in the humanities and social sciences that are included in Figure 2 have only provided information about the number of applicants for assistant professorships either before or after the reform, but not for both periods. For faculties in science and technology, we see no great difference in the number of applicants for assistant professorships before and after the reform. For these, six of 16 have provided information about the number of applicants either before or after the reform, but not for both periods.

3.2.2. Number of applicants per position and university

Figure 3 (page 14) presents the average number of applicants for assistant professorship at the faculties that responded. The number of applicants per position varies widely between the faculties, from an average of at

most 67 applicants to only one applicant per position. A number of differences can be noted between comparable faculties:

- Chalmers¹⁹ is distinguished by the absolute highest average number of applicants, with 67 applicants per announced position after the reform. It appears likely that the high number of applicants has been influenced by Chalmers' major investment in multiple open assistant professorships that have been announced in broad disciplines.²⁰
- The Faculty of Science at Stockholm University has seen an increase in the number of applicants per position, from an average of 28 (n=42) before the reform to an average of 39 (n=6) after. At the Faculty of Science and Technology at Uppsala University, however, the number of applicants per position has fallen from 18 before the reform (n=81) to ten after the reform (n=10).
- The faculties of social sciences at the University of Gothenburg and Uppsala University had an average of 6 (n=11) and 3 (n=21) applicants per position, respectively, prior to 2018. The equivalent figure for the Faculty of Social Sciences at Stockholm University was 17 (n=25). After the reform, the number of applicants per position was 30 (n=1), 3 (n=7) and 18 (n=9) for these three faculties.
- Assistant professorships in medicine consistently have fewer applicants per position after the reform. The average number of applicants has fallen from almost 18 (n=30) to eight (n=11) in Lund. In Umeå, the number has fallen from eight (n=36) to one (n=3) applicant per position, even if the data is limited thus far.

In the survey, it is clear that the number of applicants per position varies significantly between the various positions. Figure 3 shows relatively large differences between disciplinary areas, but also between different faculties in the same disciplinary area. It is likely that there are several different explanations for this.

¹⁷ On average, 15.6 before 2018 and 13.3 after 2018. In our data, particularly for the time after 2018, some faculties include a number of ongoing and/or terminated recruitments, which probably somewhat reduces the average number of applicants per position.

¹⁸ However, a clear exception is the Disciplinary Domain of Medicine and Pharmacy, Uppsala University, after 2018, which, however, is only based on one position.

¹⁹ Chalmers is a foundation and thus does not fall under the Higher Education Ordinance like other public-sector higher education institutions. Instead, fixed-term employment for lecturers and researchers is regulated through collective agreements. Chalmers uses the Swedish name of 'forskarassistent' instead of 'biträdande lektor' for the position of assistant professor. Employment as 'forskarassistent' at Chalmers has brought the right to be evaluated for promotion since 2016.

²⁰ Chalmers (2019)

Average number of applicants before and after the reform, all faculties

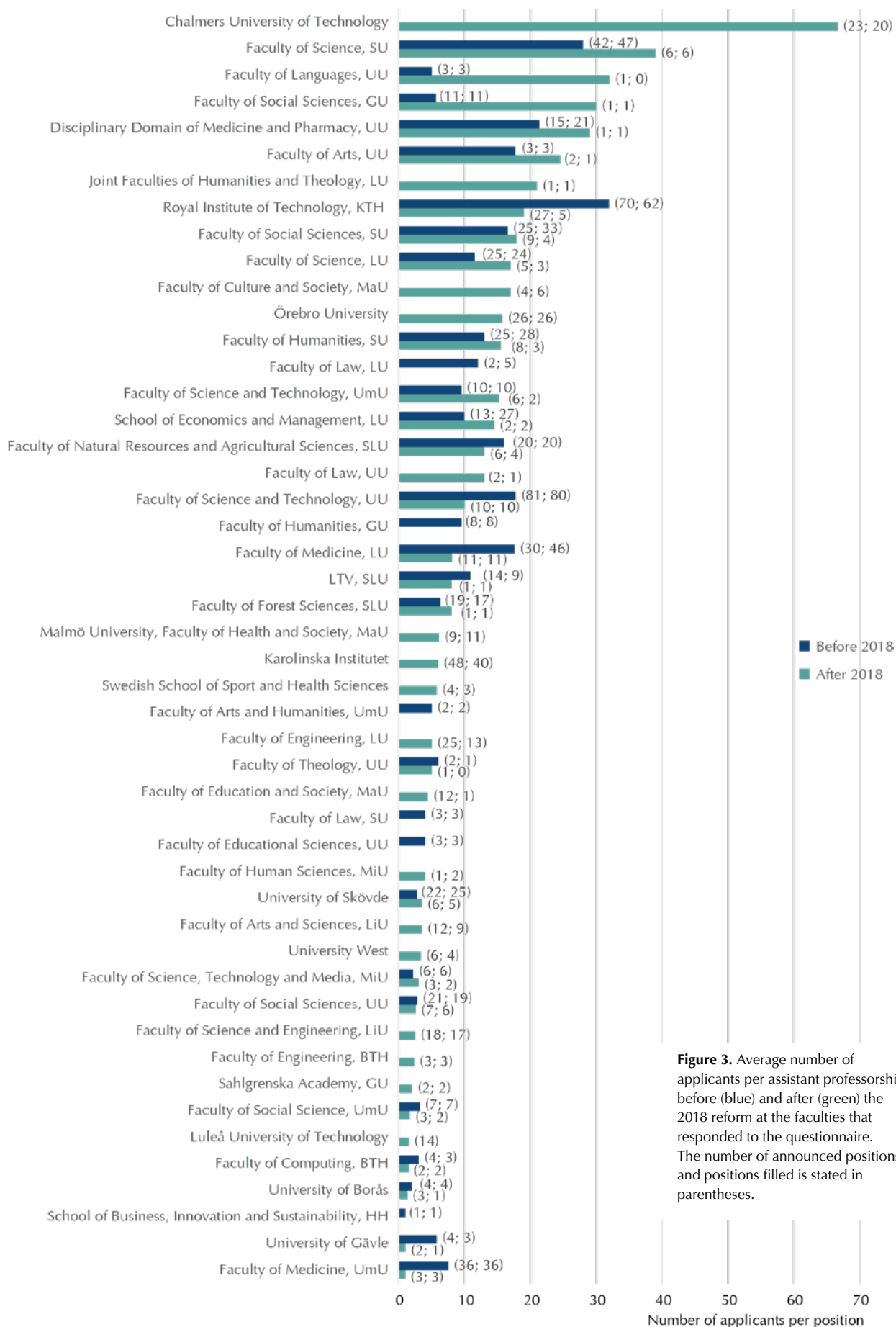


Figure 3. Average number of applicants per assistant professorship before (blue) and after (green) the 2018 reform at the faculties that responded to the questionnaire. The number of announced positions and positions filled is stated in parentheses.

In the responses to the questionnaire, one reason provided for the positions being more specialised is that faculties use assistant professorships as a way of ensuring the provision of expertise in specific areas. For example, the Faculty of Medicine at Umeå University states that this occurs in some clinical fields. Announcements of such positions become, per definition, more specialised and thus attract fewer candidates.

There may also be other factors that affect the number of applications per position for different assistant professorships, in addition to those that are directly reported by the faculties that participated in the survey. We discuss other potential explanations in Sections 4.1 and 4.2.

3.2.3. Distribution of external and internal applicants

A central objective in the Swedish government's report prior to the reform was to increase mobility in Swedish higher education and research.²¹ We have therefore analysed the proportion of internal and external candidates, among both the applicants and those who were appointed. Figure 4 illustrates the distributions, in total and separately, for different disciplinary research areas.

Figure 4 indicates that the proportion of external applicants for assistant professorships is generally high. Before the 2018 reform, the total proportion of external applicants was 70% and after the reform it was 78%. However, the proportion of positions where an external candidate was employed is consistently lower than the proportion of external applicants.²² For the period prior to 2018, the proportion of external recruitments is 42% and, for the period after 2018, the equivalent figure is 49%. The difference between the proportion of external applicants and the proportion filled by external applicants is statistically significant for the total; it is found in all disciplinary areas apart from medicine and health sciences before the reform and the humanities and social sciences after it. The discussion section (4.3.) presents potential explanations.

Previous reviews have indicated that "rigged" announcements of positions may occur at HEIs and is characterised by a high proportion of internal recruitment and few applicants.²³ To investigate whether there is support for this in our data,

Proportion of external applicants and externally filled positions before and after the reform

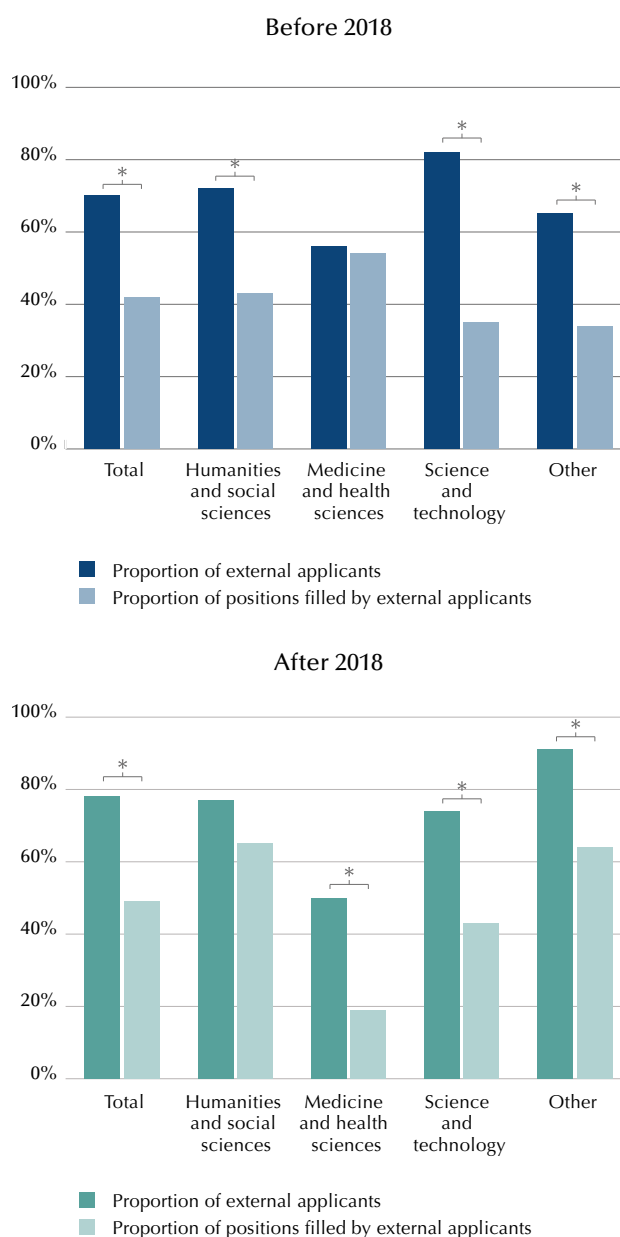


Figure 4. The proportion of external applicants and the proportion of positions filled by external applicants before (upper panel) and after (lower panel) 2018's reform of higher education, in total and per disciplinary area. P-values below 0.01 (statistically significant difference) are marked with an asterisk. For the period prior to 2018, the analysis is based on a total of 355 filled positions, distributed as 134 for humanities and social sciences, 82 for medicine and health sciences, 110 for science and technology, and 29 for other. For the period after 2018, the analysis is based on a total of 175 filled positions, distributed as 31 for humanities and social sciences, 21 for medicine and health sciences, 84 for science and technology, and 39 for other.

²¹ SOU 2016:29, section 2.1.

²² Only medicine and health sciences (before 2018) and humanities and social sciences (after 2018) have relatively similar proportions of external applicants and external appointments. However, the sample size for medicine and health sciences is considerably smaller after 2018 (21 filled positions, compared to 82 before 2018).

²³ Lundgren et al. (2018)

the proportion of positions filled by an external candidate at faculties that have, on average, few applicants (fewer than five) per position was compared with faculties that, on average, have five or more applicants per position. In the ideal case, such an analysis would be based on the number of applicants for each specific position, but our data does not allow this. Figure 5 shows these two comparisons divided between the positions announced before and after the reform.

Figure 5 shows that, at faculties with few applicants per position, a lower proportion of positions were filled with external applicants, both before 2018 (25%, n=52) and after the 2018 reform (35%, n=52). At faculties with five or more applicants per position, the equivalent proportion of positions that went to external applicants was 45% before 2018 (n=303) and 56% after the 2018 reform (n=119). In both cases, the difference is statistically significant.

From this data, it is not possible to discern whether Swedish HEIs ever announce positions that are already intended for a specific candidate. However, our survey shows that it is more common for an internal candidate to be appointed to an assistant professorship at the faculties that, on average, have very few applicants for their announced positions.

Proportion of positions filled by external applicants, with few or many applicants per position

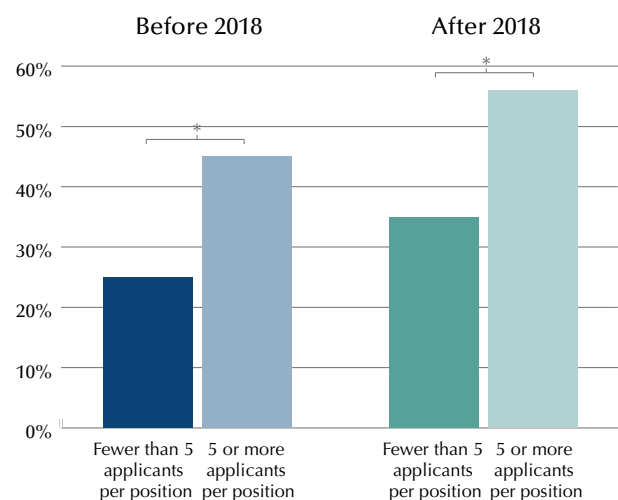


Figure 5. The proportion of positions filled with an external candidate at faculties with fewer than five applicants per position and five or more applicants per position, before and after 2018’s higher education reform. The differences for both time periods are statistically significant; P-values below 0.01 are marked with an asterisk.

Gender distribution for applicants and employees, before and after the reform

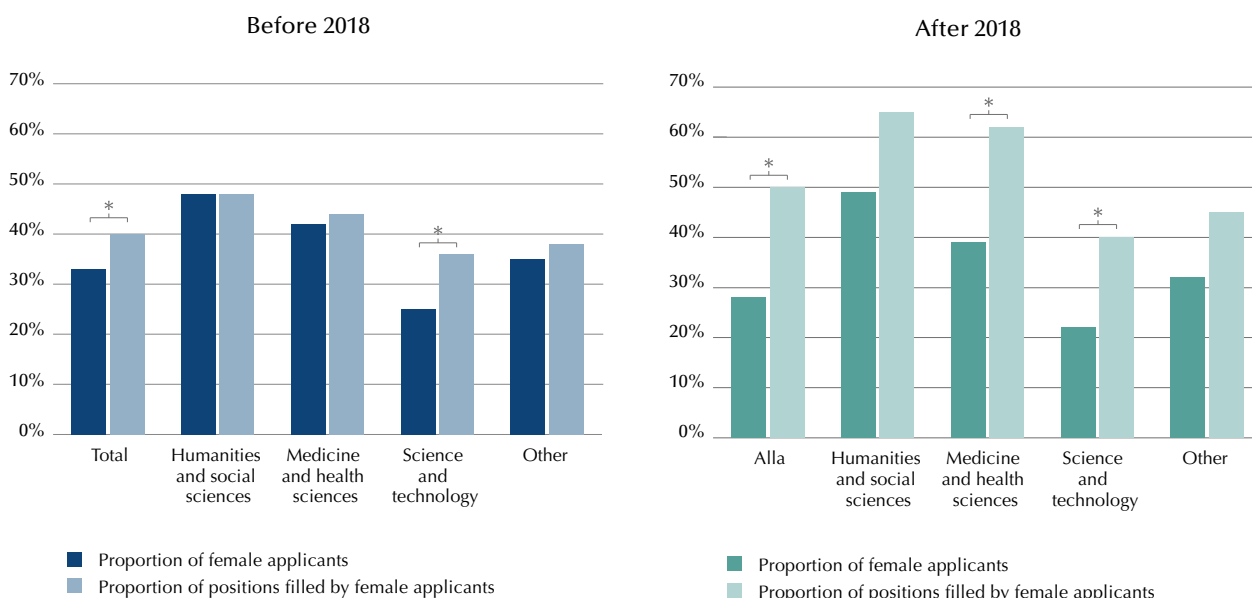


Figure 6. The proportion of female applicants for assistant professorships and the proportion of positions filled by female applicants, in total and distributed across disciplinary areas. The figure to the left shows the distributions prior to 2018 and the figure to the right shows after the 2018 reform. P-values below 0.01 are marked with an asterisk. For the period prior to 2018, the analysis is based on a total of 528 filled positions, distributed as 135 for humanities and social sciences, 82 for medicine and health sciences, 279 for science and technology, and 32 for other. For the period after 2018, the analysis is based on a total of 232 filled positions, distributed as 31 for humanities and social sciences, 61 for medicine and health sciences, 89 for science and technology, and 51 for other.

3.2.4. Gender distribution of applicants and employees

We have also analysed the proportions of women and men among those who applied for and were appointed to assistant professorships. Figure 6 (page 16) shows that the proportion of women who applied for assistant professorships was around 30%, both before and after 2018's reform.

Figure 6 (page 17) shows that prior to the implementation of the reform (left panel) the proportion of applicants and the proportion of employed women was fairly similar in all disciplinary areas, with the exception of science and technology, where the proportion of employed women was higher than the proportion of female applicants. For the time period after the reform (right panel) the difference between the proportion of applicants and the proportion of employed women is statistically significant at the 1-percent level also for the area of medicine and health sciences.

Our data provides no explanations for the root causes of the pattern in Figure 6, but the responses to the questionnaire include specific investments conducted to

change the gender balance. For example, the Faculty of Engineering at Lund University cites the programme for *Excellence in Academia through Gender Equality (EATG)* at the faculty:

“in addition to standard recruitments of assistant professors, the faculty contributes 80% of the funding for the first four years when employing an applicant of the under-represented gender. To ensure that the meritocratic requirements are fulfilled, the requirements for obtaining an assistant professorship via EATG are higher than for a regular assistant professorship...

... the EATG programme generated a total of 25 female applicants for a total of five assistant professorships, which can be compared with a total of 39 female applicants for the 25 appointments as assistant professor that have been initiated and announced during the relevant period.”

Among those who applied for assistant professorships, the proportion of women is lower than that of men (approx. 30% women). One possible explanation is that fewer women complete PhDs in disciplines that qualify them for the announced positions. To investigate this explanation, Figure 7 shows data for the proportion of female applicants for the 337 assistant professorships that were analysed, along with data from UKÄ on the proportion of people who has completed PhDs in Sweden who were women, in 2013 (50%) and 2018 (48%).²⁴

The distance between the bars and the triangles/diamonds in Figure 7 shows that in the disciplinary area of medicine and health sciences, the difference between the proportion of potentially qualified women with Swedish PhDs and the proportion of female applicants is 20 percentage points (i.e. a relative discrepancy of approx. 40%). This difference was smaller for the disciplinary areas of the humanities and social sciences and science and technology, approx. 6 percentage points and approx. 12 percentage points respectively. However, this is a large gap for science and technology, because the proportion of female applicants for the positions was 22% (i.e. a relative discrepancy of more than 50%).

It is apparent that the proportion of female applicants does not represent the entire potential pool of women with PhDs in Swedish higher education. It should be noted that the positions frequently attract international applicants, and that the gender distribution among those

Gender distribution among applicants for assistant professorships and among PhDs

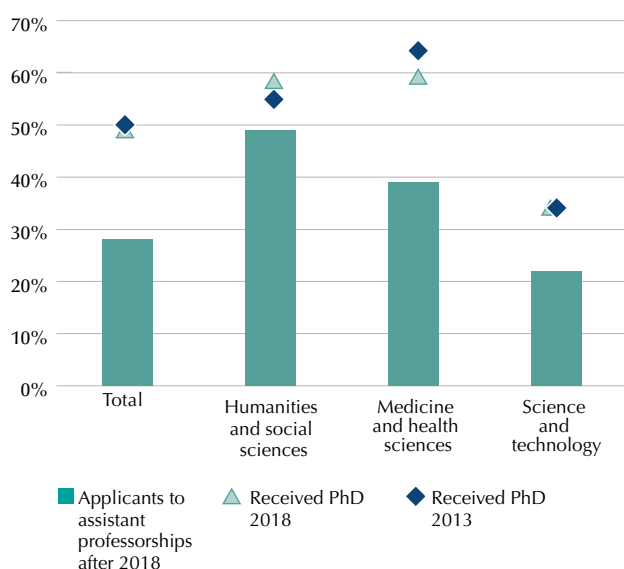


Figure 7. Bar chart showing the proportion of female applicants for assistant professorships after the 2018 reform of higher education, and the proportion of women among those who received PhDs in 2018 (triangles) and 2013 (diamonds), in total and distributed across disciplinary areas.

²⁴ We chose to compare those with a PhD from 2013, as it can be assumed that these represent potential applicants for assistant professorships in 2018, considering postdoctoral positions and other qualifying activities.

²⁵ OECD (2019), pp. 251–252

who were awarded PhDs abroad is different.²⁵ The only certain conclusion we can draw from our data is that this appears to be a complex issue that should be investigated further. See the discussion about possible causes in Section 4.4.

3.2.5. Announcement and recruitment processes

Initiating the appointment. Using the questionnaire, we investigated the recruitment process for assistant professorships. The faculties were asked to describe the process based on questions relating to announcement, assessment, etc. The responses show that at 83% of the responding faculties (39 of 47), the announcement of a vacant assistant professorship is initiated by the department, or the department in consultation with the faculty.

Announcement. A significant majority (43 of 47 respondents) state that all positions are announced externally.²⁶ However, the Red Cross University College and Sophiahemmet University, both independent education providers, responded that they do not do so.

Assessment. A large majority of faculties (36 of 49 respondents) state that they use external experts when evaluating the candidates. A few (5 of 49 respondents) state that they use international experts. The majority state simply that the experts are from “another HEI”. Many (14 respondents) state that the experts should be at least a docent (associate professor level) and that there must be one woman and one man or an even gender distribution (5 respondents). Among those who describe how nominations are made, it is common for the head of faculty or department to propose experts and for the faculty, or research council at a central level, to decide.²⁷

Decision on employment. Of the responding faculties, the majority (51%) state that decisions on employment are taken at departmental level, often on the proposal of the faculty (teacher proposal committee, recruitment committee or similar). 38% state that the decision is taken at faculty level and five (11%) that the decision is taken by the vice-chancellor.

3.2.6. Procedure for promotion

In the questionnaire, we asked how many assistant professors have been promoted to associate professors. In total, the faculties that responded to this question reported that 11 (4%) of the 285 assistant professors that applied for promotion between 2012 and 2018 had their application rejected. However, it is likely that some never apply for promotion and thus disappear from the statistics, which we discuss in Sections 3.2.12. and 4.1.

Using a number of questions, the faculties were asked to describe the promotion process. The survey shows that the faculties have reached different stages in their work to develop a clear process for evaluating applications for promotion from assistant professor to associate professor. Some simply refer to the HEI’s appointments procedure. However, the majority have supplementary faculty-wide criteria, usually validated by the faculty board. Several have also developed more refined criteria at disciplinary level. The Faculty of Science at Stockholm University described its promotion process in detail:

“Educational expertise is assessed internally, at the university. At least eighteen months before the end of the employment period, the vice dean/dean appoints an educational expert. The expert evaluates the assistant professor’s educational expertise by following their teaching and supervision for a while. This includes attending selected teaching sessions, talking to students, doctoral students and directors of studies for first, second and third cycle levels. The expert produces a statement on the applicant’s educational expertise about six months before the assistant professorship ends and participates, with the right to put forward an opinion, in the promotion committee’s meetings. The educational statement is also based on the application’s content, including the educational reflection by the applicant.

The scholarly qualification and development during the assistant professorship is partly evaluated by the promotion committee, partly by around 8–12 external experts from Swedish and foreign HEIs, who are asked to answer questions about progression, research results, research plans, ability to attract external funding, publications and impact in the specific field of research.

²⁶ One respondent states that “Statistics here only relate to externally announced positions”. It is unclear whether other respondent have only provided information about externally announced positions.

²⁷ Note that many faculties have only provided brief responses to the open question “Who are appointed as experts?”. Even if they have not expressly stated that use international experts, for example, or strive for an even gender distribution, this does not necessarily mean that they do not do so.

The experts are asked to place the applicant in relation to other researchers who are at an approximately equivalent place in their careers as the applicants. Additionally, they are asked whether the candidate would be awarded an associate professorship at the expert's HEI and/or be promoted. The promotion committee may supplement the experts' statements through conversations with the experts and taking other references.

The external experts' assessments are an important contribution, but they are generally positive in their statements, even if any telephone contact may result in some critical opinions. It is probably that the external experts are unwilling to express criticism in their written statements because these are public documents, and there may be friendship links within the discipline, even if we are very careful in avoiding conflicts of interest."

Another example of the promotion process comes from the Faculty of Social Sciences at the University of Gothenburg:

"An initial assessment is conducted at the department, where the department also ensures that the person is qualified through taking courses in teaching and learning in higher education. After this, the application for promotion is processed by the teacher proposal committee and sent to experts for assessment based on the criteria stated in the text of the announcement and the faculty's general instructions for associate professors. The most difficult thing to evaluate has often been the criteria that you should have the ability to teach in Swedish after two years, in cases where the applicants did not master Swedish on being appointed to the assistant professorship. Otherwise, on some occasions there has been a rush to get the qualification in teaching and learning in higher education if this wasn't started well in advance, as it is a requirement for promotion and applications for promotion must be submitted at least six months before the end of the assistant professorship."

Chalmers University of Technology describes its promotion process in the following manner:

"After half the period, i.e. two years, there is a first assessment of whether the employed assistant professor²⁸ is considered to have the ability to be fully qualified as an associate professor and, in a few cases, as an associate professor/professor at the end of the stated four years. A

local evaluation group from the department at which the assistant professor is employed writes the statement. At the final evaluation for promotion, the review must be conducted by two scholarly experts. There is an additional educational review (may take place in parallel with the scholarly review) and then a lecture and interview in the Employment Committee."

The Faculty of Arts at Uppsala University writes:

"Applications go to the faculty's promotion group which, in turn, collects statements from external experts. Their evaluations are of great weight. One important element is to inform the external experts that there is a real possibility that the application is rejected, so they undertake their task with the same seriousness as when they have to rank candidates. There is a problem with external experts who are too "kind" when it comes to promotions to docent."

Jönköping International Business School gives the following answer:

"Based on the statements from the external experts, an assessment is carried out by a recruitment group that is composed collegially and led by the recruiting manager. We contract at least two external experts. The expert's assessment is important, but is always balanced by the recruitment group's overall assessment. The recruitment group's assessment is validated by the dean after the process has been reviewed by the collegial-based recruitment committee. One challenge (potential for improvement) is the development of better, more transparent criteria for qualification, in addition to those that are usually linked to research (bibliometrics) and teaching (volume, results measured through course evaluations, etc)."

As the examples make clear, many faculties strive for a thorough process with external reviewers who consider both research and teaching, as well as other qualifications. Challenges that are frequently mentioned are how to deal with overly generous experts who, in some cases, provide telephone statements that are more critical than their written ones, how to assess the assistant professor's ability to teach in Swedish if this is a requirement for promotion, and how qualification criteria can include factors in addition to bibliometrically weighted research and teaching qualifications in the form of volume and course evaluations.

²⁸ Chalmers uses the Swedish name of 'forskarassistent' instead of 'biträdande lektor' for the tenure track position of assistant professor. Employment as 'forskarassistent' at Chalmers has brought the right to be evaluated for promotion since 2016.

3.2.7. The length of employment varies

The faculties were also asked to describe the format and duration of the assistant professorships for the positions that were filled after the reform. The majority (76%) of the assistant professors were employed for four years, 6% for five years and 18% for six years.

The Faculty of Science at Stockholm University has chosen an employment period of six years, because they believe that:

“in many disciplinary areas, four years is too short a time to gain qualifications and experience, so it is too soon to make such a pivotal decision.”

Karolinska Institutet writes that:

“With additional (external) funding, it would be desirable if the period of employment could be extended up to six years.”

The Faculty of Engineering at Lund University has decided to extend the period of employment from four to six years, but sees a risk that this will make departments cautious when announcing positions:

“At the turn of 2019/2020, a decision was made on a faculty-wide period of employment of six years for assistant professorships. The previous period of employment was four years. At the faculty, it is more the rule than the exception that teaching staff who conduct research are primarily funded through external funding. There is concern that the extended period of employment can result in unwillingness to use this form of employment as the department is then committed to organising funding for up to six years.”

The responses show that numerous faculties see the period of employment as a balance between providing enough time for the assistant professor to gain qualifications and the requirement to ensure financing for the position.

3.2.8. Faculties work actively with competence development

In the questionnaire, the faculties were also asked to describe what was offered in the form of competence development, mentorship, education, half-way evaluation

or other factors. Many faculties have not responded to this question, which can be interpreted as them not offering any of these, or that they do not know or cannot answer. Several faculties state that competence development is managed at departmental level, which is why they have not responded to the question.

However, some faculties do appear to work actively with competence development. Among others, the Faculty of Law at Lund University offers mentorship, education and a half-way evaluation:

“Mentorship: The faculty works with educational development, such as through educational training, including supervisor education and courses in gender perspectives and other critical perspectives, educational mentorship and various educational development projects. The vice dean for research guides assistant professors in the development of research and on issues relating to external funding, publication, research leadership, etc. The head of department holds staff appraisals with the assistant professors, guided by career-development plans. Education: For example, supervisory training, leadership training and the opportunity for international staff to take Swedish courses, as well as practical opportunities for making use of these.”

Örebro University's *Framtidens Forskningsledare* [Future Research Leaders] programme offers mentorship and competence development:

“Mentorship: Each assistant professor on the programme has a subject mentor who is a senior researcher in the subject. Education: A two-year development programme has been developed for these assistant professors. The intention is to also offer parts of the programme to other junior researchers/assistant professors who are not included in the programme. Half-time evaluation: Half-time follow-ups are planned.”

The Faculty of Medicine at Umeå University not only offers an educational development plan, including courses and educational qualification through participation in teaching, but also two scholarly and one educational mentor for each assistant professor. It is worth noting that, through dialogue between the faculty and the region (regional health board), Umeå can include clinical duties as part of the position.²⁹

²⁹ The Higher Education Ordinance now states that combined positions between a university and medical facility are possible for associate professors and professors. However, it does not mention assistant professors, which has resulted in it being impossible to combine an assistant professorship with a clinical position at many higher education institutions.

The Faculty of Engineering at Lund University has established a development programme, *LTH Career Academy*, specifically for all newly employed assistant professors:

“The purpose of LTH Career Academy includes helping each assistant professor ahead of promotion and a continued academic career. Appraisal meetings must be conducted with all staff at the Faculty of Engineering at least once each year. A competence development plan must be drawn up at the start of employment. This plan allows the employee and manager to agree on competence development measures in the short and the long term. The plan must be revised at appraisal meetings, at least once each year. For employees on assistant professorships, this competence development plan is of extra importance. It must be a long-term plan for the entire period of employment and there is a suggestion that it should be followed up at least once each year (two years is proposed in a new employment policy). The plan must be drawn up when the employee starts their position and must be an individual and systematic plan so the employee will qualify for potential future employment as an associate professor. For assistant professors, the requirements for promotion stated in the requirements profile for the announced position must be stated in the competence development plan, and the development measures that must be implemented during the period of employment for these requirements to be fulfilled must be established. The work and qualifications for an assistant professor should be evaluated in relation to the requirements for promotion stated in the requirements profile. This should be done by the line manager after half of the period of employment.”

3.2.9. Swedish universities are positive about assistant professorships

The responses from the faculties clearly show that an overwhelming majority are positive about assistant professorships. Those that responded to the survey see many advantages to this tenure-track position. This form of employment is regarded as an important tool in ensuring long-term competence provision, particularly in disciplines with few or no applicants for higher positions. Several faculties state that assistant professorships are strategically important for increasing competitiveness and the potential for attracting internationally and nationally leading young

researchers to the faculty, as these often expect a tenure-track position. One additional positive aspect that is brought up by many faculties is that the amendment to the Higher Education Ordinance allows assistant professorships to be six-year positions, whereas they previously could be a maximum of four years.

3.2.10. Deadline of five years after doctoral degree is regarded as problematic

Many faculties (11), particularly scientific, technical and medical faculties, stated that the deadline for eligibility for applying for an assistant professorship is very problematic, as the amendment to the Higher Education Ordinance reduced this from seven to five years after receiving a PhD. This means that some faculties have chosen not to use assistant professorships to any great extent, as five years is not regarded as enough to be able to evaluate the candidates. The faculties state that the shorter time limit excludes many competent candidates with longer postdoctoral periods abroad. A number of those that highlight this problem would like a return to the previous provision where the deadline was seven years after receiving a PhD.

For example, the Faculty of Medicine at Umeå University writes that:

“Internationally strong young researchers looking for tenure-track positions have often undertaken long, sometimes multiple, postdocs, so the current limit of five years after receiving the doctoral degree is problematic (which we and many other bodies stated in the consultation on the report that led to the current provision in the Ordinance)”.

The Faculty of Social Sciences at Uppsala University states that:

“There are problems for some subjects where it is more the rule than the exception that the upper limit of five years must be achieved to be able to compete and be offered employment.”

The Sahlgrenska Academy writes:

“We use this position [assistant professor, our note] as little [as] possible. ... It is too early to assess a researcher's future research potential so soon after receiving a

doctorate, to receive a lifelong “tenure track”. Instead, we announce positions for researchers and associate professors.”

The Faculty of Forest Sciences at SLU writes:

“With the new Higher Education Ordinance (HEO), an applicant with a doctoral degree must have received it or the equivalent competence no more than five years before the deadline for applications for employment as an assistant professor. Before the current HEO, this time limit was seven years. It takes longer than five years to qualify for an academic career in many disciplinary areas, i.e. demonstrate scholarly expertise (primarily through publications). This may mean that departments, to a greater extent than previously, instead of employing an assistant professor, choose to employ an excellent researcher who has been active for longer than five years.”

The Faculty of Science at Stockholm University states that:

“The biggest disadvantage with the current assistant professorships is that the applicant’s doctoral degree may be no older than five years by the deadline for applications. This means that we miss out on the foremost international applicants, at the time that they consider a suitable point in their career to apply for an assistant professorship or the equivalent. We have noted that we receive many applications that have passed this five-year deadline, despite them not being able to be considered. We understand this to mean that the applicants, particularly those from abroad, do not know that this rule exists and that they do not see any option other than to apply anyway, because they have now, in principle, ended up outside the system. These include extremely strong applicants who cannot be considered for employment. This is a serious and significant strategic disadvantage, which will lead to some disciplines considering increasingly returning to announcing positions at the level of associate professor. However, then the risk is that these young talented researchers, perhaps 6–8 years after receiving their doctorate, will still be unable to compete against people with 10–20 years of experience.”

The short time interval has also been criticised in other contexts, not least in statements by several consultation bodies on the report *Trygghet och attraktivitet – en forskarkarriär för framtiden*³⁰ [Security and attraction

power – a research career for the future] and in a members’ survey undertaken by Junior Faculty KI and the KI Postdoc Association, which showed that eight of ten young researchers at Karolinska Institutet preferred a seven-year limit³¹.

3.2.11. Demand for combined positions in clinical research

Several medical faculties state that it is desirable for the Higher Education Ordinance to be amended so that it allows the combination of clinical duties with an assistant professorship as a combined position. This is regarded as being very important, both for clinical research and for contributing to increased gender equality.

For example, Karolinska Institutet writes that:

“KI would like to see a change in the rules that allows combined positions earlier on the career path, e.g. at the level of assistant professor. Because the majority of those who work in healthcare are women this could, in the long term, increase the number of female professors.”

The Sahlgrenska Academy writes:

“This position excludes young researchers who received their doctoral degree more than five years ago. This means that researchers with a longer international postdoc cannot apply, nor young clinical researchers who need to combine specialist training, research and, often, also starting a family (particularly disadvantages women).”

The Faculty of Medicine at Umeå University writes:

“In Umeå, we have worked very hard so that these tenure-track positions can also be combined with clinical positions – including those that are often at a “medium level” – to guarantee parallel career development (in research/education and clinic) in clinical disciplines, where we often have great difficulty with recruitments for higher teaching positions.”³²

³⁰ SOU 2016:29.

³¹ Junior Faculty KI and KI Postdoc Association (2016)

³² The Higher Education Ordinance states that combined positions between a university and medical facility are possible for associate professors and professors. However, it does not mention assistant professors, which has resulted in it being impossible to combine an assistant professorship with a clinical position at many higher education institutions. Dialogue between the faculty and the region (regional health board) in Umeå has meant that clinical duties can be part of the position.

3.2.12. Expected high level of promotion to associate professor

A large majority of all respondents expected that all, or as good as all, assistant professors would be promoted to associate professors. If an assistant professor is not promoted, it is considered a failed recruitment. This is backed up by our quantitative survey that shows that only 4% of the assistant professors who applied for promotion between 2012 and 2018 were rejected. Some faculties also point out that it is difficult to set the correct criteria for promotion.

For example, the Faculty of Science at Lund University writes:

“We regard it as a failure, not only for the candidate, but for both the faculty and the department, if an assistant professor is not promoted. We have not been successful in our recruitment and our support functions after employment.”

The Faculty of Science and Technology at Umeå University reasons that:

“it [is] difficult to provide balanced criteria for promotion and there is an obvious risk that people who are promoted would not beat the competition in an open recruitment process. The risk with “all” assistant professors being promoted is the risk of departments being very restrictive when it comes to employing younger staff. Younger staff then risk ending up in research positions with few opportunities for employment as associate professor.”

However, there are some faculties that reason differently in their responses.

The Faculty of Science at Stockholm University writes:

“Our aim is to recruit and employ applicants that are so talented that, in principle, they all develop well and are promoted. However, this will not be true in practice. As stated above, the current provision for a maximum of five years from a doctoral degree to employment is, in many disciplines, too short a time to acquire adequate qualifications or to develop the scholarly maturity necessary to drive their own line of research and a research group. This means that some will not be mature enough to shoulder this burden. It also entails the likelihood of some poor recruitments being unavoidable, because there is too little on which to base selection and assessment at the time of employment. In the current system,

we have a promotion rate of approximately 80–85% (10/12), and we can assume this will fall somewhat in the new system, perhaps to 70–80%.”

The Faculty of Arts at Uppsala University writes:

“The assistant professors have, as we know, the opportunity for promotion to associate professorships. We work hard to design practices that entail this step involving a strict and genuine evaluation (in the absence of the open competition that otherwise applies to associate professorships). That there is a real chance of the candidate’s application for promotion being rejected (that it is not a “done deal” when you get an assistant professorship) is something that must be communicated clearly and made known inside and outside the faculty. Without these efforts, there is a risk that the result is that some of the associate professors at the faculty do not meet the same standards as those who got their positions in open competition.”

It is also worth noting that the questionnaire probably does not capture the people who disappear along the way and never apply for promotion. A few responses considered this in the open question about the proportion that was expected to be promoted. For example, the Faculty of Education at Gothenburg University writes that

“Of the positions announced historically (before 2018), 50% have been promoted; the others have left for other jobs (sometimes to another position as associate professor at the same university)”

Another example is provided by the Faculty of Science at Lund University, which states:

“Our aim is that our assistant professors can be promoted. In practice, we have a not-insignificant loss, due to resignations (other employment), recruitment failures and unfortunate circumstances. We believe that a very important support function is help when employing doctoral students. Few things are as disruptive for a young researcher as a failed recruitment early in their career.”

3.2.13. An expensive form of employment that risks leading to reduced mobility?

Even though many of the answers are positive about assistant professorships, problems with this type of position are also highlighted. Several respondents say that it is an expensive position because it includes a great deal of research time and risks leading to lock-in effects.

The Faculty of Social Sciences at Umeå University writes:

“The major barrier described by the departments is funding. An assistant professorship includes a significant

amount of research, which cannot be funded in the same way as teaching. At the same time, many of the faculty’s young researchers have already developed a high level of autonomy in their research, because many of them wrote their thesis autonomously, often as a monograph.”

The Faculty of Social Sciences at Uppsala University reports that:

“One contradiction that can occur is if many assistant professorships are announced at one department, there are no vacancies for associate professorships, which prevents mobility at that level.”

The Faculty of Theology at Uppsala University expresses concern that:

“There is a risk of it locking the system for a long time. It is difficult to make changes, which can be important for smaller subject areas.”

The Faculty of Landscape Architecture, Horticulture and Crop Production Science at SLU writes:

“When employing an assistant professor, the faculty bets on a single card. Assessing whether the person being employed will be suitable as an associate professor is a challenge.”

From these and other responses, it is apparent that the problems of assistant professorships as an expensive form of employment are primarily experienced by faculties in the humanities and social sciences, where it is more common for positions to be largely financed through teaching. To then take a relatively large part of this financing from research funding makes this position seem relatively expensive for faculties with limited

direct government appropriations for research. Some faculties also point out the problem that appointing assistant professors can further reduce mobility. If a significant proportion of associate professorships are appointed through promotion, this risks fewer associate professorships being announced and mobility between Swedish HEIs being further reduced.

3.3. Financing of assistant professorships

As regards the questions about how assistant professorships and (after possible promotion) associate professorships are financed, the responses make clear that there are huge differences between HEIs, faculties, departments and disciplinary areas. It is also clear that the responsibility for financing lies at different levels and that faculty management is not always where this question should be directed. We have therefore chosen to supplement the responses we received via the questionnaire with information from members of the Young Academy of Sweden. Thirteen Academy members have provided information about the financing of assistant professorships at their faculties, so that we can obtain a better picture of which financing models are used at departments and faculties at Swedish HEIs.

From our survey, it is clear there is wide variation in how assistant professorships are financed. To exemplify this, we have categorised the forms of financing into three different types, plus several special cases. Figures 8–11 show various financing models using examples that we have identified in our survey. As an assistant professorship is intended to be a step on a career ladder, we also show what financing can look like after promotion, at the level of associate professor. For a more detailed description of some examples, please refer to Appendix D.

Funding for teaching positions can come from three primary sources: government appropriations for first- and second-cycle (Bachelor’s and Master’s) education (here called BM funding), direct government appropriations for research and third-cycle (doctoral) education (RE funding), and external funding, primarily for research and third-cycle education (EXT funding). The latter category is generally project-based funding from public or private financiers, e.g. the Swedish Research Council, the Swedish Foundation for Strategic Research, the Wallenberg Foundations, Riksbankens Jubileumsfond and the European Research Council.

Below, we present diagrams that illustrate different examples of the way the assistant professorships are financed at Swedish faculties. These models are an important foundation for discussions about the differences in the conditions for promotions and further career opportunities. We lack data permitting the quantification of the relative frequency of these financing models due to inadequate responses from the faculties, which mainly appears to be because most faculties do not describe how financing via direct government appropriations is actually allocated to assistant professorships.

3.3.1. Assistant professorship as a teaching position

Figure 8 illustrates a financing model that we have called teaching position. The financing of such a position primarily comes through government appropriations for BM funding. Assistant professors with these positions primarily teach, but also have some guaranteed research time that is financed via direct government appropriations for RE funding. Any external funding may be used to increase research time. After promotion to associate professor, the guaranteed research financing changes somewhat, but BM funding, and thus teaching, often continues to be the primary source of financing for the position. One observation is that relatively low research funding risks reducing the opportunities for the assistant professor to gain research qualifications in this model for financing assistant professorships.

3.3.2. Assistant professorship as a research position with defined research time

In what we have called a *research position with defined research time*, Figure 9, the position is primarily financed via direct government appropriations for research (RE funding). These positions are primarily specialised in research with a significant amount of guaranteed research time. It is not uncommon for external funding to allow assistant professors with this kind of position to increase their proportion of research and, correspondingly, to reduce the amount of teaching that otherwise contributes to the remaining financing of the position through BM funding. In our survey, we have identified examples where the financing using RE and BM funding is entirely transparent and the person can see exactly how the

Teaching position – example of a teaching post specialising in education

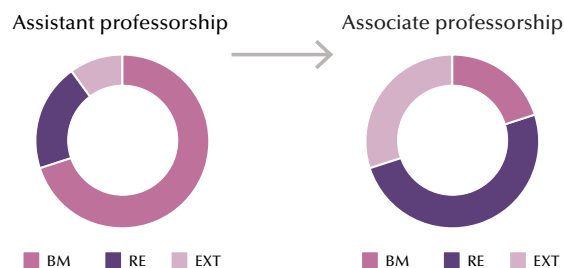


Figure 8. The figure shows an example of a financing model for a teaching post specialising in education. The assistant professorship has guaranteed financing via direct government appropriations for research of 20% and 70% for Bachelor's and Master's levels. After promotion to associate professor, the proportion for research increases and, alternatively, the teaching element can be reduced through external funding. See also Appendix D, from where this description is taken.

Research position with defined research time – teaching post specialising in research

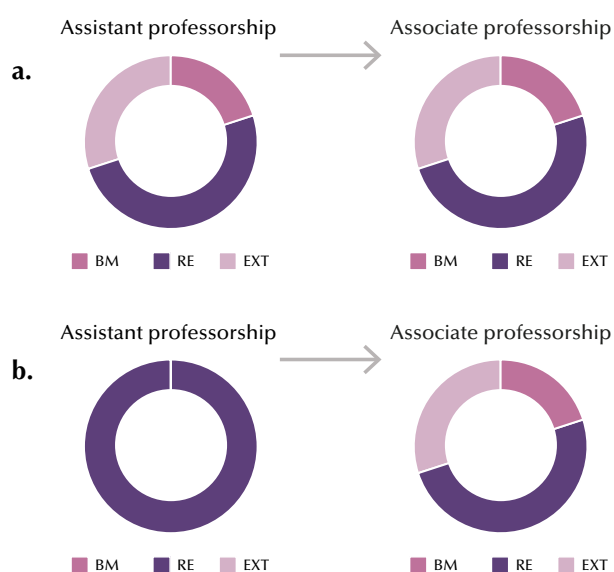


Figure 9. The figure presents two examples of a research position with defined research time **a.** The assistant professorship has guaranteed financing via direct government appropriations for research at 50% and for Bachelor's and Master's level at 20%, with external funding covering the remainder. After promotion to associate professor, the financing remains the same. Alternatively, the teaching element can be reduced through external grants. **b.** The assistant professorship has guaranteed funding for 100% research from direct government appropriations, which is equivalent to the previous non-tenure track assistant professor. To gain qualifications for an associate professorship, the assistant professor is expected to teach as well as research. After promotion to associate professor, the proportion of research falls and financing is the same as in the previous example. See also Appendix D, from where these descriptions are taken.

position is financed hour by hour, as well as examples where the assistant professorship entails up to 100% research. To gain educational qualifications, the assistant professor is expected to teach in addition to the position's research element, even in positions that are 100% research. After promotion, the position is financed with a continuing high proportion of research supplemented by teaching and external funding.

3.3.3. Assistant professorship as a research position with flexible research time

Research positions with flexible research time, as illustrated in Figure 10, primarily include research. However, the proportions of research, teaching and departmental duties are not predefined; they are decided in dialogue with the organisation and may change from year to year. The assistant professor may sometimes be able to increase the proportion of research up to 100% through external funding in this financing model. After promotion, the proportion of teaching often increases, but the amount of research can remain high if this is financed with external funding. This fundamental financing model appears to be one of the most common at Swedish HEIs. One observation is that the ability to continually adjust the conditions reduces transparency.

3.3.4. Special cases for assistant professorships

In addition to the main categories for assistant professorships listed above, our survey has also identified at least three other models for career paths that start from an assistant professorship. The first arises through significant external funding, for example from the Swedish Research Council, the Swedish Foundation for Strategic Research, the Wallenberg Foundations, Riksbankens Jubileumsfond and the European Research Council (ERC) (Figure 11 a, page 27).³³ As an assistant professorship brings the right to be evaluated for promotion, this route makes it possible for the researcher to achieve a professorship without financing from the HEI.

Another special case is an assistant professorship that is financed with government appropriations, but where

the HEI does not guarantee financing after a promotion to an associate professorship (Figure 11 b, page 28). It is important that this is clearly communicated when the position is announced, as this may otherwise cause problems after promotion if continued financing is not in place. Externally recruited candidates, in particular, can expect continued financing after promotion, depending on what the system is like in other countries.³⁴

Finally, we have also identified examples of assistant professorships that are financed with external funding as above, but which, after promotion, move to being financed through a combination of government appropriations for education and for research (Figure 11 c).

Research position with flexible research time – teaching post specialising in research

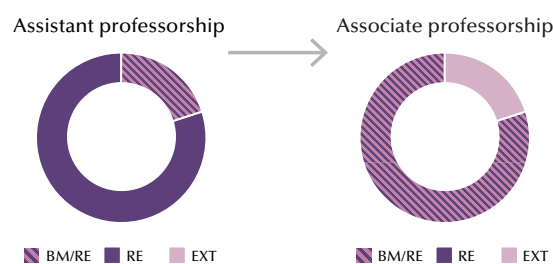


Figure 10. The figure provides an example of a research position with flexible research time. Many HEIs do not clearly separate financing via government appropriations from BM and RE funding. In this example, the assistant professorship has, in practice, guaranteed financing via direct government appropriations for research at 80%, where a combined government appropriation covers the entire financing. This allocation of duties within the position, thereby linked to the source of financing, takes place in dialogue with the department and may change from year to year. After promotion, the guaranteed research time is reduced and dialogue with the department on the allocation of working hours between research and teaching continues on an annual basis. Significant external funding often leads to less teaching. See also Appendix D, from where this description is taken.

³³ This takes place through various grants that are applied for in competition and which aim to provide younger researchers with the opportunity to become established as an autonomous researcher in Sweden. E.g. the Swedish Research Council and the ERC Starting grant, ERC Consolidator grants, Wallenberg Academy Fellows, Wallenberg Center for Molecular Medicine, Pro Futura, Sveriges Sällskap för Medicinsk Forskning:s Stora Anslag, etc.

³⁴ Universitetslärares (2020)

Special cases for the financing of assistant professorships

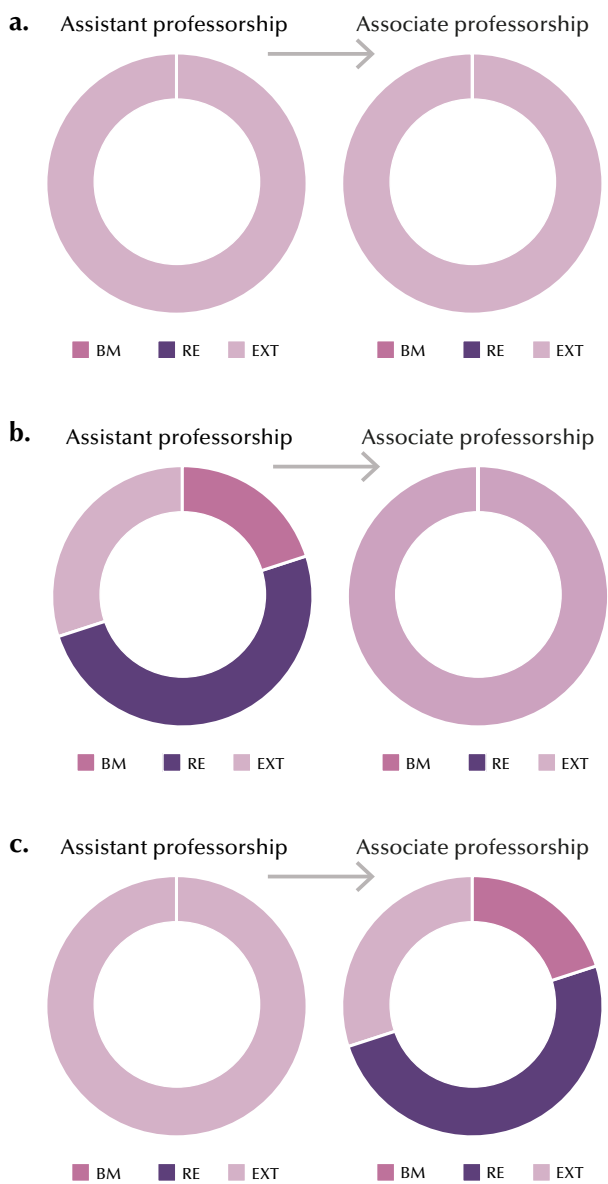


Figure 11. The figure presents examples of special cases for the financing of assistant professorship. **a.** In the first example, the assistant professorship is entirely financed through external funding. After a promotion, the associate professorship is also fully financed via external funding. **b.** In example two, the assistant professorship is financed with direct government appropriations. However, after promotion, the financing via direct government appropriations disappears and becomes financing solely via external funding. **c.** This is also an example where the assistant professorship is entirely financed by external funding but, after a promotion, the associate professorship is financed through the addition of funding from the HEI. See also Appendix D, from where these descriptions are taken.

4. Discussion

Swedish HEIs need a coherent career system that offers clear, beneficial career paths for young researchers. One important component in this is the tenure-track position of assistant professor which, in its present form, has been included in the Higher Education Ordinance since 2017. Since then all Swedish HEIs have been able to utilise assistant professorships. Their purpose is to provide promising young researchers with the opportunity to gain qualifications and then to be evaluated for a permanent position as an associate professor.

The questionnaire sent out by the Young Academy of Sweden clearly shows that the management of most faculties are satisfied with the position of assistant professor. The responses highlight some challenges, but the overall picture is that this position is on the way to becoming an important tool in creating clearer and more attractive career paths at Swedish HEIs.

4.1 The use of assistant professorships varies between faculties

The Higher Education Ordinance does not say anything about *how* assistant professorships should be implemented. This allows the various HEIs and faculties to implement it in different ways, even within the same disciplinary areas. Our survey shows that this is what has happened; there are great differences, both in how the position is used and in the routines for recruitment and evaluation. Many faculties have embraced assistant professorships wholeheartedly, and use this position on a large scale, while others have chosen to utilise it to a very limited degree.

One common negative opinion about this position is that the deadline of five years after receiving a PhD (which is short in an international perspective) makes it difficult

to evaluate suitable candidates. Another stated reason for scepticism is that there is an expectation that the vast majority of assistant professors will be promoted to associate professors, which gives rise to concern about lock-in effects.

According to the Higher Education Ordinance, the duration of an assistant professorship can vary from four to six years, an increased flexibility that is welcomed by some faculties. A few faculties use six-year positions, which have the benefit of providing a longer timeframe for evaluation of promotion to associate professor. The disadvantage is that this is more expensive and, for assistant professorships that are dependent on external funding, it is difficult to find sources that provide funding for more than four years. This far, the most common duration appears to be four years.

Some variations in how assistant professorships have been implemented can probably be explained through differing circumstances, both between HEIs and disciplinary areas. However, some of the differences also appear to be related to the level of ambition and the varying speed of implementing a new career system.

4.2 Variation in the number of applicants between faculties and subjects

From our survey, it is clear that the average number of applicants per announced position varies significantly between the faculties and disciplines, from a single applicant per position to, at most, 67 applicants. On average, across all faculties, assistant professorships have had about 15 applicants. The number of applicants can be regarded as a measure of how attractive the position is on the labour market. There are probably numerous different explanations for the variations in the number of applicants,

but one aspect we particularly wish to highlight is that there can be great differences in how broad the announced positions are in their requirements and skills profiles (a broad position may be in the field of 'biochemistry', for example, while a narrower one would state 'biophysical chemistry specialising in single-molecule spectroscopy'). Per definition, broader announcements mean that there are more researchers with PhDs whose competence matches the announced position. Other factors are also likely to play a large role: the attractiveness of the career system and HEI, the discipline, clarity of the advert, financing for the position and research funding that is linked to the position.

In general, at medical faculties we can see a reduction in the number of applicants after the reform. One reason for this could be the new five-year limit after receiving a PhD. Medicine has a tradition of a longer period of postdoctoral research after a PhD (often four to seven years) before a researcher is qualified enough to be able to compete for a position leading a group. When this deadline after the PhD was reduced from seven years to five, with no transition period, two cohorts of researchers ended up outside the system. These researchers probably include some who had intended to apply for an assistant professorship but who, due to the new five-year limit, are no longer eligible to do so. Another problem in medicine is that the current legislation means that preclinical researchers are those primarily able to apply for assistant professorships, because clinical combined positions or time deductions for clinical research are not possible.

4.3 The reform's contribution to increased mobility

Researchers moving between countries and HEIs contributes to increasing the quality of research and education by disseminating knowledge and experience through different environments. Swedish higher education has relatively low mobility and a high degree of recruitment from within each HEI. One purpose of the reform was to counteract this.³⁵ However, our analysis shows that the proportion of internal recruitment remains relatively high. In addition, we see that the proportion of external applicants for assistant professorships is generally higher than the proportion of positions that are filled by an external applicant. Based on our data, we cannot definitely state the cause(s) of this discrepancy, but we list three possible explanations here:

- The advert is tailored to a previously identified internal candidate. This contravenes the meritocratic principles that must apply to academic appointments, but this appears to happen in Sweden.³⁶
- External applicants are overrepresented among those who are offered a position but decline. Possible explanations for this could be the recruitment process being so slow (sometimes a year or more) that the best candidates have often had time to receive another offer, and/or that moving to Sweden is not attractive enough for foreign candidates.
- Each advert tends to attract a number of applications that are clearly inadequate. Based on the experiences of recruitment found within YAS, the proportion of clearly substandard applications appears to be higher among external applicants.

In this context, it is important to note that there is no unambiguous and established definition of internal recruitment, and different reports and surveys interpret the concept differently depending on the issue. This means that comparisons between different surveys are unreliable, but we can establish that the proportion of internal recruitment (58% before 2018 and 51% after 2018) in our survey is somewhat lower than that reported in other surveys. For example, SULF's report *Ett spel för galleriet* [A Political Grandstanding] states that 73% of the appointments at Lund's Faculty of Engineering, the Faculty of Social Sciences at Stockholm University and the Faculty of Medicine at Uppsala University, went to an internal applicant.

Our survey also shows that it is more common for an internal candidate to be appointed to an assistant professorship at faculties that, on average, have very few applicants for their vacancies. Attractive and openly announced vacancies with clear procedures for recruitment, financing and promotion, which are communicated openly and clearly, mean that young Swedish researchers will be more willing to move between HEIs and that young foreign researchers will want to come to Sweden.

³⁵ Bill 2016/17:50

³⁶ Lundgren et al. (2018)

4.4 Gender differences in the number of applicants and number employed

Our analysis of gender differences in association with the recruitment of assistant professors brings up two patterns that are worthy of discussion. First, we have found that the proportion of women who are appointed is significantly higher than the proportion of women who apply in the disciplinary areas of science and technology (both before and after the reform) and in medicine and health sciences (after the reform). Second, we see that the proportion of women with PhDs is higher than the proportion of female applicants for assistant professorships in all disciplinary areas. In medicine and health sciences, the difference between these groups is about 40%, and for science and technology it is over 50%. We cannot draw any definite conclusions about these patterns on the basis of our data, but some potential explanations are discussed below.

That women are more likely to leave academia than men has been covered in previous analyses of the higher education sector. This phenomenon is sometimes called “the leaky pipeline”, which is a metaphor for the large proportion of women with PhDs who disappear on the various steps of the academic career ladder.^{37,38} We believe that there is a pressing need for deeper analysis of career paths for Swedish researchers with PhDs to answer the question of why a large proportion of women who hold PhDs in Sweden refrain from applying for the announced assistant professorships.

We can establish that there is a significant difference in the gender distribution of applicants and appointments, and this difference increases after 2018. This may be explained by a difference in quality among the applicants, one group being at an advantage in the recruitment process, and/or other reasons. A potentially contributing factor may be that some faculties have begun to work actively on changing gender distribution in some disciplinary areas. This has been carried out at many HEIs and is also described in the responses to the questionnaire (see Section 3.2.4.). It remains to be seen whether these efforts have already had an effect and can explain elements of these results. Naturally, during this work, it is vital that meritocratic principles are maintained.

An important conclusion from this part of the analysis is that the patterns that appear in our survey require further examination, because it is vital to Swedish research that everyone, regardless of gender, origin, or nationality, has the same opportunities and conditions for work in Swedish higher education.

4.5 Transparency and clarity is necessary when financing assistant professorships

Our survey shows that financing forms for assistant professorships vary widely. In some places, positions are almost entirely financed using direct government appropriations for research and education, while in other places the assumption is that the assistant professor will independently apply for and receive external funding. This difference is also discernible after promotion to associate professor, where there may also be large differences in how time should be allocated to teaching and research. The large variations in the financing system mean that working conditions in general, and the proportions of research and teaching in particular, depend less on the type of position than on how the position is financed. The result is that the system of tenure-track positions, despite its purpose, remains obscure and unpredictable.

These ambiguous conditions for assistant professorships can cause problems, particularly in communication with international candidates or with applicants who are unused to the variation in conditions between identically designed positions at different HEIs and faculties. Clarity and transparency are vital to good career planning. If conditions for a person who starts a tenure-track position do not correspond with what has been communicated, it can result in unnecessary stress and worry, and the lecturer leaving the HEI. Our survey indicates that many faculties are already managing this problem well, such as by clearly describing the conditions for research and teaching in the advert, but we can also see that there is room for improvement. It should be natural to make a clear presentation of the purpose of the position and the expectations placed on the assistant professor, i.e. the extent to which it will involve teaching or research, how this will be financed, and the conditions for financing following any promotion.

³⁷ Bergman (2013), Shen (2013), Nordic and Baltic young academics (2019)

³⁸ However, in several disciplinary areas it has been noted that women with Swedish PhDs now have a somewhat higher probability of remaining in academia after receiving them than men (Amilon and Persson (2010)).

5. The conclusions of the Young Academy of Sweden

The Young Academy of Sweden (YAS) believes that the recruitment of young researchers is among the most important instruments that Swedish higher education institutions (HEIs) has for increasing the quality of Swedish research. The introduction of the tenure-track position of assistant professor in the Higher Education Ordinance was decisive in boosting higher education institutions' potential to make recruitments that promote quality. HEIs must urgently design long-term targets for the recruitment of young and autonomous researchers, and develop recruitment processes that drive quality. In this way, the reform can lead to a leap in the quality of Swedish research and higher education.

YAS believes that assistant professorships must be at the heart of a coherent career system. These positions must be attractive enough to bring the best international candidates to Swedish HEIs. The development of the assistant professors should be continually monitored, and each position accompanied by individual support through mentorship, leadership training and active collegial support. The assistant professorship must conclude with an evaluation based on promotion criteria that are transparent, demanding and drive quality. Financing after any promotion must be guaranteed at an early stage and clearly communicated. In this way, the position of assistant professor will ensure high quality in higher education and increase Sweden's competitiveness as a knowledge nation.

To achieve these objectives, YAS is proposing several amendments to the Higher Education Ordinance and provides concrete proposals for how the HEIs should design their career systems. In addition, we highlight some good examples that we believe deserve national attention.

5.1. The provisions of the Higher Education Ordinance

Through our survey, YAS has identified two necessary changes to the Higher Education Ordinance; these are simple and relatively easy to implement.

1. Extend the deadline for applying for assistant professorships from five to seven years after obtaining a PhD. YAS believes that the deadline for applying for an assistant professorship after obtaining a PhD is too short. The survey shows strong support for this position from many faculties. At least one large faculty (Sahlgrenska Academy) does not use assistant professorships because they do not feel they can identify the best candidates as early as five years after obtaining a PhD. A deadline of seven years also better corresponds with international praxis and with what several important research financiers (Knut and Alice Wallenberg, European Research Council and Swedish Research Council) apply to their recruitment and start-up programmes. An extension to the time period would allow the HEIs to recruit the strongest candidates, nationally and internationally. This is vital for Sweden's competitiveness as a research nation.

2. Allow clinical duties to be combined with assistant professorships and make time for clinical duties deductible when applying for assistant professorships. We propose that the Higher Education Ordinance is amended to allow the combination of clinical duties with an assistant professorship, as part of a combined position. This is currently available to associate professors and professors, but the Higher Education Ordinance does not mention assistant professors, which has resulted in it being impossible to combine an assistant professorship with a clinical position at many HEIs. This is currently a serious and entirely unnecessary barrier to recruitment at medical faculties. There is a pressing need to correct this, in order to ensure the future of medical research and teaching in Sweden. We also propose that time for clinical duties are

deductible when appointing and potentially extending an assistant professorship.

5.2. The Young Academy of Sweden's vision for associate professorships

For HEIs to succeed in recruiting and retaining the best teachers and researchers, YAS believes that the position of assistant professor should be at the heart of a coherent career system that drives quality. The Swedish higher education system is heterogenous and to have the best effect, assistant professorships may thus need to be implemented in different ways at different HEIs and faculties. However, the main elements that we describe here (recruitment, establishment, evaluation, and the continuation after promotion) should always be included in a career system that is fit-for-purpose.

1. Recruitment

There is a pressing need for recruitment to be designed so that the positions are attractive to the best researchers. Recruitment of promising researchers at the start of their careers is a key issue for Swedish HEIs. This is also a great challenge, as there is tough international competition for the best candidates. Important aspects of making these positions attractive include a financial start-up package, access to research infrastructure (e.g. archives, databases and advanced technical equipment), the design of the position vis-à-vis teaching, salary, inspiring academic environments and support packages for accompanying family members (for candidates who move to Sweden). An additional way of increasing attractiveness may be to announce six-year assistant professorships. However, it is important to state that the optimal design of an assistant professorship varies between disciplinary areas.

Another way of attracting the best candidates is clear advertising, which unambiguously and transparently explains the conditions and opportunities, financing and allocation of time between research and teaching. International recruitment and mobility benefit from broad announcement of vacancies, and that the recruitment process is conducted speedily. Recruitment processes in Sweden can often take a year or more from announcement to employment, which not infrequently leads to the top

candidates receiving, and sometimes accepting, other offers.

YAS believes that Chalmers' *Advance yourself program*³⁹ is a good example of well-designed, broad announcements of assistant professorships. Our survey results also show that Chalmers has been successful in attracting applicants for its positions, as they have by far the highest average number of applicants per announced position.

The announcement of an assistant professorship must, as far as possible, be disciplinarily broad. Broad, openly advertised vacancies promote quality, mobility and equality, while also counteracting nepotism and stagnation. Positions with broad profiles increase the number of potential candidates and thus the chance of a successful recruitment.

The quality of the recruitment process can be ensured by having a recruitment group at a higher level that reviews all advertised assistant professorships (and for associate professors and professors).

Higher education institutions should have a sustainable, long-term plan for announced positions. The recruitment of researchers at an early stage of their career is an important means for departments to steer and renew their research and teaching. The focus of the assistant professorship should therefore be adapted to the HEI's long-term needs and potential financing. Broad disciplinary areas open pathways to renewal.

There is a need for clarification of how young researchers with considerable external funding can fit into the career system. At the start of their careers, promising researchers can receive considerable career funding from research financiers such as the Knut and Alice Wallenberg Foundation, the European Research Council, Swedish Research Council, Riksbankens Jubileumsfond, and others. These grants are highly competitive and are awarded after careful review by external experts. However, some of these researchers do not have tenure-track positions, but are instead employed in research positions outside normal career paths. HEIs sometimes deal with this by appointing a position without previous announcement or through announcing a very narrow position, which thwarts transparency. Career grants are a fantastic opportunity for promising researchers to establish an independent line

³⁹ Chalmers (2019)

of research and it is positive that these promising young researchers are attached to Swedish HEIs, but forms for this must be clarified.

2. Establishment

The assistant professor should receive good conditions for development and this process should be continually reviewed. An assistant professorship should at least include a half-way evaluation, where the body that is responsible for promotion reviews development thus far and compares this with the agreed criteria for promotion. Administration should be kept to a minimum and the focus of the process should be on giving the assistant professor constructive feedback and an indication of whether their development is heading in the right direction. One suggestion could be to offer support through annual appraisals with a mentor or a group of senior researchers at the department. This type of process gives the assistant professor important individual feedback on their work, at the same time as the department and teacher collegium participate in the assistant professor's development. In our survey, we have identified numerous good examples of this, including Lund's Faculty of Engineering's *LTH Career Academy*⁴⁰ and KTH Royal Institute of Technology's *Partners In Learning (PIL)*⁴¹. It is also very important that the conditions for the teaching expected within the framework for gaining qualifications are both advantageous and predictable.

Integrate the assistant professor in the department through active collegial support. The collegium should be involved in the development of the assistant professor. It is important for a researcher's development that their closest colleagues are open to exchanging experiences and providing support. The collegium needs to regard the assistant professor as an asset, so that everyone works together to help a new colleague achieve their full potential and fulfil the criteria for promotion.

Offer leadership training to the assistant professor. YAS believes that leadership skills should be promoted for all assistant professors, by including or offering leadership training. This is particularly important for assistant professorships in disciplines that traditionally build on research groups as the primary form of organisation. Helping others conduct high quality research brings

entirely different challenges to conducting it yourself. Different forms of university- and faculty-wide programmes can also give the assistant professor a unique opportunity to build a network outside their department. One example of good leadership training is the *REAL programme* at Umeå University.⁴²

The criteria for promotion must be transparent and promote quality. The general criteria for promotion from assistant professor to associate professor must be clarified when the assistant professorship is announced. The advert must state the intended focus of the position and what the candidate is expected to achieve in order to be promoted. The criteria must be possible to apply generally, but also allow space for individual adaptation; they should reflect the desired balance between teaching, research and other duties.

The criteria for the promotion of assistant professors should be set high. Our survey shows that the promotion process differs across Sweden, but what many faculties have in common is that they expect that a very high proportion of assistant professors will be promoted. In order for assistant professorships to drive quality, promotion must not be taken for granted. The bar for promotion should be just as high as that for candidates in external recruitments for associate professors at the equivalent stage of their careers.

National consensus is required on assistant professorships being an important step in an academic career. We believe that overarching uniformity on the criteria and conditions for assistant professorships is decisive for Sweden's ability to attract young researchers, and thus for its competitiveness as a research nation. At the same time, there must be room for adaptation to the specific conditions at each HEI and faculty. We propose that HEIs conduct active dialogue about this, at the levels of both vice-chancellor and faculty.

Statements from external experts are important in the evaluation of potential promotions, but must be supplemented and quality-assured. External experts have an important function in recruitment and promotion at Swedish HEIs. They should contribute impartial statements to ensure that the most suitable and qualified candidate is employed, or to determine whether an employee should be granted a promotion or not. Our survey shows that

⁴⁰ Lund University, Faculty of Engineering (2019)

⁴¹ KTH Royal Institute of Technology (2019))

⁴² Umeå University (2019)

great weight is attached to experts' statements in cases of both employment and promotion. However, promotions may be particularly challenging for external experts to assess because it is not possible to compare multiple candidates. Also, because the experts' reports are public documents, it may be easier to write something positive than to publicly provide a negative evaluation, which reduces the quality of basis on which the decision is made.

YAS thus believes that external experts should receive tools (e.g. questionnaires) in order to assure the quality of the review process and that statements by the external experts should be supplemented by relevant material, such as letters of recommendation or references from colleagues, managers, students, etc. YAS also recommends that interviews are conducted with the external experts and with the candidate. Assuring the quality of the promotion process can be done by having a recruitment group at a higher level review all promotion cases.

3. After promotion

Higher education institutions should guarantee salary financing for assistant professors after promotion. After promotion to associate professor, an assistant professor should be employed on terms that are equal to those of other associate professors at the department. The long-term objective should be that all university lecturers have predictable financing via government appropriations.

A clear and constructive process is necessary to support assistant professors who are not promoted. The aim should be that every assistant professor can fulfil the requirements for promotion to associate professor, but high demands also mean that not everyone will be promoted. The assistant professors who are denied promotion need to be given a reasonable opportunity, in terms of financing and time, to phase out their research and teaching at the HEI and, for example, be replaced in their role as supervisor for doctoral students. This can be facilitated by a generous timeline, in which the evaluation is conducted in good time, but without infringing on the time for qualification. This can also be conducted through the department offering a bridging grant, allowing the assistant professor to leave their position in a dignified manner and giving them the opportunity to apply for other positions.

Opportunities for mobility should be included in teaching positions. Researchers moving between countries and HEIs helps increase the quality of research and education by disseminating knowledge and experience through different environments. As employers, HEIs should encourage and simplify mobility, such as by enabling cooperation with, and visits at, other HEIs and departments in Sweden or abroad. HEIs should review internal regulations that make longer absences difficult, and should allow opportunities for sabbaticals as part of associate professorships and professorship.

References

Reports

- Bergman, Solveig; Rustad, Linda M.** 2013 *Norden – et steg nærmere kjønnsbalanse i forskning?* Report 2013:513. Copenhagen: Nordic Council of Ministers.
- Bienenstock, Arthur; Schwaag-Serger, Sylvia; Benner, Mats; Lidgård, Anne.** 2014. *Utbildning, forskning, samverkan. Vad kan svenska universitet lära av Stanford och Berkeley.* Report. Stockholm: Studieförbundet Näringsliv och Samhälle (SNS).
- Frølich, Noline; Wendt, Kaja; Reymert, Ingvild; Tellmann, Silje Maria; Elken, Mari; Kyvik, Svein; Vabø, Agnete; Larsen Even.** 2018. *Academic career structures in Europe. Perspectives from Norway, Denmark, Sweden, Finland, the Netherlands, Austria and the UK.* Report 2018:4. Oslo: Nordic Institute for Studies in Innovation, Research and Education (NIFU).
- Lundgren, Anna; Claesson Pipping, Git; Åmossa, Karin.** 2018. *Ett spel för galleriet? Om anställningsprocesserna i akademien.* Report. Stockholm: Swedish Association for University Teachers and Researchers (SULF).
- Junior Faculty KI; KI Postdoc Association.** 2016. *Member Survey of Research Career Government proposal.* Survey. Stockholm: Junior Faculty KI; KI Postdoc Association. Access: <https://storage.googleapis.com/wzukusers/user-17415557/documents/575d28809d77ePcUvaNW/Annex%20A%20-%20JF-KI%20and%20KIPA%20survey%202016.pdf> [29 April 2020].
- OECD.** 2019. *Education at a Glance 2019: OECD Indicators.* Paris: OECD Publishing. Access: <https://doi.org/10.1787/f8d7880d-en>
- Rönmar, Mia.** 2018. *Goda och tydliga karriärvägar vid Lunds universitet.* Report. Lund: Lund University.
- Stampfer, Michael.** 2019. *“An unprecedented increase” A short inquiry into causes why in one of the richest university settings of the world everybody is unhappy.* Report R9:2019. Stockholm: Formas.
- Young Academy of Norway; Young Academy of Sweden; Young Academy of Denmark; Young Academy of Finland; Young Academy of Estonia; Young Academy of Latvia; Young Academy of Lithuania.** 2019. *Nordic and Baltic statement on gender equality in academia.* Statement. Access: <https://www.sverigesungaakademi.se/download/18.8620dc61698d96b19026e6c/1565592146618/JointStatementGenderEquality.pdf> [5 June 2020]
- Öquist, Gunnar; Benner, Mats.** 2012. *Fostering breakthrough research: A comparative study.* Academy report. Stockholm: Royal Swedish Academy of Sciences.

Government bills, enquiries and legislation

- Prop. 1984/85:57. *Ny arbets- och tjänsteorganisation för lärare i den statliga högskolan.*
- Prop. 1992/93:1. *Universitet och högskolor – Frihet för kvalitet.*
- Prop. 1996/97:141 *Högskolans ledning, lärare och organisation.*
- Prop. 2000/01:3 *Forskning och förnyelse.*
- Prop. 2009/10:149 *En akademi i tiden – ökad frihet för universitet och högskolor.*
- Prop. 2016/17:50 *Kunskap i samverkan – för samhällets utmaningar och stärkt konkurrenskraft.*
- SOU 2016:29. *Trygghet och attraktivitet – en forskarkarriär för framtiden.*
- SFS 2017:844, *Förordning om ändring i högskoleförordningen (1993:100).*

Journals

- Amilon, Anna; Persson, Inga. 2010. *Sveriges vetenskapliga arbetskraft – ett genusperspektiv*. Ekonomisk Debatt, vol. 38 (3) pp. 27–38.
- Shen, Helen. 2013. *Inequality quantified: Mind the gender gap*. Nature. vol. 495, pp. 22–24.

Databases

- Statistics Sweden. 2019. *Personal vid universitet och högskolor. Meriteringsanställningar efter kön och typ av meriteringsanställning 2001–2018*. Sveriges Officiella Statistik. Tillgänglig: <https://www.scb.se/hitta-statistik/statistik-efter-amne/utbildning-och-forskning/hogskolevasende/personal-vid-universitet-och-hogskolor/pong/tabell-och-diagram/meriteringsanstallningar/meriteringsanstallningar-efter-kon-och-typ-av-meriteringsanstallning-20012018/> [29 April 2020].

Websites

- Chalmers. 2019. *Advance Yourself*. Access: <https://www.chalmers.se/en/areas-of-advance/materials/news/Pages/Call-for-new-assistant-professor-with-tenure-track-in-Materials-Science.aspx> [27 April 2020].
- Faculty of Engineering, Lund University. 2019. LTH Career Academy. Access: <https://www.lth.se/job/career-academy/> [29 April 2020].
- KTH Royal Institute of Technology. 2019. Partners In Learning. Access: <https://www.kth.se/om/work-at-kth/arbetsomraden/lorare/tenure-track/> [29 April 2020].
- Umeå University. 2019. Research and leadership programme. Access: <https://www.aurora.umu.se/en/education-and-research/support-forresearch/real/> [20 May 2020]
- Universitetsläraren. 2020. Värvad professor blev övertalig – kände inte till svenska systemet. *Universitetsläraren*. 21 February 2020. Access: <https://universitetslararen.se/2020/02/21/varvadprofessor-blev-overtalig-kande-inte-till-svenskasystemet/> [19 May 2020].

Appendices

Appendix A: Faculties/higher education institutions in the survey

The faculties listed below are those that received an offer to respond to the questionnaire. Respondents are marked with (X). Those that responded that they have not announced any assistant professorships before or after the reform, and are thus not included in the analysis, are marked with (x). The classification of faculties and higher education institutions by disciplinary area is stated, MH = Medicine and health sciences, HS = Humanities and social sciences, ST = Science and technology and Other.

Faulty/Higher education institution	Response	Disciplinary area
Responded		
Blekinge Institute of Technology, Faculty of Computing	X	ST
Blekinge Institute of Technology, Faculty of Engineering	X	ST
Chalmers University of Technology	X	ST
Swedish School of Sport and Health Sciences	X	Other
University of Gothenburg, Faculty of Humanities	X	HS
University of Gothenburg, Sahlgrenska Academy	X	MH
University of Gothenburg, Faculty of Social Sciences	X	HS
University of Gothenburg, Faculty of Education	X	HS
Stockholm School of Economics	X	HS
University of Borås	X	Other
University of Gävle	X	Other
Halmstad University, School of Business, Innovation and Sustainability	X	ST
University of Skövde	X	Other
University West	X	Other
Karolinska Institutet	X	MH
KTH Royal Institute of Technology	X	ST
Linköping University, Faculty of Arts and Sciences	X	HS
Linköping University, Faculty of Science and Engineering	X	ST
Linnaeus University, Faculty of Arts and Humanities	X	HS
Luleå University of Technology	X	ST
Lund University, School of Economics and Management	X	HS
Lund University, Joint Faculties of Humanities and Theology	X	HS
Lund University, Faculty of Law	X	HS
Lund University, Faculty of Engineering	X	ST
Lund University, Faculty of Medicine	X	MH
Lund University, Faculty of Science	X	ST



Malmö University, Faculty of Health and Society	X	Other
Malmö University, Faculty of Culture and Society	X	HS
Malmö University, Faculty of Education and Society	X	HS
Mid Sweden University, Faculty of Human Sciences	X	HS
Mid Sweden University, Faculty of Science, Technology and Media	X	ST
Swedish Red Cross University College	X	MH
Sophiahemmet University	X	MH
Jönköping University, Jönköping International Business School	X	HS
Stockholm University, Faculty of Humanities	X	HS
Stockholm University, Faculty of Law	X	HS
Stockholm University, Faculty of Social Sciences	X	HS
Stockholm University, Faculty of Science	X	ST
Swedish University of Agricultural Sciences, Faculty of Landscape Architecture, Horticulture and Crop Production Science	X	ST
Swedish University of Agricultural Sciences, Faculty of Natural Resources and Agricultural Sciences	X	ST
Swedish University of Agricultural Sciences, Faculty of Forest Sciences	X	ST
Södertörn University	X	HS
Umeå University, Faculty of Arts and Humanities	X	HS
Umeå University, Faculty of Medicine	X	MH
Umeå University, Faculty of Social Science	X	HS
Umeå University, Faculty of Science and Technology	X	ST
Uppsala University, Faculty of Theology	X	HS
Uppsala University, Faculty of Law	X	HS
Uppsala University, Faculty of Arts	X	HS
Uppsala University, Faculty of Languages	X	HS
Uppsala University, Faculty of Social Sciences	X	HS
Uppsala University, Faculty of Educational Sciences	X	HS
Uppsala University, Disciplinary Domain of Medicine and Pharmacy	X	MH
Uppsala University, Faculty of Science and Technology	X	ST
Örebro University	X	Other
Does not have assistant professorships		
Beckmans College of Design	(x)	
University College Stockholm	(x)	
University of Gothenburg, Faculty of Arts	(x)	
Halmstad University, School of Education, Humanities and Social Sciences	(x)	
Kristianstad University	(x)	
Royal Institute of Art	(x)	
Royal College of Music in Stockholm	(x)	
Lund University, Faculty of Fine and Performing Arts	(x)	



Malmö University, Faculty of Technology and Society	(x)	
University College of Music Education in Stockholm	(x)	
Not responded		
Erica Foundation		
Ersta Sköndal Bräcke University College		
Swedish Defence University		
Gammelkroppa School of Forestry		
University of Gothenburg, School of Business, Economics and Law		
University of Gothenburg, IT Faculty		
University of Gothenburg, Faculty of Science		
Dalarna University, School of Humanities and Media Studies		
Dalarna University, Academy of Technology and Business Studies		
Dalarna University, Academy of Education, Health and Social Studies		
Evidens AB		
Halmstad University, School of Health and Welfare		
Halmstad University, School of Information Technology		
Johannelund School of Theology		
Karlstad University		
Konstfack		
Linköping University, Faculty of Medicine and Health Sciences		
Linköping University, Faculty of Educational Sciences		
Linnaeus University, School of Business and Economics		
Linnaeus University, Faculty of Health and Life Sciences		
Linnaeus University, Faculty of Social Sciences		
Linnaeus University, Faculty of Technology		
Lund University, Faculty of Social Sciences		
Malmö University, Faculty of Odontology		
Mälardalen University, School of Business, Society and Engineering		
Mälardalen University, School of Health, Care and Social Welfare		
Mälardalen University, School of Innovation, Design and Technology		
Mälardalen University, School of Education, Culture and Communication		
Newman Institute		
Scandinavia's Academy for Psychotherapy Development		
Jönköping University, School of Education and Communication		
Jönköping University, School of Health and Welfare		
Jönköping University, School of Engineering		
Stockholm University of the Arts		
Swedish Institute for CBT and Schema Therapy		
Swedish University of Agricultural Sciences, Faculty of Veterinary Medicine and Animal Science		

Appendix B: Questionnaire

Del 1. Frågor till fakultetsledning/dekan (eller motsvarande)

Namn:

Funktion/tjänst:

Fakultet (eller motsvarande):

Lärosäte:

För följande frågor: ange för biträdande lektorer anställda under nu gällande högskoleförordning som trädde i kraft i april 2018.

1. Strategi för biträdande lektor.

Vilken långsiktig strategi har ni för rekryteringar och tillsättningar av biträdande lektorer på fakulteten?

Finns det några problem/motsättningar med nuvarande biträdande lektorat för att uppnå de strategiska målen?

Hur passar biträdande lektorat in i ert karriärsystem?

Ser ni för/nackdelar med biträdande lektorat jämfört med tidigare system (innan nu gällande högskoleförordning trädde i kraft)?



2. Befordran av biträdande lektor.

Hur fastställer ni kriterierna för befordran?

Hur och när kommuniceras kriterierna till de biträdande lektorerna?

Beskriv befodringsförfarandet. Vem bedömer befodringsansökan? Inhämtar ni interna och/eller externa sakkunnighetsutlåtanden? Hur mycket vikt tillmäts deras bedömningar? Har ni förslag på hur bedömningsförfarandet kan förbättras? Utveckla gärna.

Hur stor andel av de som anställs som biträdande lektorer förväntas befodras till lektor?

3. Övriga kommentarer.

Del 2. Frågor av administrativ karaktär att besvaras av fakultetsadministrationen

Namn:

Funktion/tjänst:

Fakultet (eller motsvarande):

Lärosäte:

För fråga 1–10: ange för biträdande lektorer (BUL) anställda under nu gällande högskoleförordning som trädde i kraft i april 2018.

1. Hur många BUL-tjänster har utlysts på fakulteten?
2. Hur många sökande fanns det till BUL-tjänsterna?
3. Bland de sökande, hur ser fördelningen ut mellan
 - a. sökande från annat lärosäte respektive internt från eget lärosäte?
 - b. kvinnor och män?
4. Hur många BUL-tjänster har tillsatts på er fakultet?
5. Bland de tillsatta BUL-tjänsterna, hur ser fördelningen ut mellan
 - a. sökande från annat lärosäte respektive internt från eget lärosäte?
 - b. kvinnor och män?
6. Hur finansieras primärt lön för BUL-tjänsterna? Ange fördelning i antal:
 - a. Statliga medel (s.k. basanslag) till lärosätet:
 - b. Projektmedel som söks av biträdande lektor:
 - c. Undervisning utförd av biträdande lektor:
 - d. Annat, specificera och ange antal:
7. Hur kommer primärt lön efter ev. befordran till lektor finansieras? Ange fördelning i antal:
 - a. Statliga medel (s.k. basanslag) till lärosätet:
 - b. Projektmedel som söks av biträdande lektor:
 - c. Undervisning utförd av biträdande lektor:
 - d. Annat, specificera och ange antal:
8. Beskriv rekryteringsprocessen.
 - a. Vem initierar utlysningen?
 - b. Utlyses alla tjänster externt?
 - c. Vilka utnämns som sakkunniga?
 - d. På vilken nivå tas beslut om anställning – institution, fakultet?



9. Hur lång är anställningen som biträdande lektor? Ange fördelningen enligt nedan:
- a. 4 år: Ange antal:
 - b. 5 år: Ange antal:
 - c. 6 år: Ange antal:
10. Vilka element, förutom anställning och befordran av biträdande lektor, ingår i ert karriärsystem? Utveckla gärna.
- a. Mentorskap:
 - b. Utbildning:
 - c. Halvtidsutvärdering:
 - d. Annat:

Fråga 11–19: Besvaras om ni vid fakulteten, även före april 2018 (då nu gällande högskoleförordning infördes), haft anställningsform motsvarande biträdande lektor, med rätt till prövning för befordran (exv. biträdande universitetslektor, biträdande lektor). För dessa, ange för tiden 2012 – mars 2018:

11. Hur många BUL-anställningar har utlysts på er fakultet?
12. Hur många sökande fanns det till BUL-tjänsterna?
13. Bland de sökande, hur ser fördelningen ut mellan
- a. sökande från annat lärosäte respektive internt från eget lärosäte?
 - b. kvinnor och män?
14. Hur många BUL-anställningar har tillsatts på din fakultet?
15. Bland de tillsatta BUL-tjänsterna, hur ser fördelningen ut mellan
- a. sökande från annat lärosäte respektive internt från eget lärosäte?
 - b. kvinnor och män?
16. Hur finansieras primärt lön för meriteringstjänsterna? Ange fördelning i antal:
- a. Statliga medel (s.k. basanslag) till lärosätet:
 - b. Projektmedel som söks av biträdande lektor:
 - c. Undervisning utförd av biträdande lektor:
 - d. Annat, specificera och ange antal:
17. Hur finansieras primärt lön efter ev. befordran till lektor? Ange fördelning i antal:
- a. Statliga medel (s.k. basanslag) till lärosätet:
 - b. Projektmedel som söks av biträdande lektor:
 - c. Undervisning utförd av biträdande lektor:
 - d. Annat, specificera och ange antal:
18. Hur många biträdande lektorer har befordrats?
19. Hur många biträdande lektorer har nekats befordran?

Appendix C: Accompanying letter



SVERIGES UNGA AKADEMI

Stockholm, 4 November 2019

Assistant professorships have become increasingly common at Swedish higher education institutions (HEIs) since 2011; they have been implemented in different ways, with different forms of financing and opportunities for promotion. The Higher Education Ordinance was amended in 2017, and the position of assistant professor assumed its present form. This means that from 1 April 2018, everyone who has been employed as an assistant professor at a Swedish university is entitled to be evaluated for promotion to associate professor. However, there are significant differences between HEIs in the extent to which assistant professorships are announced and how the position has been implemented (e.g. the criteria and processes for recruitment and promotion).

Career paths are a central issue for the Young Academy of Sweden. We wish to contribute to the 2017 reform being implemented in a prudent manner and having the intended effect – that of making assistant professorships a vital step on a clear and transparent career ladder, one that drives quality. We are currently conducting a survey of how assistant professorships have been implemented in Swedish higher education. Our purpose is to gain an overview of how assistant professorships are currently utilised, the problems that HEIs experience with assistant professorships, and to identify good examples of the implementation of assistant professorships. Our hope is that this will provide a good overview of the situation, and that the results will provide a useful basis for HEIs in the process of implementing assistant professorships as part of a coherent career system. We also want to help disseminate good examples.

For the material to be as comprehensive and useful as possible, we would appreciate your responses to the appended questionnaire. Out of consideration for your time, we have divided the questions into two sections: one to which the faculty office can respond, and one of a more qualitative character, where we would like the academic management to contribute the experiences of your faculty. Your answers are important for us obtaining a nuanced and thorough image of work on career paths at your faculty and are of great significance for the survey's completion. If any of the questions need to be forwarded to a colleague to be answered, please do so. We would like to receive your responses **by 27 November**. Please send them to helena.rosik@sverigesungaakademi.se.

The questionnaire is being sent to the faculty management (or the equivalent) at all Swedish higher education institutions. Using this [link](#), you can read more about the survey on the Young Academy of Sweden's website. We will also publish a list of which faculties have responded to the questionnaire.

On behalf of the Young Academy of Sweden,

Magnus Jonsson, Chair

Anna Wetterbom, CEO

GDPR: Due to the survey, we will need to save your personal data (name). The purpose is to track who has responded to the survey. We will erase all data as soon as we have concluded the survey. You are entitled to contact us if you want information about your personal data stored by us.

c/o Kungl. Vetenskapsakademien, Box 50005, SE-104 05 Stockholm, Besök/Visit: Lilla Frescativägen 4A
+46 733 267 167 • anna.w@sverigesungaakademi.se • <http://sverigesungaakademi.se>

Appendix D: Example financing

In this appendix, we describe a few specific examples of how assistant professorships are financed. The descriptions have been taken from different faculties around the country. These examples fit with the more general financing models that are described in the main text.

Example 1: A medical faculty (I)

General description

This medical faculty has a limited number of teaching positions. These are financed by the faculty or departments. When announcing a vacant position, it states how much of the salary's financing is guaranteed and the remainder is covered by external funding, teaching or departmental duties. The latter comprises a smaller amount, with most being paid through external funding (EXT) or teaching (BM funding). Teaching positions are commonly either a research position with a high proportion of guaranteed research funding (e.g. 70% RE funding), or a teaching position with a low proportion of guaranteed funding (e.g. 30% RE funding), where the majority is covered by funding from the BM budget through teaching; for teaching, the teacher is compensated per hour of teaching. This faculty wants a high proportion of RE-funded positions where the lecturers/researchers are able to govern their time themselves, with the desired distribution between research/teaching/departmental duties.

Assistant professorship

The faculty has established four main types of assistant professorships, all with the potential for promotion, but where the financing differs:

1. Of the announced assistant professorships, there is one variety with a true tenure track, with a high proportion of guaranteed salary financing during the assistant professorship, which then continues after promotion to the same level as associate professorships and professorships; 70–80% before overheads (approx. 20%). E.g. Wallenberg Center for Molecular Medicine (WCMM) fellow and some assistant professorships where tenure financing was approved in the budget.
2. Teaching-focused assistant professorship with tenure-financing that provides a high level of research financing (50% before overheads) during the period of the assistant professorship, then reduced to 30% after promotion to associate professor.
3. A normal assistant professorship now gives 70% research financing before overheads, which disappears entirely on promotion. This also applies on continued later promotion to professor.
4. There are assistant professorships that have been established with specific funding without external announcement, as the holder has received a career grant, e.g. a Swedish Research Council starting grant, Ragnar Söderberg Fellow, Wallenberg Fellow. These positions work in the same way as 2, but with no guaranteed financing from the faculty or department, where the salary is instead financed through the specific grant.

Example 2: A science faculty

This science faculty has a limited number of teaching positions. These are financed by the faculty or departments. The lecturers (associate professors and professors) who have research funding receive about 65% of their salary through direct appropriations for research. In principle, all assistant professorships at this faculty have been financed through external career grants, but the departments have also announced assistant professorships that they have financed themselves. All assistant professors that have been promoted are then covered by the same conditions as other associate professors, i.e. tenure financing with approx. 65% research and the remainder being covered by teaching or external funding.

Example 3: A medical faculty (II)

At this medical faculty, positions are announced through the faculty to be located at the departments. The number of teaching positions at the departments is primarily based on the required amount of teaching. The position includes time for research, which is 80% for assistant professors, at least 20% for associate professors and at least 50% for professors. The exact proportion of research for associate professors and professors varies at the departments due to teaching duties and how much external funding is achieved. The faculty uses assistant professorships at departments that are teaching-heavy and research-heavy, but the assistant professorships that have been filled at research-heavy departments are primarily due to external financing.

Example 4: A department in a technology faculty

This department has a significant amount of freedom in how funding is used for positions. All assistant professorships have the same conditions, with no guaranteed funding for financing positions, i.e. the position is primarily externally financed. However, there are guidelines for the proportion of time that must be used for teaching, which is set at 15–30%, which thus gives some BM-based financing. After promotion, a fixed annual amount is provided as basic grant financing, where the time for teaching is also increased to 30–60%.

Example 5: A science department

This department has a significant amount of freedom in how funding is used for positions. All assistant professorships have the same conditions, with some research funding (70%) guaranteed for financing positions. The remainder of the position is covered through teaching or external funding. After promotion, 50–70% of the position is covered through basic funding (RE and BM). The need for teaching relative to the proportion of lecturers allows lecturers with adequate external funding to refrain from teaching and dedicate more time to research.

Example 6: A humanities department

This department has two assistant professorships. They have basically 50% BM-based and 50% RE-based funding, but in practice both have external research funding, which reduces the teaching time and partly replaces the RE funding. E.g.: The base is 50% teaching and 50% research (RE funding) – an external research project covers 50%, making it 25% BM, 50% EXT, 25% RE. The details are subject to individual negotiation.

Example 7: A higher education institution in the social sciences

This higher education institution in the social sciences primarily announce tenure track positions at the level of assistant professor. Those who receive employment are guaranteed 100% of their salary for six years if they pass the first three-year period review. After six years they are either promoted to associate professor with tenure or discharged. Positions as assistant professor, associate professor, and professor without chair include teaching equivalent to four courses, but internal (primarily for assistant professors) and external financing that cover 50% of the salary make teaching equivalent to two courses. Instead, chaired professors have three courses as default and are encouraged not to have fewer than this.

Example 8: A social science faculty

This social science faculty has great freedom in how funding is used for positions such as assistant professor, but positions must be approved by the faculty; this is primarily due to financial considerations. All assistant professors at the faculty are guaranteed at least 50% research, but the departments can choose to increase the amount of research. The positions are fully financed by faculty funding, but supplementary external funding is encouraged. After promotion to associate professor,

research amounts to at least 30%. As yet, assistant professorships are relatively uncommon compared to associate professorships, partly due to the cost of a higher proportion of research in assistant professorships. However, young researchers are also recruited through national career programmes that are externally funded and thereby supplement the faculty's assistant professorships.

Example 9: A humanities department

At this department, positions are financed by the department and the faculty. The number of teaching positions at the departments is primarily based on the required amount of teaching. The position guarantees tie for research: 50% for assistant professors, 20% for associate professors and 50% for professors. The exact proportion of research for assistant professors, associate professors and professors varies at the department with the teaching duties and how much external funding is achieved. Assistant professors and associate professors who have external funding equivalent to that guaranteed in the position, no research is financed via faculty funding. All assistant professors who are promoted are then covered by the same conditions as other associate professors.

Example 10: A technology faculty

There is wide variation across the departments, as they have great freedom in how funding is used for positions. All assistant professorships generally have the same conditions, with no government research funding guaranteed for financing positions, i.e. the position is primarily externally financed. However, most have at least 20% government research funding. There are guidelines for the proportion of time that must be used for teaching, where most are set at 10–30%, which thus gives some BM-based financing. The conditions after promotion are generally the same. The departments' finances are general must be managed, and government research funding, BM contributions and external funding balanced.

Example 11: A humanities faculty

At this faculty in the humanities, the primary form of financing is ordinary government funding. There is currently no externally funded employment. However, no division can be made between BM and RE funding. Positions are now normally divided 40/60 between teaching and research.