



# Do Low-Openness, Low-Transparency Procedures in Academic Hiring Disadvantage Women?

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**Abstract:** Research has shown that low openness and low transparency in the process of recruitment of new (associate) professors put women at a systematic disadvantage. Examples include professorships awarded by direct invitation (as opposed to job calls); contexts where nominally open job calls routinely get only one applicant; and procedural rules that allow the filtering out of qualified applicants without sharing the grounds of the decision with the candidates. We investigated one decade (2007–2017) of hiring of new (associate) professors in one Faculty at the largest university in Norway, the Norwegian University of Science and Technology (NTNU) (N = 79). The Faculty is a highly gender-equal setting, in that the share of women among associate professors has been >40% for over a decade. We found (1) a high share (about 40%) of women among applicants, maintained among winners; (2) a very sporadic use of direct invitations (two in a decade) and no sign that their use advantages men; (3) no nominally ‘open’ job calls with only one applicant; (4) no disadvantage for women when the pool of applicants is small; (5) no systematic filtering out of women when low-transparency internal formal preselection procedures are used because of organizational contingencies (e.g., a high number of applicants). We found an overall high degree of openness in the selection procedure when compared to other Scandinavian and Western European studies. Contrary to our expectations (based on the relevant literature), we found no link between low openness in the selection process and gender inequality in the outcome. The latter finding must be interpreted in context. We conclude that the overall good gender balance locally is an antidote to the potential biasing effect of low-openness and low-transparency procedures, so long as such procedures are used only exceptionally, and their use is clearly tied with organizational contingencies. At the same time, we found no indication that low-openness and low-transparency procedures systematically advantage women.

**Keywords:** sociology; decision-making; academic recruitment; gender equality; organizations; work; Norway

## 1. Introduction

Traditionally, the academic career is very much men’s province. Women academics have been metaphorically described as ‘intruders’, ‘others’ and ‘laborers’ in ‘men’s emporium’, performing unacknowledged work for the benefit of male careers and subject to multiple forms of inequality across the academic life course (Angervall et al. 2015; Winslow and Davis 2016; Moratti 2018). The focus of the present study is on tenure, an essential precondition for scholarly and professional independence and to earn ‘full citizenship’ in the scientific community (Cole 1981; Adams 2006; Hohm and Shore 1998). The question of access to permanent (associate) professor positions for historically disadvantaged groups (including women) is increasingly topical, as academia internationally is seeing a proliferation of fixed-term employment and a general weakening of job security, a phenomenon known as ‘precarization’ or ‘casualization’ (Larson et al. 2014; Jessop 2018;

Wånggren 2018; Brown et al. 2010). Casualization has been shown to affect women's career progression more than men's (Bryson 2004; Ackers and Oliver 2007; Barrett and Barrett 2011; Winchester and Browning 2015). The share of women among junior and fixed-term academics has increased dramatically in the past decades; yet, the mere growth of the pool of qualified women has not led to a commensurate number of women rising to (associate) professorship (European Commission 2019; Monroe and Chiu 2010). Gender balance is not just a matter of time, it does not happen naturally: there are more complex dynamics at play (Valian 1999; D'Amico et al. 2011).

Researchers have tried to understand the root causes of gender imbalance by studying recruitments to identify gender-specific patterns. One stream of research has looked for evidence that low openness and low transparency in recruitment procedures advantage men. By 'openness' we mean that multiple qualified candidates get an actual chance to apply to and be considered for the job. By 'transparency', we refer to the fact that the grounds for the decision are shared with the applicants. This research can be framed as falling within the broader domain of the investigation of social processes of formal and informal secrecy in organizations (Costas and Grey 2014). In academia internationally, there is increasing emphasis on effectively implementing ideals of meritocratic universalism consistent with the Napoleonic maxim of 'careers open to talents'. Beyond local specificities, in most countries academic recruitment is nowadays tightly regulated by statutory laws and institutional guidelines designed to guarantee openness and transparency (Ackers and Oliver 2007; Carvalho and Santiago 2010; Frølich et al. 2018; Murgia and Poggio 2019). In most academic systems, the appointment of new (associate) professors can happen either by direct invitation of one particular candidate or through a job call. In the former case, the invitee is chosen through an internal decision-making process that is transparent only to the individuals who have taken part in it. There are no applicants; rather, one particular person is invited. This type of hiring is allowed only exceptionally and in regulations job calls are typically framed as the preferred recruitment method. When hiring happens through job calls, the vacancy is advertised and applicants are assessed by multiple committees on various grounds, mainly publications and teaching. However, there is evidence that this kind of procedure is not watertight to pressure by decision-makers who mobilize their informal networks inside the institution to secure a particular outcome. Opaque institutional preselection processes in general have been shown to systematically disadvantage women (Ledwith and Manfredi 2000; Husu 2000; Vazquez-Cupeiro and Elston 2006; Carvalho and Santiago 2010; Van den Brink et al. 2010; Nielsen 2016a).

The pioneering study by Husu (2000) on 179 appointment procedures for professorships in Finland in the late 1990s showed that women's chances of appointment increase drastically with job calls as opposed to direct invitation procedures. Later research has departed from the direct-invitation versus job-call dichotomy, to investigate the multiple ways in which nominally open job calls are in actuality only accessible to one particular person informally chosen in advance, and the role that gender can play in this process. Nielsen (2016a) investigated all appointments of new (associate) professors at one Danish university in the period 2004–2013 (N = 1007). He found that 19% of the job calls were never advertised and had on average only one applicant each. In fact, as many as 40% of all the 1007 job calls that he investigated had only one applicant, and the formal selection procedure seemed a mere ratification of an informal decision made at earlier stages. When advertised, the job calls had on average 4.6 applicants which, according to Nielsen, indicates a degree of (informal and opaque) "institutional preselection". Despite the university's increased emphasis on transparency also at the policy level, the share of nonadvertised job calls increased over time totaling about 30% of all appointments in 2009–2012. Considering the share of women in temporary senior positions at the same university, Nielsen found that women are less likely to apply than men, which again he attributed to opaque institutional preselection rather than women's choices.

Based on their analysis of 971 professorial appointment reports in the Netherlands from the period 1999–2003, Van den Brink et al. (2010) concluded that transparency regulations "remain paper tigers". In some instances, jobs were advertised following "pressure from the Dean, the University Board or the HRM (Human Resources Management) advisor" but the selection procedure was "purely cosmetic" with male candidates being more likely to win. What is more, over two-thirds of

all appointed professors were recruited through direct invitation: a procedure that according to the regulations should be reserved for “exceptional cases”. Women get appointed by direct invitation nearly as often as men do, but typically for special temporary, lower-status women’s chairs. Van den Brink et al. (2010) also found that in most faculties, women applicants to job calls have lower chances of victory than their male counterparts. We have chosen to present in greater detail the studies reviewed above, because they are among the most cited and the national and institutional contexts where they took place are relatively similar to that of our own study (set in Norway.) However, there is a wealth of methodologically diverse evidence that low-openness, low-transparency preselection processes in academic hiring disadvantage women in other contexts too, including large comparative studies carried out in multiple national and institutional settings (Murgia and Poggio 2019; Ó Náráigh 2020).

The main explanations offered in the literature for these effects are ‘homosociality’, gender bias and the mobilization of men-dominated networks (Husu 2000; Özbilgin and Healy 2004; Bozionelos 2005; Monroe et al. 2008; Treviño et al. 2015; Van den Brink et al. 2010; Roebken 2010; Van den Brink and Benschop 2012, 2014; Teelken and Deem 2013; O’Connor 2014, 2019; Fritsch 2015; Nielsen 2016a, 2016b; Howe-Walsh and Turnbull 2016; O’Hagan et al. 2016; Burkinshaw et al. 2018, Checchi et al. 2019). All three explanations stem from the fact that internationally most senior academics are male. ‘Homosociality’ means that decision-makers tend to choose people similar to themselves, not least to reproduce the proven success model. ‘Gender bias’ refers to assumptions among decision-makers on the competencies and preferences of women candidates (Ridgeway and Correll 2000, 2004; Valian 2005; Ridgeway 2009, 2011; Stewart and Valian 2018). Networks are forms of “cooperation and coalition building ... to effect or resist change” and get to decide “who is *invited to apply* for research positions, whose reputations are built, and whose visibility is promoted” (our italics) (Van den Brink et al. 2010). Decision-makers are not necessarily aware of women’s systematic disadvantage when men-dominated networks are activated (Van den Brink et al. 2010; Van den Brink and Benschop 2012, 2014; Nielsen 2016a, 2016b).

In this paper, we report the findings of a study on one decade of academic recruitment (2007–2017) in a highly gender-equal setting, whose general features are described below. Based on the international literature reviewed above, we hypothesize the existence of a relation between (degree of) openness and transparency in the recruitment procedure and gender equality in the outcome of the selection. After a discussion of the local regulations and the individuation of procedural loopholes through which homosociality, gender bias or pressure from men-dominated networks can potentially leak in, we look at frequency of use and impact of the type of procedure used on the selection outcome by gender.

## 2. Setting

Our study was carried out at one of the Faculties of the Norwegian University of Science and Technology, NTNU. With about forty thousand registered students, NTNU is the largest university in Norway. Norway is a social democracy with a strong public sector and a solid welfare concretely supporting working motherhood and caring fatherhood. It is one of the most gender-equal countries in the world according to international rankings, particularly when it comes to (access to and outcome of) education and employment (World Economic Forum 2019). In Norway, gender balance in academia (defined as “at least 40% of each gender” in each academic rank) has been an express political objective since the 1980s, and it has been concretely followed up (Nielsen 2014, 2017). The figures for gender balance in Norwegian academia seem relatively reassuring, at least compared to its EU neighbors. Table 1 below gives an impression of the gender balance nationally and locally, at NTNU and at the Faculty where we carried out our study.

In short, the setting of the present study seems reasonably gender equal if one looks at the overall figures. The share of women associate professors (with permanent positions) at the Faculty considered has been over 40% since 2004; in the past decade it has swung between 44 and 53 (Norwegian Database for Statistics in Higher Education 2020). At the same time, recent works have problematized and disconfirmed the widely accepted assumption that gender equality is already an

accomplished fact in Norwegian academia (Seierstad and Healy 2012; Bergman 2013; Husu 2015; Piñheiro et al. 2015; Rasmussen 2015). Like academia internationally and especially following relatively recent higher education governance reforms, Norway is experiencing increasing casualization of the academic workforce and a growing competition for permanent positions, with negative repercussions on gender equality (Nerdrum and Sarpebakken 2006; Frølich 2005, 2006; Vabø et al. 2014; Thun 2019; Maassen et al. 2011; Christensen et al. 2014).

**Table 1.** Gender balance figures among permanent (associate) professors. Sources: European Commission 2019; Norwegian Database for Statistics in Higher Education (DBH) 2019.

	<b>% Women Associate Professors Holding Permanent Positions (Range)</b>	<b>% Women Professors Holding Permanent Positions (Range)</b>
EU average (data for 2016)	40 (with major variations across countries)	24 (with major variations across countries)
Norway (2019)	50 (46–61)	31 (24–52)
NTNU (overall) (2019)	46 (20–77)	26 (8–41)
NTNU (Faculty studied) (2019)	54 (29–69)	41 (21–68)

The main part of the Norwegian university system is public, academics are civil servants and their recruitment is tightly regulated by civil-service employment statutes, additional legal rules specially designed for the education sector and institutional recruitment guidelines. Transparency and gender equality are at the core of such regulations (Frølich et al. 2018). In Norway, there is no tenure-track system comparable to that in the US; rather, academics work on fixed-term contracts until they are recruited as faculty via a job call or a direct invitation (Kyvik 2015; Frølich et al. 2018). Consistently with the international policy trend, Norwegian law and NTNU regulations prescribe that as a general rule, tenured chairs must be filled through job calls. The vacancy is advertised publicly, allowing all interested scholars to apply. A selection is then carried out in accordance with procedures laid down in the regulations and summarized in Figure 1 below.



**Figure 1.** The various phases in the recruitment procedure of new tenured professors via job call.

A brief description of the procedure is as follows: The ‘screening report’ filters out some of the applicants, whose candidacies do not proceed to the next stage. It is drafted by a department committee that consists of three local members. Unlike other steps in the selection procedure, the screening phase is optional. ‘Screening report’ is our translation of the original Norwegian ‘sile’, literally meaning ‘sieve’ in English. The external committee consists of three (associate) professors and it can include academics with non-Norwegian affiliations. It drafts a shortlist of candidates who are invited for an interview and trial lecture, and ranks them. The assessment is based on the candidates’ scientific production. The lecture committee involves a student and an HRM advisor, along with local faculty. It ranks candidates again based on trial lectures and interviews. With all previous reports in hand, the head of department drafts his or her own recommendation and all documentation is then forwarded to the faculty board.

This rather cumbersome procedure can take a year from advertisement to appointment, but it is not designed for speed and efficiency. The goal is allowing time for careful reflection leading to a well-pondered decision. Job call procedural rules are a system of checks and balances, designed to resist lobbying, undue pressure, manipulation and attempts to rush the decision. The candidates and their work are reviewed and tested in multiple ways by multiple people at multiple points. The procedure is designed to guarantee the involvement of various types of expertise and give voice to different stakeholders, and it typifies the evaluative culture that characterizes academics as a professional group (Lamont 2009; Bourdieu 1988).

Another equally important goal of the job call procedure is guaranteeing transparency. However, the initial list of applicants and the experts’ report by the external committee are the only documents accessible to candidates. The screening report phase stands out as a crucial passage where candidates are particularly vulnerable. Applicants are sorted into ‘not qualified’, ‘qualified’ and ‘best qualified’. Only the latter are forwarded to the external committee, meaning that ‘qualified’ candidates are not admitted into the most transparent phase of the selection procedure and this decision is made by a department committee.

Direct invitations are an option in Norway as in many other countries. According to Norwegian statutory law, they can be used “exceptionally” when there are “special reasons” to do so and the faculty board does not oppose (Law on Universities and Colleges, § 6-3). Direct invitations are intended to make room for the contingent and possibly urgent strategic needs of the organization in

recruitment decisions. According to NTNU personnel regulations, direct invitations can be used when strategic reasons make it necessary to secure a new employee rapidly; or there are compelling reasons to hire one particular person; or repeated advertising failed to attract qualified applicants. All of the above is found in many other academic systems; what is exceptional to Norway and particularly to NTNU is the possibility to resort to direct invitations as a form of affirmative action, when “*necessary* for the recruitment of *qualified* women” (NTNU personnel regulations § 3.7, our italics). “Necessary” means that other types of measures have failed to lead to a satisfactory gender balance in the staff composition, “qualified” means that competency requirements must be fulfilled. This is the last of the four scenarios when the use of direct calls becomes permissible. Considering the wealth of international research pointing to an advantage for men in direct invitation procedures, it is particularly interesting to investigate their use in a context where they can also be employed as affirmative action tools to recruit women. Direct invitations “for the recruitment of qualified women” were recently used in technology where women are heavily underrepresented. Their use has sparked controversy and supporters and opponents voiced their views (Hanger 2019a, 2019b). The use of direct invitations (as a form of affirmative action and not) and the role of screening reports are an important part of our investigation, as there is hardly any information available other than fragmentary, case-based media reports.

### 3. Materials, Methods and Research Questions

We requested from the administration access to the full documentation relevant to *all* recruitments of new permanent (associate) professors at the Faculty considered in the decade 2007–2017. Our research project was granted advance approval by the Data Protection Service at the Norwegian Centre for Research Data (NSD) on condition of maintaining strict anonymity, as we did. Once the approval was in, the administration promptly sent us digital documents organized into folders, pertaining to a total of 92 appointment procedures. We were only interested in permanent (associate) professorships of at least 0.5 FTE (full-time employment) and we excluded from our analysis 13 selection procedures that were either lectureships, temporary chairs or less than 0.5 FTE. This left us with a sample of  $N = 79$  procedures, the near-totality of which were for associate (rather than full) professorships. In Norway, one can become a full professor also through promotion; in this study, we investigated the recruitment of new faculty and not promotion. From our materials, we extracted manually information on applicants and winners. A job call usually leads to the appointment of one new full-time (associate) professor. Exceptionally, one call can lead to the appointment of two full-time (associate) professors, one or two part-time (associate) professors, or to no appointment at all.<sup>1</sup> We counted part-time (associate) professors as a fraction of 1 depending on their appointment (for example 0.5 FTE professors were counted as 0.5). In some instances, the winning candidate declined the job offer and the chair was offered to someone else. However, this is a study on decision-making so we did not focus on who eventually filled the vacancy but on who received the offer first. We coded applicants by gender. The applicants’ list contains each candidate’s gender, as stated by the applicant. The scope of our research was constrained by the features of the online application system that offers applicants only two options as presets in a drop-down menu: man (M) or woman (W). We assumed that applicants’ responses reflected their primary gender identification.

Our methodology is novel, in that we provided a working definition of ‘openness’ and ‘transparency’ (for the purposes of our investigation), identified possible loopholes in the selection procedure where the two principles can be under threat, and operationalized them by combining multiple different indicators typically not investigated together in the literature. To study the possible relation between degree of openness and transparency in recruitment and gender balance in the outcome, we posed the following research questions:

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<sup>1</sup> Exceptionally, one call can lead to the appointment of two full-time professors ( $n = 4$ ), one ( $n = 1$ ) or two ( $n = 5$ ) part-time professors, or to no appointment at all ( $n = 7$ ).

1. *Overall gender balance in recruitment.* What percentage of applicants were women? Was that percentage maintained among winners? These baseline data clarify whether women applicants were systematically excluded in the selection procedure.
2. *Use of direct invitations and outcome by gender.* How often were direct invitations used and did their use systematically advantage men? Who was appointed and on which grounds? Conversely, were direct invitations ever used as affirmative action tools?
3. *One-applicant 'open' job calls and outcome by gender.* How often were nominally open job calls in fact used as direct invitations, attracting only one applicant? What was the gender balance in the outcome?
4. *Size of the applicants' pool and outcome by gender.* How many applicants were there per position, on average? Do men have an advantage when the pool of applicants is smaller?
5. *Preselection by means of screening and filtering-out by gender.* How often was the screening preselection used (and not)? Did its use systematically lead to filtering out women applicants?

#### 4. Statistics

We conducted descriptive and inferential statistics on the dataset. In particular, to answer question number 4 we calculated linear correlations using Pearson's coefficient and ran generalized linear models (GLM) using the same predictors (number of men and women applicants) and dependent variables (jobs offered to men and women). As explained under Section 3 above, some job offers were for part-time appointments and we coded them accordingly, as fractions of 1. Therefore, not all our dependent variable values were 0 or 1, meaning that logistic regression could not be applied: we performed linear regression (GLM) instead. To answer question number 5, we conducted a chi-square test between two variables: gender of candidates and selection process stage (applicants and filtered-in candidates). In addition, in order to determine whether the number of positions offered to women (or to men) decreases when a screening committee is in place, we ran two separate Wilcoxon rank sum tests comparing the total number of job offers to women without filter and with filter, and the same comparison for men (unpaired samples in both cases) Along with test statistics, *p*-values are reported in each case, assuming 0.05 as a standard significance threshold.

#### 5. Results

Direct invitations were hardly ever used. Tenured professorial hirings in the decade 2007–2017 were heavily skewed in favor of (open) job calls. There were 77 job calls and only two direct invitations. This is consistent with statutory and institutional regulations, that prescribe a systematic preference for job calls. A thorough reading of the documentation pertaining to the two direct invitations shows that the sole arguments used were the scientific achievements and expertise of the two candidates, who were women. The question of gender was nowhere raised, even though one of the direct invitations took place at a department where over 80% of the tenured associate professors were men. One of the direct invitations was an associate professorship, awarded to a fixed-term researcher to secure the continuation of an interinstitutional collaboration she was involved in. The other spot had initially been advertised through a job call, but none of the (two) applicants met the required scientific standards and there were teaching and coordination tasks connected with institutional reorganization that needed to be attended to urgently, so the selection procedure was closed without hiring and another scholar was hired via a direct invitation instead. In a nutshell, while the two appointees by direct invitation happened to be women, the circumstances of their appointment and the arguments used in the reports lead us to conclude that gender was not part of the considerations made.

Our 77 (open) job calls attracted 1009 applicants, about 41% of whom were women ( $n = 419$ ). Looking at the overall patterns in the Faculty considered, scarcity of women applicants does not seem to be an issue. The 77 calls lead to a total of 73.7 job offers; about 46% of these were to women ( $n = 34$ ). (We remind the reader that the total of job offers is not an integer number because we retained part-time job offers of at least 0.5 FTE.) The percentage of women among applicants is roughly

maintained among winners, indicating that there is no bottleneck holding women back in the selection procedure.

Each job call attracted about 13 applications on average (13.1, to be exact). Most calls had between 4 and 23 applicants approximately ( $SD = 9.8$ ). None of our calls had only one applicant. The call with the most applicants had 61, the call with the least applicants had 2. We chose to look into the cases with only two applicants, even though the literature on openness in academic recruitment and gender equality usually pays attention only to one-applicant procedures. There were in total three procedures in a decade with only two applicants (all other job calls attracted at least four candidates). A closer analysis of the two-applicant calls shows the following: In one case, none of the two applicants met the required scientific standards and the hiring was transformed into a direct invitation (this is the case described above). The remaining two cases ended with the victory of a woman (in both cases the two applicants were women).

A smaller pool of candidates could reasonably be linked with a lower degree of openness; and according to the international literature low openness disadvantages women. However, we found that the size of the applicants' pool does not affect gender balance in the selection outcome. The total number of applicants does not predict the number of job offers to either women (Pearson's correlation coefficient:  $r = 0.05$ ,  $p = 0.69$ ; GLM:  $\beta = 0.00005$ ,  $df = [75]$ ,  $t = 0.005$ ,  $p = 0.1$ ) or men (Pearson's correlation coefficient:  $r = 0.10$ ,  $p = 0.34$ ; GLM:  $\beta = 0.0066$ ,  $df = [75]$ ,  $t = 0.484$ ,  $p = 0.63$ ). This means that women do not have better chances of getting the job as the pool of candidates grows (and neither do men). Men do not have better chances as the pool of candidates shrinks (and neither do women).

The use of screening was documented in 22 job call procedures out of our total of 77 (28.6%); all after mid-2014. This reflects the surge in the average number of applicants per position. We split our sample into two subsets: cases where screening was used, and cases where it was not. In the former subset, there were on average 20 applicants per call; in the latter only 10. The percentage of women applicants was around 40% for both subsets. The data reported in Table 2 below clearly show that the use of screening did not lead to a systematic filtering out of women applicants. Among applicants, there were 40.83% of women and 59.17% of men; similarly, among filtered-in candidates, there were 38.31% of women and 61.69% of men. Although this may appear to be a (small) difference, it is not statistically robust. We conducted a chi-square test on two variables: gender of candidates and stage of the selection process (applicants or filtered-in candidates). We found no relation between these two variables ( $\chi^2 = 0.04831$ ,  $df = [1]$ ,  $p = 0.83$ ), suggesting that roughly the same proportions of women apply and are filtered in: the filtering procedure does not advantage or disadvantage women.

**Table 2.** Comparison between procedures when screening ('sile') was and was not used.

	When Screening Used	When Screening Not Used
Nr. of applicants (nr. of job calls)	$n = 436$ (22)	$n = 573$ (55)
Average nr. applicants/position (range)	$n = 19.82$ (4–61, $SD$ 13.7)	$n = 10.2$ (2–32, $SD$ 6)
Women applicants	$n = 178$ (40.83%)	$n = 241$ (42%)
Women filtered in	$n = 59$ (38.31%)	no filtering

Another approach may be to ask whether the presence of a filter makes a difference for women's chances of being offered a position. Mindful of differences in size between the two samples (with and without filter), one can compare the total women offered without filter and with filter: here, we found no difference (Wilcoxon rank sum test for unpaired samples,  $W = 628$ ,  $p = 0.77$ ), but the same applied to the total of men offered without filter and with filter ( $W = 488$ ,  $p = 0.14$ ). On average, the number of positions offered to women do not decrease when filtering is in place, nor does the number change for men.



Generally, our results do not support the contention that lower openness and low transparency are necessarily vectors of gender inequality. At the same time, low openness and low transparency do not seem to advantage women either. We will address these questions in the Discussion section below.

## 6. Discussion

Our findings show that recruitment regulations are implemented, in that the use of direct invitations is very exceptional and clearly tied with organizational contingencies. We found only two such appointments in one decade. Contrary to other Scandinavian studies reviewed above and (Husu 2000; Nielsen 2016a, 2016b), we found no sign of a large-scale use of direct invitations or of a systematic advantage for men in such procedures. In the two cases we reported the job offers went to women; however, they were *not* framed as affirmative action even though one of them took place in a heavily men-dominated department. From our material we can safely conclude that the very sporadic use of direct invitation procedures had hardly any impact on the current gender balance among tenured staff at the Faculty studied. Moreover, we did not find any nominally 'open' job call with only one applicant. Again, this finding sets out study apart from other works that demonstrate how nominally open procedures can be in fact manipulated and used as if they were direct invitations, to the advantage of men (Nielsen 2016a; Van den Brink et al. 2010; Van den Brink and Benschop 2012, 2014). We found three calls with only two applicants, and they all resulted in the victory of a woman (all other calls had at least four applicants). While it is difficult to generalize from our relatively small sample, we can conclude that there is no discernible pattern of gender-based disadvantage linked to one- or two-applicants job calls.

We found on average 13.1 applicants per job call. By European standards, this is not a very small pool (Van den Brink et al. 2010). In his study, Nielsen (2016a, 2016b) found an average of just 4.6 applicants per job call and interpreted that as pointing to some degree of covert institutional preselection of candidates. We submit that 13 applicants is not so small a pool as to indicate the existence of covert preselection. We do not claim that it can be interpreted as proof of openness either: we do not think that any particular number of applicants can *in itself* be evidence of openness in the selection procedure. More importantly for the purpose of this study, the selection mechanism does not disproportionately expel women. About 40% of applicants were women and that percentage was roughly maintained among winners, which indicates that there was no systematic filtering-out of women applicants. These considerations also apply to cases where the screening filter was used, as the percentages are the same: screening did not introduce gender inequality. What is more, smaller pools of applicants do not necessarily put women at a disadvantage. In our sample, some calls attracted many more candidates than others: the number of applicants ranged between 2 and 61, and the size of the pool of applicants had no effect on women's chances to win.

The above findings point to an overall high degree of openness in the selection procedure compared to other Scandinavian and Western European studies. Contrary to our expectations and to the findings in most of the relevant literature, we found no link between the use of low-openness and low-transparency procedures and gender inequality in the outcome. The latter finding must be interpreted in context. The overall gender balance among tenured associate professors already employed at the Faculty considered is good, *and* our study shows that the use of low-openness and low-transparency procedures is exceptional. We conclude that the overall good gender balance locally together with the overall high degree of openness and transparency of the recruitment system function as antidotes to the potential gender-biasing effect of low-openness and low-transparency procedures, *so long as such procedures are used only exceptionally* and are clearly tied with organizational contingencies. Our findings complement the findings from well-known studies that show clear patterns of disadvantage for women in recruitment systems with overall lower degrees of openness and transparency (Van den Brink et al. 2010, Van den Brink and Benschop 2012, 2014; Nielsen 2016a, 2016b).

The results of our study can offer indications for policy and (future) research. It is important to constantly monitor (also through research) the implementation of regulations that prescribe openness

and transparency in recruitment (and confine the use of low-openness, low-transparency procedures to exceptional circumstances clearly tied with organizational contingencies.) To protect gender equality, the recruitment system should remain overall highly open and highly transparent and deviations should be exceptional, clearly justified and adequately recorded. As long as low-openness, low-transparency procedures remain exceptions, they are probably not detrimental to the chances of women scholars. Of equal importance is keeping track of the overall gender balance in the selection procedure, and not only among scholars already employed at the institution. If the share of women among applicants is not reflected in the selection outcome, that warrants investigation particularly if gender-specific bottlenecks appear only when low-openness, low-transparency procedures are used.

We acknowledge that our study has limitations, and we list six. Most importantly, we only investigated *gender equity*: we did not explore other types of inequalities in the selection system. Second, we undertook the study under a strong commitment to preserve anonymity which prevented us from offering detailed accounts of decision-making steps and reports. Relatedly, we did not attempt to override the committees' decisions and to identify the most deserving candidate to each job, because scholarly judgment cannot replace the assessment by several committees, based on multiple criteria and involving extended discussions over time; such a comparison would also introduce undesirable normative elements into an empirical and descriptive study. Fourth, in our study, gender equity is framed as a question of gender balance: we focus on the share of women among new (associate) professors. However, the issue of gender equity reaches far beyond mere numbers. It encompasses job satisfaction, relational climate at work and numerous other social and cultural factors that we did not investigate in our study. Fifth, we only examined the hirings that took place in the decade 2007–2017. We have no insight into recruitment procedures advertised before 2007 or closed after 2017. We regard a recruitment procedure as 'closed' when the administration sends a formal job offer to the winning candidate. Finally, our study is based on the assumption that the information we received is complete and the record-keeping is accurate, in particular with regard to the transition from fixed-term to permanent employment for people already employed at the institution.

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