The balance between status quo and change when minorities try to access top ranks. A tale about women achieving professorship

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SUMMARY OF REVIEWERS' COMMENTS AND REVISIONS - Manuscript GM-04-2022-0141

	REVIEWER 1	REVIEWER 2	REVIEWER 3	ANSWERS AND SUMMARY OF EDITS
1. **Originality:** Does the paper contain new and significant information adequate to justify publication?	The authors argue that their findings are unique in that they show how it is intergroup dynamics (i.e. how much pressure associate women professors put on effecting change at the full professor level) that is most important. As a theorist, as opposed to a quantitative scholar, I'm not able to comment on their statistical data. But, anecdotally, their findings make totally sense to me.	The paper does contain new and significant information that justifies its publication. It explores gendered implications of the majority (mostly men full professors) when under pressure to change.	Yes, the paper contains new and significant information to justify publication, specifically the integration of both individual and structural (critical mass and competition theories) factors to examine gender inequality in academic promotions in Italy.	Thank you to the reviews for their time and their comments. All the comments were considered. A summary is reported below. In the new version of the paper, all the amends are highlighted in yellow (except the amends related to proofreading – this to improve readability of the document).
2. **Relationship to Literature:** Does the paper demonstrate an adequate understanding of the relevant literature in the field and cite an appropriate range of literature sources? Is any significant work ignored? How does this paper further the continuing debate of this area in the Journal?	Good lit review but there could have been more focus on more critical feminist scholarship, and less on the work of people like Kanter whose research is quite dated now. Similarly, some of the other scholarship seemed a little dated.	The authors have included a good deal of relevant literature. However, some key references are missing. These findings could be better contextualised. In particular, the paper could benefit from examining Ryan and Haslam's work on the glass cliff - the notion that women are promoted to leadership positions during times of crisis or duress, or during a recession when the chance of failure is more likely. Thus, these women are set up for failure. Men only make concessions for greater representation of women when there is external pressure to do so (and they are likely to revert to the status quo once women have sorted out the financial/hr mess that these men have created). The paper could also reference van den Brink's research that demonstrated the powerful role of male professors as academic gatekeepers.	Yes, the literature cited is appropriate in both relevance and scope. The contribution of this paper is in both: 1) the uniqueness and comprehensiveness of the data set-- extensive data on ALL promotions from associate to full in Italian universities from 2013 to 2017 and 2) the use of individual and intergroup /structural factors to explain gender disparities in academic promotion. Additionally, the findings may provide insight into WHY (in spite on focus on gender discrimination in academia) gender disparities are slow to change, resulting in continued gender discrimination.	Comments on this point were especially useful. When writing the literature review section, we aimed at discussing a broad range of contributions, starting from the roots of some key approaches (e.g. critical mass, competition theory, social identity). In the new version of the paper, some new and recent references have been added, and all the works suggested by reviewers 1 and 2 have been included. In particular: ▪ Ryan and Haslam's work on the glass cliff is now cited in the introduction already, and then discussed in the section on critical mass. Table1 was amended accordingly. In the case of the Italian academic system, the risk of phenomena such as the glass cliff is minimised, and this is explained in the introduction (the system is centralised, publicly funded, and all academics have civil servant status – a reference was added for readers wanting to go deeper into this). It is also important to stress that our dataset does not allow checking for the specific contextual

		p. 4 The paper makes a useful comment about academia being a conservative environment where women struggle to find legitimacy, even when gender equality is apparently supported (see also B. Bonisch-Brednich and K. White, 2021, Whatever happened to gender equality in Australian and New Zealand Universities? in O'Connor and White, Gender, Power and Higher Education in a Globalised World). p. 6 notes that "achieving a full professorship means accessing a position of prestige and power". It is also a prerequisite for an academic leadership position (see Bagilhole and White, 2011, Gender, Power and Management). p. 12. This discussion could benefit from referencing Burkinshaw, 2015, Higher Education. Leadership and Women Vice-Chancellors (Palgrave). p.14 There is mention of why change is so slow that could usefully reference O'Connor, P. and White, K. (eds.) (2021), Gender and Power in Higher Education in a Globalised World (Palgrave: Basingstoke). p. 24 It is asserted that promotions are more likely to happen when, within institutions, the full professor rank is men dominated, and the associate professor rank is women-		conditions around academic promotions (this was added in the section about the limits and future directions). ▪ The work by Van den Brink and Benschop on gatekeeping is now referred to in the introduction and in the discussion. ▪ To answer Reviewer 1, in the section on critical mass, a final paragraph was added with contribution from feminist scholars who take a more critical approach and argue for better considering the (negative) impact of the wider neoliberal context on equality in academia. ▪ References to Bonisch-Brednich & White (2021), Bagilhole & White (2011), O'Connor & White (2021) and Burkinshaw (2015) have been added as suggested by reviewer 2. ▪ What is more, to better clarify the characteristics of the national context, some very recent literature focused on Italy has been added in the section on the academic career system in Italy (section 3). ▪ Finally, the sentence at page 24 about the likelihood of promotions, was amended to make it clearer.

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		dominated. This is an interesting finding but it is not clear how the authors arrived at the conclusion and it requires more explanation. p. 26. usefully talks about the pressure of a minority group which creates more opportunities for accessing top positions; this could be linked to Ryan and Haslam's work.		
3. **Methodology**: Is the paper's argument built on an appropriate base of theory, concepts, or other ideas? Has the research or equivalent intellectual work on which the paper is based been well designed? Are the methods employed appropriate?	I cannot comment on methods because I am not a quantitative scholar. But I do think the way that they bring together diverse theoretical approaches is novel. I found this the weakest part of the paper in the sense that I didn't understand what they said they were doing. More revision necessary here so that a lay person can understand. As well sometimes the authors made claims but did not go into any detail. Here's one sentence on p. 14 "Experimental conditions and student samples might not be able to reflect the complexity of everyday organizational life, particularly when power and politics are at stake". Probably so, but what is meant here by power and politics? These are important concepts that are not discussed in relation to the lit. or as it relates to the org. that was the site of the study. More explication would help.	I do not have specific expertise in the methodology used. Hopefully, the other reviewer will comment on whether or not it is appropriate.	Yes, the theoretical unpinning is based on well-established theories and the methodology is both sound and appropriate.	The sentence on experimental conditions has been amended.

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4. **Results**: Are results presented clearly and analysed appropriately? Do the conclusions adequately tie together the other elements of the paper?: The results are presented clearly.	I thought the discussion was interesting, and clear.	The results are clearly presented	Although the findings were not supported by one of the models tested, the overall approach and results are compelling enough to merit publication.	Thank you for these comments about results and implications. It is true one model does not fit. We keep this to highlight that group dynamics is not a tentative shot, and to demonstrate which group dynamic does matter. We will also consider these comments to orient future research and publications.
5. **Implications for research, practice and/or society**: Does the paper identify clearly any implications for research, practice and/or society? Does the paper bridge the gap between theory and practice? How can the research be used in practice (economic and commercial impact), in teaching, to influence public policy, in research (contributing to the body of knowledge)? What is the impact upon society (influencing public attitudes, affecting quality of life)? Are these implications consistent with the findings and conclusions of the paper?	They seem to be forging a new path, so that there is potential here for intercultural work. It would be fascinating to see how their findings compared to other countries. As well, this research called out for a mixed methods approach in that it would have been fascinating to see whether talking to individuals could offer greater insight into their theoretical assumptions and conclusions.	The implications are consistent with the findings and conclusion of the paper.	Yes, implications for both further research and practice are clearly identified. The paper helps bridge the gap between theory and practice by using relevant theories from related disciplines and combining them to craft a unique approach to trying to tease out the why behind continued gender discrimination. It also offers some insight into how change (elimination of gender discrimination) might occur.	

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6. **Quality of Communication:** Does the paper clearly express its case, measured against the technical language of the field and the expected knowledge of the journal's readership? Has attention been paid to the clarity of expression and readability, such as sentence structure, jargon use, acronyms, etc.	For the most part, this was a good read. That said, there were lots of mini-errors and, as stated above, for a person not schooled in statistics it was hard work to comprehend some of the explanation. So I would call for a much greater attention to detail in regards to editing, and greater thought given to how non-specialists can comprehend. Some errors (but by no means all) as follows: More care with definite article needed. P. 7 ideal academic requires "an" to make sense. Go through paper and check other places. On various occasions, authors used "this" when they meant "thus." See p. 9, l. 39 for example. P. 12 founding support should read finding support On page 14, the authors state "This paper proposes to combine social identity and competition theory to look at how intergroup dynamics affect gender discrimination in career progression." Maybe this had been made clear at the start, but if so, remind the reader as it seems late for such an important comment. p. 19 What is a "dichotomous variable" Explain terms for readers. p. 21. This page needs rewriting for	Given that English is not the first language of the authors, the paper requires editing.	Overall, the paper has good clarity. There was a bit of clarity lacking due to the authors not being native English speakers, However, the paper was still understandable. The structure of the paper was solid and well-organized. I commend the author(s) on a very interesting read. I appreciated the use of both individual and intergroup factors in the analysis of the data. The unique and relatively comprehensive nature of the data set (as well as the inherent homogeneity of the population) also contributed to the value of the research and findings. I would like to see further research/analysis of the data using multivariate data analysis techniques to further reveal what other findings might be extracted from the dataset.	Professional proofreading was carried out, and the issues pointed out by the reviewers have been hopefully solved. We clarified the point on dichotomous variables.

	clarity. NB Model# are squished together. p. 28 I did not understand this sentence. "Via granting more promotions, majorities assure to perpetrate some enduring discrimination towards minority members, slowing down the actual process of change			

The balance between status quo and change when minorities try to access top ranks: A tale about women achieving professorship

Purpose: Vertical gender segregation persists even in fields where women are well represented at junior levels. Academia is an example. Individual performance and lack of a critical mass do not fully explain the problem. Thus, this paper adopted an intergroup perspective (i.e., social identity and competition theories) to study how a majority (i.e., men) can influence the advancement of a minority (i.e., women).

Design/methodology/approach: The paper investigated promotions from associate to full professor in Italy. The original dataset included all promotions from 2013 to 2016. To study intergroup dynamics, individual-level variables were analysed together with structural factors, such as gender representation and availability of resources.

Findings: The effect of gender representation was significant in that promotions were more likely when full professor ranks within academic institutions were men-dominated, and associate professor ranks were women-dominated. Concurrently, the analysis of individual-

level variables supported the existence of discrimination against women. The paper argues that the majority grants more promotions under the pressure of change; however, this does not contrast discrimination at the individual level.

Originality: This study explored gender segregation from a new perspective, highlighting the importance of the interplay between individual and structural factors. This interplay might be one of the causes of the slow progress of gender equality.

Research limitations/implications: The paper focused only on one country. However, the framework can be applied in other contexts and used to study segregation based on factors other than gender.

1. Introduction

Vertical segregation in academia is a global issue (Le Feuvre *et al.*, 2019, Sümer, 2020). The proportion of women in academia tends to decrease progressively with the career levels across all disciplines; this is known as the *leaky pipeline* (EC, 2019). It is also referred to as the *glass ceiling* (Cook and Glass, 2014) and the *glass cliff* (Peterson, 2016, Ryan and Haslam, 2005), which indicate the existence of a hostile environment for women (Broadbridge and Mavin, 2016). Women's representation on the corporate boards and CEO positions in non-academic organisations is an example.

Interestingly, while these metaphors highlight the role of structural issues, a considerable amount of literature on vertical segregation has focused on the individual level of analysis. This also applies to the literature on women's academic careers. Academia is considered highly gendered (Gupta, 2020, Wieners and Weber, 2020), negatively affecting women's careers, especially when considering progression from associate to full professor (Winslow and Davis, 2016). Two individual factors have received considerable attention: scientific productivity and family commitment (often culturally assumed as women's work). However, women are less likely to obtain tenure and promotions even when controlling for productivity. This effect was found in several countries, including the US (Treviño *et al.*, 2018, Weisshaar, 2017), Canada

(Wijesingha and Robson, 2022), Germany (Mayer and Rathmann, 2018), Sweden (Danell and Hjerm, 2013), Iceland (Heijstra *et al.*, 2015), Japan (Takahashi and Takahashi, 2015), and Italy (De Paola *et al.*, 2018, Filandri and Pasqua, 2021). Lutter and Schröder's (2016) study in the field of sociology in Germany was an exception, reporting positive discrimination against women. Regarding family commitments, literature has reported mixed results. One's family condition was a significant factor affecting promotion in the studies by Takahashi and Takahashi (2015) and Fox and Xiao (2013) but not in others (Hesli *et al.*, 2012, Heijstra *et al.*, 2015). Distinct institutional characteristics may have possibly influenced these differences.

Most literature incorporating structural factors (i.e., factors beyond individuals' direct agency) has examined the effects of institutional policies and practices on women's careers and explored the broader effects of academic and disciplinary cultures (Fagan and Teasdale, 2020, Berheide and Walzer, 2014, Howe-Walsh and Turnbull, 2016). These findings showed that academia is a conservative environment where women struggle to find legitimacy, even when gender equality is supported (O'Connor, 2020, Bönisch-Brednich and White, 2021, Moratti, 2021, Cohen *et al.*, 2021). Often, neither an increase in the proportion of women (Helitzer *et al.*, 2017) nor the presence of gender equality initiatives (Tzanakou and Pearce, 2019, Roos *et al.*, 2020) is enough to change these deeply-ingrained power dynamics.

The predominance of literature assuming that individual characteristics can explain vertical segregation in academia and the paucity of studies considering both individual and structural factors limit our understanding of the underrepresentation of women professors (de Vries and van den Brink, 2016, Hüther and Kirchner, 2018). Thus, this article considers individual and structural factors affecting promotion, proposing combining *social identity* and *competition* theory. Individual factors include measures of scientific performance, among others. Structural factors include gender representation (e.g., percentage of women in a given institution or discipline) at both associate and full professorship levels and the availability of resources. This article suggests that this combination allows us to understand the role of intergroup dynamics, which tends to be neglected in research focusing on academic promotions. Ultimately, this should clarify the slow progress of gender equality, particularly in academia (O'Connor and White, 2021, Teelken *et al.*, 2021).

Social identity theory (Tajfel, 1974, Tajfel, 1978) and competition theory (Blalock, 1967) stress the importance of intergroup dynamics in processes of social ascension. Both theories look at dynamics between *majority* and *minority*, defined in terms of status differentials. The majority might also be called "established" and minority "parvenu," especially when expectations of social ascension are attributed to the minority and a defensive and resistant stance to the

majority. The two theories are often used to study relationships across ethnic groups. According to Hüther and Kirchner (2018), they are also especially suitable for studying gender dynamics. Adopting these middle-range theories for this topic is suitable and innovative *per se*. Academic women's career aspirations represent a quest for change, ultimately affecting the interplay between the majority (men full professors) and minority (women associate professors) and the consequent distribution of power. It is worth emphasizing that a full professorship allows access to strategic decision-making processes and senior leadership positions (Bagilhole and White, 2011). Additionally, research has demonstrated that full professors often act as gatekeepers, controlling whom they promote (van den Brink and Benschop, 2014, Wroblewski, 2014, Fisher and Kinsey, 2014).

Drawing on social identity and competition theories, this article aims to clarify whether intergroup dynamics are more important than individual factors in women aspiring to professorship. The study focuses on the entire population of associate and full professors in Italy, viewing gender from an intergroup perspective (the Italian academic system has a relatively homogenous population in terms of ethnicity and nationality). Moreover, phenomena such as the glass cliff are reduced in an academic system like the Italian one because it is

centralized and publicly funded, characterized by low stratification and civil servant status of academic staff (Pezzoni *et al.*, 2012).

The contribution of this article is manifold. From a theoretical perspective, it combines social identity and competition theories to investigate gender and promotion patterns. Furthermore, by understanding gender and promotion processes as a dynamic between majority and minority, this article offers a new viewpoint to the study of gender and careers. A wider contribution of this study is that it can offer possible explanations for slow career movement in any top-rank profession when looking at aggregated terms, depending not only on gender but also on social standing (e.g., ethnicity, nationality, social class).

2. Gender differences in promotions: Theoretical perspectives

Gender differences in career progression in academia have been investigated for a long time (Kalleberg and Reskin, 1995). Nevertheless, the debate about the factors driving these differences (and the consequent debate on how to address them) continues. Acker's (1990, 2006) claim that organisational cultures are gendered has been generally accepted. Our daily practices and routines reproduce a gendered order, where gender is so pervasive that it becomes invisible (Gherardi and Poggio, 2001, O'Connor *et al.*, 2017, van den Brink and Benschop, 2012). This helps explain women's slow progress despite gender equality initiatives (Roos *et al.*, 2020).

Following Acker (1990), it has been argued that the image of the ideal academic is highly gendered, even in the disciplines where women are well-represented (Bleijenbergh *et al.*, 2013, Cohen *et al.*, 2021). Gendered organisations are an unfriendly environment for anyone not fitting the image of the ideal white male worker, thus conveying resistance to structural changes (O'Connor, 2020).

2.1 Critical mass: Change the numbers to change cultures

Kanter (1977) argued that a certain proportion of women at each level of an organisation should encourage the change in organisational culture. When women find themselves in a highly skewed group (>15%), they experience a difficult work climate and are under extra pressure to perform. Women promoted to top positions might often find themselves in the role of "tokens," representing the highly visible minority. Consequently, their actions are carefully scrutinized, putting more pressure on them. Kanter argued that this situation could be tackled by increasing the proportion of women, reaching at least the 35% threshold. Kanter's (1977) arguments are referred to as a "critical mass" approach. Literature built on this approach stressed that gender imbalance creates a hostile environment because women are expected to fit into the (masculine) organisational culture. Nielsen and Madsen (2019) showed that today women still find themselves in token positions, which has detrimental effects on women's career aspirations.

Critical mass has widely influenced the academic literature and the wider debate on gender quotas (Terjesen and Sealy, 2016). It is often accompanied by the assumption that people tend to help those similar to them (e.g., women supporting other women) and that increased exchanges between members of different groups will cause people to be more open to others. Consistent with Kanter's (1977) arguments, some research has shown that women are more likely to access senior positions when they are well-represented in their organisation (Dreher, 2003, Skaggs *et al.*, 2012), including in academia (Chevreul *et al.*, 2018). It is argued that the presence of women in professorial or board roles makes universities less gendered (Mazzotta et al., 2020) and that such presence widens the scope of the criteria for promotion (Crawford *et al.*, 2012).

Following the critical mass theory, a gender balance in promotion committees is recommended. The existing literature has looked at how such a balance affects the advancement of women in academia. However, the findings are mixed. Some literature has found that the presence of women on appointment committees (De Paola and Scoppa, 2015) and university boards (Mazzotta et al., 2020) is beneficial. Others have revealed that having more women on the selection committee might even decrease women's promotion (Bagues et al., 2017).

Additionally, the presence of a work environment characterized by a balanced representation might even increase stereotyping and subtle discrimination (Bobbitt-Zeher, 2011, Jones *et al.*, 2017). Studies that stress the persistent underrepresentation of women at top levels even when women are massively represented at lower levels have questioned the critical mass theory. This situation has been widely documented in academic medicine (Cervia and Biancheri, 2018, Richter et al., 2020). Helitzer et al. (2017) also did not find support for the critical mass approach, leading them to conclude that "critical actors" are much more important than critical mass in the case of academia. The literature building on the concept of glass cliff (Ryan et al., 2016) has also questioned the critical mass approach, showing that women are often appointed to precarious leadership positions, even in the case of academia (Peterson, 2016). This means that the mere presence of women on boards is not necessarily a sign of any advancement in equality. Finally, the neoliberal and managerial trends characterizing academia hinder progress toward equality (Teelken and Deem, 2013, O' Hagan *et al.*, 2016, Lund, 2020, Morley, 2018); thus, the focus on the achievement of a critical mass is limited.

2.2 The intergroup perspective

Yoder (1991) explained the risk of a sole focus on numbers and highlighted that the critical mass approach had focused primarily on individual-level issues, ignoring structural and

intergroup issues regarding workplace discrimination. Such a misbalance has led to a conflation of numerical representativeness by gender status, which is a different phenomenon. Yoder cited Blalock's (1967) competition theory to argue that the increase in the representation of women might even increase discrimination against them. Blalock (1967) developed the competition theory when studying relationships between Whites and Blacks in the US, claiming that a high-status group (majority), when feeling threatened by the increasing number and status of the lower-status group (minority), tends to become more supportive of the ingroup and more discriminatory towards the outgroup. The resources at stake (political or economic ones) affect these dynamics between minority and majority. In the case of political resources, an increase in the status of the minority might bring about increased discrimination by the majority.

Competition theory helps explain contradictory findings, especially how an increase in the number and status of the minority might not necessarily benefit the minority in the short term (Allmendinger and Hackman, 1995, Tsui et al., 1992). For example, Tolbert et al. (1995) found that an increase in the number of women faculty was associated with an increased turnover of women (but not men). Following the competition theory, the authors explained that a hostile environment emerging from the different balance between high (men) and low (women) status groups might contribute to the high turnover of women. Hüther and Kirchner (2018) studied

the effect of the proportion of women full professors on the advancement of women in Germany, supporting the competition theory. They found that the number of women appointed as full professors progressed slower than expected after reaching the 25% threshold (while critical mass would argue for a quicker progression).

Social identity theory also helps us understand why an increased proportion of women might enhance ingroup solidarity (i.e., the male majority) and why this intensifies problems in the outgroup (i.e., the female minority). Tajfel (1974) argued that individuals want to develop a positive social identity, and social identity becomes salient in conditions of instability or illegitimacy. The motivation to attain a positive social identity varies by group and depends on status: social identity might become more salient for minorities since they are in a less privileged position. Individuals from a low-status group might use two strategies to increase their status: distancing themselves from their original ingroup or using social creativity by redefining the factors of comparison between the groups. Thus, the social identity theory helps explain conditions under which individuals act in favour of the ingroup (or the outgroup). For example, the "queen bee" phenomenon happens because individuals in low-status groups wish to distance themselves from their original ingroup to increase their status (Duguid *et al.*, 2012).

The degree of perceived legitimacy and stability of a group also affects group dynamics. When perceived as low in legitimacy and stability, a majority group might face greater pressures for change. Consequently, the majority may become more discriminatory towards the outgroup. Importantly, perceived legitimacy always depends on the kind of majority and minority groups being considered: therefore, some minority groups might struggle more than other minorities in some conditions. For example, a recent review showed that black women might struggle more than white women when they find themselves in the token role (Watkins et al., 2019). Some empirical studies in the private sector provide clear support for social identity theory (Markoczy et al., 2020), showing that the male majority, worried about preserving their status, might coalesce to marginalize the minority (Huang et al., 2020) and that women are usually conferred with less status (Markóczy et al., 2021). In the case of academia, research has demonstrated that leadership cultures are highly gendered and tend to reproduce male power structures (Burkinshaw, 2015, Burkinshaw and White, 2017).

2.3 The novelty of conjoint use of individual and group level

This paper proposes combining social identity and competition theory to examine the effect of intergroup dynamics on gender discrimination in career progression. Thus, it goes beyond the analysis of the effect of social similarity on career progression (Huang et al., 2020). Social

identity and competition theory have potential limitations when applied to the study of career progression. Social identity was developed mainly through experiments, sometimes involving student samples. Experimental conditions and student samples might not be able to reflect the complexity of everyday organisational life, particularly when referring to access to prestigious positions. Competition theory was developed to explain interracial relations, which might present different patterns compared to gender. Table 1 below compares the theoretical approaches, their main claims, background assumptions, evidence, and limits. Notably, compared to critical mass, social identity and competition theory provide a more nuanced understanding of the processes that characterize changes in the number and status of a group: they shift the focus from the individual to the institutional structures and cultures when studying the gender gap. This shift is necessary to understand why change is so slow. Thus, this paper simultaneously investigated structural (e.g., gender representation) and individual level (e.g., scientific productivity) factors to understand whether and how intergroup dynamics explain a slow advancement of women to top ranks in academia even in disciplines where they are well represented.

[TABLE 1 AROUND HERE]

2.4 Hypothesis development

This paper operationalized the above observations from the literature in the following way.

1) In academia, men represent the majority (the *ingroup*, following social identity theory). Women represent the minority (the *outgroup*), struggling for legitimacy and asking for change.

2) Academic promotions from associate to full professor more often occur when pressure for change (change in the majority and minority groups' composition) is high: this happens when there is a remarkable imbalance in the two academic ranks (i.e., high proportion of women at associate professor level and high proportion of men at academic level).

3) Such imbalance in ranks is measured at a disciplinary level as well as at an institutional level. The disciplinary level is paramount given the importance of disciplinary cultures. The institutional level is also vital, given that this is where financial resources are distributed, as explained in the following section.

3 The academic career system in Italy

The current system regulating academic careers in Italy was introduced in 2012 based on two steps. First, academics apply to the 'abilitazione scientifica nazionale' (ASN), a national evaluation process awarding a fit-for-the-role qualification. ASN is conducted by committees from specific disciplines (*settore scientifico concorsuale*, referred to as "SSC" in the variables

listed in Table 3). There are 184 committee disciplines grouped in 14 areas (see Table 2). Second, academics who successfully complete the ASN can apply for recruitment or promotion that universities advertise. ASN is only a qualification process, ensuring that some minimal essential criteria, especially concerning publications, are satisfied (Marzolla, 2016). The proportion of academics achieving the ASN usually outnumbers those getting a position mainly because of a shortage of funding. Institutional mobility is low in Italy, and typically academics apply to full professorship in the university where they already hold a position.

Each university has the autonomy to appoint or promote anyone who has qualified through the ASN to the rank of full professor. Provided financial resources are available at the institutional level, no specific national procedure must be followed when appointing or promoting academics. Allowing candidates to become full professors is not necessarily as transparent as the ASN process that contains publicly available documents. The academic career system in Italy has some features of careers in bureaucratic organisations (i.e., transparent and performance-based eligibility checks). However, academic staff (full professors in this case) have the final voice in promotions and recruitment.

It is worth mentioning that universities are expected to have three-year-long equality plans and monitor gender representation at different levels (Directive 2/2019 on equal opportunities in

the public sector). However, these interventions are often not well integrated within institutional strategic plans, and they struggle to tackle cultural change (Oppi *et al.*, 2021, Galizzi and Siboni, 2016). Recent research has shown that the Italian academic system is still highly masculine (Roberto *et al.*, 2020, Bozzon *et al.*, 2017, Murgia and Poggio, 2019, Gaiaschi and Musumeci, 2020). Overall, gender bias or gatekeeping processes (negatively affecting women) seem to exist as in other countries (Wroblewski, 2014, van den Brink and Benschop, 2014, Fisher and Kinsey, 2014).

Literature has focused especially on investigating gender discrimination in ASN committees (Abramo *et al.*, 2015), yielding mixed results. Research on promotions to full professors found that women are less likely to be promoted at parity of scientific productivity (De Paola *et al.*, 2018, Marini and Meschitti, 2018, Filandri and Pasqua, 2021). Table 2 shows the percentage of women per disciplinary area at all academic ranks and full professor ranks in 2000 and 2017. Figures show that women were still underrepresented in full professor roles in 2017.

[TABLE 2 AROUND HERE]

4 Methodology, data, and variables

We used an original dataset from publicly and non-anonymous available repositories that provide census data. Individual performances were derived from applications to ASN in the first two waves (2012 and 2013). By incorporating such information, it was possible to normalize bibliometric and non-bibliometric indicators to compare bibliometric and non-bibliometric disciplines on the ground that minimal thresholds identify their least common denominator. Table 3 lists the variables briefly described below. A correlation matrix for all the variables is reported in Table 4, showing no problems with high correlations, even among those representing values at the aggregate level.

[TABLE 3 AROUND HERE]

Promotion

Promotion was a dichotomous variable representing promotions between 2013 and 2016. Non-promotion was coded as 0, whereas promotion was coded as 1. We obtained around 6000 valid observations. As shown in Table 2, only 23% of those who achieved the ASN were promoted.

Indicators of scientific productivity

Three indicators of scientific productivity are used in the ASN. For hard sciences, the indicators are articles in journals (prod_1), the gross number of citations (prod_2), and the H index

(prod_3). For social sciences and humanities, the indicators are articles in journals (prod_1), chapters or books (prod_2), and articles in specifically listed top journals (prod_3). We normalized such values by the thresholds indicated at the national level for each disciplinary community to achieve a fair comparison across disciplines.

Age

Age was extracted from the CVs uploaded together with the ASN application.

Seniority within rank

Seniority within a rank is the number of years in rank. A person who has been an associate professor for 5 years, equals 5 in seniority; a person who spent just one year since the previous promotion scores 1 in this variable. This variable relates to status (Marini, 2017).

Institutional endowment (IE)

IE variable represents the availability of resources to fund academic salaries (*punti organico*), which are centrally distributed at the institutional level depending on formulaic performance indicators. This is a necessary covariate, considering competition theory arguments about material resources.

Masculinity by rank and pool

We computed three different variables to account for the extent to which the interplay of applicants (associate professors) and decision-makers (full professors) are men-dominated, empirically translating social identity and competition theories arguments about majorities and minorities. These three variables are:

- Deltamasc_HEI: The difference in masculinity rates between the full professor and associate professor ranks for each institution. For example, this variable equalled 0.1 when, at university X, men accounted for 60% of full professors and 50% of associate professors (0.6-0.5=0.1).
- Deltamasc_SSC: The difference in the masculinity rate between the full professor and associate professor ranks for each scientific discipline (SSC, *settore scientifico concorsuale*).
- Deltamasc_HEI_SSC: The difference in the masculinity rate between the full professor and associate professor ranks for each scientific discipline within each institution.

These variables were computed at the end of 2012 (to account for the first wave of promotions following the system introduced in 2012). A degree of masculinity was coded as 1 if all persons were men and 0 if all persons were women. These three variables accounted for the two main factors influencing a promotion: applicants (associate professors) and decision-makers (full

professors) by two types of groups (the whole institution and the restricted epistemic community therein).

[TABLE 4 AROUND HERE]

5 Results

Table 5 lists the results of OLS. The table shows fewer observations compared to Table 3 due to listwise missing values for some small, recently established institutions with a lack of staff at the professorial level. We proposed four models to account for masculinity by the associate and full professors at different levels (institution and discipline). Model 1 used only masculinity at the institutional level. Model 2 used masculinity at the disciplinary level nationwide. Model 3 used masculinity at a disciplinary level within institutions. Model 4 included all three masculinity variables. The Variance Inflation Factor (VIF) for each model is shown in Table 6, showing no problems with multicollinearity.

[TABLES 5-6 AROUND HERE]

During the period under examination (2013-2016 included), the number of women full professors increased from 20.95% to 22.95%. However, gender discrimination in the promotion to full professor is a consistent reality at parity of scientific performance. When looking at variables testing individual factors (gender, indicators of scientific productivity, age, and seniority), gender was always significant in all four models, showing consistent discrimination against women who apply to full professorship. Scientific productivity did not have a particularly decisive effect, although productivity is typically highly valued for promotions, and universities should reward productive individuals. Arguably, research performance *per se* seems to diminish above a certain threshold established by ASN qualification (supplementary analysis using logarithms of these three variables showed similar patterns – output available upon request). Seniority does not play a role in promotion, showing that the amount of years spent in a rank is not an advantage or an impediment in terms of the likelihood of being promoted. Age was also insignificant, indicating that it is not a factor in predicting promotions (quadratic age yielded similar results).

When looking at the variables testing aggregate factors, an interesting picture emerged. First, the variable testing for institutional resources is not significant. Although this variable was

insignificant, it is an essential confounding factor to consider. Instead, the differences in gender composition between full and associate professor levels (masculinities) affected promotion.

In Model 1, the coefficient of masculinity at the institutional level indicated that this variable is more prominent than individual variables, such as gender. The findings revealed that men and women are more likely to obtain full professorship if the pool of full professors is more masculine than the associate professors. In other words, promotions are more likely when the rate of men at full professor rank is greater than that of men at associate professor rank. This is true regardless of individuals' gender, performance, seniority, age, and resources available at the institutional level. Besides these collective predictors, findings also indicated gender discrimination at the individual level, as already noted.

Model 2 tested the same individual variables but considered masculinity at a disciplinary level instead. The effect of gender composition was less prominent than that found in Model 1 but still statistically significant. All other predictors remained like those in Model 1. Specifically, the coefficient for Deltamasc_SSC was similar to that in Model 1.

Model 3 included the masculinity variable computed at a disciplinary level within each institution. This model assumed that considering both disciplinary (where single communities decide their own members' careers) and institutional levels (where resource constraints are

negotiated) would yield a more realistic prediction. However, this aggregate variable did not have a statistically significant coefficient.

Model 4 attempted to include all three variables. It confirmed that the best predictor of promotion is the gender composition by rank at the institutional level. Some further observations were dropped. These dynamics exist together with some consistent unfair treatment of women, as shown by individual indicators. Overall, Model 1 produced the best results.

To briefly summarise, this analysis showed that institutional factors, such as gender composition at both associate professor and full professor ranks, have the strongest effect on predicting promotions when considering the institutional composition by gender and rank. Promotions are more likely to happen when (within institutions) the full professor rank is men-dominated and the associate professor rank is women-dominated, as shown in Model 1. Individual factors do not play a particularly prominent role. Nevertheless, promotion by gender at the individual level, at parity of performances, was statistically significant, showing discrimination against women. This finding paves the way for further discussion.

6 Discussion and conclusion

Following social identity theory, our empirical analysis of gender discrimination in academic promotions reflects a case where the majority's position (the dominance of men at the full professor level) is no longer considered legitimate in the public discourse. The minority (a considerable number of women at the associate professor level) are seeking change, strengthened by the broader discourse about the need for more women at top levels in academia. Since the majority has the power to decide to whom to bestow promotions, it is likely to make promotions available under higher pressure from the minority (more women-dominated associate professors pools). This does not necessarily mean that women will get promoted equally to men at parity of merit since the results in Table 5 confirm discrimination against women.

Intriguingly, making promotions happen shows the majority's willingness to concede some form of change. However, evidence shows that in certain circumstances, promotions are not necessarily bestowed fairly (i.e., women are less likely to be promoted at parity of scientific performance). Instead, promotions may disguise some persistent actual discrimination. Using a metaphor from previous literature (van den Brink and Benschop, 2014), promotions happen because "opening the gates" becomes ineluctable. Opening the gates is a reaction to an increasing quest for change from below (or outside). When such gates open, the flux of new

entrants will not be necessarily fair in relative terms, although in absolute terms, we may witness more minorities trespassing the gate. Thus, an observer may detect a smooth betterment over time at aggregate levels, as per Table 2.

The fact that the gender composition at the institutional level is more important than gender composition at other levels can be explained by the fact that the institution is the locus of resource negotiations according to the current system in Italian universities.

Competition theory could explain the discrimination against women at the individual level: the majority becomes more discriminatory when the minority wants to access its resources. Promotions to full professors can be considered a zero-sum game at the individual level. Different forces are at play: the necessity to "open the gates" (which could, in principle, help the minority, as explained by social identity theory) together with some discrimination from the competition over the same resources (in this case, harming the minority, as explained by competition theory).

In summary, this article shows that, in aggregate terms, the career progression of members of a minority group is more predominantly subject to intergroup dynamics rather than individual achievements (i.e., individuals' research performance that, in principle, ought to be the main factor in granting a promotion) or individual characteristics (e.g., age, seniority). Instead, the

pressure from a minority group creates some more opportunities for accessing top positions. Minority and majority members might exploit these opportunities at the individual level. Importantly, such opportunities are more available in the cases where the rank composition (masculinity delta) follows a specific pattern: majority-dominated at the highest level, minority-dominated at the level just below. Still, discrimination occurs at the individual level. This means that the minority might advance, albeit slower than expected, following a mere individual meritocratic assumption (e.g., productivity).

Previous literature that has attempted to investigate why change towards equality is so slow has mainly pointed at micro-interactional practices supported by a broader gendered culture of male privilege (O'Connor and White, 2021, Teelken *et al.*, 2021, O'Connor, 2020). This paper suggests that intergroup dynamics contribute to reproduce this gendered culture. Indeed, by "opening the gates," the majority responds superficially to the quest for change. Majorities perpetrate some enduring discrimination towards minority members by granting more promotions, slowing down the process of change. The dynamics observed in this paper might be considered both cause and effect of the underlying cultural system of male privilege found in other studies and sectors as well (Burkinshaw and White, 2017, Poorhosseinzadeh and

Strachan, 2020). It might also underlie the defensive institutional work against gender equality, which has been found by Roos and colleagues (2020).

Previous literature has mainly looked at individual variables, even when considering disciplinary differences, such as in the case of Weisshaar (2017). Our findings highlight that individual and institutional factors should be considered comprehensively to obtain a thorough picture of individual achievement resulting from collective dynamics. Social identity and competition theory can help us understand the behaviours of groups with different statuses.

Previous literature has looked at how the representation of women at top levels might help other women ascend. In literature investigating academia, only a few have looked at intergroup dynamics to evaluate how gender representation at specific levels affects promotion (Crawford, Burns, and McNamara 2012; Hüther and Kirchner 2018). Our findings indicating that women are being prevented from accessing leadership roles are original since data show the effect of gender representation simultaneously at both middle and top levels, accounting for individual characteristics. These findings parallel Hüther and Kirchner (2018) since they do not support the critical mass approach. However, they differ from Crawford, Burns, and McNamara's (2012) study, which found that a higher representation of women among full professors was associated

with more recommendations for promotion. This disparity might be due to differences in disciplinary and national cultures.

6.1 Limits and future directions

This study has some limitations. First, scholars' social capital arguably plays a strong role in academic promotions. Unfortunately, it was not possible to get any proxy for this. Second, the invisibility of formal institutional processes and informal practices involved in promotions is unsatisfactory. These important predictors are unobservable. Possibly, different universities might develop different degrees of sensibility to gender equality due to ample freedom in devising gender equality plans. Third, our dataset did not allow us to check for the glass cliff, which is an important phenomenon to consider even if the features of the Italian context minimize its presence. Fourth, this study was conducted in one country only, disregarding other cultural contexts.

Nevertheless, the dynamic observed in this article might also apply to other professions or organisations. Some good examples are the public sector and bureaucratic organisations with a transparent system of eligibility checks coupled with a hierarchical structure and professional discretion. Furthermore, following social identity theory, majority and minority groups might be defined by variables other than gender (e.g., ethnicity, social class, denominations, political

affiliations, sexual orientation, etc.). Notwithstanding, it could still be possible to find an analogous dynamic: the majority disclosing more opportunities when there is a quest for change coming from the minority (a quest supported by solid figures as well), and at the same time denying perfectly fair access to promotion (that partially discriminates minority members' ambitions).

Further research might inquire about other sectors and countries, other potential discrimination features, the intersectionality of multiple features, the presence of the glass cliff phenomenon, and the role of a sudden rise in public opinion awareness.

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Table 1 - the lack of women in top organizational positions; comparing theoretical perspectives

	Critical mass	**Competition**	**Social identity**
Main claim	A given proportion of women (35%) at top levels is necessary to make organizational cultures more inclusive. Changing the numbers is necessary to change cultures.	Majority and minority groups are defined by their control on resources. The majority might discriminate against the minority if this wants to access their resources.	Social identity is defined by being part of a high-status (majority) or low-status (minority) group. While the majority wants to preserve its status, the minority wants to change it.
Assumptions	Increased exchanges among members of different groups will cause people to be more open to others.	People strive to preserve the resources of their group (no win-win solution is possible).	People strive to attain a positive social identity (and might even discriminate against their ingroup to do so).
Evidence	Women being discriminated / treated as tokens in male-dominated environments. Presence of women widens promotion / appointment criteria. Good representation of women across the organization significantly helps to improve their representation at top levels.	Majority (men) becoming more discriminatory towards the minority (women) if there is a quest for change coming from the minority.	(Male-dominated) majority coalescing to hinder the (female) minority. Queen bee syndrome, women discriminating other women to increase their status.
Limits	Mixed results in relation to number of women in appointment / promotion committees, and number of women being appointed / promoted. Underrepresentation of women in professions / disciplines with a considerable number of women at entry levels. Presence of the glass cliff.	Mainly applied to interracial relations only.	Mainly applied on student samples.

Source: own elaboration

Table 2 - Percentage of women in all ranks and in full professorship (2000-2017) by macro disciplinary area

	Percentage of women (all ranks)		Percentage of women full professor	
Macro Discipline	**2000 y**	**2017 y**	**2000 y**	**2017 y**
1. Mathematics and informatics	34.27	32.36	13.82	19.66
2. Physics	15.38	20.53	4.61	12.37
3. Chemistry	31.09	47.97	9.59	25.89
4. Earth sciences	22.35	29.00	7.79	18.23
5. Biology	43.33	53.61	20.53	33.41
6. Medicine	20.82	32.98	5.35	15.65
7. Agricultural and veterinary sciences	25.23	38.91	6.09	17.66
8. Civil engineering and architecture	18.63	32.34	7.47	18.78
9. Industrial and information engineering	9.55	16.89	2.35	9.48
10. Antiquities, philology, literary studies, art history	53.10	54.28	30.96	42.54
11. History, philosophy, pedagogy and psychology	39.25	46.25	18.52	36.06
12. Law	26.88	37.48	7.79	24.15
13. Economics and statistics	26.63	37.21	9.74	23.14
14. Political and social sciences	29.98	39.95	9.92	26.44
Total	28.92	37.41	11.43	22.95

Source: own elaboration from MIUR repositories

Table 3 - Descriptive statistics of promotions and available determinants

	Variable	Obs	Mean	Std. Dev.	Min	Max
Individual	Promotion	6,162	0.229	0.420	0	1
	Gender	6,162	0.679	0.467	0	1
	Productivity_1	6,162	0.896	1.556	-1.000	39.527
	Productivity_2	6,162	1.720	6.064	-1.000	178.800
	Productivity_3	6,162	0.795	2.019	-1.000	43.440
	Age	6,156	48.7	6.923	30	70
	Seniority within rank	6,144	5.14	3.218	0	12
Structural	Institutional Endowment	6,162	0.159	0.315	0.000	7.987
	Deltamasc_HEI	6,142	0.114	0.090	-0.278	0.357
	Deltamasc_SSC	6,102	0.134	0.088	-0.075	0.472
	Deltamasc_HEI_SSC	6,089	0.144	0.147	-1.000	1.000

Source: own elaboration from MIUR repositories

Table 4 - correlation matrix for all the variables

	Promotion	Gender	Prod_1	Prod_2	Prod_3	Age	IE	Seniority	delta_HEI	delta_ssc	delta_HEIssc
Promotion	1,000										
Gender	0.0738*	1,000									
Prod_1	0.0660*	0.0729*	1,000								
Prod_2	0.0128	0.0508*	0.2542*	1,000							
Prod_3	0.0405*	0.0451*	0.0891*	0.1313*	1,000						
Age	-0.0275*	-0.0485*	-0.0732*	-0.0527*	-0.1083*	1,000					
IE	0.0163	0.0130	-0.0134	-0.0110	0.0396*	0.0009	1,000				
Seniority	-0.0075	-0.0028	-0.0579*	-0.0203	-0.0816*	0.4661*	0.0371*	1,000			
delta_HEI	0.1336*	-0.0256*	-0.0115	-0.0754*	-0.0592*	0.2122*	-0.0025	-0.0035	1,000		
delta_ssc	0.0269*	-0.1212*	-0.0654*	-0.0093	-0.0043	-0.0253*	0.0098	0.0176	0.0502*	1,000	
delta_HEIssc	-0.0225	-0.1398*	-0.0317*	0.0098	-0.0056	-0.0156	0.0015	-0.0211	0.1567*	0.1596*	1,000

* $p<0.05$;

Table 5 – Prediction of promotion to full professorship

	M1	M2	M3	M4
	b/se	b/se	b/se	b/se
GENDER	0.062***	0.066***	0.057***	0.060***
	(0.01)	(0.01)	(0.01)	(0.01)
PROD_1	0.015***	0.017***	0.016***	0.016***
	(0.00)	(0.00)	(0.00)	(0.00)
PROD_2	-0.000	-0.001	-0.000	0.000
	(0.00)	(0.00)	(0.00)	(0.00)
PROD_3	0.008**	0.007*	0.006*	0.008**
	(0.00)	(0.00)	(0.00)	(0.00)
AGE	-0.004***	-0.001	-0.001	-0.004***
	(0.00)	(0.00)	(0.00)	(0.00)
IE	0.019	0.019	0.027	0.021
	(0.02)	(0.02)	(0.02)	(0.02)
SENIORITY	0.004	0.001	0.001	0.004*
	(0.00)	(0.00)	(0.00)	(0.00)
DELTA_HEI	0.706***			0.739***
	(0.06)			(0.06)
DELTA_SSC		0.186**		0.165**
		(0.06)		(0.06)
DELTA_HEISSC			-0.033	-0.117**
			(0.04)	(0.04)
_CONS	0.246***	0.190***	0.225***	0.240***
	(0.04)	(0.04)	(0.04)	(0.04)
ADJ. R-SQUARE	0.031	0.011	0.009	0.033
NUMBER OF CASES	6142	6102	6089	6050

Table 6 - VIF test for multicollinearity (variables sorted as per Table 5)

	M1	M2	M3	M4
gender	1,01	1,02	1,03	1,04
prod_1	1,08	1,09	1,09	1,10
prod_2	1,09	1,09	1,10	1,10
prod_3	1,04	1,04	1,04	1,04
age	1,37	1,30	1,29	1,38
seniority	1,30	1,28	1,28	1,30
IE	1,00	1,00	1,00	1,00
delta_HEI	1,07			1,10
delta_ssc		1,02		1,04
delta_HEIssc			1,02	1,07
Mean VIF	*1,12*	*1,11*	*1,11*	*1,12*

The balance between status quo and change when minorities try to access top ranks: A tale about women achieving professorship

Purpose: Vertical gender segregation persists even in fields where women are well represented at junior levels. Academia is an example. Individual performance and lack of a critical mass do not fully explain the problem. Thus, this paper adopted an intergroup perspective (i.e., social identity and competition theories) to study how a majority (i.e., men) can influence the advancement of a minority (i.e., women).

Design/methodology/approach: The paper investigated promotions from associate to full professor in Italy. The original dataset included all promotions from 2013 to 2016. To study intergroup dynamics, individual-level variables were analysed together with structural factors, such as gender representation and availability of resources.

Findings: The effect of gender representation was significant in that promotions were more likely when full professor ranks within academic institutions were men-dominated, and associate professor ranks were women-dominated. Concurrently, the analysis of individual-

level variables supported the existence of discrimination against women. The paper argues that the majority grants more promotions under the pressure of change; however, this does not contrast discrimination at the individual level.

Originality: This study explored gender segregation from a new perspective, highlighting the importance of the interplay between individual and structural factors. This interplay might be one of the causes of the slow progress of gender equality.

Research limitations/implications: The paper focused only on one country. However, the framework can be applied in other contexts and used to study segregation based on factors other than gender.

1. Introduction

Vertical segregation in academia is a global issue (Le Feuvre *et al.*, 2019, Sümer, 2020). The proportion of women in academia tends to decrease progressively with the career levels across all disciplines; this is known as the *leaky pipeline* (EC, 2019). It is also referred to as the *glass ceiling* (Cook and Glass, 2014) and the *glass cliff* (Peterson, 2016, Ryan and Haslam, 2005), which indicate the existence of a hostile environment for women (Broadbridge and Mavin, 2016). Women's representation on the corporate boards and CEO positions in non-academic organisations is an example.

Interestingly, while these metaphors highlight the role of structural issues, a considerable amount of literature on vertical segregation has focused on the individual level of analysis. This also applies to the literature on women's academic careers. Academia is considered highly gendered (Gupta, 2020, Wieners and Weber, 2020), negatively affecting women's careers, especially when considering progression from associate to full professor (Winslow and Davis, 2016). Two individual factors have received considerable attention: scientific productivity and family commitment (often culturally assumed as women's work). However, women are less likely to obtain tenure and promotions even when controlling for productivity. This effect was found in several countries, including the US (Treviño *et al.*, 2018, Weisshaar, 2017), Canada

(Wijesingha and Robson, 2022), Germany (Mayer and Rathmann, 2018), Sweden (Danell and Hjerm, 2013), Iceland (Heijstra *et al.*, 2015), Japan (Takahashi and Takahashi, 2015), and Italy (De Paola *et al.*, 2018, Filandri and Pasqua, 2021). Lutter and Schröder's (2016) study in the field of sociology in Germany was an exception, reporting positive discrimination against women. Regarding family commitments, literature has reported mixed results. One's family condition was a significant factor affecting promotion in the studies by Takahashi and Takahashi (2015) and Fox and Xiao (2013) but not in others (Hesli *et al.*, 2012, Heijstra *et al.*, 2015). Distinct institutional characteristics may have possibly influenced these differences.

Most literature incorporating structural factors (i.e., factors beyond individuals' direct agency) has examined the effects of institutional policies and practices on women's careers and explored the broader effects of academic and disciplinary cultures (Fagan and Teasdale, 2020, Berheide and Walzer, 2014, Howe-Walsh and Turnbull, 2016). These findings showed that academia is a conservative environment where women struggle to find legitimacy, even when gender equality is supported (O'Connor, 2020, Bönisch-Brednich and White, 2021, Moratti, 2021, Cohen *et al.*, 2021). Often, neither an increase in the proportion of women (Helitzer *et al.*, 2017) nor the presence of gender equality initiatives (Tzanakou and Pearce, 2019, Roos *et al.*, 2020) is enough to change these deeply-ingrained power dynamics.

The predominance of literature assuming that individual characteristics can explain vertical segregation in academia and the paucity of studies considering both individual and structural factors limit our understanding of the underrepresentation of women professors (de Vries and van den Brink, 2016, Hüther and Kirchner, 2018). Thus, this article considers individual and structural factors affecting promotion, proposing combining *social identity* and *competition* theory. Individual factors include measures of scientific performance, among others. Structural factors include gender representation (e.g., percentage of women in a given institution or discipline) at both associate and full professorship levels and the availability of resources. This article suggests that this combination allows us to understand the role of intergroup dynamics, which tends to be neglected in research focusing on academic promotions. Ultimately, this should clarify the slow progress of gender equality, particularly in academia (O'Connor and White, 2021, Teelken *et al.*, 2021).

Social identity theory (Tajfel, 1974, Tajfel, 1978) and competition theory (Blalock, 1967) stress the importance of intergroup dynamics in processes of social ascension. Both theories look at dynamics between *majority* and *minority*, defined in terms of status differentials. The majority might also be called "established" and minority "parvenu," especially when expectations of social ascension are attributed to the minority and a defensive and resistant stance to the

majority. The two theories are often used to study relationships across ethnic groups. According to Hüther and Kirchner (2018), they are also especially suitable for studying gender dynamics. Adopting these middle-range theories for this topic is suitable and innovative *per se*. Academic women's career aspirations represent a quest for change, ultimately affecting the interplay between the majority (men full professors) and minority (women associate professors) and the consequent distribution of power. It is worth emphasizing that a full professorship allows access to strategic decision-making processes and senior leadership positions (Bagilhole and White, 2011). Additionally, research has demonstrated that full professors often act as gatekeepers, controlling whom they promote (van den Brink and Benschop, 2014, Wroblewski, 2014, Fisher and Kinsey, 2014).

Drawing on social identity and competition theories, this article aims to clarify whether intergroup dynamics are more important than individual factors in women aspiring to professorship. The study focuses on the entire population of associate and full professors in Italy, viewing gender from an intergroup perspective (the Italian academic system has a relatively homogenous population in terms of ethnicity and nationality). Moreover, phenomena such as the glass cliff are reduced in an academic system like the Italian one because it is

centralized and publicly funded, characterized by low stratification and civil servant status of academic staff (Pezzoni *et al.*, 2012).

The contribution of this article is manifold. From a theoretical perspective, it combines social identity and competition theories to investigate gender and promotion patterns. Furthermore, by understanding gender and promotion processes as a dynamic between majority and minority, this article offers a new viewpoint to the study of gender and careers. A wider contribution of this study is that it can offer possible explanations for slow career movement in any top-rank profession when looking at aggregated terms, depending not only on gender but also on social standing (e.g., ethnicity, nationality, social class).

2. Gender differences in promotions: Theoretical perspectives

Gender differences in career progression in academia have been investigated for a long time (Kalleberg and Reskin, 1995). Nevertheless, the debate about the factors driving these differences (and the consequent debate on how to address them) continues. Acker's (1990, 2006) claim that organisational cultures are gendered has been generally accepted. Our daily practices and routines reproduce a gendered order, where gender is so pervasive that it becomes invisible (Gherardi and Poggio, 2001, O'Connor *et al.*, 2017, van den Brink and Benschop, 2012). This helps explain women's slow progress despite gender equality initiatives (Roos *et al.*, 2020).

Following Acker (1990), it has been argued that the image of the ideal academic is highly gendered, even in the disciplines where women are well-represented (Bleijenbergh *et al.*, 2013, Cohen *et al.*, 2021). Gendered organisations are an unfriendly environment for anyone not fitting the image of the ideal white male worker, thus conveying resistance to structural changes (O'Connor, 2020).

2.1 Critical mass: Change the numbers to change cultures

Kanter (1977) argued that a certain proportion of women at each level of an organisation should encourage the change in organisational culture. When women find themselves in a highly skewed group (>15%), they experience a difficult work climate and are under extra pressure to perform. Women promoted to top positions might often find themselves in the role of "tokens," representing the highly visible minority. Consequently, their actions are carefully scrutinized, putting more pressure on them. Kanter argued that this situation could be tackled by increasing the proportion of women, reaching at least the 35% threshold. Kanter's (1977) arguments are referred to as a "critical mass" approach. Literature built on this approach stressed that gender imbalance creates a hostile environment because women are expected to fit into the (masculine) organisational culture. Nielsen and Madsen (2019) showed that today women still find themselves in token positions, which has detrimental effects on women's career aspirations.

Critical mass has widely influenced the academic literature and the wider debate on gender quotas (Terjesen and Sealy, 2016). It is often accompanied by the assumption that people tend to help those similar to them (e.g., women supporting other women) and that increased exchanges between members of different groups will cause people to be more open to others. Consistent with Kanter's (1977) arguments, some research has shown that women are more likely to access senior positions when they are well-represented in their organisation (Dreher, 2003, Skaggs *et al.*, 2012), including in academia (Chevreul *et al.*, 2018). It is argued that the presence of women in professorial or board roles makes universities less gendered (Mazzotta et al., 2020) and that such presence widens the scope of the criteria for promotion (Crawford *et al.*, 2012).

Following the critical mass theory, a gender balance in promotion committees is recommended. The existing literature has looked at how such a balance affects the advancement of women in academia. However, the findings are mixed. Some literature has found that the presence of women on appointment committees (De Paola and Scoppa, 2015) and university boards (Mazzotta et al., 2020) is beneficial. Others have revealed that having more women on the selection committee might even decrease women's promotion (Bagues et al., 2017).

Additionally, the presence of a work environment characterized by a balanced representation might even increase stereotyping and subtle discrimination (Bobbitt-Zeher, 2011, Jones *et al.*, 2017). Studies that stress the persistent underrepresentation of women at top levels even when women are massively represented at lower levels have questioned the critical mass theory. This situation has been widely documented in academic medicine (Cervia and Biancheri, 2018, Richter et al., 2020). Helitzer et al. (2017) also did not find support for the critical mass approach, leading them to conclude that "critical actors" are much more important than critical mass in the case of academia. The literature building on the concept of glass cliff (Ryan et al., 2016) has also questioned the critical mass approach, showing that women are often appointed to precarious leadership positions, even in the case of academia (Peterson, 2016). This means that the mere presence of women on boards is not necessarily a sign of any advancement in equality. Finally, the neoliberal and managerial trends characterizing academia hinder progress toward equality (Teelken and Deem, 2013, O' Hagan *et al.*, 2016, Lund, 2020, Morley, 2018); thus, the focus on the achievement of a critical mass is limited.

2.2 The intergroup perspective

Yoder (1991) explained the risk of a sole focus on numbers and highlighted that the critical mass approach had focused primarily on individual-level issues, ignoring structural and

intergroup issues regarding workplace discrimination. Such a misbalance has led to a conflation of numerical representativeness by gender status, which is a different phenomenon. Yoder cited Blalock's (1967) competition theory to argue that the increase in the representation of women might even increase discrimination against them. Blalock (1967) developed the competition theory when studying relationships between Whites and Blacks in the US, claiming that a high-status group (majority), when feeling threatened by the increasing number and status of the lower-status group (minority), tends to become more supportive of the ingroup and more discriminatory towards the outgroup. The resources at stake (political or economic ones) affect these dynamics between minority and majority. In the case of political resources, an increase in the status of the minority might bring about increased discrimination by the majority.

Competition theory helps explain contradictory findings, especially how an increase in the number and status of the minority might not necessarily benefit the minority in the short term (Allmendinger and Hackman, 1995, Tsui et al., 1992). For example, Tolbert et al. (1995) found that an increase in the number of women faculty was associated with an increased turnover of women (but not men). Following the competition theory, the authors explained that a hostile environment emerging from the different balance between high (men) and low (women) status groups might contribute to the high turnover of women. Hüther and Kirchner (2018) studied

the effect of the proportion of women full professors on the advancement of women in Germany, supporting the competition theory. They found that the number of women appointed as full professors progressed slower than expected after reaching the 25% threshold (while critical mass would argue for a quicker progression).

Social identity theory also helps us understand why an increased proportion of women might enhance ingroup solidarity (i.e., the male majority) and why this intensifies problems in the outgroup (i.e., the female minority). Tajfel (1974) argued that individuals want to develop a positive social identity, and social identity becomes salient in conditions of instability or illegitimacy. The motivation to attain a positive social identity varies by group and depends on status: social identity might become more salient for minorities since they are in a less privileged position. Individuals from a low-status group might use two strategies to increase their status: distancing themselves from their original ingroup or using social creativity by redefining the factors of comparison between the groups. Thus, the social identity theory helps explain conditions under which individuals act in favour of the ingroup (or the outgroup). For example, the "queen bee" phenomenon happens because individuals in low-status groups wish to distance themselves from their original ingroup to increase their status (Duguid *et al.*, 2012).

The degree of perceived legitimacy and stability of a group also affects group dynamics. When perceived as low in legitimacy and stability, a majority group might face greater pressures for change. Consequently, the majority may become more discriminatory towards the outgroup. Importantly, perceived legitimacy always depends on the kind of majority and minority groups being considered: therefore, some minority groups might struggle more than other minorities in some conditions. For example, a recent review showed that black women might struggle more than white women when they find themselves in the token role (Watkins et al., 2019). Some empirical studies in the private sector provide clear support for social identity theory (Markoczy et al., 2020), showing that the male majority, worried about preserving their status, might coalesce to marginalize the minority (Huang et al., 2020) and that women are usually conferred with less status (Markóczy et al., 2021). In the case of academia, research has demonstrated that leadership cultures are highly gendered and tend to reproduce male power structures (Burkinshaw, 2015, Burkinshaw and White, 2017).

2.3 The novelty of conjoint use of individual and group level

This paper proposes combining social identity and competition theory to examine the effect of intergroup dynamics on gender discrimination in career progression. Thus, it goes beyond the analysis of the effect of social similarity on career progression (Huang et al., 2020). Social

identity and competition theory have potential limitations when applied to the study of career progression. Social identity was developed mainly through experiments, sometimes involving student samples. Experimental conditions and student samples might not be able to reflect the complexity of everyday organisational life, particularly when referring to access to prestigious positions. Competition theory was developed to explain interracial relations, which might present different patterns compared to gender. Table 1 below compares the theoretical approaches, their main claims, background assumptions, evidence, and limits. Notably, compared to critical mass, social identity and competition theory provide a more nuanced understanding of the processes that characterize changes in the number and status of a group: they shift the focus from the individual to the institutional structures and cultures when studying the gender gap. This shift is necessary to understand why change is so slow. Thus, this paper simultaneously investigated structural (e.g., gender representation) and individual level (e.g., scientific productivity) factors to understand whether and how intergroup dynamics explain a slow advancement of women to top ranks in academia even in disciplines where they are well represented.

[TABLE 1 AROUND HERE]

2.4 Hypothesis development

This paper operationalized the above observations from the literature in the following way.

1) In academia, men represent the majority (the *ingroup*, following social identity theory). Women represent the minority (the *outgroup*), struggling for legitimacy and asking for change.

2) Academic promotions from associate to full professor more often occur when pressure for change (change in the majority and minority groups' composition) is high: this happens when there is a remarkable imbalance in the two academic ranks (i.e., high proportion of women at associate professor level and high proportion of men at academic level).

3) Such imbalance in ranks is measured at a disciplinary level as well as at an institutional level. The disciplinary level is paramount given the importance of disciplinary cultures. The institutional level is also vital, given that this is where financial resources are distributed, as explained in the following section.

3 The academic career system in Italy

The current system regulating academic careers in Italy was introduced in 2012 based on two steps. First, academics apply to the 'abilitazione scientifica nazionale' (ASN), a national evaluation process awarding a fit-for-the-role qualification. ASN is conducted by committees from specific disciplines (*settore scientifico concorsuale*, referred to as "SSC" in the variables

listed in Table 3). There are 184 committee disciplines grouped in 14 areas (see Table 2). Second, academics who successfully complete the ASN can apply for recruitment or promotion that universities advertise. ASN is only a qualification process, ensuring that some minimal essential criteria, especially concerning publications, are satisfied (Marzolla, 2016). The proportion of academics achieving the ASN usually outnumbers those getting a position mainly because of a shortage of funding. Institutional mobility is low in Italy, and typically academics apply to full professorship in the university where they already hold a position.

Each university has the autonomy to appoint or promote anyone who has qualified through the ASN to the rank of full professor. Provided financial resources are available at the institutional level, no specific national procedure must be followed when appointing or promoting academics. Allowing candidates to become full professors is not necessarily as transparent as the ASN process that contains publicly available documents. The academic career system in Italy has some features of careers in bureaucratic organisations (i.e., transparent and performance-based eligibility checks). However, academic staff (full professors in this case) have the final voice in promotions and recruitment.

It is worth mentioning that universities are expected to have three-year-long equality plans and monitor gender representation at different levels (Directive 2/2019 on equal opportunities in

the public sector). However, these interventions are often not well integrated within institutional strategic plans, and they struggle to tackle cultural change (Oppi *et al.*, 2021, Galizzi and Siboni, 2016). Recent research has shown that the Italian academic system is still highly masculine (Roberto *et al.*, 2020, Bozzon *et al.*, 2017, Murgia and Poggio, 2019, Gaiaschi and Musumeci, 2020). Overall, gender bias or gatekeeping processes (negatively affecting women) seem to exist as in other countries (Wroblewski, 2014, van den Brink and Benschop, 2014, Fisher and Kinsey, 2014).

Literature has focused especially on investigating gender discrimination in ASN committees (Abramo *et al.*, 2015), yielding mixed results. Research on promotions to full professors found that women are less likely to be promoted at parity of scientific productivity (De Paola *et al.*, 2018, Marini and Meschitti, 2018, Filandri and Pasqua, 2021). Table 2 shows the percentage of women per disciplinary area at all academic ranks and full professor ranks in 2000 and 2017. Figures show that women were still underrepresented in full professor roles in 2017.

[TABLE 2 AROUND HERE]

4 Methodology, data, and variables

We used an original dataset from publicly and non-anonymous available repositories that provide census data. Individual performances were derived from applications to ASN in the first two waves (2012 and 2013). By incorporating such information, it was possible to normalize bibliometric and non-bibliometric indicators to compare bibliometric and non-bibliometric disciplines on the ground that minimal thresholds identify their least common denominator. Table 3 lists the variables briefly described below. A correlation matrix for all the variables is reported in Table 4, showing no problems with high correlations, even among those representing values at the aggregate level.

[TABLE 3 AROUND HERE]

Promotion

Promotion was a dichotomous variable representing promotions between 2013 and 2016. Non-promotion was coded as 0, whereas promotion was coded as 1. We obtained around 6000 valid observations. As shown in Table 2, only 23% of those who achieved the ASN were promoted.

Indicators of scientific productivity

Three indicators of scientific productivity are used in the ASN. For hard sciences, the indicators are articles in journals (prod_1), the gross number of citations (prod_2), and the H index

(prod_3). For social sciences and humanities, the indicators are articles in journals (prod_1), chapters or books (prod_2), and articles in specifically listed top journals (prod_3). We normalized such values by the thresholds indicated at the national level for each disciplinary community to achieve a fair comparison across disciplines.

Age

Age was extracted from the CVs uploaded together with the ASN application.

Seniority within rank

Seniority within a rank is the number of years in rank. A person who has been an associate professor for 5 years, equals 5 in seniority; a person who spent just one year since the previous promotion scores 1 in this variable. This variable relates to status (Marini, 2017).

Institutional endowment (IE)

IE variable represents the availability of resources to fund academic salaries (*punti organico*), which are centrally distributed at the institutional level depending on formulaic performance indicators. This is a necessary covariate, considering competition theory arguments about material resources.

Masculinity by rank and pool

We computed three different variables to account for the extent to which the interplay of applicants (associate professors) and decision-makers (full professors) are men-dominated, empirically translating social identity and competition theories arguments about majorities and minorities. These three variables are:

- Deltamasc_HEI: The difference in masculinity rates between the full professor and associate professor ranks for each institution. For example, this variable equalled 0.1 when, at university X, men accounted for 60% of full professors and 50% of associate professors (0.6-0.5=0.1).
- Deltamasc_SSC: The difference in the masculinity rate between the full professor and associate professor ranks for each scientific discipline (SSC, *settore scientifico concorsuale*).
- Deltamasc_HEI_SSC: The difference in the masculinity rate between the full professor and associate professor ranks for each scientific discipline within each institution.

These variables were computed at the end of 2012 (to account for the first wave of promotions following the system introduced in 2012). A degree of masculinity was coded as 1 if all persons were men and 0 if all persons were women. These three variables accounted for the two main factors influencing a promotion: applicants (associate professors) and decision-makers (full

professors) by two types of groups (the whole institution and the restricted epistemic community therein).

[TABLE 4 AROUND HERE]

5 Results

Table 5 lists the results of OLS. The table shows fewer observations compared to Table 3 due to listwise missing values for some small, recently established institutions with a lack of staff at the professorial level. We proposed four models to account for masculinity by the associate and full professors at different levels (institution and discipline). Model 1 used only masculinity at the institutional level. Model 2 used masculinity at the disciplinary level nationwide. Model 3 used masculinity at a disciplinary level within institutions. Model 4 included all three masculinity variables. The Variance Inflation Factor (VIF) for each model is shown in Table 6, showing no problems with multicollinearity.

[TABLES 5-6 AROUND HERE]

During the period under examination (2013-2016 included), the number of women full professors increased from 20.95% to 22.95%. However, gender discrimination in the promotion to full professor is a consistent reality at parity of scientific performance. When looking at variables testing individual factors (gender, indicators of scientific productivity, age, and seniority), gender was always significant in all four models, showing consistent discrimination against women who apply to full professorship. Scientific productivity did not have a particularly decisive effect, although productivity is typically highly valued for promotions, and universities should reward productive individuals. Arguably, research performance *per se* seems to diminish above a certain threshold established by ASN qualification (supplementary analysis using logarithms of these three variables showed similar patterns – output available upon request). Seniority does not play a role in promotion, showing that the amount of years spent in a rank is not an advantage or an impediment in terms of the likelihood of being promoted. Age was also insignificant, indicating that it is not a factor in predicting promotions (quadratic age yielded similar results).

When looking at the variables testing aggregate factors, an interesting picture emerged. First, the variable testing for institutional resources is not significant. Although this variable was

insignificant, it is an essential confounding factor to consider. Instead, the differences in gender composition between full and associate professor levels (masculinities) affected promotion.

In Model 1, the coefficient of masculinity at the institutional level indicated that this variable is more prominent than individual variables, such as gender. The findings revealed that men and women are more likely to obtain full professorship if the pool of full professors is more masculine than the associate professors. In other words, promotions are more likely when the rate of men at full professor rank is greater than that of men at associate professor rank. This is true regardless of individuals' gender, performance, seniority, age, and resources available at the institutional level. Besides these collective predictors, findings also indicated gender discrimination at the individual level, as already noted.

Model 2 tested the same individual variables but considered masculinity at a disciplinary level instead. The effect of gender composition was less prominent than that found in Model 1 but still statistically significant. All other predictors remained like those in Model 1. Specifically, the coefficient for Deltamasc_SSC was similar to that in Model 1.

Model 3 included the masculinity variable computed at a disciplinary level within each institution. This model assumed that considering both disciplinary (where single communities decide their own members' careers) and institutional levels (where resource constraints are

negotiated) would yield a more realistic prediction. However, this aggregate variable did not have a statistically significant coefficient.

Model 4 attempted to include all three variables. It confirmed that the best predictor of promotion is the gender composition by rank at the institutional level. Some further observations were dropped. These dynamics exist together with some consistent unfair treatment of women, as shown by individual indicators. Overall, Model 1 produced the best results.

To briefly summarise, this analysis showed that institutional factors, such as gender composition at both associate professor and full professor ranks, have the strongest effect on predicting promotions when considering the institutional composition by gender and rank. Promotions are more likely to happen when (within institutions) the full professor rank is men-dominated and the associate professor rank is women-dominated, as shown in Model 1. Individual factors do not play a particularly prominent role. Nevertheless, promotion by gender at the individual level, at parity of performances, was statistically significant, showing discrimination against women. This finding paves the way for further discussion.

6 Discussion and conclusion

Following social identity theory, our empirical analysis of gender discrimination in academic promotions reflects a case where the majority's position (the dominance of men at the full professor level) is no longer considered legitimate in the public discourse. The minority (a considerable number of women at the associate professor level) are seeking change, strengthened by the broader discourse about the need for more women at top levels in academia. Since the majority has the power to decide to whom to bestow promotions, it is likely to make promotions available under higher pressure from the minority (more women-dominated associate professors pools). This does not necessarily mean that women will get promoted equally to men at parity of merit since the results in Table 5 confirm discrimination against women.

Intriguingly, making promotions happen shows the majority's willingness to concede some form of change. However, evidence shows that in certain circumstances, promotions are not necessarily bestowed fairly (i.e., women are less likely to be promoted at parity of scientific performance). Instead, promotions may disguise some persistent actual discrimination. Using a metaphor from previous literature (van den Brink and Benschop, 2014), promotions happen because "opening the gates" becomes ineluctable. Opening the gates is a reaction to an increasing quest for change from below (or outside). When such gates open, the flux of new

entrants will not be necessarily fair in relative terms, although in absolute terms, we may witness more minorities trespassing the gate. Thus, an observer may detect a smooth betterment over time at aggregate levels, as per Table 2.

The fact that the gender composition at the institutional level is more important than gender composition at other levels can be explained by the fact that the institution is the locus of resource negotiations according to the current system in Italian universities.

Competition theory could explain the discrimination against women at the individual level: the majority becomes more discriminatory when the minority wants to access its resources. Promotions to full professors can be considered a zero-sum game at the individual level. Different forces are at play: the necessity to "open the gates" (which could, in principle, help the minority, as explained by social identity theory) together with some discrimination from the competition over the same resources (in this case, harming the minority, as explained by competition theory).

In summary, this article shows that, in aggregate terms, the career progression of members of a minority group is more predominantly subject to intergroup dynamics rather than individual achievements (i.e., individuals' research performance that, in principle, ought to be the main factor in granting a promotion) or individual characteristics (e.g., age, seniority). Instead, the

pressure from a minority group creates some more opportunities for accessing top positions. Minority and majority members might exploit these opportunities at the individual level. Importantly, such opportunities are more available in the cases where the rank composition (masculinity delta) follows a specific pattern: majority-dominated at the highest level, minority-dominated at the level just below. Still, discrimination occurs at the individual level. This means that the minority might advance, albeit slower than expected, following a mere individual meritocratic assumption (e.g., productivity).

Previous literature that has attempted to investigate why change towards equality is so slow has mainly pointed at micro-interactional practices supported by a broader gendered culture of male privilege (O'Connor and White, 2021, Teelken *et al.*, 2021, O'Connor, 2020). This paper suggests that intergroup dynamics contribute to reproduce this gendered culture. Indeed, by "opening the gates," the majority responds superficially to the quest for change. Majorities perpetrate some enduring discrimination towards minority members by granting more promotions, slowing down the process of change. The dynamics observed in this paper might be considered both cause and effect of the underlying cultural system of male privilege found in other studies and sectors as well (Burkinshaw and White, 2017, Poorhosseinzadeh and

Strachan, 2020). It might also underlie the defensive institutional work against gender equality, which has been found by Roos and colleagues (2020).

Previous literature has mainly looked at individual variables, even when considering disciplinary differences, such as in the case of Weisshaar (2017). Our findings highlight that individual and institutional factors should be considered comprehensively to obtain a thorough picture of individual achievement resulting from collective dynamics. Social identity and competition theory can help us understand the behaviours of groups with different statuses.

Previous literature has looked at how the representation of women at top levels might help other women ascend. In literature investigating academia, only a few have looked at intergroup dynamics to evaluate how gender representation at specific levels affects promotion (Crawford, Burns, and McNamara 2012; Hüther and Kirchner 2018). Our findings indicating that women are being prevented from accessing leadership roles are original since data show the effect of gender representation simultaneously at both middle and top levels, accounting for individual characteristics. These findings parallel Hüther and Kirchner (2018) since they do not support the critical mass approach. However, they differ from Crawford, Burns, and McNamara's (2012) study, which found that a higher representation of women among full professors was associated

with more recommendations for promotion. This disparity might be due to differences in disciplinary and national cultures.

6.1 Limits and future directions

This study has some limitations. First, scholars' social capital arguably plays a strong role in academic promotions. Unfortunately, it was not possible to get any proxy for this. Second, the invisibility of formal institutional processes and informal practices involved in promotions is unsatisfactory. These important predictors are unobservable. Possibly, different universities might develop different degrees of sensibility to gender equality due to ample freedom in devising gender equality plans. Third, our dataset did not allow us to check for the glass cliff, which is an important phenomenon to consider even if the features of the Italian context minimize its presence. Fourth, this study was conducted in one country only, disregarding other cultural contexts.

Nevertheless, the dynamic observed in this article might also apply to other professions or organisations. Some good examples are the public sector and bureaucratic organisations with a transparent system of eligibility checks coupled with a hierarchical structure and professional discretion. Furthermore, following social identity theory, majority and minority groups might be defined by variables other than gender (e.g., ethnicity, social class, denominations, political

affiliations, sexual orientation, etc.). Notwithstanding, it could still be possible to find an analogous dynamic: the majority disclosing more opportunities when there is a quest for change coming from the minority (a quest supported by solid figures as well), and at the same time denying perfectly fair access to promotion (that partially discriminates minority members' ambitions).

Further research might inquire about other sectors and countries, other potential discrimination features, the intersectionality of multiple features, the presence of the glass cliff phenomenon, and the role of a sudden rise in public opinion awareness.

7 References

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