

# Unveiling the gender gap: exploring gender disparities in European academic landscape

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Gender inequality is a widespread and enduring problem that has been acknowledged and discussed for centuries. Despite recent efforts promoting gender equality, women still encounter discrimination from individuals and society, facing issues such as gender-based violence, workplace discrimination, and underrepresentation in leadership roles.

Robust evidence unequivocally highlights that these inequalities are particularly pronounced in academic and research sectors, where progress in addressing gender disparities remains disappointingly slow.<sup>1</sup> Although women have achieved parity in educational attainment, globally accounting for 45–55% of bachelor's and master's degrees, the gender discrepancy in academic career advancement is widening. According to the UNESCO Institute for Statistics, data reveal that women comprise approximately 33% of researchers worldwide, but this number falls among higher professional roles according to the “leaky pipeline” phenomenon.<sup>2</sup> In Europe, although women represent nearly half of grade C positions, grade A positions that include full professors and directors of research<sup>3</sup> comprised only 26.2% women in 2018 (Fig. 1), a minimal improvement on the 24.1% in 2015.<sup>4</sup> This gap is especially pronounced in the scientific sector: while for the humanities disciplines women in category A exceeded 30% in 2018, among the Science, Technology, Engineering, and Mathematics (STEM) fields, the figures drop to 22% for the natural sciences and 17.9% for engineering and technology (Fig. 1).<sup>4</sup>

The inadequate inclusion of women in academia is driven by significant barriers and a “glass ceiling” that hamper their career and restrict their potential. Obstacles such as implicit biases, limited networking opportunities, and work-life balance challenges prevent women's advancement to senior positions in academia and research.<sup>1</sup> Female researchers face significant challenges in achieving equal recognition and visibility for their work, as biases in peer review processes and

editorial decisions undervalue or overlook their contributions.<sup>5</sup> In addition, the demanding nature of academic careers intersects with family responsibilities, disproportionately affecting women, particularly after giving birth.<sup>1</sup> Especially in Southern European Countries, there is a persisting stereotype that when a woman gives birth, she must sacrifice her career to take care of the child. Because of this and since males cover most of the leading academic roles, there is the implicit expectation that a female researcher will not be as “productive” as before giving birth. Simultaneously, women can perceive themselves as “less competitive” because of the situation, unconsciously feeling less important compared to the past, thus limiting future willingness to be a leader in research and academic fields. Lastly, gender discrimination and stereotypes in the selection and promotion processes within academia persist. These factors limit advancement opportunities for women, reducing their representation in academic leadership positions. The scarcity of successful female role models and mentors in prominent positions also negatively impacts women's confidence and ambition in pursuing an academic career.

These disparities have far-reaching and profound consequences, impacting various aspects of the research world. Firstly, the underrepresentation of women in leadership and senior academic roles perpetuates a power imbalance, limiting diversity and innovative thinking.<sup>1</sup> Furthermore, this loss of talented women deprives society of valuable insights and groundbreaking discoveries, thereby impeding the advancement of knowledge and understanding.

Beyond academic and research spheres, the gender gap reinforces economic inequalities by limiting women's access to higher-paying positions and opportunities for professional advancement, exacerbating wage gaps and perpetuating gender-based income disparities.<sup>6</sup> Lastly, these inequalities both hinder social progress and send a disheartening message to future generations, discouraging young women from pursuing their academic and research ambitions and reinforcing gender stereotypes.

Encouragingly, Europe has witnessed the emergence of initiatives dedicated to fostering an inclusive and equitable research environment. The European Union's Horizon Europe programme actively emphasizes the importance of achieving gender balance in research



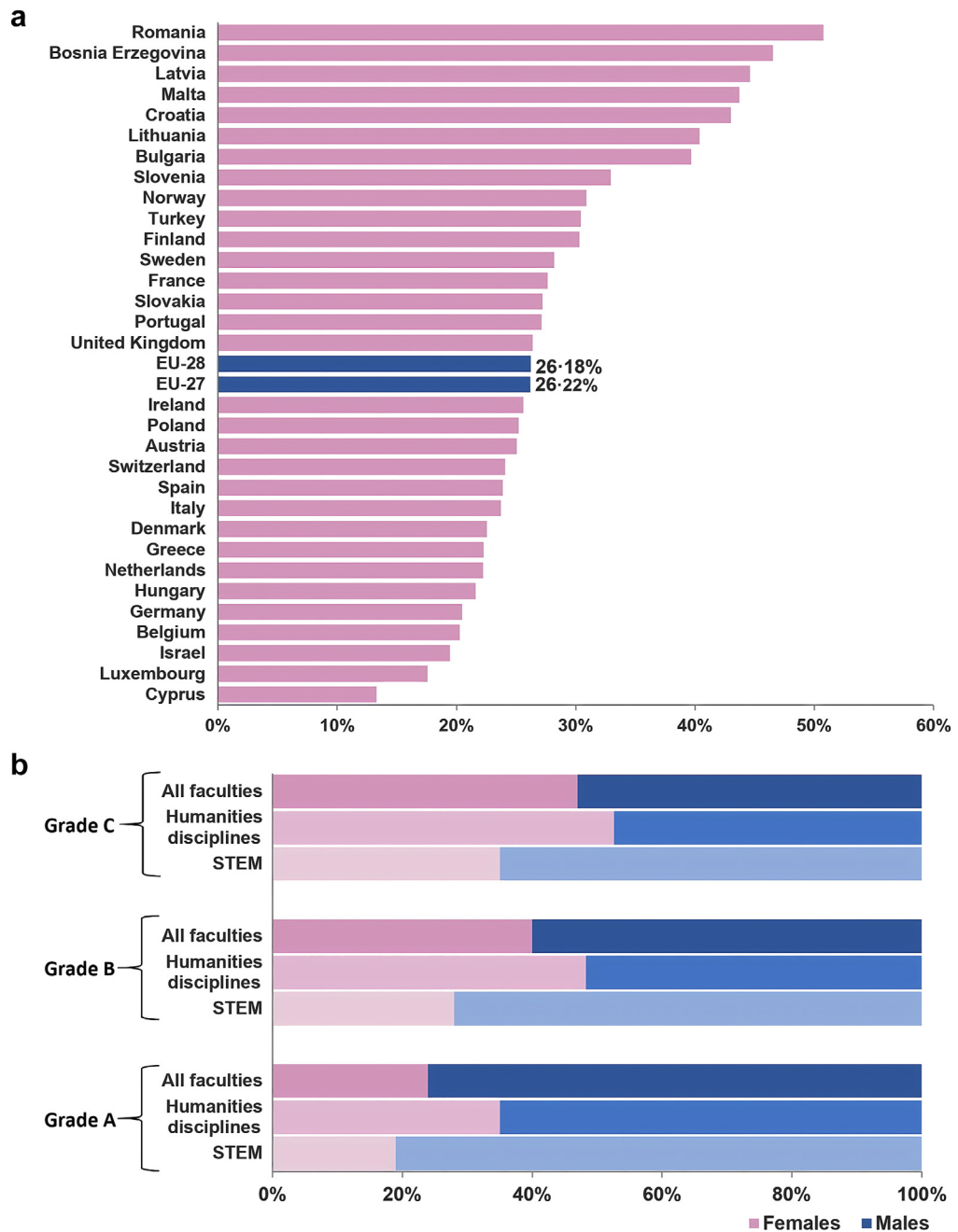
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Fig. 1: a. Proportion of women among Grade A<sup>3</sup> positions in academia in EU in 2018.<sup>4</sup> b. Proportion of males and females in academic roles<sup>4</sup> in EU in 2018, according to the different disciplines.

teams and combatting biases in funding decisions.<sup>7</sup> Furthermore, various European universities and research institutions have implemented their own efforts, such as gender equality plans, mentoring and

sponsorship programmes tailored for female researchers, and inclusive recruitment and promotion practices. Additionally, significant investments have been made in creating support structures, including

accessible childcare facilities, flexible working arrangements, and work-life balance policies, all aimed at addressing the unique challenges faced by women in academia.<sup>7</sup>

Collaborative networks and platforms have also emerged, enabling researchers, policymakers and stakeholders to exchange knowledge, share best practices, and advocate for gender equality. Worldwide projects, such as “Women in Science”,<sup>8</sup> or agencies like the “European Institute for Gender Equality”<sup>9</sup> have promoted gender-responsive research and innovation. Efforts have also been made to increase the visibility and recognition of women researchers’ achievements through awards, prizes, and conferences.<sup>10</sup>

These endeavours across Europe reflect a commitment to creating a more equitable and inclusive research environment. Nevertheless, women also play a crucial role in bridging the gender gap by speaking out against gender bias and discrimination and supporting each other in advancing their careers. Working together, we have the power to forge a future where gender equality becomes an intrinsic and indispensable cornerstone of academia and research.

#### Contributors

S.B. conceived the original idea, laid the groundwork for the study and revised the manuscript. S.F. wrote and organised the manuscript. R.I. revised the manuscript and accepted the final version for publication.

#### Declaration of interests

No specific funding was received for the preparation of this manuscript. The authors declare they have no conflicts of interest.

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