

Introduction – Research Funding Organizations

Most research nowadays is carried out in teams, often across disciplinary, organizational and national boundaries. Instruments to monitor and assess the impact of team composition – specifically from a gender perspective – on research processes and outcomes are scarce. The GEDII project provides new tools and evidence to better understand how gender and diversity should be addressed on the team level in order to guarantee a more just science system and better quality research. Supporting equality concerns remains a pressing challenge in the face of an increasingly diverse and demanding R&D funding landscape.

Why are Funding Organizations important?

Success in competitive research funding is an important measure of scientific excellence. Several gender issues are well known to interfere in the just distribution of funding such as the under-representation of women in gatekeeper positions, the bias of review processes, gendered definitions of excellence or the penalty of carrying out interdisciplinary research. At the same time, the rise of team science poses new demands on funding organizations that have to consider the unique new challenges of funding teams instead of individuals such as group size, geographic distribution, or knowledge integration in interdisciplinary or transdisciplinary research. An innovative policy agenda for addressing the gender challenge in research funding needs to pay attention to team level which is key for the success of the overall research and gender equality issues such as career advancement.

Key points and recommendations

- Evaluating and funding collaborative projects requires to consider team size and team complexity as distinct success criteria of projects. Larger teams with higher levels of diversity face greater difficulties of knowledge integration. Coordination and integration costs should be considered and explicitly accounted for in research proposals, especially for interdisciplinary and transdisciplinary projects.
- Funding organizations can provide incentives for team science by facilitating team-based awards and develop new standards for distribution of collective credit and its recognition during proposal review processes.
- The GEDII project has developed the Gender Diversity Index, a monitoring and assessment tool targeting specifically the team level. It is a composite indicator to measures the participation of women and men in teams in a more elaborate way across 7 pillars including age, education, care responsibilities, marital status, type of contract, seniority and team tenure.
- A central result of the GEDII project stipulates that a higher score on the Gender Diversity Index (GDI)

indirectly increases a team's productivity. On average, the difference between no inclusivity (a score of 0) and being fully inclusive (a score of 1) generates the equivalent of the productivity of one additional senior team member.

- The higher productivity of more inclusive teams is important because it indicates that gender balanced research groups can mitigate the productivity gap between women and men and thus contribute to more equal science careers.
- Funding organizations can use the GDI as a more sophisticated instrument to assess the gender inclusiveness of applicant teams beyond simply counting the "women on the team". Assessing gender diversity across the 7 pillars will raise awareness among researchers beyond simply "ticking the gender box".
- The Gender Diversity Index is a valuable new instrument for monitoring the potential impact of more gender inclusive teams on research performance by tracking the productivity (number of publications) as well as quality (citations) of their funded research.
- Funding organizations are in a privileged position to promote further research on the relationships between gender diversity in teams and research performance, beyond the GEDII project. In order to consolidate our findings, follow up studies across disciplines and S&T fields are warranted across Europe, supported by more targeted funding for team science initiatives.

Five Must Reads

European Commission, ed. 2009. *The Gender Challenge in Research Funding: Assessing the European National Scenes*. EUR 23721. Luxembourg: Office for Official Publications of the European Communities. → *Exposes the multifaceted nature of gender in research funding.*

National Research Council (U.S.), Nancy J. Cooke, and Margaret L. Hilton, eds. 2015. *Enhancing the Effectiveness of Team Science*. Washington, D.C: The National Academies Press. → *Excellent overview of team science dimensions in general and consequences for research funding in particular.*

Besselaar, Peter van den, and Ulf Sandström. 2017. "Vicious Circles of Gender Bias, Lower Positions, and Lower Performance: Gender Differences in Scholarly Productivity and Impact." *PLOS ONE* 12 (8): e0183301. <https://doi.org/10.1371/journal.pone.0183301>. → *unequal performance opportunities for women and men create "vicious circles" re-enshrining women's lower position and status in academia.*

Bol, Thijs, Mathijs de Vaan, and Arnout van de Rijt. 2018. "The Matthew Effect in Science Funding." *Proceedings of the National Academy of Sciences* 115 (19): 4887–90.

Nielsen, Mathias Wullum. 2017. "Gender Consequences of a National Performance-Based Funding Model: New Pieces in an Old Puzzle." *Studies in Higher Education* 42 (6): 1033–55.