

The COVID-19 impact on GENDER EQUALITY in Research and Innovation

May 2023



The EU's response to the COVID-19 impact on the European Research Area (ERA)

With the outbreak of the COVID-19 pandemic, the European Commission launched the [ERAvsCorona Action Plan](#) to coordinate EU action with the Member States and to support the scientific community, by providing funding for clinical trials, facilitating open data sharing, and supporting the development of innovative solutions. As it quickly became clear that the pandemic did not affect all researchers equally, the Commission launched an [Expert Group on the COVID-19 impact on gender equality in R&I](#), whose findings are presented in this factsheet.



Why didn't COVID-19 lockdowns impact every researcher the same way?

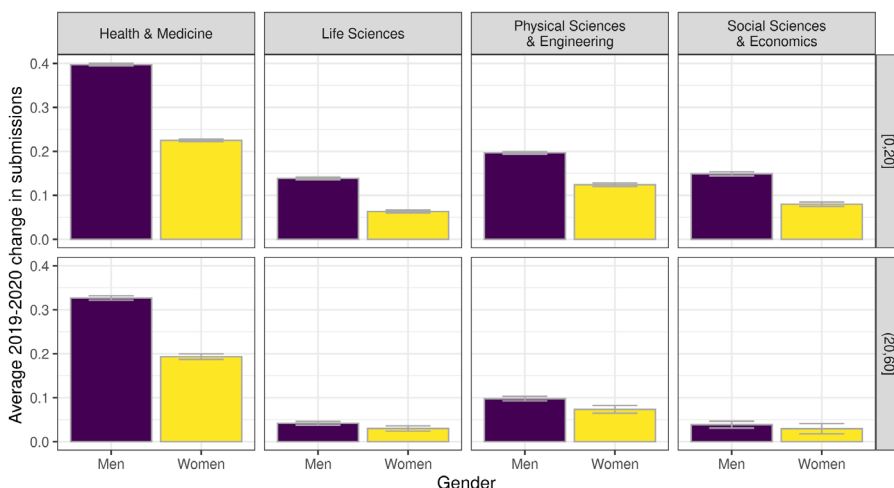


Figure 1. Average change in submissions to Elsevier journals from Feb-May 2019 to Feb-May 2020 by scholar's research area, the latter variable including authors in the first cohort (≤ 20 years from their first publication, probably still untenured scientists) with older authors in the second (e.g. associate & full professors). Bars represent standard errors. (Squazzoni et al. 2021).

The COVID-19 pandemic led to an **increased demand for research** in various areas with abnormal rates of pre-print and manuscript submissions compared to previous years. Women have benefited significantly less from these opportunities. For instance, despite the overall increase in journal submissions, **women submitted proportionally fewer manuscripts than men** during the first wave of the pandemic compared to pre-pandemic submission rates with differences more prominent for **junior women** (see top row representing ≤ 20 years of an academic career in Figure 1). Another study found a **widening gender gap in first authorships** globally, comparing publication data from 2020 and 2021 to pre-COVID-19 publications in the same journals in 2019 (Figure 2).

Several factors contribute to this gendered productivity gap:

- *Women shouldered a disproportionate amount of care responsibilities*, including home schooling, which led to **less time to conduct research**, compared to those without care responsibilities or where this is equally shared.
- *There is a higher representation of women among doctoral graduates in fields such as biology and chemistry, where **access to research facilities is critical***. Mathematics and ICT, where women are significantly underrepresented, were less affected by the closure of facilities. The lockdowns of laboratories and classrooms thus hampered proportionally more research activities of women doctoral graduates.

- *Women academics provided more **teaching and counselling** to students than their male colleagues already before the pandemic. Women academics were therefore more affected by the extra workload from moving teaching and counselling students on-line.*



Why does falling behind in productivity, mobility and networking matter?

- *Lower publication rates slow down career advancement with little perspective of catching up: While certain research funding and performing organisations are moving away from traditional bibliometric indicators for research assessment, the number of publications and citations are still one of the main assessment criteria for recruitment, advancement and funding. Researchers who published less during the pandemic have fallen up to two years behind their peers with no guarantee that this disadvantage will be taken into account in future evaluations.*
- *Spending time carrying out research in another host institution or country and building international networks is essential for a successful research career. As conferences and project activities went online, they became more accessible. However, virtual events cannot fully compensate for physical mobility and there is also a risk of decreased visibility and more gender biases in the way online conferences are moderated. Even where virtual mobility schemes exist, these need to be approached cautiously to avoid creating a two-tier mobility system, where only those with care and academic responsibilities take up this option, while others can benefit from in-person networking.*



How did the R&I community respond?

A number of measures were taken to mitigate the impact of the pandemic on researchers, for example, deadlines were extended, general guidelines were provided and special provisions were made for childcare or career breaks. Generally, however, these measures were mostly **gender-blind**, sometimes unintentionally tipping the balance in favour of men. Only a few R&I organisations implemented gender-sensitive measures.

Policy responses

In May 2020, the [German Research Foundation](#) (DFG) started offering the possibility of applying for additional funds, with minimal bureaucracy, in order to continue and complete research work which could not follow planned procedures due to the lockdown measures. To support equal opportunity during the pandemic, funding recipients could also specify in the 'emergency support' application, whether additional financial resources were needed, in case of staff absences to care for children due to the closure of day care, schools and other care facilities.

The [Canadian Institutes of Health Research](#) (CIHR) integrated gender aspects after launching a rapid response COVID-19 funding competition in February 2020. By factoring sex and gender in R&I content into grant requirements between the first and the second competition, applications from women increased from 29% to 39%, and the share of female Principle Investigators in funded applications doubled from 22% to 45%. Unlike in the initial competition, in the second one, more applications integrating sex and gender dimensions in their research proposal were funded.



Change in Gender Gap (percentage points)

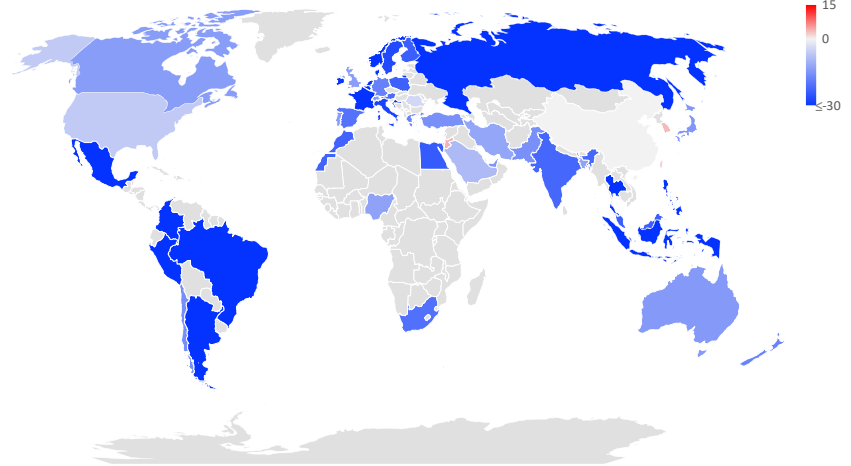


Figure 2. World map depicting the deviation in the gender gap in first authorships for COVID-19 publications when compared with the expected gender in the same journals a year earlier. Red indicates an overrepresentation of women first authors, white indicates gender parity, blue indicates an overrepresentation of men first authors (in percentage points) (Lerchenmüller et al., 2021).



What more needs to be done?

There is a risk that women and disadvantaged researchers will be held back in their careers if the pandemic's impact is not addressed; worse, they may even leave academia altogether as they come up against new structural barriers, particularly in rising to top leadership positions. With the [ERA Policy Agenda 2022-2024](#) and the Action 5 [subgroup 'Inclusive gender equality in the ERA'](#), the Commission will take up the expert recommendations to work together with Member States and stakeholders towards a more inclusive R&I system. In addition, following the introduction of **Gender Equality Plans** as an [eligibility criterion](#) in Horizon Europe, there is an opportunity to **adapt these plans** in order to take into account the experiences of the pandemic. Specifically, [the report](#) calls for:

- further **funding of gender and intersectional research** under Horizon Europe, in line with the [EU Gender Equality Strategy 2020-2025](#), as well as national funding schemes, to support **monitoring of gendered productivity patterns** in research. There is also a need for more data and research on care responsibilities, gender-based violence, work-life balance and wellbeing in the R&I sector.
- reconsidering the **criteria used to assess and select candidates for recruitment, advancement, and funding**. Consideration should be given to corrective measures to offset the impact of the pandemic and lockdown on evaluations and promotions, especially for those with care responsibilities.
- **specific research funding schemes** for the most disadvantaged groups (e.g. women, early career researchers, researchers with care responsibilities) particularly affected by changing work roles and modes to overcome the productivity decline associated with the COVID-19 pandemic.
- enhanced international academic and scientific mobility schemes by promoting and investing in **virtual mobility programmes** and by providing conditions that allow women and individuals with care responsibility, especially early career researchers, to combine care, work and mobility.
- **teleworking to be available as a guaranteed option**, while designing plans and **guidelines for work-life balance** and ensuring that the right to disconnect digitally is recognised and regulated.



Works cited:

Squazzoni, F., G. Bravo, F. Grimaldo, D. García-Costa, M. Farjam, and B. Mehmani, Gender Gap in Journal Submissions and Peer Review during the First Wave of the COVID-19 Pandemic. A Study on 2329 Elsevier Journals, Edited by A. Baccini, PLOS ONE, Vol. 16, No. 10, 2021, p. e0257919, DOI:10.1371/journal.pone.0257919.
Lerchenmüller, C., L. Schmallenbach, A.B. Jena, and M.J. Lerchenmueller, Longitudinal Analyses of Gender Differences in First Authorship Publications Related to COVID-19, BMJ Open, Vol. 11, No. 4, April 5, 2021, p. e045176, DOI:10.1136/bmjopen-2020-045176

More information:

[Report on the COVID-19 impact on gender equality in Research and Innovation](#)

[Gender equality in Research and Innovation](#)

[Coronavirus Research and Innovation](#)

[EIGE: COVID-19 and gender equality](#)

[European Research Area](#)

@EUSciencInnov
@HorizonEU
#EURResearchArea
#UnionofEquality



Publications Office
of the European Union

© European Union, 2023

Reuse of this document is allowed, provided appropriate credit is given and any changes are indicated (Creative Commons Attribution 4.0 International license). For any use or reproduction of elements that are not owned by the EU, permission may need to be sought directly from the respective right holders.

All images © European Union, unless otherwise stated.

Image sources: #349400073 © Natalia, #357685604 © Vectorwonderland, #497704189 #569054713 © VectorMine, #530119558 © topvectors, #422792693 © zaie, #341704272 © Muhammad, #280665660 © Mykola, 2023. © Tartila #279519357, © Visual Generation #297402768, 2022.

Source: stock.adobe.com