



It's time to close the gender gap in research and the digital transformation

Exploratory Mutual Learning Workshop on Gender and Digitalization
Horizon 2020 GENDERACTION project
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It's time to close the gender gap in research

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<https://oecd-innovation-blog.com/2020/06/17/gender-gap-research-oecd-survey-scientific-authors/>



OECD International Survey of Scientific Authors

Some findings on women researchers

- Women are **under-represented** in research careers.
- On average across OECD countries, women are only around **40 percent of all researchers**.
- They are considerably **less likely to be in leadership** positions.
- **Only 30 percent of corresponding authors** are women.
- Women researchers may have **less opportunity** to both enter and advance in their fields.
- The magnitude of this gender gap **varies significantly across fields of research**.

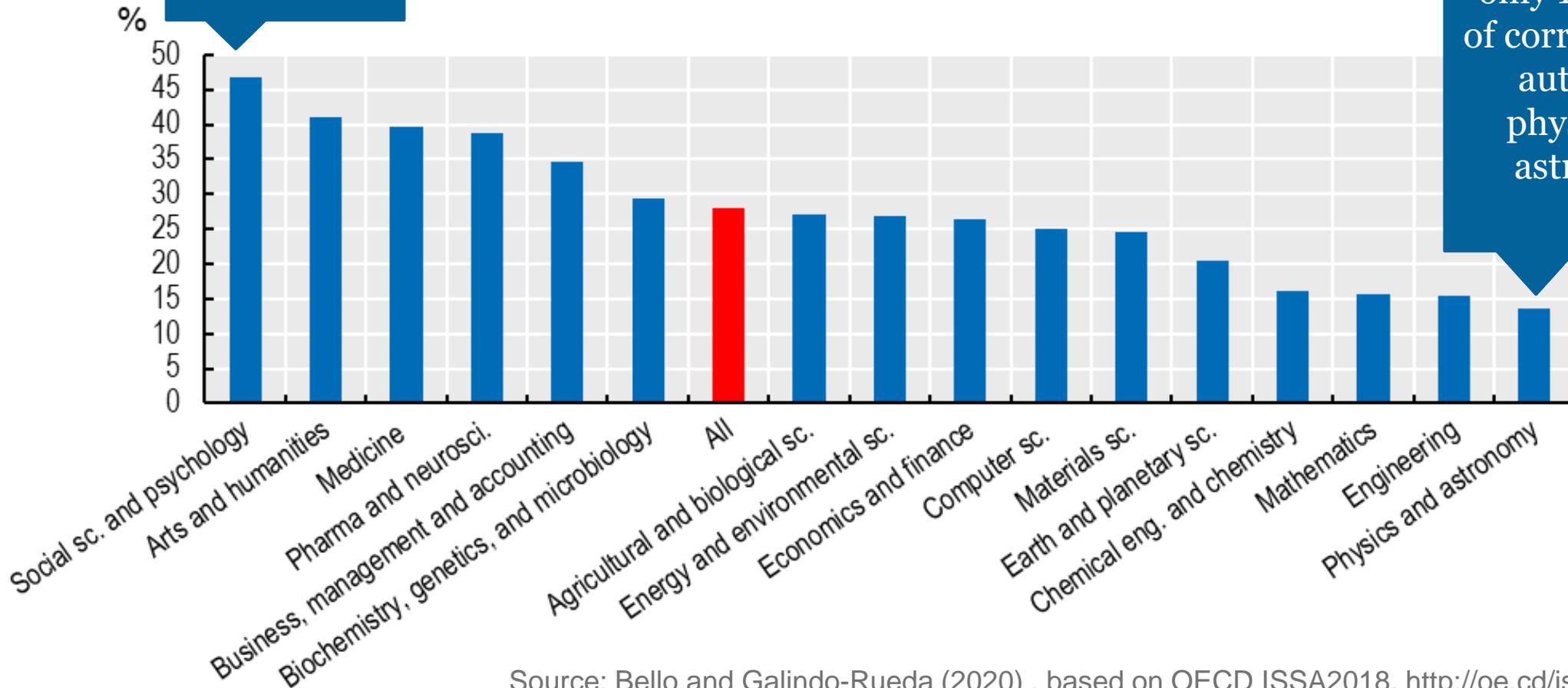


Women scientific authors, by field of research

Percentage of corresponding authors in each field

near-parity
in the social
sciences and
psychology

only 15 percent
of corresponding
authors in
physics and
astronomy



Source: Bello and Galindo-Rueda (2020) , based on OECD ISSA2018. <http://oe.cd/issa>



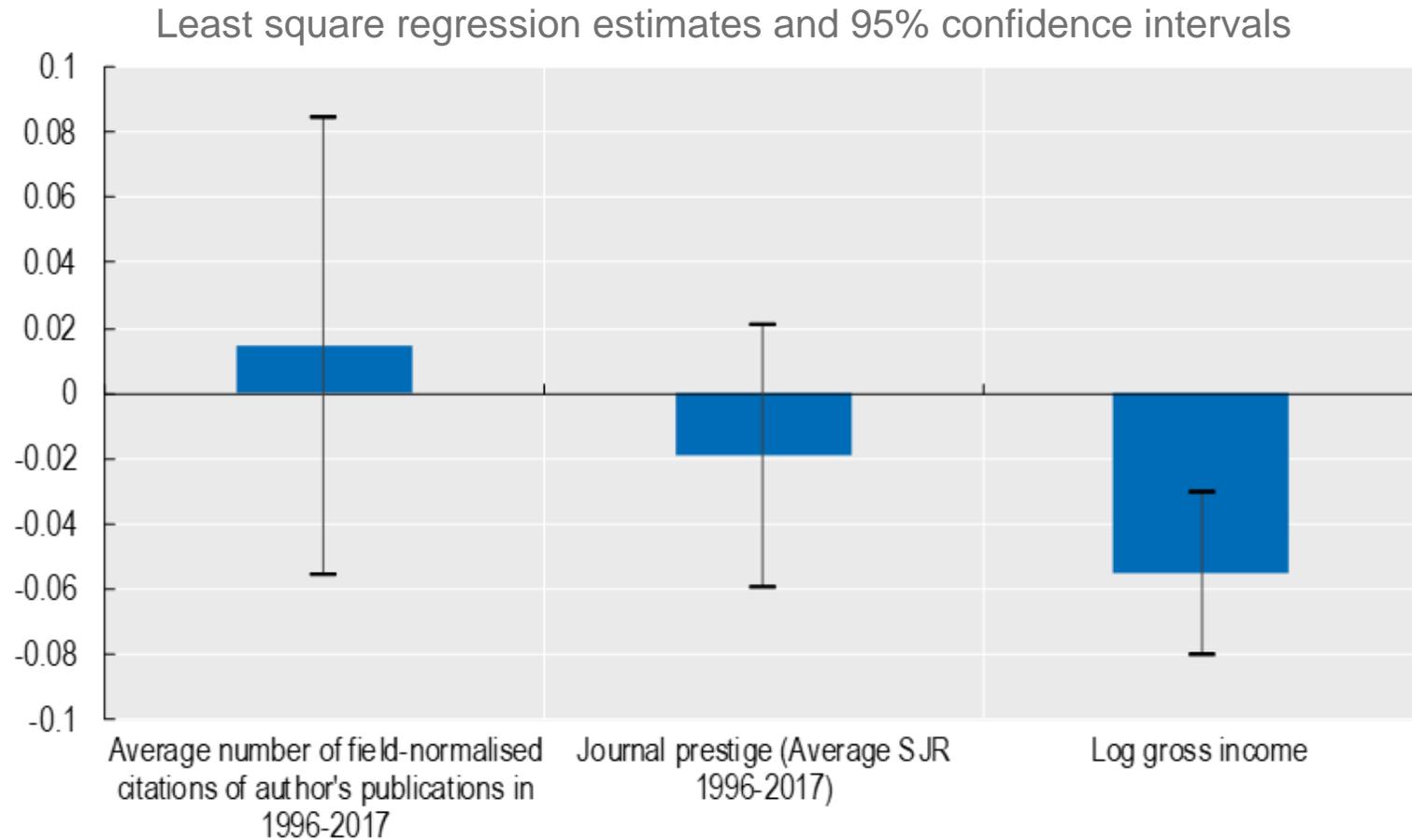
Women researchers earn less

Despite parity in the quality of their research

- Women authors **earn on average 5 to 6 percent less** than their male counterparts do, even after accounting for individual and job-related characteristics
 - The gender wage gap is **particularly wide in engineering and computer sciences** (nearly 27 percent), **and in senior manager positions** (15 percent)
 - Women are at a greater **disadvantage in fields associated with more prestige and better pay**
- However, **the work of male authors is not more likely to be cited or be published in prestigious journals** than that of female authors
- **Women authors also tend to be less mobile** than men are
 - Around 24 percent of male authors live in a country that is different from where they attained their highest degree, compared to only 18 percent of women



Estimated differences of research quality and earnings between female and male scientific authors



Source: Bello and Galindo-Rueda (2020) , based on OECD ISSA2018. <http://oe.cd/issa>



Women appear to face greater challenges in attaining leadership roles

- 80% of female corresponding authors and 85% of male corresponding authors hold a doctorate degree.
- **Yet nearly 15 percent of female corresponding authors are in a subordinate relationship** to a senior researcher, compared to just 8 percent of male researchers.



Gender differences on the use of digital tools

- Women authors appear **less likely to seize opportunities** brought about by **digitalization**
 - they are less likely to use advanced digital tools or share data and code
- But they are **more likely** to engage in activities aimed at building and **maintaining their digital identity**, and to communicate information about their work online
 - **women need to put more effort into having their work recognized**
 - men typically get more credit for co-authored papers in tenure decisions
 - women are held to higher standards when seeking to have their papers published in top journals
- No significant differences in the use of digital productivity and collaborations tools
- Female authors appear more likely to report access to digital infrastructure as a challenge.
- No evidence of significant differences in attitude between women and men towards the impact of digitalization on science.



Gender parity is being achieved at the doctoral level

Things diverge as women advance in the career

Countries need to make **systemic changes in academic structures** and institutions to address gender issues, and keep the momentum to track and evaluate the results of the range of actions and policies to achieve gender equality in science.

If countries fail to remedy gender discrepancies, they risk **wasting considerable talent** that could have otherwise made valuable contributions to their research systems, and **knowledge production** itself becomes inherently **gender biased**.



Science needs a turning point...



In the 1970s and 1980s, many orchestras began using **blind auditions** in an effort to mitigate any gender-related biases among judges.

The experiment marked a turning point for female musicians, as the percentage of women in orchestras increased dramatically.

Science today needs a similar turning point to eliminate systemic bias against women – and it may take similarly bold ideas to get there.



Gender in a changing context for STI

- Most countries are implementing **policies to address gender equity**
 - But policy initiatives remain **fragmented**
- There is a need for **strategic and systemic long-term approach**:
 1. Monitor and address long-term challenges in scientific education, training and careers
 2. Ensure that digital education and training strategies provide full and equal opportunities to girls and women and do not enforce traditional gender stereotypes or introduce digital discrimination
 3. Ensure that the contribution of all disciplines and supporting professions is fully recognised, valued and rewarded in the transition to open science and greater transdisciplinary research

OECD (2018), "Gender in a changing context for STI", in *OECD Science, Technology and Innovation Outlook 2018: Adapting to Technological and Societal Disruption*, OECD Publishing, Paris, https://doi.org/10.1787/sti_in_outlook-2018-12-en.



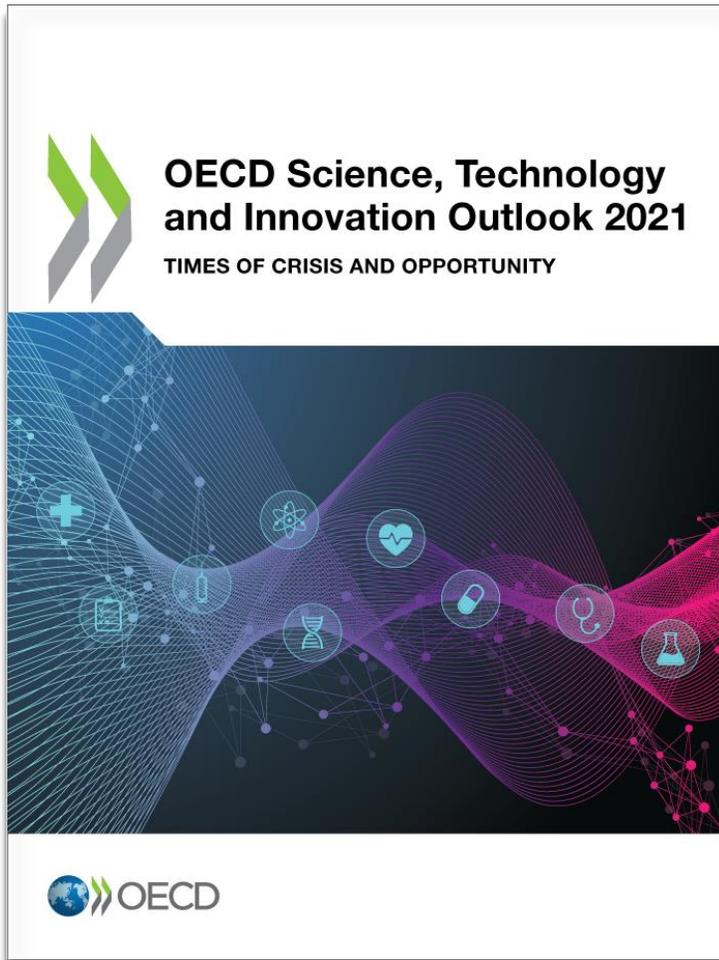
Building digital workforce capacity and skills for data-intensive science

- Capacity building efforts need to create a workforce that **reflects the diversity of society**
 - to ensure that science is not only more productive but also more responsive to societal needs.
- There is substantial evidence of gender inequality in the digital world
 - but **policy interventions can help** pave the way to greater inclusion of women.
- There is a **fundamental role for education and training** in bridging the digital gender divide.
 - Needs to be part of systemic approach
 - Promoting ICT use, skills and learning
 - Empowering educators and making them active agents of change.
- There are now a range **of initiatives that encourage gender diversity in digital roles** (and more broadly in science, technology, engineering and mathematics).
 - CIFAR: supports specific training programmes for schoolgirls and young women to raise awareness of AI

OECD (2020), "Building digital workforce capacity and skills for data-intensive science", *OECD Science, Technology and Industry Policy Papers*, No. 90, OECD Publishing, Paris, <https://doi.org/10.1787/e08aa3bb-en>.



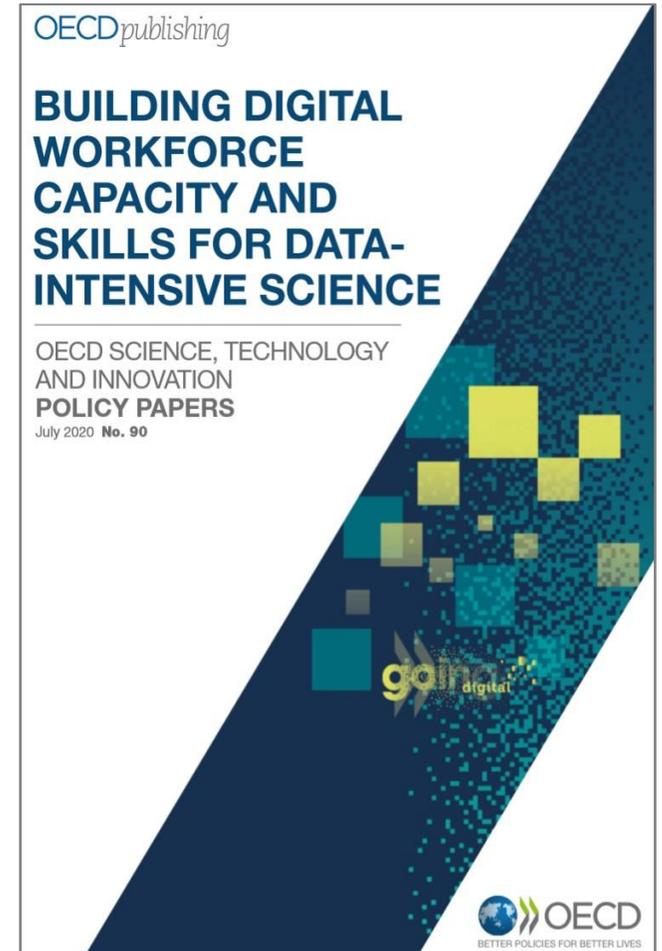
Further information



Chapter 3: Challenges and new demands on the academic research workforce



Website online: <http://www.oecd.org/sti/science-technology-innovation-outlook/>



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Let's discuss!





Thank you!

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