



The long road to gender equality is paved with data

We have come a long way to achieving gender parity at the doctoral and graduate level, but the gender gap persists in pretty much all the following stages of a researcher's career. Identifying the root causes and how to solve them, all boil down to one thing: getting the right data, getting enough data, and recognising that this is an issue that needs to be addressed at the level of every single research project.

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For Michaela Brchnelova, it's a matter of facts. As a doctoral student at the Centre for Mathematical Plasma-Astrophysics in Leuven, Belgium, she is well aware of the skewed proportion of men and women in certain parts of academia.

In her field, for instance, women doctoral graduates are still under-represented. This makes Brchnelova sensitive to the precarity in academia, particularly for female researchers.

'I can see for myself that with a career in academia, you don't have much certainty. The PhD is basically the longest contract you can get early in your career,' said Brchnelova, who was selected for the

[#EUwomen4future campaign](#) launched by Mariya Gabriel, the European Commissioner for Innovation, Research, Culture, Education and Youth, in March 2020.

And while this affects both men and women, it tends to affect women the most. In a world as competitive as academia, taking a year out to go on maternity leave may set a woman back compared to male colleagues, who don't necessarily need to take the same break from their academic track.

'Nowadays it's getting better,' she added. 'My department is really trying to support women who want to have children during their PhDs. Still, it is always accompanied by a lot of hardship. If you take a year off, it is very hard to get back into the game.'

Following the journey of researchers

Since its first publication in 2003, the tri-annual [She Figures report](#) has closely followed the journey of women and men researchers from the time they pursue their doctoral studies and throughout their career, including the research and innovation (R&I) output they produce.

'Having been involved in two editions of the She Figures report, I think it's just an amazing and fantastic document and effort, that doesn't exist anywhere else in the world,' said Dr Elizabeth Pollitzer, co-founder and director of the not-for-profit [Portia](#) organisation that monitors gender equality in science and the inclusion of a gender dimension in R&I content.

'She Figures allows policymakers, universities and research organisations to see how they are doing in terms of gender equality in relation to other countries, and compare across fields of research. And, of course, you cannot make any improvements unless you have pretty good data about the status quo.'

The latest She Figures report shows that gender inequalities in the research space persist despite decades' worth of efforts to improve the situation. For instance, women are still under-represented at the highest level of academia and in decision-making positions, and lag behind their male colleagues in terms of R&I output (such as publications, citations, patents and industry collaborations).

There are also still big differences across study fields, with women representing only 29% of PhD graduates in engineering, manufacturing and construction.

Dismantling the pipeline

While the 2021 edition of the She Figures report shows progress in certain areas, for example the fact that there is almost gender parity at the doctoral and graduate level, the vast amount of Europe-wide data the report is based on also reveals the complexity of the gender issue and the many levels at which gender inequality exists.

'It's very interesting, because more women get PhDs in life sciences than men, so you would think that at least in life sciences the proportion of women at the professor level would be much better than in other fields,' said Dr Pollitzer. 'But that isn't the case. So, I think that what we have learned over the last 10 years is that we cannot look at the pipeline as a whole; we have to look at each segment of the pipeline and identify what is happening that stops women moving forward.'

Dr Pollitzer explains how the She Figures data indicate that each career stage for a researcher creates its own barriers: the obstacles women meet in advancing to a position as associate professor, for example, are different than the ones they face in reaching a full professorship. As such, targeted solutions are needed for the different legs of the academic career.

'60-70% of full professorships are occupied by men. So, unless new professorships are formed and the system changes, it will be very hard to actually achieve gender balance in these top positions,' she said.

Planning, monitoring and measuring progress

Data are central to developing policies that apply across the board. But data is a fickle thing. Privacy regulations, different ways of collecting data and varying understandings of the type of data to collect, mean that it can be very difficult to get a detailed overview of the situation at national level, let alone at EU level.

As an economist in the Marco Biagi Department of Economics at the University of Modena and Reggio Emilia, Professor Tindara Addabbo knows her way around the data landscape better than most. Using the She Figures as a point of departure, she can disaggregate the data to get a clearer picture of gender equality at the level of individual universities.

For example, with her research team Professor Addabbo has developed the IDEM index, a systemic indicator that brings together different dimensions of gender equality within organisations to better guide the design of actions aiming to improve gender equality and measure their overall impact.

Coordinating the [LeTSGEPs](#) project, Prof. Addabbo is working closely with research performing organisations to implement [Gender Equality Plans](#) (GEPs). This is a new requirement for all universities and research bodies applying for funding under Horizon Europe.

‘It was very powerful that the European Commission stated very clearly that each action in a GEP must have specific Key Performance Indicators – KPIs,’ said Prof. Addabbo. Based on concrete measures and targets, GEPs include actions that aim to promote gender equality through institutional change. They also address work-life balance and organisational culture, gender equality in recruitment and career progression.

But measuring the achievement of outcomes requires developing the right indicators.

‘The glass ceiling index is very useful,’ said Prof. Addabbo, referring to the indicator in She Figures that explores the barriers that impede women’s access to top decision-making and managerial positions. ‘But another indicator that is not currently used in She Figures is the [glass door index](#).’

Introduced by Ilenia Picardi, the glass door index (GDI) documents and allows us to measure the invisible barriers that hinder the academic path of women from the earliest career stages. And while the glass ceiling index in the latest She Figures report shows that there is slow but steady progress in women achieving top level positions, the GDI can reveal a different trend: when applied to the Italian academic system, the GDI in fact showed a decrease in the share of women with access to stable academic positions in all the main research fields.

The more data the better

‘For us, data and statistics are the starting point,’ said Zulema Altamirano, Director of the Women & Science Unit at the Spanish Ministry of Science and Innovation. ‘We need a scientific picture of how the situation is; and for that, we need data.’

Her team in the ministry led the work on strategic policy advice during the EU-funded [GENDERACTION](#) project, and is developing policy solutions that can improve the gender balance in public research organisations in Spain. They use the She Figures report to get a picture of how the overall situation in Spain is compared to the rest of Europe, and to identify new ways to improve gender equality in their national research space.

An important part of the ministry’s work lies in liaising with the research organisations. ‘If they don’t see any problem with gender equality, then they will ask why they should put so much effort into collecting the data properly,’ she said. ‘That’s why we explain the connection between what we are asking from them and what this will bring them in return.’

In the case of Spain, public research organisations are well-versed in comprehensive data collection which has been compulsory since 2007. Altamirano and her colleagues can use this information to build a clear picture of gender equality at the country’s public research organisations. The next level of action then, is to start asking why the situation looks the way it does, and to develop policy actions that can improve the status quo.

Altamirano can list a range of initiatives launched in Spain to effect change, the biggest being new legislation that will make it compulsory for research organisations to not only implement actions towards improving gender equality, but also follow up on them.

‘The second part is crucial,’ she said, ‘Once we have the picture, we then need to ask if the measures we are taking to improve gender equality are actually working. Because on paper, everything is possible.’

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