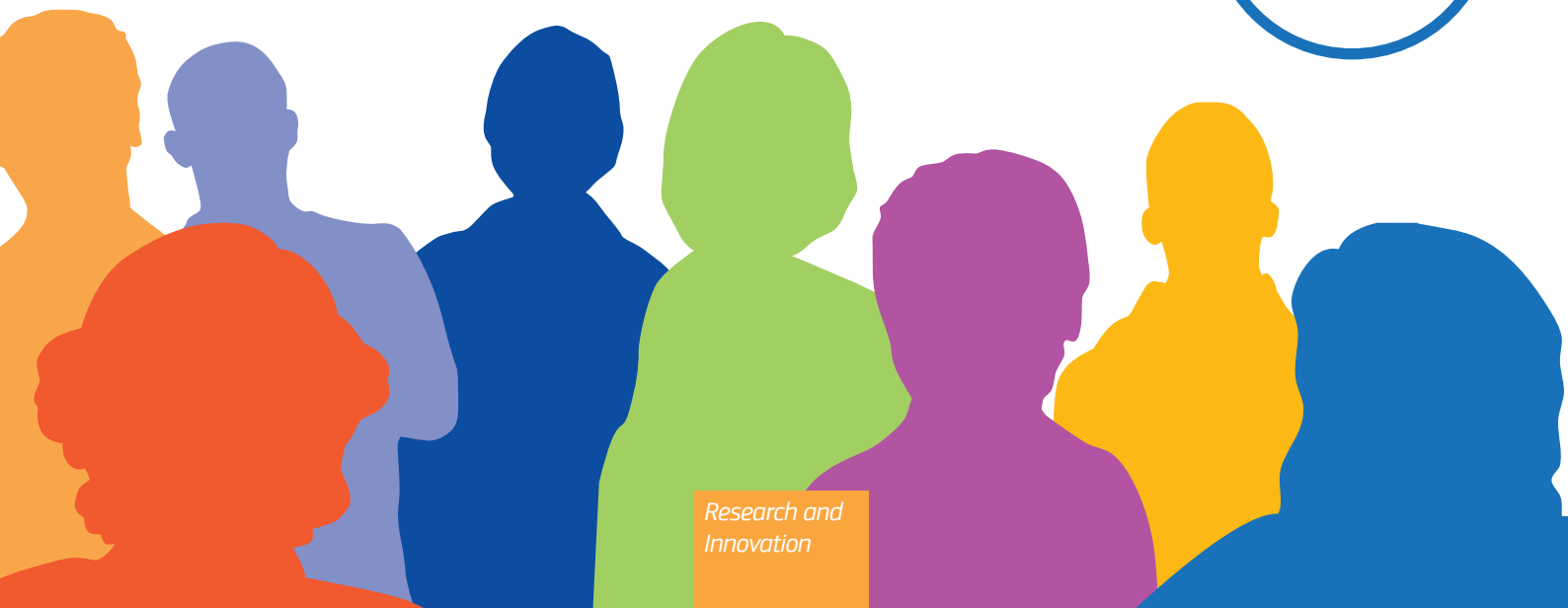
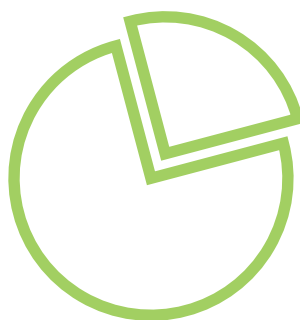




# SHE FIGURES 2018

## Executive summary



Research and  
Innovation

## **SHE FIGURES 2018 – Executive Summary**

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Equality between women and men is a core value of the European Union, enshrined in the European Treaties. The EU, through a large body of legislation, actively promotes gender equality in areas such as equal pay, work-life balance, health and safety at work, social security, access to goods and services, and protection from human trafficking, gender-based violence and other forms of gender-based crime.

The EU is also equally committed to advancing gender equality in research and innovation. More specifically, gender equality and gender 'mainstreaming' (the integration of a gender perspective in the preparation and evaluation of policies) in academic research is one of the priorities for the European Research Area, and the promotion of both of these policies within research and innovation is among the aims of the EU's framework programmes. In Horizon 2020, gender equality is both a 'cross-cutting' issue and the topic of the dedicated Work Programme 'Science with and for Society', which funds specific initiatives in support of the EU's gender equality strategy.

The 'She Figures' publication provides a range of indicators on gender equality in research and innovation at pan-European level. It aims to give an overview of the gender equality situation, using a wide range of indicators to examine the impact and effectiveness of policies implemented in this area.

The EU is approaching gender balance among doctoral students (Chapter 2). Overall, in 2016, women made up 47.9 % of doctoral graduates at the EU level, while in two thirds of EU Member States the proportion of women among doctoral graduates ranged between 45 % and 55 %. While the overall number of both women and men doctoral graduates increased between 2007 and 2016, in most of the countries that She Figures covered, the number of women doctoral graduates increased at a faster rate than that for men. The proportion of women among doctoral graduates still varies among the different fields of education; in 2016, women doctoral graduates at EU level were over-represented in education (68 %), but under-represented in the field of information and communication technologies (21 %) and the fields of engineering and manufacturing and construction (29 %).

Tertiary educated women make up a majority of 'professionals and technicians' in the EU-28 (Chapter 3). More specifically, in 2017 at the EU level, women represented 53.1 % of the persons with tertiary education who were employed as professionals or technicians. In contrast, in science and engineering, women in the EU-28 were still a minority as they made up only 40.8 % of people employed as scientists or engineers. However, between 2013 and 2017, in both science and engineering and professional and technical occupations, the number of women grew on average by 2.9 % per year between 2013 and 2017. In total employment, women continue to hold lower shares than men, and even when they have tertiary education, women are more likely than men to be unemployed. In the EU-28 in 2017, the unemployment rate for women with tertiary education was 3.8 %, while for men the same rate was 2.9 %.

Gender imbalance amongst researchers still remains as in 2015 only one third of the EU's researchers were women (Chapter 4). However, during the 2008-2015 period, the number of women researchers in the EU-28 increased at higher rate on average than men (3.8 % for women and 3.4 % for men). Women researchers' presence in 2015 was strongest in the government sector (where 42.5 % of researchers are women) and in the higher education sector (42.1 %) resulting in a more gender-balanced population of researchers at the EU level. On the contrary, in the business enterprise sector, women are still severely under-represented as they only represent 20.2 % of the total number of researchers.

Differences between women and men can also be observed in their working conditions as researchers (Chapter 5). At the EU level, the proportion of women researchers working part-time was higher than that of men; 13 % of women researchers and 8 % of men researchers were working part-time in 2016. Furthermore, 8.1 % of women and 5.2 % of men researchers worked under contract arrangements considered as 'precarious employment'. In terms of equal payment, there is still a considerable gender pay gap in scientific R&D occupations. Across the EU-28, women in R&D earned on average 17 % less than their men colleagues in 2014, and the gender pay gap was found to widen with age. Moreover, the presence of women researchers seems to have an inverse relationship with the R&D expenditure per researcher; most of the countries that spent more per researcher had some of the lowest shares of women researchers.

As they move up the academic ladder, women are less represented (Chapter 6). In the EU-28 in 2016, women represented 48 % of doctoral students and graduates, 46 % of grade C academic positions, 40 % of grade B and 24 % of grade A academic positions. The gap between women and men was wider in STEM (science, technology, engineering and mathematics); while women made up 37 % of doctoral students and 39 % of doctoral graduates, they held only 15 % of grade A academic positions. In the EU-28, the proportion of women among heads of institutions in the higher education sector increased from 20 % in 2014 to 22 % in 2017. Furthermore, in 2017, women made up 27 % of the members of boards of research organisations, while when focusing on board leaders alone, the proportion of women decreased to 20 %.

In the EU-28, women were still under-represented in the writing of scientific papers (Chapter 7). Between 2013 and 2017, the ratio of women to men among authors of scientific publications in the EU was on average one to two. However, this ratio is slowly improving and it has been increasing by almost 4 % per year since 2008. The highest women to men ratio of authorship was observed in the fields of medical and agricultural sciences, where a little over eight women authors corresponded to 10 men authors. Moreover, women are still strongly under-represented among patent inventors; between 2013 and 2017 in the EU, the women to men ratio of patent inventors was on average just over one to ten. A strong gender gap in the composition of the inventors' teams was also observed in the EU-28, where the most frequent composition of the teams was all men (47 %), followed by those with just one male inventor (33%). A final overall observation for EU countries was a slight gender gap in receiving research grants. The funding success rate was higher for men team leaders than women team leaders by 3.0 percentage points.



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Equality between women and men is a core value of the European Union, actively promoted in all aspects of life by the European Commission. What is the situation in Research and Innovation? Are women participating and contributing to it to the same extent as men? Or is the so-called 'leaky pipeline', the phenomenon of women dropping out of research and academic careers at a faster rate than men, still prevalent?

The She Figures 2018 presents the latest available official statistics on the footprint of women in the research landscape. The data follow the 'chronological journey' of researchers, from graduating from higher education programmes to acquiring decision-making roles, while considering their working conditions and intellectual outputs. The publication highlights also the differences between women and men in all these respects.

Produced in close collaboration between the European Commission and the Statistical Correspondents of the EU Member States and Associated Countries, She Figures 2018 is recommended reading for policymakers, researchers and anybody with a general interest in these issues.

*Studies and reports*

