

CLOSING THE GENDER GAP IN THE TECH TRANSITION, CRUCIAL FOR ECONOMIC AND SOCIAL GROWTH, CALLS FOR INVESTMENT IN EARLY EDUCATION

Posted on 07/10/2024 by Naider

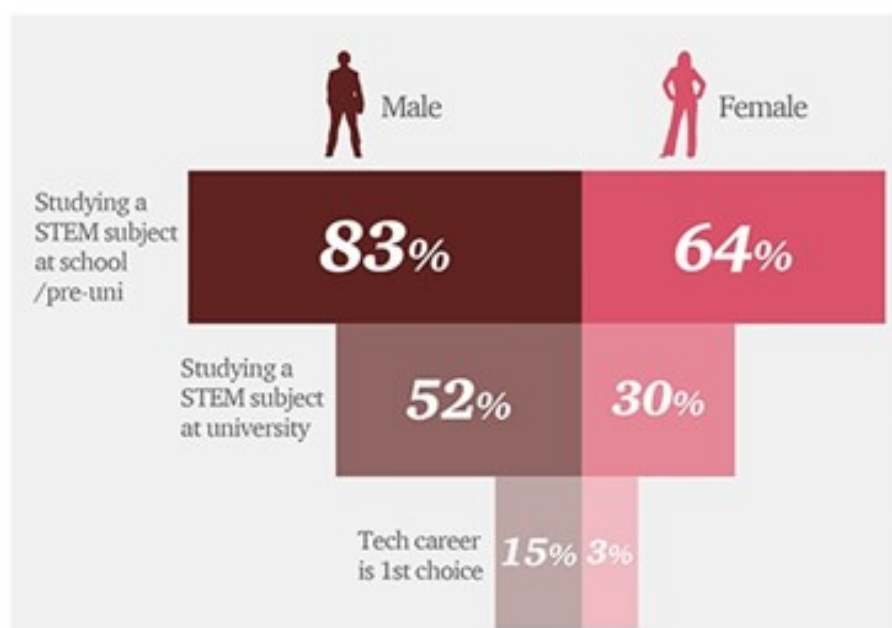
Gender gap remains a critical issue globally, as the World Economic forum highlighted in the [latest report](#). It continues to hinder progress and limiting opportunities for women worldwide. Although gender parity has slightly improved globally from previous years according to the World Economic Forum, it is still a very slow process, and affects all segments and processes of society, including the ongoing technology transition.

This transition plays a major role in improving healthcare, the way we work, or combat climate change. As we navigate it, professionals in science, technology, engineering and mathematics (STEM) are key; however, female underrepresentation is severe. While in the life sciences and health disciplines we have somewhat reached parity in terms of workforce share, we are still lagging far behind in most domains. Particularly concerning is the field of IT, where current trends suggest it may take over 280 years for women to achieve equal representation. Overall, women comprise only 28% of the STEM workforce.

Understanding the roots of the Gender Gap in STEM

According to PwC, this underrepresentation of female talent in technology transition originates early on, beginning in school and continuing throughout their lives. A study by United Nations Developmental Programme (UNDP) in Uzbekistan provided similar findings: girls typically develop an interest in STEM between ages 13-18, influenced by their school classes, participation in STEM activities, and exposure to STEM on TV.

By the time they reach university, only 30% of women study STEM degrees in the UK, compared to 52% of men. When transitioning to the workforce, it is challenging to retain women in STEM jobs as well, as they gradually leave the STEM workforce as they gain more experience and achieve higher ranks. This consistent trend has been labelled as *leaky pipeline*.

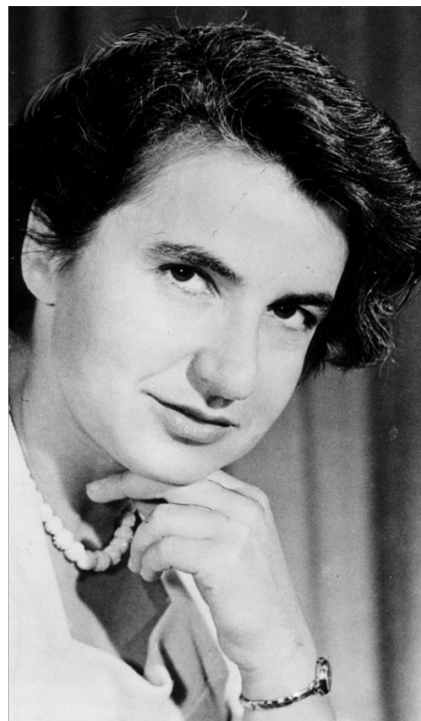


Share of women in STEM at school, university and 1st career choice. Source: PwC UK.

Many have tried to explain the reasons for such a trend. PwC argues that the shortage of female role models is a major barrier, as well as a lack of understanding of how technology can enable women to change the world. This view is supported by the American Association of University Women (AAUW), who argue that fear of confirming negative stereotypes can negatively impact

performance and career aspirations, a phenomenon known as stereotype threat. Exposure to female role models, according to their research, can help alleviate such fear.

However, women who choose to remain in STEM often encounter the glass ceiling, although experts have introduced a newer term: the broken rung. This refers to the challenge of advancing to managerial or mid-senior positions within the industry, further increasing the leaks in the pipeline.



Women in STEM (From left to right): Zaha Hadid (architect and Pritzker award winner); Ginny Rometty (electric engineer and former IBM CEO); Rosalind Franklin (chemist – her work led to the discovery of DNA structure).

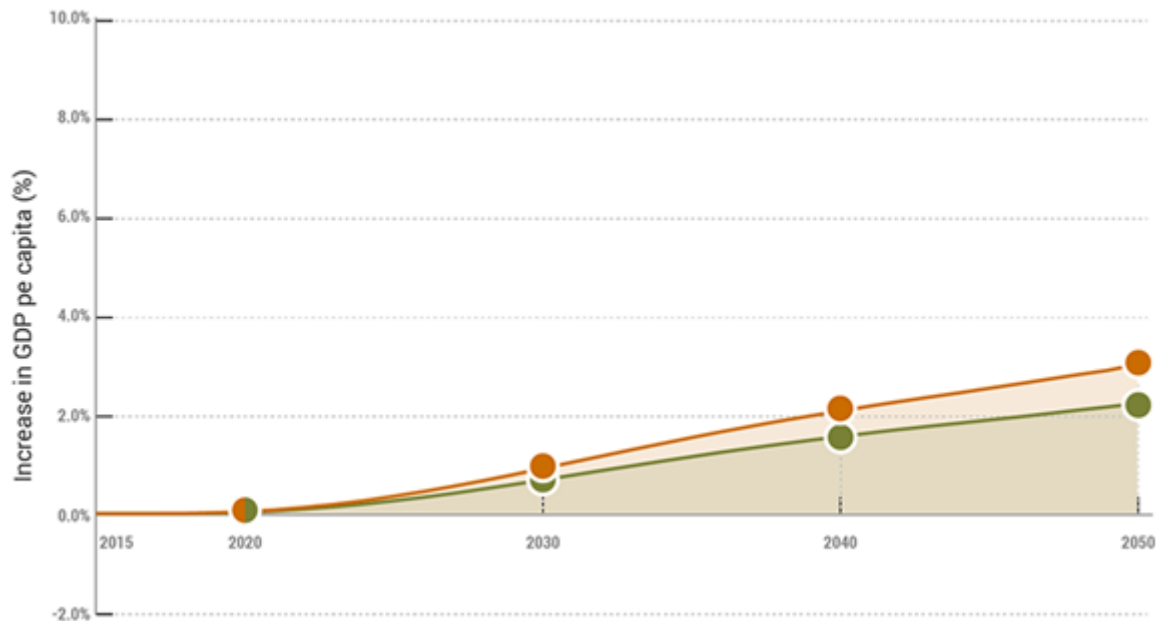
The economic and societal impact of Gender Gap in Technology Transition

As some of today's highest-paying jobs are in engineering and IT, gender gaps prevent women from accessing these better-paid opportunities compared to men. The European Parliament noted that STEM professionals face lower unemployment rates and enjoy significantly higher wages. By excluding women from STEM fields, their chances of economic success are reduced, increasing the risk of poverty.

Moreover, companies that fail to actively recruit women into tech roles limit their access to a diverse talent pool and miss out on innovative perspectives. This exclusion not only stifles creativity and innovation but also overlooks women's specific needs and perspectives, perpetuating historical biases. These innovations are often designed with only men in mind, neglecting a significant portion of society. In medicine, most drugs have been tested primarily on white men, disregarding potential physiological differences in women and other ethnicities. Similarly, when seatbelts were first introduced, they were designed to fit the male body, leading to the loss of lives among many women and children.

According to the European Institute for Gender Equality, achieving gender parity in STEM fields could boost GDP per capita in the EU by 2.2 to 3.0% by 2050, equating to €610 - €820 billion in

economic gains. Overall gender equality efforts could potentially raise EU GDP per capita by 6.1 to 9.6% by 2050, amounting to €1.95 to €3.15 trillion. Similarly, the International Monetary Fund (IMF) also underscores the economic potential of female talent, suggesting that eliminating barriers in STEM fields could accelerate Japan's economic growth by 20%, pushing technological boundaries and improving overall welfare for all Japanese workers by 4%.



Impact in the GDP per capita of closing gender gaps in STEM. Source: European Institute for Gender Equality

Tackling the Gender Gap in Tech

The early years are crucial for fostering curiosity and scientific exploration and combating harmful gender stereotypes. To increase female representation in STEM and narrow the gender gap, investments across women's lifecycles are essential, starting with early childhood development and continuing through school learning.

According to AAUW, efforts should focus on cultivating girls' interest in science and engineering. This includes increasing the visibility of female role models for both girls and boys, emphasizing the lack of gender difference in performance in nearly every STEM subject, promoting a growth mindset, teaching about stereotype threats, and encouraging girls to recognize their career-relevant skills and pursue advanced science and technical classes in high school.

Similarly, research by UNDP in North Macedonia suggests several strategies to encourage girls to pursue STEM careers. Implementing large-scale programs for secondary school students can inspire young girls to consider STEM fields. Organizing promotional events can further boost their interest in STEM subjects, while government-sponsored scholarships for women in STEM can provide essential financial support. Supporting mentorship opportunities and fostering partnerships between educational institutions and STEM companies to offer internships can also play a crucial role in this effort.

However, support for women should extend beyond these early initiatives and continue throughout their academic and professional journeys, ensuring sustained interest and improved job opportunities in adulthood.

In conclusion...

... the gender gap as a whole remains a global issue, hindering progress and opportunities for women worldwide. Despite some advances in STEM, disparities persist, with women significantly underrepresented. Efforts to bridge this gap should start early with investments in childhood education and continue with ongoing support throughout women's careers. Initiatives to foster girls' interest in STEM, provide role models, and combat stereotypes are essential to start plugging the leaks in the pipeline.

Closing the gap in this transition will not only promote economic growth, as highlighted by institutions like the EIGE and the IMF, but also foster innovation and societal advancement. Achieving gender parity in tech is not just a matter of fairness, but a strategic imperative for creating a more inclusive and prosperous future.

Illustrative picture: Louis Reed, Unsplash

