LinkedIn Economic Graph

International gender representation in STEM employment and skills

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Jobs in Science, Technology, Engineering, and Mathematics (STEM) are important for a dynamic economy and offer potential for career progress with higher income and lower unemployment. Consistently, across countries we analyzed, women are consistently underrepresented in STEM, and have the lowest representation in leadership positions within STEM occupations. We investigate possible contributing factors, such as the differences in showcasing STEM-related LinkedIn skills and the stark drop off in women representation between STEM graduation and STEM employment. While these trends are relatively consistent across countries, there is nonetheless wide variation in the magnitude of the disparities.

Introduction

The fields of Science, Technology, Engineering, and Mathematics (STEM) serve as bedrocks for innovation, technological advancements, and economic growth in modern economies. From AI researchers shaping the future of technology to civil engineers designing sustainable infrastructure, STEM professionals drive progress in various sectors. However, despite the progress made in narrow gender gaps in STEM employment, significant disparities persist in STEM fields across the globe (Anderson et al., 2021; Baird et al., 2017; Beede et al., 2011). Achieving gender equality in STEM is not only crucial for ensuring fairness but also holds the potential to benefit the overall economy (Morais Maceira, 2017). This white paper examines the current gender disparities in STEM employment in several countries, drawing insights from proprietary LinkedIn data. By analyzing these gaps and presenting potential solutions, our goal is to foster inclusivity, embrace diversity, and provide equal opportunities for everyone, thus driving societal progress and unlocking the full potential of human capital.

With the increased emphasis on AI and generative AI, understanding and addressing the STEM gender gap is a matter of national and global importance. Not only does it reflect the broader issue of gender inequality, but persistence of gender gaps also hinders the realization of sustainable and inclusive development goals. In addition, the rise of AI technologies portrays that yet another gender gap is arising with women underrepresented in occupations likely to be insulated or augmented by GAI. Unfortunately, there is a lack of comprehensive, cross-country analysis concerning gender gaps in STEM employment (Hägglund & Leuze, 2021). Women, representing half of the global population, possess untapped talents and innovative potential limited by systemic barriers and biases (Morais Maceira, 2017). Rectifying gender imbalances in STEM fields is essential for building a diverse and inclusive workforce, fostering creativity, and driving innovation (Hudson, 2014; Lambert, 2016). Moreover, increased representation of women in STEM positively impacts various areas such as medical research, technological devices, and safety products, leading to improved products and services for women. This paper serves as a foundation for evidence-based policies and initiatives that can effectively address these barriers and create opportunities for greater female participation in STEM.

Primary findings

In its 2023 edition, the World Economic Forum's Global Gender Gap Report utilized LinkedIn data and analysis to examine STEM skills and employment trends on a global scale (World Economic Forum, 2023). This paper provides a detailed breakdown of those findings by presenting country-level estimates. The figures presented will focus on 12 key countries; however, appendix tables will extend these findings to include additional countries with sufficient data quality. Where reported, global numbers are calculated by aggregating data from all countries that meet our minimum thresholds for gender-related analysis.

While there is variation across countries—often substantial—there are many key common

threads reinforcing the breadth of STEM gender disparities internationally:

- **Across countries, women are consistently underrepresented in STEM:** In all 39 countries evaluated, the percentage of men in STEM occupations surpasses the percentage of women in STEM (globally, 31.0% of men are in STEM vs. 15.6% of women). Additionally, women account for less than 50% of all STEM workers in each country. Only six out of the 39 countries had more than one-third of STEM workers represented by women.

- **The gap is narrowing over time.** Encouragingly, the STEM employment gender gap reduced between 2016 and 2023 in all but one of the examined countries, indicating steady progress towards gender equity in STEM.

- **Even in female-concentrated industries, women have significantly lower representation in STEM occupations within these industries compared to non-STEM occupations.** For instance, in the Education sector, women account for over 50% of workers in non-STEM occupations in 30 out of the 31 countries examined, with Finland leading at 76%. However, when it comes to STEM occupations within the education industry, women comprise less than 50% of workers in all but three countries, with Finland reaching a high of 56%.

- **The most significant widening of the gender gap in STEM occurs between the time of graduation with a STEM degree and employment one year later.** This is true in each country and across the past four cohorts of students graduating with a STEM bachelor's degree. Comparatively, changes in representation across the subsequent five years of work show relatively smaller shifts. For instance, consider Australia's STEM graduating cohort of 2017. One year after graduation, 38.9% of men from this cohort were working in STEM, while only 30.1% of women were in STEM occupations. Consequently, the proportion of STEM workers who were women decreased from 38.2% of STEM graduates to 31.6% one year later. Over the following five years, this proportion experienced a much smaller decline, settling at 31.4% of STEM workers being women.

- **While women are underrepresented in leadership positions, they hold an even smaller share of leadership positions among STEM jobs.** For many countries, the proportion of women in entry-level non-STEM positions is similar to the proportion of women in C-suite positions within the STEM field. Women comprise less than 30% of all VP-level STEM workers in all but one country.

- **Women are less likely to list STEM skills on LinkedIn than men across all countries.** This is true independent of whether they work in a STEM occupation. However, there is substantial variation in the difference, and the gap is widening in some countries while narrowing in other countries across time.

Taken together, these findings indicate the presence of persistent STEM gender disparities across countries, suggesting that this is not an isolated issue but rather a widespread concern.

However, amid these challenges, there are reasons for optimism as many of the gender gaps are showing signs of narrowing. The results also provide insights into potential policy focuses, such as improving retention rates after graduation from STEM degrees and facilitating the increased acquisition and representation of STEM skills among women. By addressing these critical aspects, we can make significant strides towards achieving greater gender equality in STEM fields.

Methodology

As in our previous work measuring gaps in the STEM US workforce (Baird, Ko, et al., 2023) , we define STEM work based on a proprietary skills-based definition. We designate an occupation as STEM in a country if it uses skills that are disproportionately likely to be held by STEM graduates as compared to non-STEM graduates. For more details on the methodology, see Baird, Gahlawat, et al. (2023). Additionally, while we acknowledge that gender is a spectrum, due to data limitations we restrict our analysis to the binary classification of men and women.

In this paper, we explore two distinct measures of gender disparity in STEM: STEM participation and gender representation within STEM.

STEM participation: The first measure focuses on STEM participation by gender. We calculate the proportion of women participating in STEM employment (or, in other cases, STEM education or STEM skills). We then calculate the same participation rate for men. By comparing these participation rates, we estimate the gender gap as the difference between men's STEM participation rate and women's STEM participation rate.

Representation within STEM: The second measure investigates the share of women within STEM. Unlike the STEM participation measure, which estimates the metric within the sample of all women or all men, this measure switches the perspective and estimates the metric within the sample of all STEM workers. We calculate the share of women among all individuals working in STEM. Additionally, we sometimes estimate the share of non-STEM workers who are women to provide a comparison point.

STEM employment

Gender gaps in STEM employment may have many long-term impacts on the economic innovation and growth as well as disparities in other related economic outcomes, including resilience in economic downturns and gender pay disparities. For these reasons, it is important to measure and track differences in STEM employment by gender. We find consistent underrepresentation of women in STEM across countries.

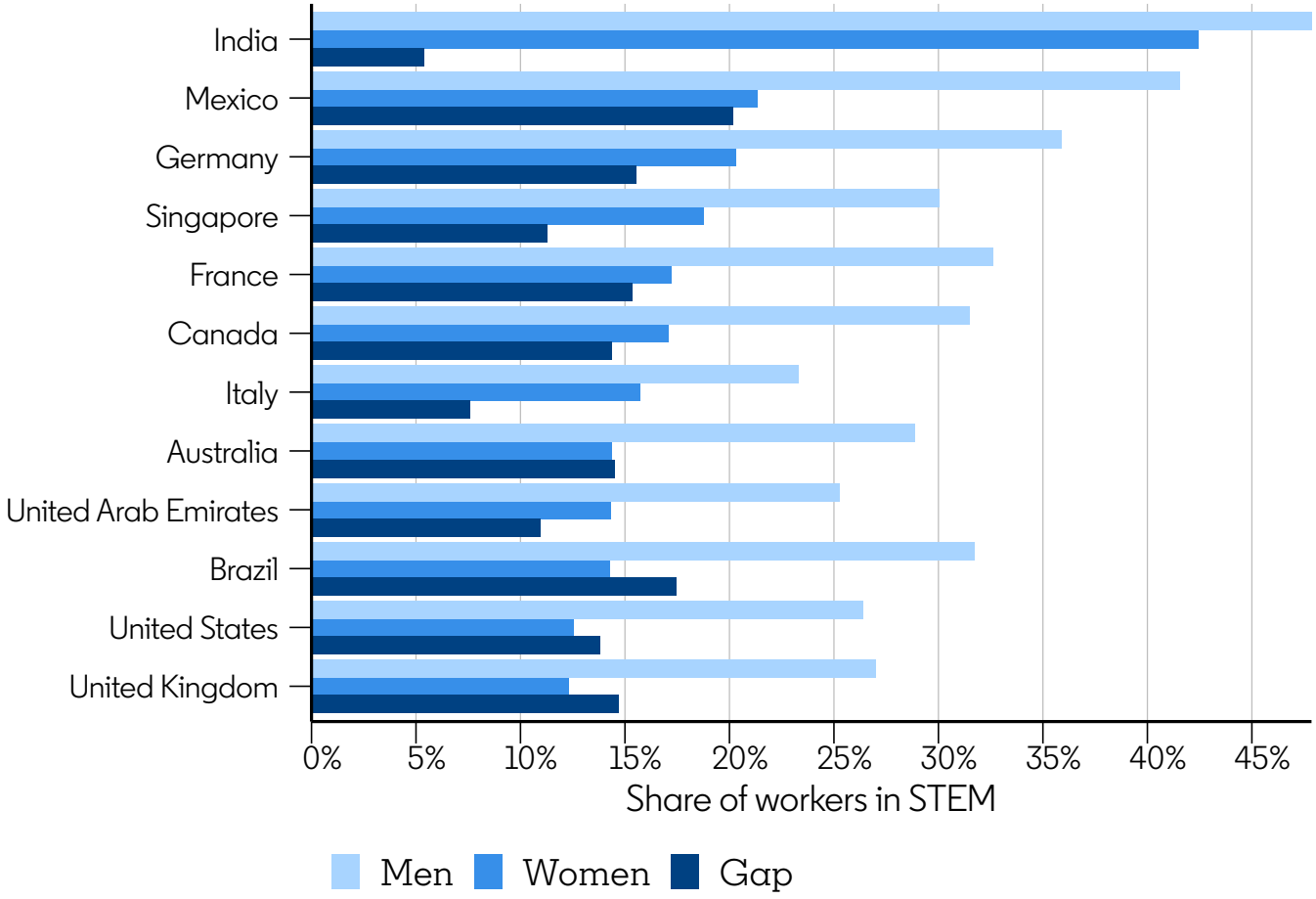
Gaps in participation in STEM employment in 2023

We first examine the share of women and men who work in STEM occupations, and the gap between these measures. Figure 1 and Appendix Table A.1 present these results.

Globally we find that 31.0% of men work in STEM in our data, while only 15.6% of women work in STEM. This underrepresentation of women in STEM is found in every country we examine. However, there is variation in how large the gap is. The smallest gaps are found in India (5.4 percentage point difference), Italy (7.6 pp),

Figure 1

STEM employment participation, by country and gender



Denmark (9.5 pp), UAE (11.0 pp), Netherlands (11.2 pp), and Singapore (11.3 pp).

The most substantial gender gaps in our sample are observed in Poland (with a difference of 25.1 percentage points), followed by Mexico (20.2), Argentina (19.4), Portugal (19.1), and Peru (19.0). These countries exhibit significant disparities in STEM employment between men and women.

Changes over time in the representation of women in STEM

We next examine the share of STEM and non-STEM workers who are women over time. Smaller gender gaps do not necessarily imply equal numbers of men and women in STEM. The rates are relative to the proportion of women in the overall workforce and on LinkedIn. In some cases, a country may have a considerably lower number of women than men in the workforce and on LinkedIn. Therefore, even if there were identical proportions of each gender group working in STEM (parity by the proportional measure shown in Figure 1), the number of women in STEM would still be lower than the number of men in STEM due to the overall gender imbalance in the workforce. India exemplifies this situation.

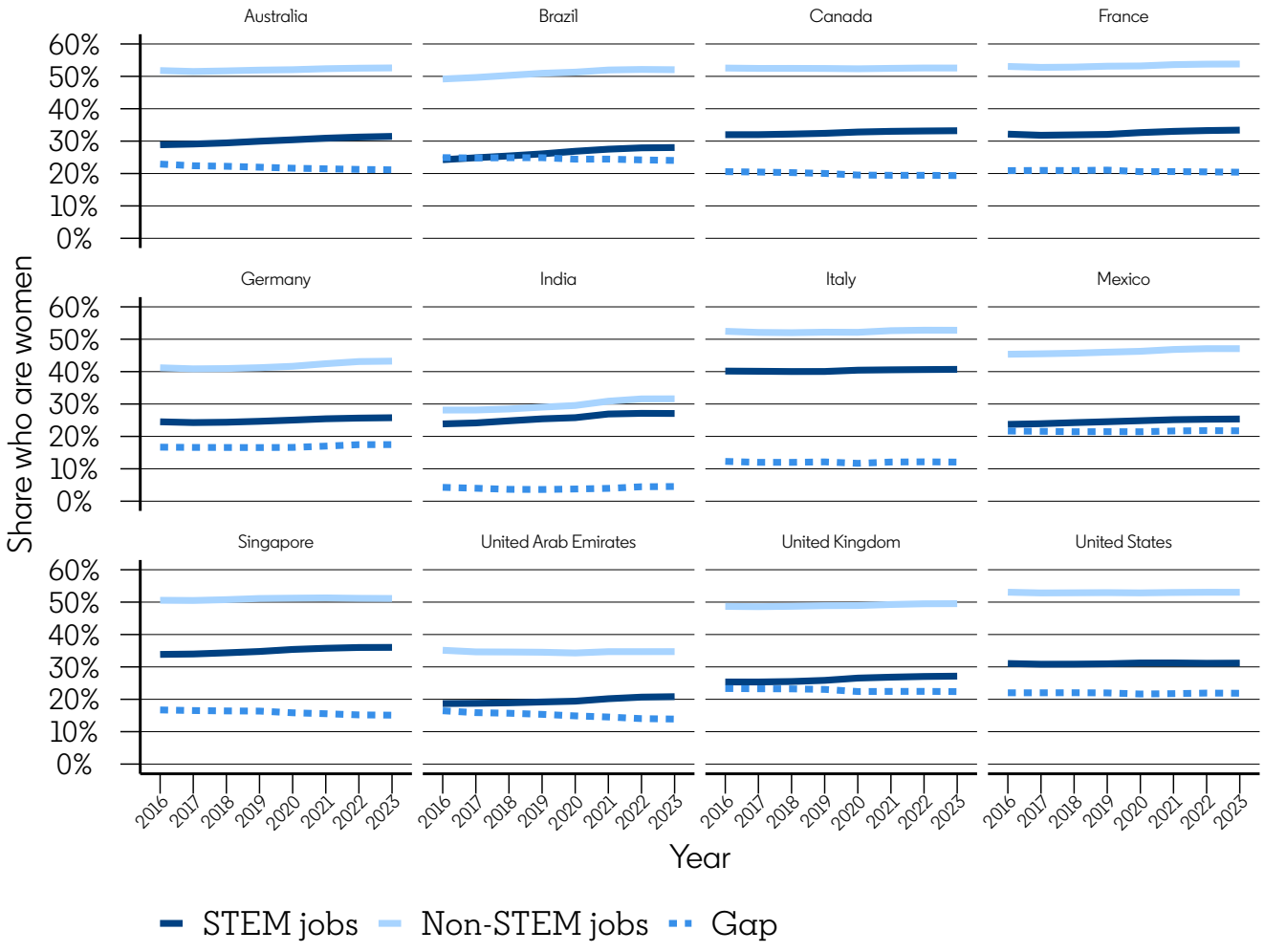
Additionally, there might be instances where both men and women have low rates of working in STEM, resulting in a small gap. For example, in Denmark, we find only 9.3% of women and 18.8% of men working in STEM, resulting in a small gender gap despite both genders having relatively low representation in STEM occupations.

For this reason, instead of solely examining the share of each gender in STEM, we next examine the proportion of workers who are women (both in STEM and non-STEM fields), shown in Figure 2 and Appendix Table A.2. This alternative measure offers a comprehensive view of gender representation across occupations.

On a global scale, using this metric we again observe strong evidence for gender disparity in STEM. Only 28.8% of STEM workers are women, while 49.5% of non-STEM workers are women. Among the countries studied, UAE had the lowest proportion of STEM workers who are women—only around one in every five STEM workers being a woman (20.8%), followed by Poland (23.2%), Austria (24.0%), Peru (24.8%), and Mexico (25.4%).

Figure 2

Share of women in STEM and non-STEM employment over time



Conversely, while still substantially below parity (50% woman), Finland boasted the highest share of STEM workers who are women (42.1%), with Italy (40.7%), Philippines (36.3%), Singapore (36.0%), Spain (33.5%), and France (33.4%) following closely behind.

The extent of the STEM gender gap across the globe is highlighted by the fact that only six of the countries examined (Finland, France, Italy, Philippines, Singapore, and Spain) had women even constituting one-third of STEM workers.

We also examine the change over time in the share of women in STEM. In the 31 countries examined, only one saw a decrease between 2016 and 2023 in the share of women in STEM jobs (Denmark, at -0.4 percentage point change, although they had moderate representation at both time points). The other countries saw an increase in the share of STEM workers who are women. The largest increase was for Poland (4.6 percentage point increase, going from 18.6% women among STEM workers to 23.2%), followed by Brazil (3.7 pp), India (3.2 pp), Romania (2.9 pp), and Peru (2.7 pp).

Participation in STEM work by industry

Despite significant variations in employment trends across industries, the STEM gender gap persists in nearly every country and industry. While certain industries may exhibit a higher proportion of STEM occupations, such as Technology, Information and Media when compared to Manufacturing, all industries do include some STEM occupations. It is crucial to note that even in female-concentrated industries like Health Care and Hospitals or Education, women face considerably lower representation in STEM occupations within those industries when compared to non-STEM occupations. These results underscore the need for comprehensive efforts to address gender disparities and promote greater gender equality in STEM fields across all industries and regions.

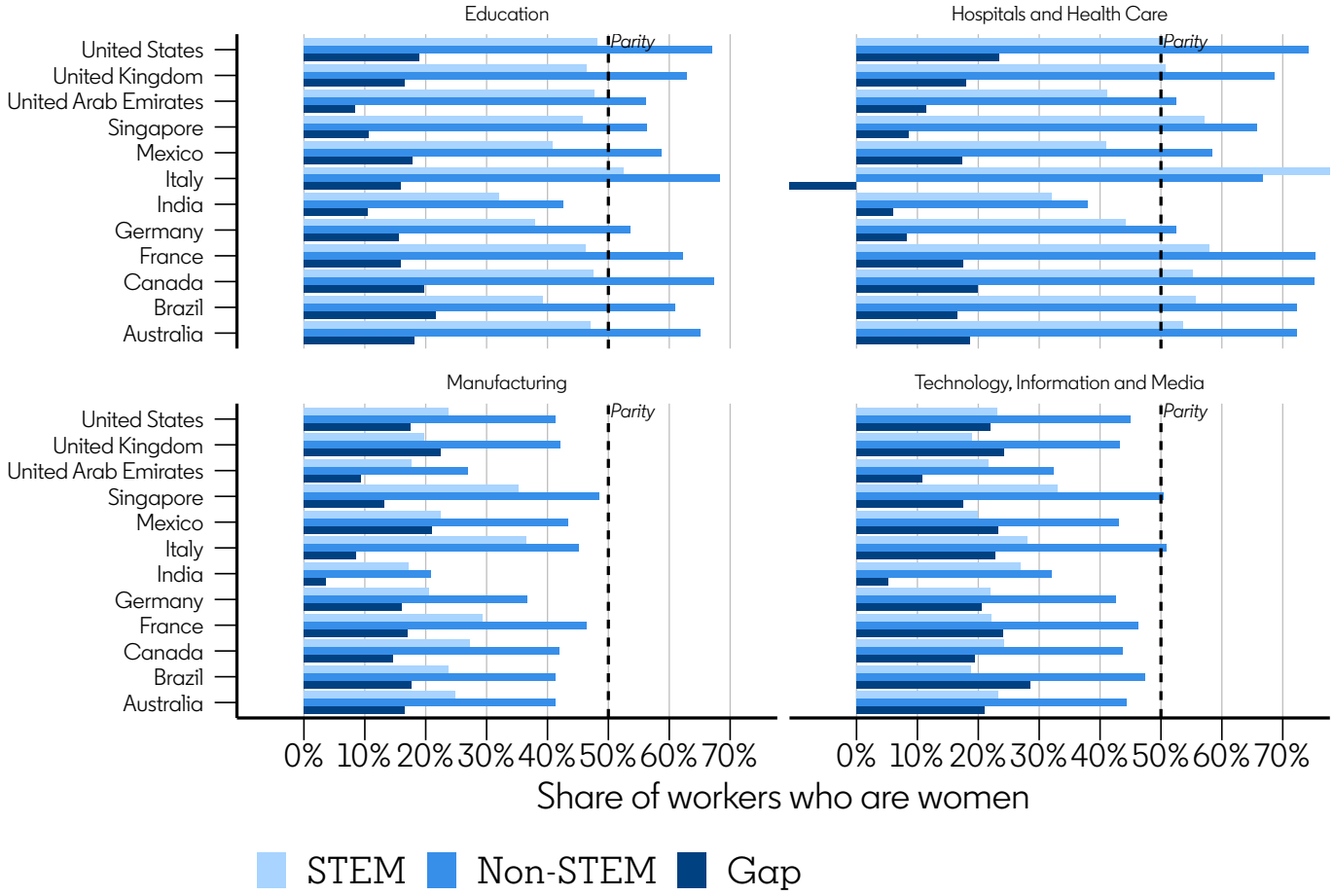
In Figure 3 and Table A.3, we specifically focus on four key industries mentioned earlier: Education, Hospitals and Health Care (which have relatively high representation of women), Manufacturing (with low representation of women), and Technology, Information, and Media (with a strong STEM presence). Across each industry and country, men are consistently more likely than women to work in STEM occupations. Only a handful of industries within country in the examined dataset have over 50 percent of STEM workers who are women. The highest representation of women is found in the Hospitals and Health Care industry in Italy, with 77.7% of workers being women. Notably, most of the cases with over half of STEM workers being women are in Hospitals and Health Care industries.[1]

Despite these higher percentages in non-STEM roles, the representation of women in STEM occupations within these industries remains notably lower, emphasizing the ongoing STEM gender gap challenge even in female-concentrated industries. Technology, Information, and Media as well as Manufacturing have the cases with the lowest representation of the four

[1] However, it is important to consider that these figures are influenced by an overrepresentation of women in these industries overall. This is evident by the even higher proportions of women in non-STEM occupations within these industries for nearly all cases.

Figure 3

Share of workers who are women, by STEM and non-STEM occupations, industry, and country



industries examined, but this again largely reflects lower female participation across occupations (STEM and non-STEM) in the industries.

When examining the gap between STEM and non-STEM female participation, we find that the largest gaps are in the Technology, Information, and Media industry in Brazil (28.5 pp), United Kingdom (24.3 pp), and France (24.1 pp), followed by the Hospitals and Health Care industry in the U.S (23.5 pp).

Retention after graduation with STEM degrees

Up until now, our focus has been on the final outcome of the STEM pipeline: gender disparities in STEM employment. However, it is essential to recognize that the gap in STEM participation widens at every stage of the pipeline, starting from primary school, continuing through tertiary education, and ultimately into the workforce (Arcidiacono et al., 2016; Baird et al., 2017; Baird, Ko, et al., 2023; Gottfried & Bozick, 2016; Sovero et al., 2021). This widening gender gap is a

consequence of women leaving STEM at higher rates compared to men at each stage of this pipeline.

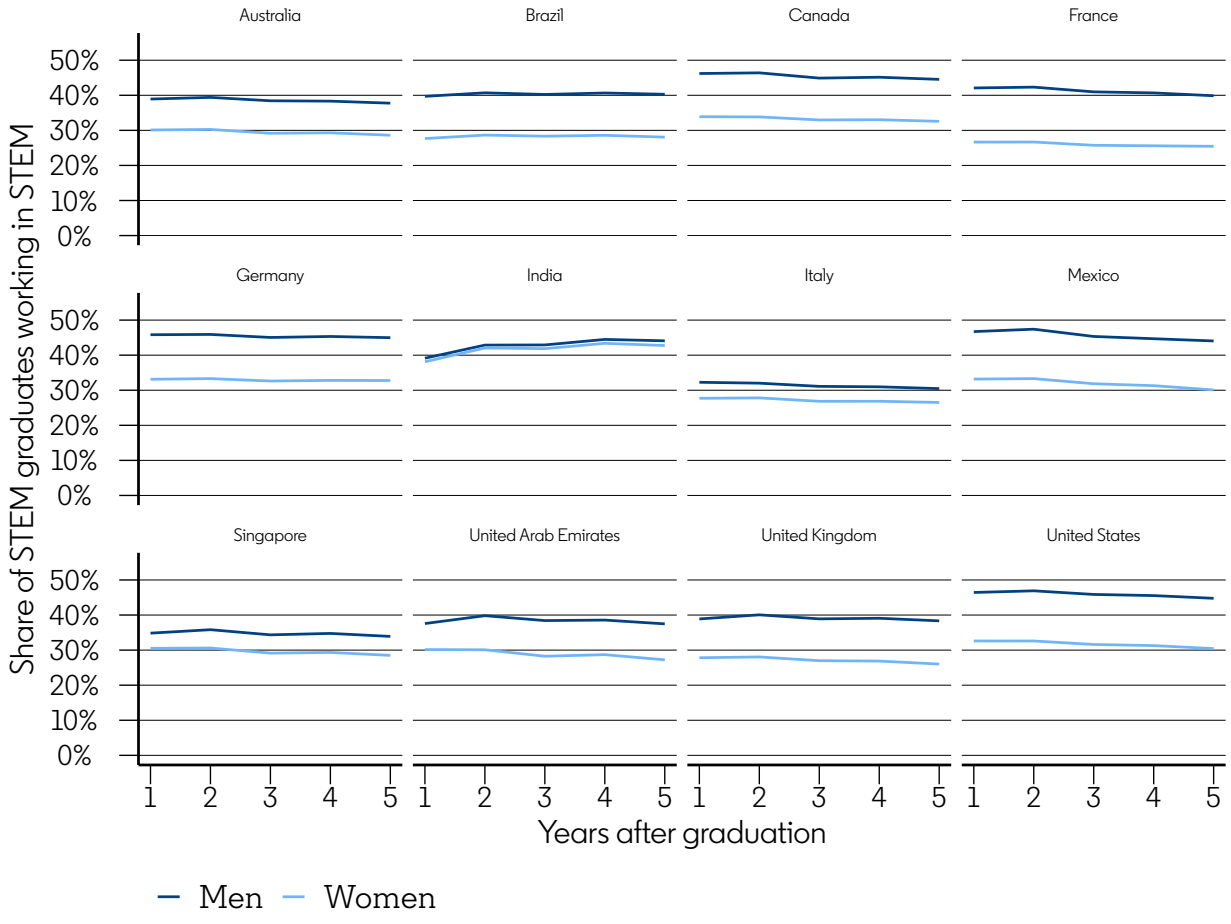
Our focus now shifts to the population of graduates from STEM bachelor's or graduate programs. Our analysis reveals a significant attrition occurring in the first year after graduation, with substantially lower retention rates for women than men (see Baird, Gahlawat, et al., (2023a) for an examination of potential reasons for this). As a result, the gender representation gap experiences its most significant widening during the first year after graduation, highlighting the critical period of transition from education to the workforce where interventions may be most impactful in promoting gender equity in STEM fields.

Low STEM participation rates after graduation, especially for women

In Figure 4 and Appendix Table A.4, we explore the retention rates of men and women after they graduate with STEM degrees. Specifically, we focus on the 2017 STEM graduation cohort and track their participation in STEM employment

Figure 4

Retention in STEM after graduation with a STEM degree for the 2017 graduation cohort



during the first 5 years after graduation. While we focus on the 2017 graduation cohort, similar patterns emerge for more recent cohorts as well.

Consistently across all countries, we observe that men have higher retention rates in STEM after graduation compared to women. This trend persists in every examined country, for each cohort, and in every year after graduation: men are more likely to stay in STEM after graduating with a STEM degree than women.

However, it's also noteworthy that even for men, the retention rates in STEM after graduation are relatively low. In all cases, fewer than 50% of STEM graduates, both men and women, continued working in STEM after graduation. The situation is particularly stark for women, with only India having more than 40% of women retained in STEM after graduation.

Another striking observation is how sharp the drop-off in retention is in STEM that occurs between graduation and the first year after graduation compared to subsequent years. As noted, more than half of all STEM graduates exit the STEM pipeline during this initial year. The drop-off in subsequent years is substantially less severe, with single-digit changes, and although rarer, there are instances of positive changes suggesting re-entry into STEM.

Examining across countries, Chile (18.5%), the Netherlands (19.0%), Austria (19.2%), and Peru (20.7%) had the lowest retention rate of women in STEM for the 2017 graduating cohort, one year later. For the 2021 graduating cohorts, this ordering remained approximately the same, with the Netherlands having the lowest rate (17.8%), followed by Austria (18.6%), Chile (21.5%), and Peru (23.0%).

The Philippines had the highest retention of women in STEM between graduation and one year later for the 2017 cohort (36.6%), followed by India (38.1%), Spain (35.5%) and Canada (33.9%). For the 2021 graduating cohort, we again observed a similar ranking, with India at the highest rate (50.8% of all women retained in STEM), followed by Spain (37.0%), Canada (36.2%), and Mexico (35.4%).

In terms of the difference in retention between men and women one year after graduation for the 2021 cohort, India had the smallest gap (with men at 54.1% retained, and women at 50.8%, for a gap of 3.3 percentage points), followed by Singapore (4.0 pp), Italy (5.9 pp), and Philippines (7.2 pp). The countries with the largest gaps were Poland (20.6 pp), Romania (15.5 pp), and Portugal (15.5 pp).

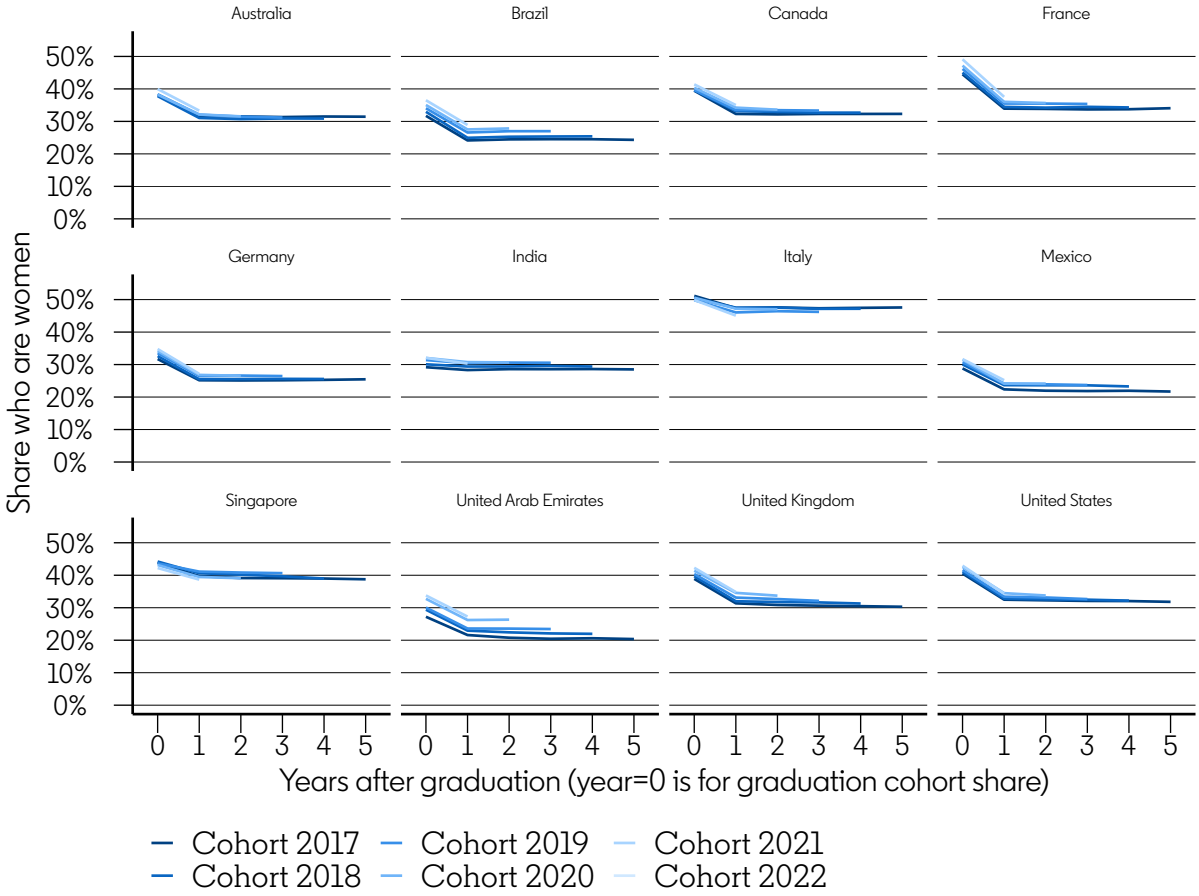
Representation of women in STEM after graduation

Our examination of women's representation in cohorts graduating with STEM degrees finds significant drop-offs in the proportion of STEM workers who are women that occurs right after graduation. This finding aligns with the results presented in Figure 4, where women have lower retention rates in STEM after graduation compared to men. Figure 5 and Table A.5 provide detailed insights into the representation of women.

While there are variations in retention levels across countries (e.g., higher levels in Italy and lower levels in Mexico and UAE), all countries

Figure 5

Female representation drop-off after graduation in STEM



share a common trend of experiencing a substantial decline in the representation of women between college graduation with a STEM degree and employment in STEM one year later.

For the 2021 graduation cohort, India had the smallest drop-off, with 32% of STEM graduates being women, while 30.3% of these graduates were in STEM occupations one year later, resulting in a drop-off of 1.7 percentage points. Singapore (3.6 pp), Italy (4.8 pp), and the Philippines (5.6 pp) had the next smallest declines in representation, consistent with their low gaps in retention discussed earlier. On the other hand, Romania (11.8 pp), Poland (11.6 pp), France (11.5 pp), and the Netherlands (11.3 pp) experienced the largest drop-offs in representation.

Alternatively, we can view this as the percentage decrease in female representation in STEM participation from the college cohort baseline.

Austria had the highest proportional drop-off, decreasing from 38.7 percent women at graduation from STEM to 27.6 percent one year later, a decrease of 28.7 percent. Remarkably, half of the countries examined witnessed a decrease of more than 20 percent from their baseline shares, underscoring the considerable

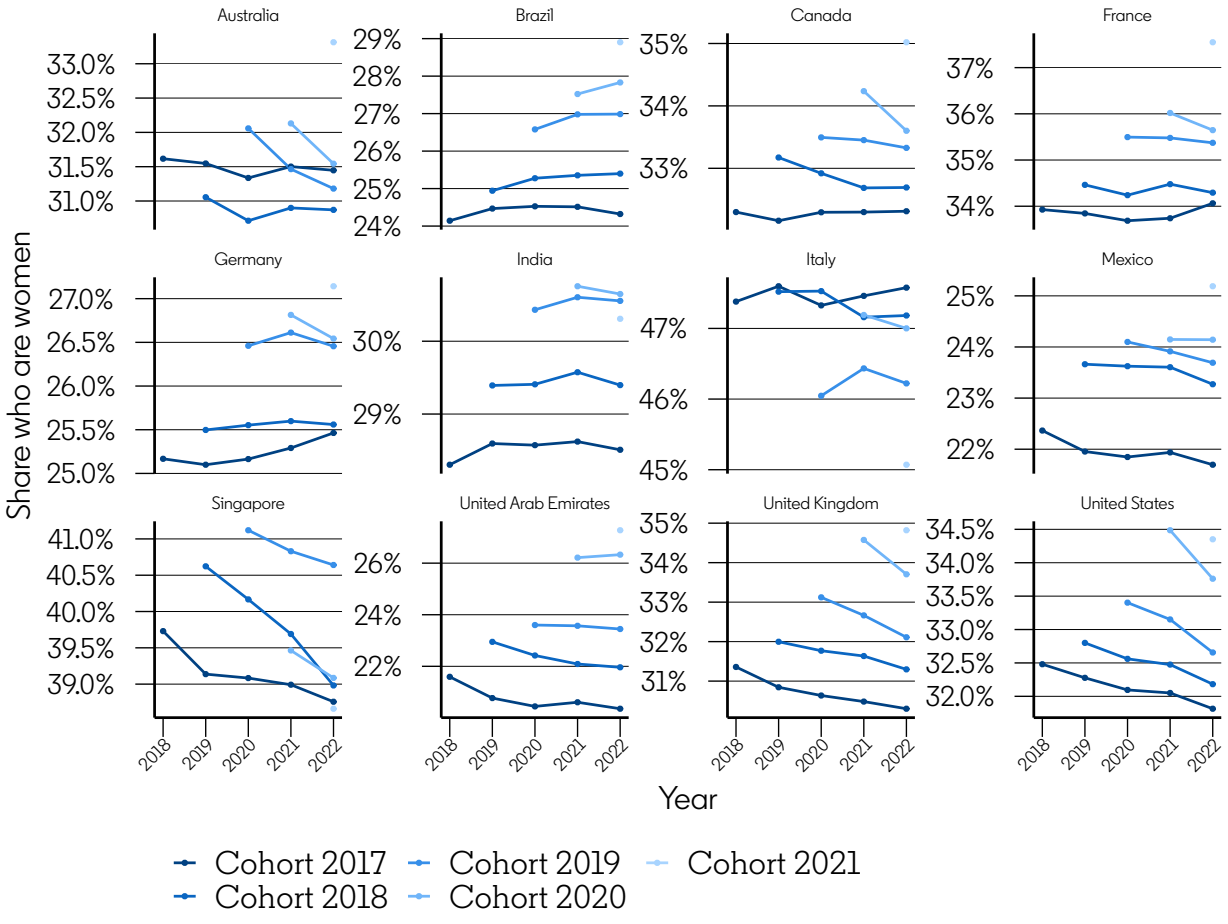
challenges in retaining women in STEM fields after they graduate with STEM degrees.

In order to examine other trends in the data, we present the same findings from Figure 5 in Figure 6, but exclude the display of graduation shares of women and allow each country to have its own range in the axis. Table A.5 still contains the relevant data points for this alternative presentation. Two recurring trends emerge consistently across the countries examined. The first trend is that most countries experience a within-cohort decrease in the share of women in STEM employment over time. In other words, when a cohort graduates, they tend to have higher proportions of women in STEM occupations one year after graduation compared to two years, three years, four years, or five years later.

The second consistent trend we observe is encouraging. Across cohorts, each subsequent graduating class has a higher proportion of STEM workers who are women. This means that the 2021 graduating cohorts tend to have higher levels of women in STEM occupations after graduation than earlier cohorts. Furthermore, this trend often surpasses the decrease within cohorts, indicating that, over time, there is progress toward increased representation of women in STEM

Figure 6

Female representation after graduation in STEM



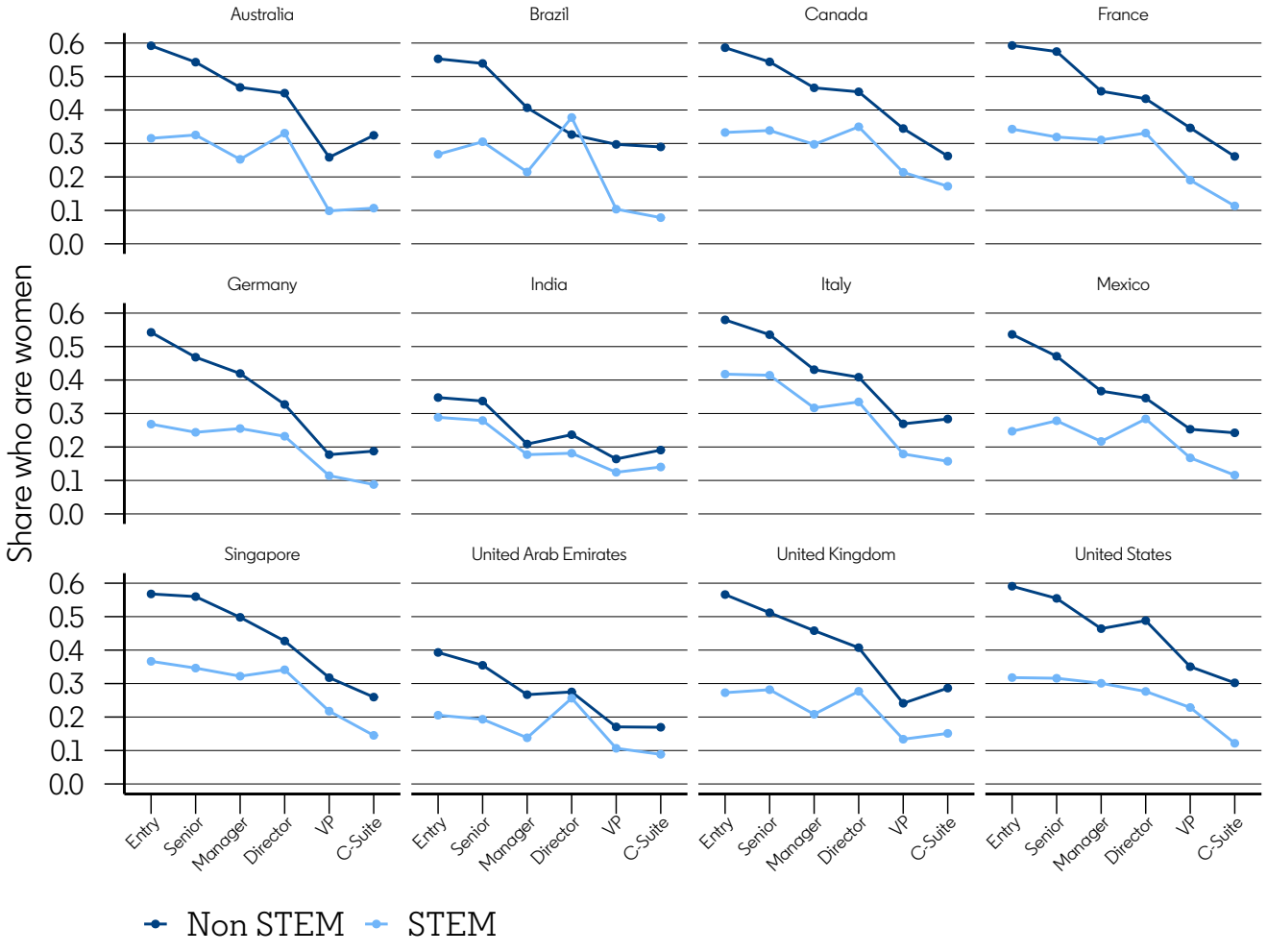
driven by each more recent cohort being more representative in the STEM workforce. These findings are significant as they demonstrate a positive movement towards greater gender representation in STEM over time, despite the within-cohort decline observed. This is likely one of the important drivers of the increased representation of women in STEM discussed in Figure 2.

Representation in leadership

Representation of women in leadership roles within the STEM field is of crucial importance to foster more equitable environments for future generations of women in STEM. Figure 7 presents the trends in representation for key countries, while Table A.6 encompasses the broader set of countries.

Figure 7

Representation of women in leadership by STEM status



In almost all countries, two recurring trends are evident. First, there is a decline in the representation of women at higher levels of seniority within the STEM field. For instance, in Singapore, women account for 36.6 percent of entry-level workers in STEM, but this percentage drops to 21.7 percent for VP-level workers and further decreases to 14.5 percent for C-level employees.

The second key trend is that, at any given level of seniority, there is a higher proportion of women in leadership roles among non-STEM occupations compared to STEM occupations. In fact, for many countries, the proportion of women in entry-level non-STEM positions is similar to the proportion of women in C-suite positions within the STEM field.

The countries that see the lowest female representation at the VP level for STEM fields are Argentina (7.8%), Austria (8.1%), Netherlands (9.8%), Peru (9.8%), and Australia (9.9%). Women make up the largest share of VP leadership in Denmark (35.1%), Ireland (29.2%), Philippines (23.9%), United States (22.8%), and Finland (22.0%). These trends reveal the persisting gender disparities in leadership within the STEM industry and the intersectionality between overall representation of women in STEM and their representation in leadership roles.

Gaps in STEM skills listed

Skills play a fundamental role in shaping the trajectory of workers' careers and their transition into various job roles. Employers rely on skills as a critical factor for filtering and selecting potential job candidates, while workers leverage their skills to enhance productivity and progress in their careers. Skills may also serve as valuable early indicators of potential shifts in the labor market.

STEM skills are defined as skills that STEM degree holders are more likely to list on their profiles. They span a wide range of categories, from specialized industry skills to disruptive tech skills, such as AI-related skills[2]. The listing of STEM skills thus offers valuable insights into the gender disparities discussed earlier. Understanding the gender gaps in the presentation of STEM skills can provide us with a deeper comprehension of the employment disparities prevalent in STEM fields.

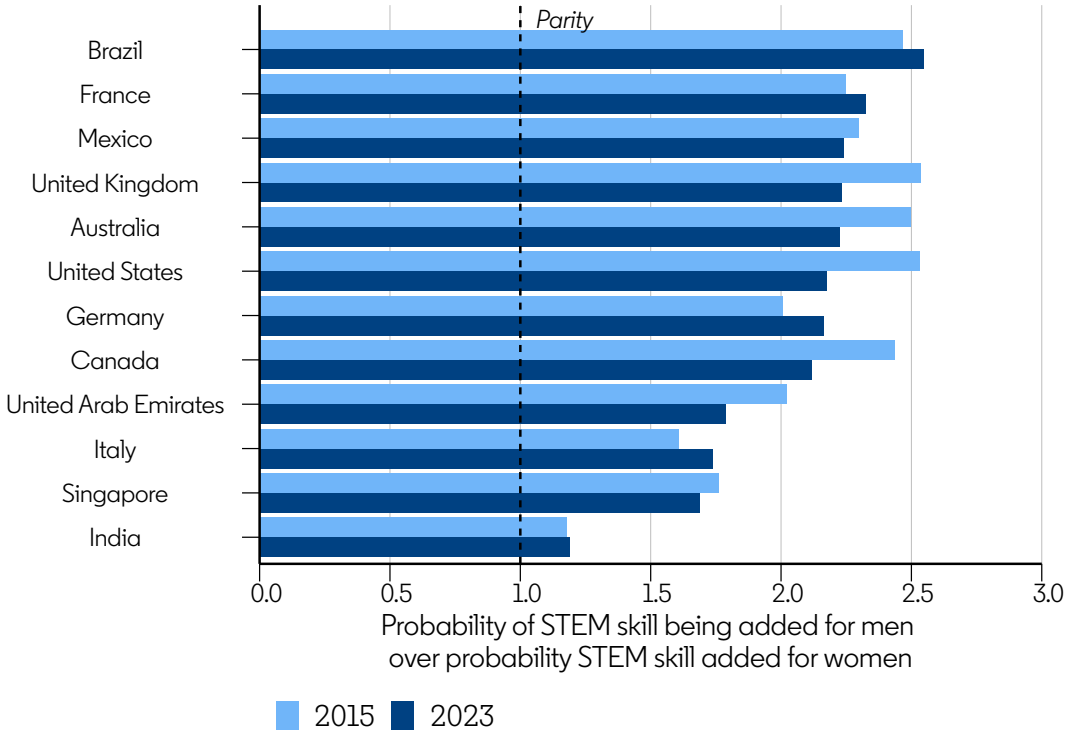
Relative probabilities of adding STEM skills in 2023

Globally, 29.3% of men who have listed a skill on their LinkedIn profile include at least one STEM skill, up by 5.4 pp from 2015. For women, that percentage is half the size, at 14.7% up by 4.2 pp from 2015. Thus, men are around twice as likely to add STEM skills as women. Figure 8 presents the probability of STEM skills being on men's profiles relative to the probability being on a women's profiles. Parity is represented by a value of one—men and women having equal probabilities of having added STEM skills to their profiles. Values above one signify men have higher likelihoods of adding STEM skills than women. The bars are placed in a descending order according to their 2023 values. Refer to Appendix Table A.1 for additional countries' numbers.

[2] For more information around AI skills adoption, see Kimbrough & Carpanelli (2023) and LinkedIn Economic Graph (2023)

Figure 8

STEM skills adoption relative probability ratio: men/women



Note: Values above 1 signify men have higher likelihood of adding STEM skills than women, and vice versa

Our analysis indicates that women are consistently less likely than men to list STEM skills in every country we examined. In 2023, India had the smallest disparity, with men being 1.2 times as likely as women to list STEM skills. Norway (1.6), Singapore (1.7), and Italy (1.7) have the next smallest disparities among the countries in our sample. However, even in these countries with relatively smaller gaps, men are significantly more likely to list STEM skills compared to women. On the other end of the spectrum, the largest gaps are observed in Latvia, Argentina, Estonia, and Poland, where men are around 2.9 times as likely as women to add STEM skills.

With the increased prevalence of STEM skills, it is important to monitor the evolution of the disparity over time. In our sample, half of the countries saw an increase in this measure of gender disparity between 2015 and 2023, while half saw a decrease. Notable countries with the biggest reductions in the gap over this time period include Estonia (decrease of 1.5 in the ratio), Latvia (1.3), Malta (0.5) and the United States (0.4). The first two interestingly also had the largest disparities as of 2023, but had much bigger disparities in 2015 – men were more than four times more likely to add STEM skills than women in 2015, compared to slightly less than three times in 2023. This suggests an encouraging movement in the right direction for those furthest behind. Among the countries to have had a widening in the disparity between 2015 and 2023, Austria, Portugal, Switzerland, and Belgium had the largest expansion of the gap, each with around 10% increase in the ratio.

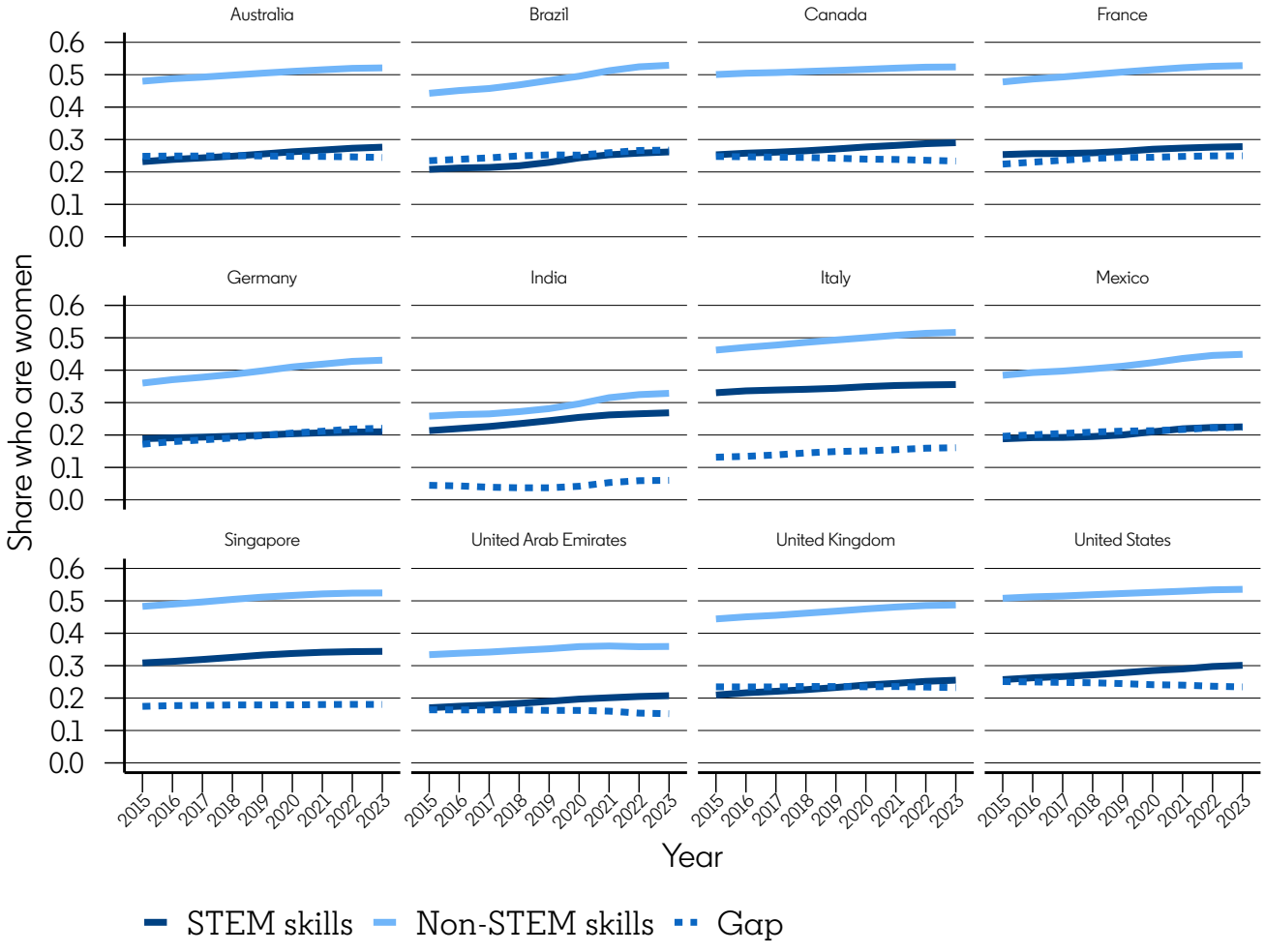
Gender representation among skills groups

As before, another way to capture trends in gender gaps in STEM is to examine gender representation among STEM skills holders versus non-STEM skills holders. We find that for many countries, among LinkedIn members who list STEM skills, the share who are women has been increasing over the last eight years. Figure 9 presents these trends for select countries, with Table A.8 presenting the values for each country. Notable countries with no increase include Portugal, Croatia, Switzerland. Meanwhile, the countries with the largest increase include Brazil, India, Poland, Latvia, and Estonia. For example, for Brazil, the share of STEM skill holders who were women went from 20.8 percent in 2015 to 26.2 percent in 2023.

A comparison between Figure 9 and Figure 8 highlights the impact of changes in the gender composition of LinkedIn membership and the countries' workforce, as well as potential variations in skill-adding behavior between men and women. Figure 9 presents a metric that

Figure 9

Skills listing trends over time: STEM vs non-STEM



scales with changes in the proportion of LinkedIn members who are women among those listing STEM skills. This metric can capture shifts in gender representation among skill holders over time. On the other hand, Figure 8 examines the likelihood of men and women adding STEM skills within their respective groups, providing insights into the skill-listing behavior of men and women relative to each other.

As a result of these different metrics, there may be variations in the findings between the two figures. For example, India shows a relatively small gap in Figure 8, with men being 1.2 times as likely as women to add STEM skills. However, when we look at Figure 9, which considers the representation of women among STEM skills holders, India falls in the middle of the country rankings, with 26.8% of STEM skills-holders being women.

Figure 9 not only presents the trends for STEM skills but also includes the trends for skills not related to STEM. Our analysis reveals that while the share of women among STEM skill holders has been increasing over the past eight years, the share of women among non-STEM skill holders has increased even more rapidly for approximately three-quarters of the countries examined. This trend indicates that although progress is being made in increasing the representation of women in STEM skills, there is even more significant advancement in their representation among non-STEM skill holders. In other words, when considering women representation in skills adoption, the gender gap in STEM fields is narrowing at a slower pace than in non-STEM fields.

However, there are exceptions to this trend. In some countries, such as Latvia, Estonia, Malta, and the United States, the share of women among STEM skill holders has been increasing at a faster rate than the share of women among non-STEM skill holders. This suggests that these countries are making notable progress in closing the gender gap specifically in the context of STEM skills.

Many countries have not seen meaningful narrowing of gaps. This may reflect differences in preparation for employment between men and women as well as reinforcement of skills gaps from higher levels of STEM employment for men. It may also reflect differences in the propensity to add skills overall—that is, not true differences in skills levels, but differences in skills-adding behavior (Fessler, 2017). Nonetheless, these findings are suggestive of the need to examine STEM training and preparation of women, including at secondary and post-secondary level.

Conclusion

The findings of this study examining STEM gender disparities repeatedly follow two patterns. First, there are common trends across countries in the overall messaging: **women are less likely than men to participate in STEM employment.** Second, despite the common overall disparities measured, the levels of disparity often **vary in meaningful ways across countries.** The first finding suggests that while there are differences across countries, there are strong overarching findings that persist in all or almost all countries repeatedly, suggesting systemic global barriers to women in working in STEM. We summarize the findings here.

Men consistently outnumber women in the STEM workforce across all examined countries, with half of the countries showing gaps greater than 15 percentage points. Even the countries with relatively smaller gaps still exhibit significant disparities. For example, in Singapore, 30% of men are in STEM compared to 18.8% of women, resulting in a gap of 11.3 percentage points, the smallest among the countries studied. It is evident that women remain a minority in STEM occupations worldwide, representing less than one-third of STEM workers in most countries, with Finland having the highest representation at 42.1%, still far below parity.

However, it is noteworthy that the **representation of women in STEM has shown improvement in nearly all countries over the past seven years**. There has been a positive trend in women's representation in STEM. This increase in representation ranges from modest gains to more substantial progress, such as Poland, which saw a rise of 4.6 percentage points from 18.6% to 23.2% of women in STEM.

When benchmarked against the representation of women in non-STEM fields to account for changes in workforce composition, approximately one-third of countries witnessed a narrowing of the gender gap in STEM representation by more than 1 percentage point, while the majority remained relatively stable. None of the countries experienced an increase in the gap of more than 1 percentage point, indicating that progress, albeit varied, is being made.

In virtually all industries examined, women were more underrepresented in STEM positions within the industry compared to non-STEM roles, emphasizing the need for a comprehensive approach to address this gender gap.

Another critical finding is the **significant drop-off in the representation of women in STEM between graduation with a STEM degree and one year later.** This first year is when there is the largest attrition from the STEM pipeline with regards to employment. For example, in the U.S., only 49.7% of men who graduated with STEM degrees (bachelor's or higher) in 2021 worked in STEM occupations any time in the following year. For women, the retention was even lower, at 34.2%. That same gap was observed for all countries and for all graduation cohorts.

This first year after graduation is perhaps the most critical time during employment to address retention of STEM graduates overall and women in particular. The larger drop-off of women in the first year after graduation creates the large widening of the gender gap at this time. Even the smallest decline observed (India decreases from 32% of STEM graduates being women to 30.3% of workers one year after graduation being women) is larger than subsequent shifts. Several countries experienced very large drop-offs, such as Romania (26%) and Austria (29%). Alarmingly, half of the countries saw declines of 20% or more in the representation of women in STEM during this transition period.

However, when analyzing trends within the first five years after graduation, it is encouraging to note that while most countries experience a decline each year in the representation of women within each STEM graduation cohort, this decline is smaller than the **positive increases over time in representation of women in STEM between graduation cohorts**. This ongoing progression

contributes to the year-by-year growth in women's representation in STEM.

The study also highlights the underrepresentation of women in leadership positions, particularly within STEM occupations compared to non-STEM fields. **The proportion of women in entry-level STEM positions is roughly equivalent to the proportion of women in C-suite positions within non-STEM occupations.** At the C-Suite level, representation of women in STEM occupation drops by around half in most of the countries considered compared to entry-level.

Lastly, although there are notable variations in the size of the STEM skills gender gaps, with some countries having gaps as small as 1.2 times more men than women with STEM skills (e.g., India) and others as large as nearly 3 times more men (e.g., Latvia, Argentina, Estonia), it is encouraging to observe that **many countries with the largest gaps in STEM skills are also experiencing the most significant progress in closing them.**

It is important to acknowledge certain limitations inherent in this study. First, the findings are based on data obtained from LinkedIn, which may introduce some degree of non-representation of the underlying country's workforce. The membership of LinkedIn varies across countries and within industries, and may not be representative of the entire population. Second, the study focuses on the representation of women in STEM and does not delve into the complex factors that contribute to gender disparities, such as societal norms, cultural influences, and systemic barriers. Additionally, the study compares countries, but differences in cultural, social, and economic contexts may limit the direct comparability of their progress in STEM representation.

Policy suggestions

The robustness of the STEM gender gaps across countries provides strong evidence that there are real underlying disparities between men and women's STEM work. Consequentially, the findings of this study hold significant policy implications for governments, educational institutions, and organizations seeking to promote gender equality in STEM fields. To address the persistent gender gap, the following policy suggestions can be considered:

Educational Reforms: Implement comprehensive educational reforms that promote inclusivity and equitable access to quality STEM education from an early age. Encourage girls' participation in STEM subjects through targeted programs, mentorship initiatives, and curriculum enhancements that challenge stereotypes and biases (Cimpian et al., 2020; Sovero et al., 2021). Particular attention can be paid during the final year of a degree, to prepare students for job opportunities.

Targeted training and orientation programs: Given the large drop-off in STEM right after graduation that is particularly strong for women, there needs to be improvement in outreach and consideration of women for job orientation programs, internships, and other early-career supports.

Empowering STEM Role Models: Foster a diverse range of visible and accessible female STEM role models who can inspire and mentor young women pursuing STEM careers.

Highlighting successful women in STEM can help dispel misconceptions and provide aspiring female students with relatable figures to look up to (Lerchenmueller et al., 2019).

Creating Supportive Work Environments: Establish policies that promote diversity and inclusivity within organizations, especially in STEM-related industries. Encourage transparent hiring practices, support flexible work arrangements, and provide mentorship and leadership development programs specifically tailored to women in STEM.

Collaboration and Partnerships: Foster collaboration among governments, academic institutions, and industry stakeholders to develop and implement effective strategies for promoting gender equality in STEM. Each country can identify specific barriers faced by their workforce and create pathways for career advancement of women in STEM.

Addressing Bias and Stereotypes: Develop initiatives to combat unconscious biases and gender stereotypes that may hinder women's progress in STEM fields, such as in hiring (Schmader, 2023). Implement training programs for teachers, recruiters, and managers to raise awareness of bias and provide tools for fair and unbiased decision-making to increase representation of women at all stages of the career ladder.

Long-Term Monitoring and Evaluation: Establish robust mechanisms to continuously monitor and evaluate the progress of initiatives aimed at increasing women's representation in STEM. Each country can regularly collect data on STEM education, employment, and leadership positions to identify areas that require targeted interventions for their individual settings and assess the effectiveness of implemented policies.

In conclusion, this comprehensive analysis demonstrates that despite persistent gender disparities, progress is being made in closing the gender gap in STEM representation globally. It is vital to continue fostering an inclusive and supportive environment to empower women in STEM education, careers, and leadership positions. Recognizing these persistent and common gender gaps across the globe is only part of the puzzle. Addressing the underrepresentation of women in STEM requires a multi-faceted approach that encompasses educational reforms, workplace policies, cultural shifts, and collaborative efforts. Collaborative efforts between governments, educational institutions, industries, and societies are crucial to promoting gender equality and harnessing the full potential of women in shaping the future of STEM fields.

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Methodology

Data and Privacy This body of work represents the world seen through LinkedIn data, drawn from the anonymized and aggregated profile information of LinkedIn's 830+ million members around the world. As such, it is influenced by how members choose to use the platform, which can vary based on professional, social, and regional culture, as well as overall site availability and accessibility.

In publishing these insights from LinkedIn's Economic Graph, we want to provide accurate statistics while ensuring our members' privacy. As a result, all data show aggregated information for the corresponding period following strict data quality thresholds that prevent disclosing any information about specific individuals.

Gender Classification Gender identity isn't binary, and we recognize that some LinkedIn members identify beyond the traditional gender constructs of "man" and "woman." If not explicitly self-identified, we have inferred the gender of members included in this analysis either by the pronouns used on their LinkedIn profiles or inferred on the basis of first name. Members whose gender could not be inferred as either man or woman were excluded from this analysis.

STEM: STEM (Science, Technology, Engineering, and Mathematics) defines a collection of skills and occupations in these connected fields. We define STEM skills as those for which STEM degree graduates are at least five times as likely to list the skill as non-STEM degree holders. We define STEM occupations as those with at least one of their top ten skills as a STEM skill. See Baird, Gahlawat, et al. (2023) for details.

Appendix

Table A.1

Share of workers in STEM, by country and gender

	Women	Men	Gap
Argentina	0.156	0.351	0.194
Australia	0.144	0.289	0.145
Austria	0.121	0.249	0.128
Belgium	0.157	0.312	0.155
Brazil	0.143	0.317	0.175
Canada	0.171	0.315	0.144
Chile	0.120	0.240	0.120
Denmark	0.093	0.188	0.095
Finland	0.206	0.387	0.181
France	0.172	0.326	0.154
Germany	0.203	0.359	0.156
Greece	0.145	0.329	0.184
India	0.424	0.479	0.054
Ireland	0.162	0.326	0.164
Italy	0.157	0.233	0.076
Mexico	0.214	0.416	0.202
Netherlands	0.080	0.192	0.112
New Zealand	0.134	0.282	0.148
Peru	0.150	0.340	0.190
Philippines	0.190	0.370	0.180
Poland	0.127	0.378	0.251
Portugal	0.174	0.365	0.191
Romania	0.159	0.346	0.187
Singapore	0.188	0.300	0.113
South Africa	0.156	0.303	0.147
Spain	0.222	0.394	0.172
Sweden	0.119	0.248	0.129
Switzerland	0.124	0.245	0.121
United Arab Emirates	0.143	0.253	0.110
United Kingdom	0.123	0.270	0.147
United States	0.126	0.264	0.138

Table A.2

Share of women in STEM and non-STEM employment over time

	2016	2017	2018	2019	2020	2021	2022	2023
Argentina								
STEM jobs	0.270	0.272	0.274	0.278	0.280	0.287	0.290	0.290
Non-STEM jobs	0.528	0.526	0.529	0.531	0.532	0.540	0.543	0.543
Gap	0.258	0.254	0.255	0.254	0.252	0.253	0.254	0.254
Australia								
STEM jobs	0.289	0.291	0.295	0.300	0.304	0.309	0.312	0.315
Non-STEM jobs	0.518	0.515	0.517	0.519	0.521	0.524	0.525	0.526
Gap	0.229	0.224	0.222	0.220	0.216	0.215	0.213	0.211
Austria								
STEM jobs	0.228	0.229	0.228	0.231	0.236	0.240	0.239	0.240
Non-STEM jobs	0.417	0.416	0.416	0.417	0.421	0.427	0.431	0.431
Gap	0.189	0.187	0.188	0.186	0.185	0.187	0.193	0.192
Belgium								
STEM jobs	0.284	0.283	0.281	0.282	0.286	0.289	0.289	0.290
Non-STEM jobs	0.487	0.486	0.489	0.492	0.493	0.497	0.499	0.500
Gap	0.202	0.203	0.207	0.210	0.207	0.208	0.210	0.209
Brazil								
STEM jobs	0.243	0.249	0.254	0.261	0.269	0.275	0.279	0.280
Non-STEM jobs	0.492	0.496	0.503	0.509	0.513	0.520	0.521	0.520
Gap	0.249	0.248	0.249	0.249	0.244	0.244	0.242	0.240
Canada								
STEM jobs	0.320	0.320	0.322	0.324	0.328	0.330	0.331	0.332
Non-STEM jobs	0.526	0.525	0.525	0.524	0.523	0.525	0.526	0.526
Gap	0.206	0.205	0.203	0.200	0.195	0.194	0.194	0.194
Chile								
STEM jobs	0.271	0.273	0.274	0.280	0.285	0.286	0.288	0.289
Non-STEM jobs	0.463	0.465	0.468	0.471	0.475	0.479	0.483	0.484
Gap	0.192	0.192	0.193	0.191	0.190	0.194	0.195	0.195
Denmark								
STEM jobs	0.303	0.299	0.293	0.293	0.296	0.298	0.298	0.299
Non-STEM jobs	0.486	0.485	0.487	0.488	0.487	0.489	0.491	0.492
Gap	0.183	0.186	0.194	0.195	0.191	0.192	0.193	0.192
Finland								
STEM jobs	0.402	0.408	0.408	0.411	0.414	0.418	0.420	0.421
Non-STEM jobs	0.620	0.626	0.632	0.633	0.634	0.637	0.638	0.639
Gap	0.217	0.218	0.223	0.222	0.220	0.219	0.218	0.218
France								
STEM jobs	0.322	0.318	0.319	0.321	0.326	0.330	0.333	0.334
Non-STEM jobs	0.531	0.528	0.529	0.531	0.532	0.536	0.538	0.538
Gap	0.209	0.210	0.209	0.211	0.206	0.206	0.205	0.204
Germany								
STEM jobs	0.245	0.243	0.244	0.247	0.250	0.254	0.257	0.258
Non-STEM jobs	0.412	0.409	0.410	0.412	0.416	0.424	0.431	0.432

	2016	2017	2018	2019	2020	2021	2022	2023
Gap	0.167	0.166	0.166	0.166	0.166	0.170	0.175	0.175
Greece								
STEM jobs	0.237	0.241	0.240	0.242	0.251	0.255	0.256	0.255
Non-STEM jobs	0.482	0.481	0.481	0.483	0.486	0.493	0.497	0.497
Gap	0.245	0.241	0.241	0.241	0.236	0.238	0.241	0.242
India								
STEM jobs	0.239	0.242	0.248	0.254	0.258	0.269	0.271	0.271
Non-STEM jobs	0.281	0.282	0.285	0.290	0.295	0.309	0.316	0.316
Gap	0.043	0.040	0.037	0.036	0.038	0.040	0.045	0.045
Ireland								
STEM jobs	0.271	0.270	0.273	0.278	0.286	0.292	0.295	0.296
Non-STEM jobs	0.503	0.502	0.503	0.503	0.505	0.509	0.511	0.512
Gap	0.232	0.231	0.230	0.225	0.219	0.217	0.216	0.216
Italy								
STEM jobs	0.402	0.401	0.400	0.400	0.404	0.406	0.406	0.407
Non-STEM jobs	0.524	0.521	0.520	0.522	0.521	0.526	0.528	0.528
Gap	0.123	0.120	0.120	0.121	0.117	0.121	0.122	0.121
Mexico								
STEM jobs	0.237	0.239	0.243	0.245	0.248	0.252	0.253	0.254
Non-STEM jobs	0.454	0.455	0.457	0.460	0.463	0.468	0.471	0.471
Gap	0.217	0.216	0.214	0.215	0.214	0.217	0.218	0.217
Netherlands								
STEM jobs	0.245	0.243	0.244	0.246	0.252	0.257	0.257	0.257
Non-STEM jobs	0.483	0.480	0.481	0.483	0.484	0.486	0.488	0.488
Gap	0.238	0.237	0.237	0.237	0.232	0.229	0.231	0.230
New Zealand								
STEM jobs	0.294	0.294	0.296	0.295	0.300	0.304	0.309	0.311
Non-STEM jobs	0.529	0.527	0.527	0.528	0.529	0.531	0.533	0.533
Gap	0.236	0.233	0.232	0.233	0.229	0.227	0.224	0.222
Peru								
STEM jobs	0.220	0.226	0.231	0.232	0.236	0.243	0.247	0.248
Non-STEM jobs	0.471	0.473	0.476	0.479	0.482	0.489	0.490	0.490
Gap	0.251	0.246	0.245	0.247	0.246	0.246	0.243	0.242
Philippines								
STEM jobs	0.337	0.344	0.349	0.353	0.359	0.365	0.364	0.363
Non-STEM jobs	0.566	0.573	0.577	0.581	0.582	0.586	0.588	0.588
Gap	0.228	0.228	0.228	0.228	0.223	0.221	0.225	0.225
Poland								
STEM jobs	0.186	0.192	0.203	0.211	0.218	0.224	0.231	0.232
Non-STEM jobs	0.529	0.531	0.537	0.542	0.545	0.551	0.558	0.559
Gap	0.343	0.339	0.335	0.331	0.327	0.327	0.327	0.327
Portugal								
STEM jobs	0.299	0.300	0.300	0.302	0.306	0.308	0.307	0.308
Non-STEM jobs	0.537	0.535	0.538	0.543	0.543	0.547	0.549	0.548
Gap	0.238	0.235	0.238	0.240	0.237	0.239	0.241	0.240
Romania								

	2016	2017	2018	2019	2020	2021	2022	2023
STEM jobs	0.293	0.302	0.309	0.311	0.315	0.321	0.322	0.322
Non-STEM jobs	0.565	0.564	0.565	0.565	0.568	0.569	0.571	0.571
Gap	0.272	0.262	0.256	0.254	0.252	0.249	0.249	0.249
Singapore								
STEM jobs	0.339	0.340	0.343	0.348	0.354	0.358	0.360	0.360
Non-STEM jobs	0.506	0.505	0.508	0.511	0.512	0.513	0.512	0.511
Gap	0.167	0.165	0.164	0.164	0.158	0.155	0.152	0.151
South Africa								
STEM jobs	0.301	0.303	0.306	0.307	0.311	0.315	0.318	0.319
Non-STEM jobs	0.513	0.512	0.515	0.518	0.518	0.523	0.524	0.525
Gap	0.211	0.209	0.209	0.211	0.208	0.208	0.206	0.206
Spain								
STEM jobs	0.328	0.327	0.327	0.328	0.333	0.335	0.335	0.335
Non-STEM jobs	0.533	0.530	0.530	0.531	0.531	0.535	0.536	0.535
Gap	0.205	0.203	0.203	0.203	0.198	0.200	0.201	0.199
Sweden								
STEM jobs	0.276	0.277	0.280	0.285	0.289	0.291	0.293	0.294
Non-STEM jobs	0.499	0.497	0.499	0.501	0.501	0.503	0.504	0.504
Gap	0.222	0.220	0.218	0.216	0.212	0.212	0.211	0.210
Switzerland								
STEM jobs	0.267	0.261	0.261	0.262	0.265	0.266	0.267	0.268
Non-STEM jobs	0.447	0.444	0.444	0.445	0.447	0.452	0.456	0.457
Gap	0.179	0.182	0.183	0.183	0.182	0.186	0.190	0.189
United Arab Emirates								
STEM jobs	0.187	0.188	0.189	0.192	0.194	0.202	0.207	0.208
Non-STEM jobs	0.351	0.346	0.346	0.345	0.343	0.347	0.347	0.347
Gap	0.165	0.159	0.157	0.154	0.149	0.145	0.140	0.139
United Kingdom								
STEM jobs	0.253	0.253	0.255	0.258	0.265	0.268	0.270	0.271
Non-STEM jobs	0.487	0.486	0.487	0.489	0.489	0.493	0.495	0.495
Gap	0.233	0.233	0.232	0.231	0.224	0.224	0.224	0.224
United States								
STEM jobs	0.310	0.308	0.308	0.310	0.312	0.312	0.311	0.312
Non-STEM jobs	0.531	0.528	0.529	0.529	0.529	0.530	0.530	0.530
Gap	0.220	0.220	0.220	0.220	0.216	0.217	0.219	0.219

Table A.3

STEM representation by industry and country

Country	Industry	STEM	Non-STEM	Gap
Argentina	Education	0.471	0.655	0.185
Argentina	Hospitals and Health Care	0.574	0.729	0.154
Argentina	Manufacturing	0.265	0.444	0.179
Argentina	Technology, Information and Media	0.195	0.484	0.289
Australia	Education	0.470	0.652	0.182
Australia	Hospitals and Health Care	0.536	0.723	0.187
Australia	Manufacturing	0.248	0.414	0.166
Australia	Technology, Information and Media	0.232	0.443	0.210
Austria	Education	0.389	0.522	0.133
Austria	Hospitals and Health Care	0.421	0.579	0.157
Austria	Manufacturing	0.211	0.356	0.145
Austria	Technology, Information and Media	0.183	0.406	0.224
Belgium	Education	0.447	0.639	0.192
Belgium	Hospitals and Health Care	0.657	0.723	0.066
Belgium	Manufacturing	0.239	0.424	0.184
Belgium	Technology, Information and Media	0.176	0.418	0.242
Brazil	Education	0.392	0.609	0.217
Brazil	Hospitals and Health Care	0.557	0.723	0.166
Brazil	Manufacturing	0.238	0.414	0.176
Brazil	Technology, Information and Media	0.188	0.473	0.285
Canada	Education	0.475	0.673	0.198
Canada	Hospitals and Health Care	0.552	0.752	0.200
Canada	Manufacturing	0.273	0.420	0.147
Canada	Technology, Information and Media	0.243	0.437	0.194
Chile	Education	0.456	0.637	0.181
Chile	Hospitals and Health Care	0.527	0.732	0.205
Chile	Manufacturing	0.297	0.382	0.085
Chile	Technology, Information and Media	0.178	0.414	0.236
Denmark	Education	0.446	0.621	0.176
Denmark	Hospitals and Health Care	0.688	0.758	0.070
Denmark	Manufacturing	0.294	0.393	0.099
Denmark	Technology, Information and Media	0.152	0.419	0.267
Finland	Education	0.560	0.756	0.196
Finland	Hospitals and Health Care	0.609	0.817	0.208
Finland	Manufacturing	0.369	0.558	0.189
Finland	Technology, Information and Media	0.338	0.539	0.201
France	Education	0.463	0.622	0.159
France	Hospitals and Health Care	0.579	0.753	0.174
France	Manufacturing	0.293	0.464	0.171
France	Technology, Information and Media	0.222	0.463	0.241
Germany	Education	0.379	0.535	0.156
Germany	Hospitals and Health Care	0.442	0.525	0.083

Country	Industry	STEM	Non-STEM	Gap
Germany	Manufacturing	0.205	0.367	0.161
Germany	Technology, Information and Media	0.220	0.425	0.205
Greece	Education	0.375	0.723	0.348
Greece	Hospitals and Health Care	0.521	0.607	0.086
Greece	Manufacturing	0.239	0.415	0.176
Greece	Technology, Information and Media	0.179	0.484	0.305
India	Education	0.321	0.425	0.105
India	Hospitals and Health Care	0.320	0.380	0.059
India	Manufacturing	0.173	0.209	0.036
India	Technology, Information and Media	0.269	0.320	0.051
Ireland	Education	0.454	0.656	0.202
Ireland	Hospitals and Health Care	0.553	0.745	0.192
Ireland	Manufacturing	0.321	0.455	0.134
Ireland	Technology, Information and Media	0.218	0.456	0.239
Italy	Education	0.525	0.684	0.159
Italy	Hospitals and Health Care	0.777	0.667	-0.110
Italy	Manufacturing	0.365	0.451	0.086
Italy	Technology, Information and Media	0.280	0.509	0.228
Mexico	Education	0.409	0.587	0.178
Mexico	Hospitals and Health Care	0.410	0.583	0.174
Mexico	Manufacturing	0.225	0.434	0.210
Mexico	Technology, Information and Media	0.198	0.430	0.232
Netherlands	Education	0.510	0.647	0.137
Netherlands	Hospitals and Health Care	0.575	0.758	0.183
Netherlands	Manufacturing	0.184	0.345	0.161
Netherlands	Technology, Information and Media	0.166	0.386	0.219
New Zealand	Education	0.482	0.657	0.175
New Zealand	Hospitals and Health Care	0.484	0.726	0.242
New Zealand	Manufacturing	0.235	0.445	0.210
New Zealand	Technology, Information and Media	0.240	0.463	0.223
Peru	Education	0.374	0.513	0.139
Peru	Hospitals and Health Care	0.391	0.632	0.241
Peru	Manufacturing	0.234	0.440	0.205
Peru	Technology, Information and Media	0.194	0.440	0.246
Philippines	Education	0.404	0.618	0.214
Philippines	Hospitals and Health Care	0.598	0.650	0.052
Philippines	Manufacturing	0.358	0.551	0.193
Philippines	Technology, Information and Media	0.332	0.561	0.229
Poland	Education	0.442	0.664	0.222
Poland	Hospitals and Health Care	0.335	0.739	0.403
Poland	Manufacturing	0.229	0.500	0.272
Poland	Technology, Information and Media	0.178	0.503	0.325
Portugal	Education	0.454	0.672	0.219
Portugal	Hospitals and Health Care	0.599	0.754	0.155
Portugal	Manufacturing	0.316	0.471	0.155

Country	Industry	STEM	Non-STEM	Gap
Portugal	Technology, Information and Media	0.188	0.494	0.305
Romania	Education	0.438	0.670	0.232
Romania	Hospitals and Health Care	0.721	0.714	-0.008
Romania	Manufacturing	0.341	0.518	0.177
Romania	Technology, Information and Media	0.295	0.537	0.242
Singapore	Education	0.457	0.563	0.106
Singapore	Hospitals and Health Care	0.571	0.657	0.086
Singapore	Manufacturing	0.353	0.484	0.131
Singapore	Technology, Information and Media	0.329	0.505	0.176
South Africa	Education	0.434	0.621	0.187
South Africa	Hospitals and Health Care	0.569	0.694	0.125
South Africa	Manufacturing	0.284	0.449	0.165
South Africa	Technology, Information and Media	0.268	0.480	0.212
Spain	Education	0.489	0.646	0.158
Spain	Hospitals and Health Care	0.690	0.691	0.002
Spain	Manufacturing	0.303	0.461	0.159
Spain	Technology, Information and Media	0.213	0.478	0.265
Sweden	Education	0.483	0.645	0.162
Sweden	Hospitals and Health Care	0.524	0.747	0.223
Sweden	Manufacturing	0.278	0.398	0.121
Sweden	Technology, Information and Media	0.198	0.414	0.216
Switzerland	Education	0.412	0.613	0.201
Switzerland	Hospitals and Health Care	0.528	0.653	0.125
Switzerland	Manufacturing	0.271	0.388	0.117
Switzerland	Technology, Information and Media	0.162	0.398	0.236
United Arab Emirates	Education	0.477	0.561	0.084
United Arab Emirates	Hospitals and Health Care	0.411	0.525	0.114
United Arab Emirates	Manufacturing	0.176	0.270	0.094
United Arab Emirates	Technology, Information and Media	0.216	0.324	0.108
United Kingdom	Education	0.465	0.630	0.165
United Kingdom	Hospitals and Health Care	0.508	0.687	0.179
United Kingdom	Manufacturing	0.198	0.422	0.224
United Kingdom	Technology, Information and Media	0.190	0.432	0.243
United States	Education	0.482	0.671	0.189
United States	Hospitals and Health Care	0.507	0.742	0.235
United States	Manufacturing	0.238	0.413	0.175
United States	Technology, Information and Media	0.230	0.451	0.220

Table A.4

Share of STEM graduates working in STEM in the first five years after graduation

Country	Cohort	Gender	Year 1	Year 2	Year 3	Year 4	Year 5
Argentina	2017	Men	0.412	0.416	0.402	0.412	0.411
Argentina	2017	Women	0.278	0.278	0.271	0.278	0.276
Argentina	2018	Men	0.416	0.410	0.422	0.415	
Argentina	2018	Women	0.266	0.262	0.269	0.268	
Argentina	2019	Men	0.424	0.443	0.442		
Argentina	2019	Women	0.282	0.293	0.297		
Argentina	2020	Men	0.460	0.461			
Argentina	2020	Women	0.303	0.299			
Argentina	2021	Men	0.478				
Argentina	2021	Women	0.324				
Australia	2017	Men	0.389	0.394	0.384	0.383	0.377
Australia	2017	Women	0.301	0.303	0.292	0.293	0.286
Australia	2018	Men	0.395	0.394	0.399	0.394	
Australia	2018	Women	0.303	0.297	0.302	0.296	
Australia	2019	Men	0.402	0.431	0.425		
Australia	2019	Women	0.308	0.320	0.313		
Australia	2020	Men	0.425	0.439			
Australia	2020	Women	0.335	0.335			
Australia	2021	Men	0.446				
Australia	2021	Women	0.343				
Austria	2017	Men	0.296	0.289	0.283	0.283	0.272
Austria	2017	Women	0.192	0.191	0.183	0.187	0.187
Austria	2018	Men	0.313	0.303	0.297	0.296	
Austria	2018	Women	0.191	0.188	0.186	0.179	
Austria	2019	Men	0.304	0.305	0.305		
Austria	2019	Women	0.198	0.196	0.196		
Austria	2020	Men	0.306	0.297			
Austria	2020	Women	0.212	0.196			
Austria	2021	Men	0.307				
Austria	2021	Women	0.186				
Belgium	2017	Men	0.341	0.342	0.337	0.338	0.338
Belgium	2017	Women	0.269	0.265	0.260	0.257	0.258
Belgium	2018	Men	0.347	0.343	0.345	0.344	
Belgium	2018	Women	0.246	0.242	0.239	0.234	
Belgium	2019	Men	0.353	0.359	0.357		
Belgium	2019	Women	0.258	0.259	0.252		
Belgium	2020	Men	0.351	0.350			
Belgium	2020	Women	0.259	0.248			
Belgium	2021	Men	0.349				
Belgium	2021	Women	0.268				
Brazil	2017	Men	0.397	0.407	0.402	0.407	0.403
Brazil	2017	Women	0.277	0.287	0.283	0.286	0.281

Country	Cohort	Gender	Year 1	Year 2	Year 3	Year 4	Year 5
Brazil	2018	Men	0.404	0.405	0.414	0.411	
Brazil	2018	Women	0.278	0.284	0.292	0.289	
Brazil	2019	Men	0.424	0.441	0.440		
Brazil	2019	Women	0.299	0.317	0.317		
Brazil	2020	Men	0.450	0.451			
Brazil	2020	Women	0.322	0.326			
Brazil	2021	Men	0.468				
Brazil	2021	Women	0.335				
Canada	2017	Men	0.462	0.464	0.449	0.452	0.445
Canada	2017	Women	0.339	0.338	0.330	0.330	0.326
Canada	2018	Men	0.458	0.453	0.457	0.449	
Canada	2018	Women	0.347	0.339	0.338	0.333	
Canada	2019	Men	0.454	0.469	0.462		
Canada	2019	Women	0.349	0.360	0.352		
Canada	2020	Men	0.466	0.469			
Canada	2020	Women	0.358	0.353			
Canada	2021	Men	0.479				
Canada	2021	Women	0.362				
Chile	2017	Men	0.260	0.266	0.253	0.256	0.251
Chile	2017	Women	0.185	0.184	0.179	0.180	0.173
Chile	2018	Men	0.268	0.258	0.265	0.263	
Chile	2018	Women	0.190	0.179	0.180	0.180	
Chile	2019	Men	0.263	0.279	0.276		
Chile	2019	Women	0.180	0.197	0.191		
Chile	2020	Men	0.285	0.286			
Chile	2020	Women	0.204	0.202			
Chile	2021	Men	0.312				
Chile	2021	Women	0.215				
Denmark	2017	Men	0.329	0.324	0.309	0.306	0.304
Denmark	2017	Women	0.242	0.221	0.210	0.219	0.219
Denmark	2018	Men	0.348	0.339	0.335	0.329	
Denmark	2018	Women	0.257	0.236	0.225	0.224	
Denmark	2019	Men	0.327	0.330	0.314		
Denmark	2019	Women	0.245	0.235	0.224		
Denmark	2020	Men	0.363	0.349			
Denmark	2020	Women	0.261	0.236			
Denmark	2021	Men	0.355				
Denmark	2021	Women	0.248				
Finland	2017	Men	0.408	0.411	0.401	0.393	0.389
Finland	2017	Women	0.314	0.305	0.302	0.300	0.284
Finland	2018	Men	0.432	0.426	0.431	0.427	
Finland	2018	Women	0.300	0.283	0.281	0.283	
Finland	2019	Men	0.396	0.399	0.398		
Finland	2019	Women	0.302	0.306	0.301		
Finland	2020	Men	0.438	0.423			
Finland	2020	Women	0.294	0.285			

Country	Cohort	Gender	Year 1	Year 2	Year 3	Year 4	Year 5
Finland	2021	Men	0.429				
Finland	2021	Women	0.297				
France	2017	Men	0.421	0.423	0.410	0.407	0.399
France	2017	Women	0.267	0.267	0.257	0.256	0.254
France	2018	Men	0.414	0.407	0.403	0.400	
France	2018	Women	0.263	0.255	0.255	0.252	
France	2019	Men	0.395	0.399	0.397		
France	2019	Women	0.253	0.256	0.253		
France	2020	Men	0.396	0.398			
France	2020	Women	0.249	0.246			
France	2021	Men	0.395				
France	2021	Women	0.247				
Germany	2017	Men	0.458	0.459	0.450	0.453	0.450
Germany	2017	Women	0.331	0.333	0.326	0.328	0.328
Germany	2018	Men	0.461	0.456	0.455	0.453	
Germany	2018	Women	0.322	0.319	0.321	0.318	
Germany	2019	Men	0.449	0.452	0.450		
Germany	2019	Women	0.319	0.323	0.319		
Germany	2020	Men	0.447	0.447			
Germany	2020	Women	0.311	0.309			
Germany	2021	Men	0.455				
Germany	2021	Women	0.312				
Greece	2017	Men	0.350	0.362	0.360	0.359	0.354
Greece	2017	Women	0.208	0.217	0.215	0.212	0.212
Greece	2018	Men	0.361	0.371	0.374	0.365	
Greece	2018	Women	0.232	0.228	0.230	0.221	
Greece	2019	Men	0.365	0.382	0.375		
Greece	2019	Women	0.220	0.226	0.219		
Greece	2020	Men	0.353	0.359			
Greece	2020	Women	0.232	0.226			
Greece	2021	Men	0.371				
Greece	2021	Women	0.247				
India	2017	Men	0.391	0.429	0.429	0.445	0.441
India	2017	Women	0.381	0.420	0.419	0.434	0.427
India	2018	Men	0.414	0.428	0.452	0.456	
India	2018	Women	0.408	0.421	0.446	0.445	
India	2019	Men	0.422	0.475	0.497		
India	2019	Women	0.415	0.467	0.485		
India	2020	Men	0.473	0.527			
India	2020	Women	0.456	0.503			
India	2021	Men	0.541				
India	2021	Women	0.508				
Ireland	2017	Men	0.389	0.395	0.380	0.378	0.367
Ireland	2017	Women	0.299	0.296	0.280	0.277	0.272
Ireland	2018	Men	0.398	0.388	0.395	0.389	
Ireland	2018	Women	0.299	0.287	0.289	0.281	

Country	Cohort	Gender	Year 1	Year 2	Year 3	Year 4	Year 5
Ireland	2019	Men	0.400	0.418	0.412		
Ireland	2019	Women	0.305	0.313	0.306		
Ireland	2020	Men	0.420	0.423			
Ireland	2020	Women	0.329	0.322			
Ireland	2021	Men	0.406				
Ireland	2021	Women	0.314				
Italy	2017	Men	0.323	0.320	0.311	0.310	0.305
Italy	2017	Women	0.277	0.278	0.268	0.269	0.265
Italy	2018	Men	0.328	0.316	0.315	0.309	
Italy	2018	Women	0.290	0.281	0.278	0.271	
Italy	2019	Men	0.329	0.332	0.322		
Italy	2019	Women	0.284	0.292	0.282		
Italy	2020	Men	0.338	0.330			
Italy	2020	Women	0.298	0.288			
Italy	2021	Men	0.355				
Italy	2021	Women	0.296				
Mexico	2017	Men	0.467	0.474	0.453	0.447	0.441
Mexico	2017	Women	0.332	0.333	0.319	0.313	0.301
Mexico	2018	Men	0.461	0.447	0.447	0.440	
Mexico	2018	Women	0.333	0.322	0.322	0.311	
Mexico	2019	Men	0.446	0.460	0.453		
Mexico	2019	Women	0.319	0.326	0.318		
Mexico	2020	Men	0.468	0.471			
Mexico	2020	Women	0.324	0.327			
Mexico	2021	Men	0.491				
Mexico	2021	Women	0.354				
Netherlands	2017	Men	0.278	0.280	0.275	0.274	0.274
Netherlands	2017	Women	0.190	0.185	0.177	0.179	0.181
Netherlands	2018	Men	0.280	0.280	0.277	0.276	
Netherlands	2018	Women	0.183	0.175	0.174	0.172	
Netherlands	2019	Men	0.284	0.288	0.284		
Netherlands	2019	Women	0.177	0.175	0.171		
Netherlands	2020	Men	0.283	0.281			
Netherlands	2020	Women	0.176	0.168			
Netherlands	2021	Men	0.285				
Netherlands	2021	Women	0.178				
New Zealand	2017	Men	0.359	0.362	0.352	0.355	0.350
New Zealand	2017	Women	0.263	0.265	0.252	0.249	0.247
New Zealand	2018	Men	0.360	0.364	0.373	0.362	
New Zealand	2018	Women	0.259	0.242	0.241	0.241	
New Zealand	2019	Men	0.349	0.379	0.380		
New Zealand	2019	Women	0.260	0.273	0.269		
New Zealand	2020	Men	0.376	0.385			
New Zealand	2020	Women	0.277	0.270			
New Zealand	2021	Men	0.390				
New Zealand	2021	Women	0.289				

Country	Cohort	Gender	Year 1	Year 2	Year 3	Year 4	Year 5
Peru	2017	Men	0.319	0.324	0.314	0.313	0.304
Peru	2017	Women	0.207	0.211	0.198	0.197	0.198
Peru	2018	Men	0.319	0.308	0.310	0.307	
Peru	2018	Women	0.217	0.204	0.209	0.205	
Peru	2019	Men	0.314	0.324	0.327		
Peru	2019	Women	0.214	0.222	0.217		
Peru	2020	Men	0.334	0.329			
Peru	2020	Women	0.230	0.230			
Peru	2021	Men	0.346				
Peru	2021	Women	0.230				
Philippines	2017	Men	0.456	0.477	0.460	0.456	0.447
Philippines	2017	Women	0.386	0.404	0.385	0.383	0.367
Philippines	2018	Men	0.456	0.462	0.464	0.456	
Philippines	2018	Women	0.381	0.377	0.382	0.368	
Philippines	2019	Men	0.410	0.459	0.469		
Philippines	2019	Women	0.338	0.383	0.387		
Philippines	2020	Men	0.376	0.435			
Philippines	2020	Women	0.320	0.366			
Philippines	2021	Men	0.404				
Philippines	2021	Women	0.333				
Poland	2017	Men	0.476	0.483	0.476	0.486	0.481
Poland	2017	Women	0.249	0.257	0.258	0.263	0.266
Poland	2018	Men	0.471	0.477	0.486	0.489	
Poland	2018	Women	0.260	0.263	0.269	0.264	
Poland	2019	Men	0.477	0.490	0.490		
Poland	2019	Women	0.266	0.278	0.279		
Poland	2020	Men	0.513	0.515			
Poland	2020	Women	0.300	0.300			
Poland	2021	Men	0.500				
Poland	2021	Women	0.294				
Portugal	2017	Men	0.433	0.437	0.429	0.432	0.428
Portugal	2017	Women	0.286	0.298	0.281	0.286	0.281
Portugal	2018	Men	0.434	0.435	0.445	0.441	
Portugal	2018	Women	0.263	0.260	0.269	0.268	
Portugal	2019	Men	0.440	0.455	0.455		
Portugal	2019	Women	0.292	0.300	0.290		
Portugal	2020	Men	0.459	0.462			
Portugal	2020	Women	0.298	0.301			
Portugal	2021	Men	0.458				
Portugal	2021	Women	0.303				
Romania	2017	Men	0.426	0.428	0.416	0.420	0.416
Romania	2017	Women	0.256	0.252	0.240	0.236	0.235
Romania	2018	Men	0.430	0.429	0.429	0.427	
Romania	2018	Women	0.273	0.265	0.271	0.263	
Romania	2019	Men	0.439	0.447	0.447		
Romania	2019	Women	0.289	0.289	0.281		

Country	Cohort	Gender	Year 1	Year 2	Year 3	Year 4	Year 5
Romania	2020	Men	0.469	0.473			
Romania	2020	Women	0.317	0.313			
Romania	2021	Men	0.505				
Romania	2021	Women	0.305				
Singapore	2017	Men	0.348	0.358	0.344	0.348	0.339
Singapore	2017	Women	0.305	0.306	0.291	0.293	0.285
Singapore	2018	Men	0.339	0.341	0.352	0.343	
Singapore	2018	Women	0.305	0.300	0.299	0.283	
Singapore	2019	Men	0.352	0.367	0.356		
Singapore	2019	Women	0.325	0.333	0.320		
Singapore	2020	Men	0.362	0.359			
Singapore	2020	Women	0.322	0.316			
Singapore	2021	Men	0.355				
Singapore	2021	Women	0.315				
South Africa	2017	Men	0.369	0.388	0.380	0.379	0.377
South Africa	2017	Women	0.283	0.304	0.299	0.297	0.290
South Africa	2018	Men	0.382	0.387	0.385	0.382	
South Africa	2018	Women	0.281	0.298	0.303	0.294	
South Africa	2019	Men	0.380	0.396	0.401		
South Africa	2019	Women	0.278	0.300	0.300		
South Africa	2020	Men	0.383	0.406			
South Africa	2020	Women	0.287	0.307			
South Africa	2021	Men	0.401				
South Africa	2021	Women	0.298				
Spain	2017	Men	0.455	0.457	0.442	0.439	0.433
Spain	2017	Women	0.355	0.348	0.335	0.338	0.333
Spain	2018	Men	0.461	0.447	0.448	0.444	
Spain	2018	Women	0.348	0.337	0.334	0.327	
Spain	2019	Men	0.459	0.463	0.458		
Spain	2019	Women	0.355	0.359	0.354		
Spain	2020	Men	0.470	0.469			
Spain	2020	Women	0.371	0.362			
Spain	2021	Men	0.488				
Spain	2021	Women	0.370				
Sweden	2017	Men	0.388	0.397	0.396	0.399	0.392
Sweden	2017	Women	0.284	0.289	0.278	0.273	0.265
Sweden	2018	Men	0.398	0.391	0.394	0.392	
Sweden	2018	Women	0.308	0.299	0.295	0.284	
Sweden	2019	Men	0.397	0.404	0.396		
Sweden	2019	Women	0.295	0.290	0.280		
Sweden	2020	Men	0.397	0.398			
Sweden	2020	Women	0.289	0.279			
Sweden	2021	Men	0.403				
Sweden	2021	Women	0.302				
Switzerland	2017	Men	0.363	0.359	0.351	0.351	0.339
Switzerland	2017	Women	0.264	0.252	0.249	0.243	0.234

Country	Cohort	Gender	Year 1	Year 2	Year 3	Year 4	Year 5
Switzerland	2018	Men	0.366	0.357	0.355	0.349	
Switzerland	2018	Women	0.264	0.254	0.244	0.239	
Switzerland	2019	Men	0.363	0.360	0.350		
Switzerland	2019	Women	0.265	0.259	0.243		
Switzerland	2020	Men	0.363	0.350			
Switzerland	2020	Women	0.257	0.231			
Switzerland	2021	Men	0.359				
Switzerland	2021	Women	0.237				
United Arab Emirates	2017	Men	0.376	0.398	0.384	0.386	0.375
United Arab Emirates	2017	Women	0.302	0.301	0.283	0.287	0.272
United Arab Emirates	2018	Men	0.379	0.377	0.383	0.366	
United Arab Emirates	2018	Women	0.294	0.284	0.277	0.261	
United Arab Emirates	2019	Men	0.362	0.376	0.367		
United Arab Emirates	2019	Women	0.281	0.292	0.277		
United Arab Emirates	2020	Men	0.367	0.363			
United Arab Emirates	2020	Women	0.287	0.282			
United Arab Emirates	2021	Men	0.348				
United Arab Emirates	2021	Women	0.276				
United Kingdom	2017	Men	0.389	0.401	0.389	0.391	0.383
United Kingdom	2017	Women	0.278	0.281	0.270	0.269	0.260
United Kingdom	2018	Men	0.392	0.391	0.397	0.392	
United Kingdom	2018	Women	0.281	0.278	0.280	0.270	
United Kingdom	2019	Men	0.388	0.413	0.410		
United Kingdom	2019	Women	0.283	0.295	0.286		
United Kingdom	2020	Men	0.399	0.409			
United Kingdom	2020	Women	0.299	0.295			
United Kingdom	2021	Men	0.411				
United Kingdom	2021	Women	0.301				
United States	2017	Men	0.464	0.469	0.459	0.455	0.448
United States	2017	Women	0.326	0.326	0.316	0.313	0.304
United States	2018	Men	0.470	0.466	0.465	0.456	
United States	2018	Women	0.328	0.322	0.319	0.310	
United States	2019	Men	0.480	0.490	0.484		
United States	2019	Women	0.336	0.339	0.329		
United States	2020	Men	0.487	0.490			
United States	2020	Women	0.343	0.335			
United States	2021	Men	0.497				
United States	2021	Women	0.342				

Table A.5

Female representation drop-off after graduation in STEM

Country	Cohort	Graduation	Year 1	Year 2	Year 3	Year 4	Year 5
Argentina	2017	0.351	0.263	0.262	0.262	0.262	0.264
Argentina	2018	0.362	0.264	0.264	0.263	0.266	
Argentina	2019	0.369	0.279	0.279	0.281		
Argentina	2020	0.375	0.282	0.279			
Argentina	2021	0.389	0.311				
Argentina	2022	0.362					
Australia	2017	0.382	0.316	0.315	0.313	0.315	0.314
Australia	2018	0.378	0.311	0.307	0.309	0.309	
Australia	2019	0.384	0.321	0.315	0.312		
Australia	2020	0.382	0.321	0.315			
Australia	2021	0.400	0.333				
Australia	2022	0.414					
Austria	2017	0.352	0.263	0.261	0.258	0.261	0.270
Austria	2018	0.349	0.258	0.257	0.265	0.259	
Austria	2019	0.363	0.261	0.266	0.264		
Austria	2020	0.364	0.274	0.265			
Austria	2021	0.387	0.276				
Austria	2022	0.401					
Belgium	2017	0.395	0.336	0.335	0.332	0.329	0.331
Belgium	2018	0.400	0.318	0.317	0.313	0.308	
Belgium	2019	0.402	0.325	0.325	0.321		
Belgium	2020	0.411	0.339	0.331			
Belgium	2021	0.427	0.358				
Belgium	2022	0.438					
Brazil	2017	0.317	0.241	0.245	0.245	0.245	0.243
Brazil	2018	0.330	0.249	0.253	0.254	0.254	
Brazil	2019	0.341	0.266	0.270	0.270		
Brazil	2020	0.350	0.275	0.278			
Brazil	2021	0.365	0.289				
Brazil	2022	0.362					
Canada	2017	0.394	0.323	0.322	0.323	0.323	0.323
Canada	2018	0.396	0.332	0.329	0.327	0.327	
Canada	2019	0.397	0.335	0.335	0.333		
Canada	2020	0.404	0.342	0.336			
Canada	2021	0.414	0.350				
Canada	2022	0.420					
Chile	2017	0.307	0.236	0.235	0.240	0.237	0.234
Chile	2018	0.310	0.239	0.236	0.235	0.235	
Chile	2019	0.321	0.247	0.255	0.250		
Chile	2020	0.311	0.242	0.241			
Chile	2021	0.320	0.245				
Chile	2022	0.298					
Denmark	2017	0.382	0.312	0.291	0.294	0.306	0.304

Country	Cohort	Graduation	Year 1	Year 2	Year 3	Year 4	Year 5
Denmark	2018	0.388	0.322	0.309	0.302	0.311	
Denmark	2019	0.390	0.330	0.319	0.318		
Denmark	2020	0.396	0.319	0.309			
Denmark	2021	0.414	0.326				
Denmark	2022	0.420					
Finland	2017	0.489	0.422	0.414	0.418	0.420	0.413
Finland	2018	0.484	0.391	0.383	0.381	0.387	
Finland	2019	0.478	0.407	0.413	0.412		
Finland	2020	0.504	0.404	0.405			
Finland	2021	0.525	0.440				
Finland	2022	0.526					
France	2017	0.445	0.339	0.338	0.337	0.337	0.341
France	2018	0.450	0.345	0.342	0.345	0.343	
France	2019	0.462	0.355	0.355	0.354		
France	2020	0.472	0.360	0.356			
France	2021	0.491	0.375				
France	2022	0.503					
Germany	2017	0.317	0.252	0.251	0.252	0.253	0.255
Germany	2018	0.326	0.255	0.256	0.256	0.256	
Germany	2019	0.335	0.265	0.266	0.265		
Germany	2020	0.342	0.268	0.265			
Germany	2021	0.348	0.271				
Germany	2022	0.359					
Greece	2017	0.390	0.277	0.282	0.283	0.286	0.290
Greece	2018	0.393	0.296	0.287	0.293	0.287	
Greece	2019	0.408	0.293	0.291	0.288		
Greece	2020	0.405	0.304	0.297			
Greece	2021	0.422	0.312				
Greece	2022	0.423					
India	2017	0.292	0.283	0.286	0.286	0.286	0.285
India	2018	0.301	0.294	0.294	0.296	0.294	
India	2019	0.314	0.304	0.306	0.306		
India	2020	0.320	0.308	0.306			
India	2021	0.320	0.303				
India	2022	0.307					
Ireland	2017	0.371	0.311	0.304	0.300	0.300	0.300
Ireland	2018	0.383	0.314	0.313	0.310	0.308	
Ireland	2019	0.386	0.320	0.317	0.313		
Ireland	2020	0.388	0.332	0.326			
Ireland	2021	0.409	0.347				
Ireland	2022	0.403					
Italy	2017	0.512	0.474	0.476	0.473	0.475	0.476
Italy	2018	0.504	0.475	0.475	0.472	0.472	
Italy	2019	0.498	0.460	0.464	0.462		
Italy	2020	0.506	0.472	0.470			
Italy	2021	0.499	0.451				

Country	Cohort	Graduation	Year 1	Year 2	Year 3	Year 4	Year 5
Italy	2022	0.489					
Mexico	2017	0.288	0.224	0.220	0.218	0.219	0.217
Mexico	2018	0.300	0.237	0.236	0.236	0.233	
Mexico	2019	0.307	0.241	0.239	0.237		
Mexico	2020	0.315	0.241	0.241			
Mexico	2021	0.317	0.252				
Mexico	2022	0.306					
Netherlands	2017	0.381	0.295	0.289	0.285	0.286	0.288
Netherlands	2018	0.395	0.296	0.288	0.291	0.289	
Netherlands	2019	0.408	0.298	0.293	0.291		
Netherlands	2020	0.414	0.305	0.293			
Netherlands	2021	0.429	0.315				
Netherlands	2022	0.448					
New Zealand	2017	0.408	0.328	0.330	0.328	0.327	0.328
New Zealand	2018	0.400	0.321	0.303	0.297	0.297	
New Zealand	2019	0.402	0.327	0.318	0.318		
New Zealand	2020	0.421	0.345	0.335			
New Zealand	2021	0.443	0.377				
New Zealand	2022	0.448					
Peru	2017	0.293	0.210	0.212	0.206	0.203	0.207
Peru	2018	0.311	0.236	0.230	0.234	0.230	
Peru	2019	0.319	0.239	0.240	0.237		
Peru	2020	0.336	0.262	0.258			
Peru	2021	0.337	0.256				
Peru	2022	0.326					
Philippines	2017	0.410	0.366	0.367	0.363	0.365	0.361
Philippines	2018	0.412	0.369	0.365	0.366	0.364	
Philippines	2019	0.409	0.366	0.366	0.365		
Philippines	2020	0.404	0.364	0.364			
Philippines	2021	0.406	0.350				
Philippines	2022	0.421					
Poland	2017	0.408	0.267	0.269	0.271	0.271	0.278
Poland	2018	0.413	0.279	0.278	0.279	0.277	
Poland	2019	0.420	0.291	0.294	0.293		
Poland	2020	0.418	0.300	0.296			
Poland	2021	0.409	0.293				
Poland	2022	0.382					
Portugal	2017	0.411	0.319	0.324	0.316	0.320	0.318
Portugal	2018	0.407	0.293	0.290	0.292	0.295	
Portugal	2019	0.425	0.327	0.324	0.321		
Portugal	2020	0.422	0.319	0.316			
Portugal	2021	0.436	0.339				
Portugal	2022	0.426					
Romania	2017	0.460	0.338	0.334	0.328	0.323	0.327
Romania	2018	0.450	0.340	0.335	0.339	0.335	
Romania	2019	0.454	0.350	0.349	0.347		

Country	Cohort	Graduation	Year 1	Year 2	Year 3	Year 4	Year 5
Romania	2020	0.460	0.362	0.357			
Romania	2021	0.458	0.340				
Romania	2022	0.450					
Singapore	2017	0.439	0.397	0.391	0.391	0.390	0.388
Singapore	2018	0.442	0.406	0.402	0.397	0.390	
Singapore	2019	0.437	0.411	0.408	0.406		
Singapore	2020	0.431	0.395	0.391			
Singapore	2021	0.422	0.387				
Singapore	2022	0.438					
South Africa	2017	0.405	0.341	0.347	0.349	0.348	0.345
South Africa	2018	0.419	0.347	0.355	0.360	0.355	
South Africa	2019	0.431	0.354	0.360	0.359		
South Africa	2020	0.433	0.365	0.366			
South Africa	2021	0.444	0.371				
South Africa	2022	0.430					
Spain	2017	0.388	0.332	0.329	0.327	0.329	0.330
Spain	2018	0.397	0.333	0.333	0.331	0.330	
Spain	2019	0.400	0.344	0.344	0.343		
Spain	2020	0.405	0.353	0.347			
Spain	2021	0.413	0.352				
Spain	2022	0.407					
Sweden	2017	0.391	0.320	0.318	0.312	0.308	0.310
Sweden	2018	0.396	0.333	0.331	0.326	0.320	
Sweden	2019	0.411	0.346	0.337	0.333		
Sweden	2020	0.421	0.354	0.345			
Sweden	2021	0.428	0.348				
Sweden	2022	0.427					
Switzerland	2017	0.365	0.291	0.286	0.287	0.283	0.284
Switzerland	2018	0.369	0.296	0.292	0.285	0.287	
Switzerland	2019	0.374	0.298	0.295	0.288		
Switzerland	2020	0.393	0.312	0.300			
Switzerland	2021	0.391	0.298				
Switzerland	2022	0.398					
United Arab Emirates	2017	0.272	0.216	0.208	0.204	0.206	0.204
United Arab Emirates	2018	0.294	0.229	0.224	0.221	0.220	
United Arab Emirates	2019	0.300	0.236	0.236	0.234		
United Arab Emirates	2020	0.327	0.262	0.263			
United Arab Emirates	2021	0.338	0.273				
United Arab Emirates	2022	0.348					
United Kingdom	2017	0.389	0.314	0.308	0.306	0.305	0.303
United Kingdom	2018	0.397	0.320	0.318	0.316	0.313	
United Kingdom	2019	0.404	0.331	0.327	0.321		
United Kingdom	2020	0.414	0.346	0.337			
United Kingdom	2021	0.423	0.348				
United Kingdom	2022	0.424					
United States	2017	0.405	0.325	0.323	0.321	0.321	0.318

Country	Cohort	Graduation	Year 1	Year 2	Year 3	Year 4	Year 5
United States	2018	0.410	0.328	0.326	0.325	0.322	
United States	2019	0.416	0.334	0.332	0.327		
United States	2020	0.426	0.345	0.338			
United States	2021	0.429	0.344				
United States	2022	0.442					

Figure A.7

Representation of women in leadership by STEM status

Country	Group	Entry	Senior	Manager	Director	VP	C-Suite
Argentina	Non STEM	0.599	0.563	0.402	0.391	0.259	0.246
Argentina	STEM	0.293	0.306	0.196	0.409	0.078	0.065
Australia	Non STEM	0.592	0.543	0.468	0.450	0.259	0.324
Australia	STEM	0.315	0.325	0.252	0.331	0.099	0.107
Austria	Non STEM	0.530	0.487	0.383	0.373	0.195	0.194
Austria	STEM	0.241	0.229	0.351	0.257	0.081	0.070
Belgium	Non STEM	0.581	0.506	0.455	0.361	0.267	0.225
Belgium	STEM	0.293	0.289	0.267	0.301	0.217	0.099
Brazil	Non STEM	0.553	0.539	0.407	0.327	0.297	0.290
Brazil	STEM	0.268	0.305	0.215	0.378	0.104	0.078
Canada	Non STEM	0.586	0.544	0.466	0.454	0.345	0.262
Canada	STEM	0.333	0.339	0.297	0.350	0.214	0.172
Denmark	Non STEM	0.581	0.490	0.422	0.376	0.238	0.217
Denmark	STEM	0.324	0.261	0.380	0.380	0.351	0.055
Finland	Non STEM	0.708	0.682	0.624	0.577	0.412	0.416
Finland	STEM	0.441	0.383	0.377	0.508	0.220	0.270
France	Non STEM	0.593	0.575	0.456	0.434	0.347	0.261
France	STEM	0.343	0.319	0.310	0.331	0.190	0.113
Germany	Non STEM	0.543	0.468	0.420	0.327	0.177	0.188
Germany	STEM	0.268	0.244	0.255	0.232	0.114	0.088
India	Non STEM	0.348	0.337	0.209	0.237	0.164	0.191
India	STEM	0.289	0.279	0.177	0.181	0.124	0.140
Ireland	Non STEM	0.578	0.514	0.478	0.405	0.236	0.272
Ireland	STEM	0.288	0.304	0.313	0.334	0.292	0.103
Italy	Non STEM	0.580	0.536	0.431	0.409	0.269	0.284
Italy	STEM	0.418	0.414	0.317	0.335	0.179	0.157
Mexico	Non STEM	0.536	0.471	0.367	0.346	0.253	0.242
Mexico	STEM	0.247	0.278	0.217	0.284	0.167	0.116
Netherlands	Non STEM	0.563	0.493	0.388	0.325	0.188	0.210
Netherlands	STEM	0.266	0.255	0.123	0.227	0.098	0.091
Peru	Non STEM	0.536	0.489	0.375	0.391	0.245	0.259
Peru	STEM	0.254	0.249	0.211	0.190	0.098	0.223
Philippines	Non STEM	0.625	0.577	0.526	0.500	0.386	0.349
Philippines	STEM	0.354	0.386	0.330	0.442	0.239	0.148
Singapore	Non STEM	0.568	0.560	0.498	0.427	0.318	0.260
Singapore	STEM	0.366	0.346	0.322	0.341	0.218	0.145
South Africa	Non STEM	0.606	0.532	0.465	0.445	0.276	0.277
South Africa	STEM	0.320	0.326	0.268	0.403	0.151	0.187
Spain	Non STEM	0.596	0.526	0.436	0.380	0.274	0.282
Spain	STEM	0.333	0.349	0.306	0.345	0.125	0.106
Sweden	Non STEM	0.545	0.531	0.494	0.487	0.262	0.284
Sweden	STEM	0.273	0.306	0.331	0.374	0.196	0.102

Country	Group	Entry	Senior	Manager	Director	VP	C-Suite
Switzerland	Non STEM	0.571	0.472	0.419	0.350	0.241	0.218
Switzerland	STEM	0.277	0.258	0.254	0.279	0.131	0.095
United Arab Emirates	Non STEM	0.393	0.355	0.267	0.275	0.171	0.169
United Arab Emirates	STEM	0.205	0.193	0.138	0.256	0.107	0.089
United Kingdom	Non STEM	0.566	0.512	0.458	0.407	0.241	0.287
United Kingdom	STEM	0.273	0.282	0.208	0.277	0.134	0.151
United States	Non STEM	0.591	0.555	0.464	0.488	0.350	0.302
United States	STEM	0.318	0.316	0.301	0.277	0.228	0.122

Table A.8

STEM skills adoption relative probability ratio: men/women

Country	2015	2023
Argentina	2.719	2.873
Australia	2.499	2.227
Austria	2.002	2.327
Belgium	2.135	2.360
Brazil	2.468	2.547
Canada	2.437	2.117
Chile	2.365	2.542
Croatia	2.420	2.574
Cyprus	2.393	2.202
Czechia	2.299	1.983
Denmark	1.841	1.978
Estonia	4.372	2.852
Finland	1.994	1.995
France	2.250	2.327
Germany	2.006	2.163
Greece	1.959	2.031
India	1.177	1.189
Ireland	2.122	1.964
Italy	1.610	1.737
Latvia	4.230	2.913
Luxembourg	1.799	1.773
Malta	2.436	1.887
Mexico	2.297	2.242
Netherlands	2.336	2.398
New Zealand	2.409	2.175
Norway	1.569	1.617
Peru	2.537	2.504
Philippines	1.990	1.985
Poland	3.130	2.794
Portugal	2.082	2.312
Romania	2.237	2.136
Singapore	1.762	1.688
South Africa	2.152	2.114
Spain	2.025	2.170
Sweden	1.971	2.141
Switzerland	1.747	1.974
United Arab Emirates	2.022	1.789
United Kingdom	2.535	2.233
United States	2.533	2.176

Table A.9

Skills listing trends over time: share of women who list STEM vs. non-STEM skills

	2015	2016	2017	2018	2019	2020	2021	2022	2023
Argentina									
STEM skills	0.211	0.213	0.213	0.215	0.220	0.227	0.233	0.236	0.239
Non-STEM skills	0.470	0.474	0.478	0.485	0.492	0.500	0.514	0.525	0.530
Gap	0.258	0.261	0.265	0.270	0.272	0.273	0.281	0.289	0.291
Australia									
STEM skills	0.232	0.238	0.243	0.249	0.255	0.262	0.267	0.273	0.276
Non-STEM skills	0.480	0.488	0.493	0.499	0.505	0.510	0.515	0.520	0.521
Gap	0.248	0.249	0.249	0.250	0.249	0.248	0.248	0.246	0.245
Austria									
STEM skills	0.204	0.205	0.204	0.203	0.205	0.208	0.210	0.211	0.212
Non-STEM skills	0.370	0.381	0.388	0.398	0.408	0.419	0.428	0.437	0.441
Gap	0.166	0.176	0.185	0.195	0.203	0.211	0.219	0.226	0.229
Belgium									
STEM skills	0.236	0.235	0.234	0.234	0.236	0.239	0.240	0.242	0.243
Non-STEM skills	0.436	0.445	0.452	0.460	0.467	0.473	0.479	0.483	0.484
Gap	0.200	0.210	0.217	0.227	0.232	0.235	0.239	0.241	0.241
Brazil									
STEM skills	0.208	0.212	0.214	0.219	0.229	0.243	0.253	0.258	0.262
Non-STEM skills	0.443	0.451	0.457	0.469	0.482	0.495	0.512	0.524	0.529
Gap	0.235	0.239	0.244	0.250	0.253	0.252	0.259	0.266	0.267
Canada									
STEM skills	0.253	0.258	0.261	0.265	0.271	0.277	0.282	0.287	0.290
Non-STEM skills	0.500	0.505	0.507	0.510	0.513	0.517	0.520	0.523	0.524
Gap	0.248	0.247	0.246	0.245	0.242	0.240	0.238	0.236	0.234
Chile									
STEM skills	0.205	0.208	0.208	0.208	0.211	0.216	0.219	0.220	0.222
Non-STEM skills	0.408	0.416	0.421	0.428	0.435	0.442	0.447	0.454	0.458
Gap	0.203	0.208	0.214	0.220	0.224	0.226	0.228	0.234	0.236
Croatia									
STEM skills	0.261	0.255	0.238	0.231	0.253	0.261	0.264	0.261	0.262
Non-STEM skills	0.462	0.460	0.459	0.460	0.462	0.468	0.474	0.478	0.480
Gap	0.201	0.205	0.221	0.229	0.209	0.207	0.210	0.217	0.217
Cyprus									
STEM skills	0.232	0.229	0.224	0.225	0.240	0.249	0.255	0.262	0.261
Non-STEM skills	0.423	0.419	0.421	0.424	0.428	0.432	0.436	0.442	0.443
Gap	0.191	0.190	0.197	0.199	0.188	0.184	0.181	0.180	0.182
Czechia									
STEM skills	0.205	0.217	0.226	0.234	0.243	0.259	0.263	0.265	0.266
Non-STEM skills	0.374	0.379	0.385	0.392	0.399	0.404	0.411	0.418	0.420
Gap	0.169	0.162	0.159	0.159	0.156	0.146	0.148	0.152	0.154
Denmark									

	2015	2016	2017	2018	2019	2020	2021	2022	2023
STEM skills	0.288	0.287	0.287	0.288	0.290	0.292	0.294	0.295	0.296
Non-STEM skills	0.454	0.462	0.469	0.477	0.483	0.487	0.489	0.492	0.493
Gap	0.167	0.175	0.182	0.189	0.192	0.194	0.195	0.197	0.197
Estonia									
STEM skills	0.156	0.193	0.202	0.216	0.230	0.241	0.246	0.247	0.246
Non-STEM skills	0.456	0.456	0.459	0.461	0.465	0.470	0.478	0.488	0.491
Gap	0.300	0.263	0.257	0.245	0.236	0.229	0.232	0.241	0.245
Finland									
STEM skills	0.389	0.392	0.392	0.393	0.397	0.399	0.401	0.404	0.405
Non-STEM skills	0.616	0.626	0.631	0.638	0.643	0.648	0.651	0.654	0.654
Gap	0.227	0.234	0.239	0.244	0.246	0.249	0.250	0.250	0.249
France									
STEM skills	0.254	0.257	0.257	0.259	0.263	0.270	0.274	0.276	0.278
Non-STEM skills	0.478	0.487	0.493	0.501	0.508	0.515	0.521	0.526	0.528
Gap	0.224	0.230	0.236	0.242	0.245	0.245	0.248	0.250	0.250
Germany									
STEM skills	0.189	0.191	0.193	0.196	0.200	0.204	0.207	0.209	0.210
Non-STEM skills	0.360	0.371	0.378	0.387	0.398	0.410	0.419	0.427	0.431
Gap	0.172	0.179	0.185	0.191	0.198	0.206	0.212	0.218	0.221
Greece									
STEM skills	0.265	0.264	0.264	0.264	0.264	0.270	0.275	0.277	0.279
Non-STEM skills	0.455	0.458	0.459	0.463	0.470	0.478	0.485	0.493	0.495
Gap	0.190	0.194	0.196	0.200	0.205	0.208	0.211	0.215	0.216
India									
STEM skills	0.213	0.220	0.226	0.235	0.244	0.254	0.262	0.266	0.268
Non-STEM skills	0.258	0.263	0.265	0.272	0.281	0.296	0.315	0.325	0.329
Gap	0.045	0.043	0.039	0.037	0.037	0.042	0.053	0.059	0.060
Ireland									
STEM skills	0.259	0.259	0.263	0.268	0.274	0.282	0.286	0.291	0.294
Non-STEM skills	0.469	0.475	0.478	0.483	0.489	0.495	0.501	0.505	0.507
Gap	0.210	0.216	0.215	0.215	0.215	0.213	0.215	0.215	0.214
Italy									
STEM skills	0.330	0.336	0.339	0.341	0.344	0.349	0.353	0.354	0.356
Non-STEM skills	0.462	0.470	0.477	0.486	0.493	0.500	0.508	0.514	0.516
Gap	0.132	0.134	0.139	0.145	0.149	0.151	0.155	0.159	0.161
Latvia									
STEM skills	0.208	0.240	0.253	0.267	0.275	0.289	0.284	0.282	0.281
Non-STEM skills	0.530	0.523	0.521	0.521	0.524	0.526	0.530	0.534	0.535
Gap	0.322	0.283	0.269	0.255	0.248	0.236	0.246	0.252	0.255
Luxembourg									
STEM skills	0.268	0.262	0.269	0.272	0.276	0.284	0.287	0.290	0.290
Non-STEM skills	0.401	0.402	0.406	0.412	0.417	0.422	0.425	0.428	0.428
Gap	0.134	0.140	0.137	0.139	0.141	0.138	0.137	0.138	0.138
Malta									
STEM skills	0.213	0.233	0.253	0.252	0.263	0.269	0.277	0.279	0.280
Non-STEM skills	0.400	0.400	0.402	0.408	0.412	0.420	0.425	0.428	0.429

	2015	2016	2017	2018	2019	2020	2021	2022	2023
Gap	0.188	0.167	0.148	0.156	0.150	0.151	0.148	0.149	0.148
Mexico									
STEM skills	0.188	0.192	0.193	0.195	0.200	0.210	0.219	0.223	0.225
Non-STEM skills	0.384	0.393	0.397	0.404	0.412	0.423	0.436	0.446	0.449
Gap	0.196	0.201	0.205	0.209	0.212	0.213	0.217	0.222	0.224
Netherlands									
STEM skills	0.218	0.215	0.218	0.221	0.225	0.231	0.235	0.238	0.240
Non-STEM skills	0.424	0.433	0.441	0.450	0.456	0.461	0.465	0.468	0.469
Gap	0.205	0.217	0.223	0.229	0.231	0.231	0.230	0.230	0.229
New Zealand									
STEM skills	0.251	0.257	0.261	0.266	0.272	0.277	0.281	0.286	0.289
Non-STEM skills	0.491	0.497	0.500	0.506	0.511	0.516	0.521	0.525	0.526
Gap	0.240	0.240	0.239	0.240	0.239	0.240	0.240	0.239	0.237
Norway									
STEM skills	0.301	0.301	0.300	0.301	0.309	0.313	0.316	0.319	0.319
Non-STEM skills	0.404	0.407	0.412	0.419	0.423	0.427	0.430	0.433	0.434
Gap	0.104	0.106	0.112	0.118	0.115	0.114	0.114	0.114	0.114
Peru									
STEM skills	0.184	0.188	0.191	0.194	0.200	0.212	0.223	0.226	0.228
Non-STEM skills	0.404	0.413	0.420	0.428	0.438	0.450	0.465	0.475	0.478
Gap	0.220	0.225	0.229	0.234	0.239	0.238	0.242	0.248	0.250
Philippines									
STEM skills	0.311	0.315	0.316	0.321	0.327	0.335	0.345	0.354	0.357
Non-STEM skills	0.538	0.545	0.549	0.556	0.564	0.570	0.582	0.592	0.593
Gap	0.227	0.229	0.233	0.236	0.237	0.235	0.237	0.238	0.236
Poland									
STEM skills	0.172	0.181	0.189	0.200	0.210	0.220	0.228	0.237	0.241
Non-STEM skills	0.456	0.468	0.479	0.491	0.502	0.513	0.523	0.537	0.542
Gap	0.284	0.287	0.289	0.291	0.292	0.292	0.295	0.300	0.300
Portugal									
STEM skills	0.277	0.274	0.272	0.270	0.271	0.274	0.276	0.276	0.277
Non-STEM skills	0.493	0.498	0.502	0.507	0.513	0.520	0.526	0.531	0.532
Gap	0.216	0.225	0.230	0.237	0.242	0.245	0.250	0.255	0.255
Romania									
STEM skills	0.292	0.288	0.287	0.288	0.290	0.293	0.296	0.299	0.301
Non-STEM skills	0.521	0.523	0.525	0.527	0.532	0.536	0.539	0.541	0.541
Gap	0.230	0.235	0.238	0.240	0.242	0.243	0.243	0.242	0.241
Singapore									
STEM skills	0.308	0.313	0.319	0.326	0.333	0.338	0.341	0.343	0.344
Non-STEM skills	0.483	0.490	0.497	0.504	0.511	0.517	0.521	0.524	0.524
Gap	0.174	0.177	0.177	0.179	0.179	0.179	0.180	0.181	0.180
South Africa									
STEM skills	0.263	0.267	0.268	0.272	0.278	0.284	0.290	0.298	0.302
Non-STEM skills	0.479	0.484	0.488	0.495	0.502	0.508	0.517	0.526	0.530
Gap	0.216	0.217	0.220	0.222	0.224	0.224	0.227	0.229	0.228
Spain									

	2015	2016	2017	2018	2019	2020	2021	2022	2023
STEM skills	0.269	0.272	0.272	0.274	0.278	0.284	0.286	0.289	0.291
Non-STEM skills	0.471	0.480	0.486	0.493	0.501	0.508	0.516	0.524	0.526
Gap	0.201	0.208	0.214	0.219	0.223	0.225	0.230	0.235	0.235
Sweden									
STEM skills	0.255	0.254	0.256	0.260	0.265	0.269	0.273	0.276	0.279
Non-STEM skills	0.442	0.453	0.462	0.474	0.483	0.489	0.493	0.497	0.498
Gap	0.187	0.199	0.206	0.214	0.219	0.220	0.220	0.221	0.220
Switzerland									
STEM skills	0.251	0.250	0.249	0.249	0.249	0.251	0.252	0.254	0.255
Non-STEM skills	0.397	0.404	0.410	0.417	0.425	0.433	0.439	0.444	0.447
Gap	0.146	0.154	0.161	0.168	0.176	0.182	0.186	0.191	0.192
United Arab Emirates									
STEM skills	0.170	0.175	0.179	0.184	0.190	0.197	0.201	0.205	0.207
Non-STEM skills	0.334	0.338	0.342	0.347	0.352	0.359	0.361	0.358	0.359
Gap	0.164	0.163	0.163	0.164	0.162	0.162	0.160	0.154	0.152
United Kingdom									
STEM skills	0.209	0.216	0.221	0.226	0.233	0.240	0.245	0.252	0.255
Non-STEM skills	0.444	0.451	0.455	0.462	0.468	0.475	0.481	0.486	0.487
Gap	0.235	0.234	0.234	0.236	0.236	0.235	0.236	0.234	0.232
United States									
STEM skills	0.257	0.263	0.267	0.272	0.278	0.285	0.290	0.297	0.301
Non-STEM skills	0.508	0.512	0.515	0.519	0.523	0.526	0.530	0.534	0.536
Gap	0.251	0.250	0.248	0.247	0.245	0.241	0.240	0.237	0.234