

# Equity in education and the labour market

Findings from Education at a Glance 2024

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# Acknowledgments

Education at a Glance is one of the OECD's yearly flagship publications. It provides an authoritative compendium of statistics on education systems in OECD countries. This spotlight draws from Education at a Glance 2024 data with the aim of providing the reader a snapshot of equity in education, investigating how progress through education and the associated learning and labour market outcomes are impacted by dimensions such as gender, socio-economic status, country of birth and regional location.

This spotlight is the product of collaborative effort between OECD governments, the experts and institutions working within the framework of the OECD Indicators of Education Systems (INES) programme, and the OECD Secretariat. It was prepared within the Innovation and Measuring Progress Division of the OECD Directorate for Education and Skills under the responsibility of Tia Loukkola. The production of the spotlight on equity was led by Eric Charbonnier. Sasha Ramirez-Hughes supported the production process.

Find out more from the OECD Education at a Glance 2024 data by visiting <https://www.oecd.org/education/education-at-a-glance/>

# Executive summary

## Educational inequalities start young, prompting many countries to take action

- » The first years of life are critical in laying the foundations for future skills, well-being and learning, therefore participation in education of children from disadvantaged backgrounds is crucial to reducing inequalities. Average enrolment rates in early childhood development programmes for children under the age of 3 have increased from 28% in 2013 to 32% in 2022 in OECD countries, but remain relatively low.
- » The children most in need of childcare are those least likely to have the opportunity. On average, in OECD countries, 32% of 0-2 year-olds from lower-income households attend childcare, compared to 50% from higher-income households.
- » Participation in pre-primary education has improved significantly. In more than half of OECD countries, the enrolment of children between the ages of 3 and 5 is now nearly universal, with rates of at least 90%. At the same time, the ratio of children to teaching staff at the pre-primary level fell from 16:1 to 15:1 on average.
- » In recent years, the resources invested in primary and lower secondary education have seen substantial increases. Between 2015 and 2021, spending per full-time equivalent student increased by 2.4% per year in primary education and by 2.0% per year in lower secondary education.

## The most significant inequalities in education are related to parents' and students' socio-economic backgrounds

- » Even in the most equitable countries, the most disadvantaged students do not achieve the same level of performance in the Programme for International Student Assessment (PISA) as their more advantaged peers. Failure to achieve basic levels in mathematics also affects the development of other essential skills, such as creative thinking.
- » Attainment passes down the generations: 30% of adults whose parents did not attain upper secondary education also failed to do so themselves, but only 4% of adults whose parents achieved tertiary education do not attain at least upper secondary education. Students whose parents have lower educational attainment are also substantially over-represented in vocational programmes in almost all OECD countries.
- » In nearly every country, the completion rates among students who start a bachelor's programme are lowest for those whose parents did not complete upper secondary education and highest for those with at least one tertiary-educated parent.
- » Teacher shortages can aggravate inequalities. At the start of the 2022/23 academic year, 18 out of 21 countries for which data are available faced teacher shortages and had been unable to fill all their vacant teaching posts.

## Despite outperforming boys in educational attainment, women, particularly those with a migrant background, are still lagging behind in the labour market

- » In 2023, only 12% of young women aged between 25 and 34 lacked upper secondary education, compared to 15% of young men of the same age, while 54% of young women held a tertiary degree, compared to 41% of young men.
- » Gender imbalances in fields of study perpetuate stereotypes and inequalities, limiting opportunities for both genders and narrowing perspectives. Only 15% of female new entrants to tertiary education choose to study science, technology, engineering or mathematics (STEM) fields, compared to 41% of male new entrants. Meanwhile, only 4% of male new entrants opt to study in the field of education.
- » Young women are less likely to be in employment than men, with the gap typically widest for those without upper secondary attainment and narrowest for those with tertiary attainment. The gender gap for those with at least a bachelor's degree fell from 8 percentage points in 2016 to 5 in 2023 on average across OECD countries.
- » In nearly all countries, young women face significantly higher inactivity rates than their male peers, particularly among those who have not attained upper secondary education.
- » Foreign-born women face a dual labour-market challenge as immigrants and as women. Among native-born tertiary-educated adults, the gender gap in employment rates averages 5 percentage points in favour of men on average across OECD countries, but more than doubles to 13 percentage points among those who are foreign born.
- » On average across OECD countries, tertiary-educated young women working full-time and for the full year earn 83% of the earnings of their male peers. Differences in field of study choices contribute to the pay gap, but even within the same fields, women with tertiary qualifications often earn less than men.

## Upper secondary education remains key to improving labour-market opportunities, but pockets of inequality remain

- » The share of 18-24 year-olds who are neither employed nor in education or training (NEET) fell from 16% in 2016 to 14% in 2023 on average across OECD countries, with rates falling in almost all countries.
- » Although attainment is rising, with fewer students leaving education without an upper secondary qualification over the last decade, student performance, as measured by PISA, has stagnated or even fallen since 2000.
- » National-level data on educational attainment often hide significant regional differences. The regions which contain the capital city tend to have a smaller share of adults with lower educational attainment than the rest of the country.
- » Foreign-born adults (25-64) are over-represented among those with lower educational attainment. On average across OECD countries, foreign-born adults represent 24% of those with below upper secondary educational attainment, 15% of those with upper secondary or post-secondary non-tertiary attainment and 19% of those with a tertiary qualification.
- » Education is the best protection against unemployment. On average across OECD countries, 61% of 25-34 year-olds with below upper secondary attainment are employed, compared to 79% of those with upper secondary or post-secondary non-tertiary attainment.
- » Workers who lack an upper secondary education earn, on average, 18% less than those who have attained that level.

## Tertiary education improves job prospects, but the countries with the largest share of tertiary graduates do not always have the highest employment rates

- » The employment rate among tertiary-educated 25-34 year-olds was 8 percentage points higher in 2023 than among those with upper secondary or post-secondary non-tertiary attainment on average across OECD countries.
- » 69% of workers with tertiary educational attainment earn more than the median, compared to just 42% of those with an upper secondary qualification.
- » The likelihood of being employed increases with educational attainment, but labour markets tend to underuse the potential skills of foreign-born adults. On average across OECD countries, 60% of native-born adults and 63% of foreign-born adults with below upper secondary education are employed, rising to 88% of native-born and 82% of foreign-born adults with tertiary attainment.
- » Countries with the largest share of tertiary graduates do not necessarily have the highest employment rates. This highlights the need for better collaboration between the education sector and the labour market, to prevent an oversupply of graduates in certain fields.



# Introduction

Equity has been a focus of policy for several decades, particularly within the sphere of education. An education system cannot be deemed successful if it does not offer all students the same opportunities or lacks inclusivity. Acknowledging this critical issue, the OECD convened a gathering of education ministers in December 2022 under the theme “Building Equitable Societies through Education”. This meeting emphasised the imperative of fostering fairness and equal access within educational frameworks worldwide. Equity in education is also a fundamental pillar of the Sustainable Development Goals (SDGs) outlined by UNESCO. This global initiative advocates for the provision of quality education that ensures equal opportunities for everyone, regardless of their background or circumstances.

Equity in education means that learning environments are structured to counteract the influence of external disparities, creating conditions where educational attainment contributes to equitable economic and social outcomes long after students leave school. Indicators play a crucial role in assessing progress towards educational equity, helping to determine whether equity is a reality or if significant challenges remain.

This spotlight draws on findings from *Education at a Glance 2024* (OECD, 2024<sup>[1]</sup>) which this year takes equity as its main theme. It starts with an overview of equity in education, analysing the main trends at each of the levels from early childhood to tertiary education. It then goes on to consider the resulting opportunities, exploring how educational inequalities persist and assessing the fit between educational outcomes and labour-market experiences. Essentially, it seeks to determine whether educational efforts actually improve labour-market prospects and outcomes.

These considerations are not new. Many of the equity indicators highlighted in *Education at a Glance 2024* were also discussed during the ministers' meeting, which went on to establish a dashboard of key indicators for achieving equity in education and beyond (OECD, 2022<sup>[2]</sup>).

The indicators presented in this spotlight highlight how different demographic groups face disparities in educational resources, proficiency, access to education, study choices and completion rates, as well as educational outcomes. These differences can be found between the least and the most skilled, the socio-economically disadvantaged and advantaged, men and women, and the native-born and immigrant populations. Although other dimensions of diversity are also relevant, the data on these dimensions currently offer the most reliable information and the best national coverage enabling equity to be assessed in and through education.

# Equity in education: from early learning to tertiary education

## Early childhood education and care (ECEC)

### Skills: **Inequalities start young**

The first years of life are critical in laying the foundations for the future development of skills, well-being and learning. OECD research (2020<sup>[3]</sup>) has found that socio-economic gaps in foundational skills and socio-emotional development emerge early in life. Children from disadvantaged socio-economic backgrounds in Estonia, the United Kingdom and the United States were already significantly behind their more advantaged peers by the age of 5. Specifically, these children lagged by an average of 12 months in emerging literacy skills, 11 months in emerging numeracy skills and an alarming 20 months in socio-emotional skills.

These deficits at such an early age underscore the urgent need for targeted interventions to support disadvantaged children, a conclusion widely echoed by policy makers globally. As a result, policies have increasingly focused on early childhood education and care (ECEC) as a crucial area for investment and policy development.

### Participation in and quality of ECEC: **There have been significant improvements in pre-primary education, both in access and staffing levels**

Participation in pre-primary education has improved significantly over past decades. In almost all OECD countries, enrolment of children in the year before they reach the official primary education entry age (one of the SDG targets) has become near-universal, exceeding 90% in most countries and reaching 100% in 8 countries. On average, enrolment rates for these children have increased by 1 percentage points since 2013, reaching 95% across OECD countries in 2022. This highlights the progress made in ensuring access to pre-primary education for children just before they start primary school (OECD, 2024<sup>[1]</sup>, Table B1.2).

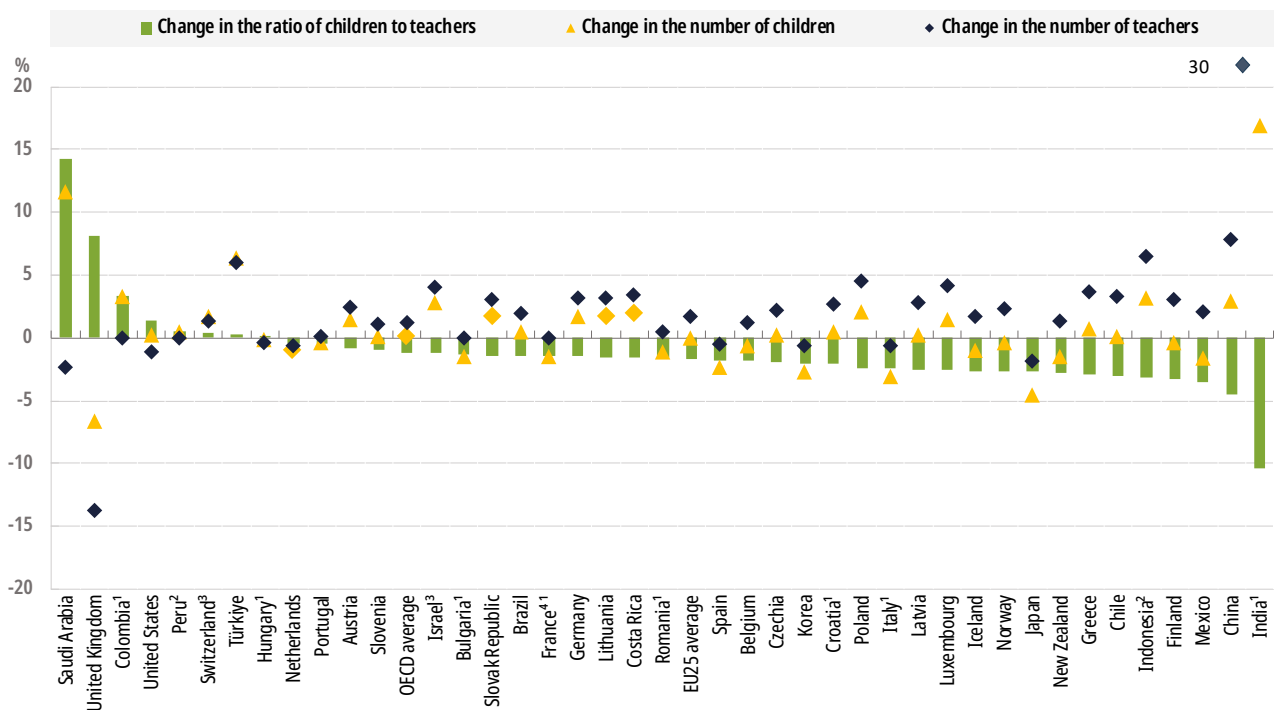
Similarly, there has been a notable improvement in structural quality at the pre-primary level, as shown by the ratio of children to teaching staff. This indicator fell from 16:1 in 2013 to 15:1 in 2022 on average across OECD countries. The only OECD country where the child-teacher ratio increased by more than 5% per year was the United Kingdom. In most countries, the decline was primarily driven by the number of teachers increasing faster than the number of children

enrolled in pre-primary education (Figure 1). In some countries, such as Belgium, Mexico, New Zealand and Romania, the number of teachers increased despite a fall in enrolment over the same period. Conversely, in Italy, Japan and Korea, the number of children enrolled and the number of teachers both fell, but the decline in enrolment outpaced the reduction in teacher numbers.

These trends reflect an overall decline in the population of children aged 0-6 years, which has influenced enrolment figures across OECD countries, but also suggest that more resources are available to pre-primary education.

**Figure 1 • Annual change in the ratio of children to teachers, number of children and number of teachers in pre-primary education (2013 and 2022)**

Average annual change in per cent



Notes:

1. Year of reference differs from 2013. Refer to the source table for more details.
2. Year of reference differs from 2022. Refer to the source table for more details.
3. Public institutions only.
4. Excludes data from independent private institutions.

Countries are ranked in descending order of the average annual change in the ratio of children to teaching staff between 2013 and 2022.

Source: Education at a Glance 2024, Table D2.1.

### Challenges: **Major challenges remain to increase participation and quality of ECEC services and make them more affordable for disadvantaged families**

Despite the progress described above, a number of challenges remain. First, there is a need to increase participation among the youngest children, especially for those from more disadvantaged backgrounds. Second, pre-primary enrolment for 3-5 year-olds remains uneven across and within countries. Finally, reliance on private funding remains a barrier to equitable access to ECEC in some countries.

Progress has been made in increasing access to ECEC for the early years. Enrolment rates in early childhood development and care programmes (ISCED level 01) for children under the age of 3 have risen from 28% on average in 2013 to 32% in 2022 among OECD countries and from 26 to 31% among European countries with available data. But these figures are still far from the target set by the European Commission to have a minimum of 45% of children under the age of 3 to be enrolled in formal childcare by 2030. Moreover, ECEC programmes for this age group are frequently less developed in socio-economically disadvantaged areas, exacerbating inequalities in access to early learning opportunities (OECD, 2024<sup>[1]</sup>, Chapter B1).

There is also a noticeable income disparity in childcare participation. On average, in OECD countries where data are available, 32% of children under the age of 3 from lower-income households attend childcare, compared to 50% of those from higher-income households (OECD, 2024<sup>[1]</sup>, Figure B1.5). The gap is particularly pronounced in countries such as Ireland, Switzerland and the United Kingdom, where the cost of childcare poses a significant financial challenge for families, exacerbating disparities in access based on socio-economic status (OECD, 2024<sup>[4]</sup>). This gap in enrolment based on income highlights how socio-economic status intersects with childcare participation, underscoring the need for comprehensive strategies to overcome the barriers faced by disadvantaged households (OECD, 2024<sup>[1]</sup>, Chapter B1).

Pre-primary enrolment among 3-5 year-olds also has room to improve. Although participation is nearly universal, i.e. at least 90% for this age group in more than half the OECD countries for which data are available, and has been increasing for several decades, progress is still needed in the remaining OECD countries, particularly in enrolling 3- and 4-year-olds in pre-primary education. The highest enrolment rates of 4-year-olds in early childhood education and primary education are found in Belgium, France, Luxembourg, Peru, Portugal and the United Kingdom, where they equal or exceed 99%. In contrast, 50% or less are enrolled in education in Saudi Arabia, South Africa, Switzerland and Türkiye. There are also large subnational differences in pre-primary enrolment rates, reinforcing inequalities between regions (OECD, 2024<sup>[1]</sup>, Chapter B1). In addition, while extending access to ECEC is crucial, ensuring that the quality of services is high, especially for diverse populations, can significantly contribute to reducing educational and social inequalities (OECD, 2023<sup>[5]</sup>).

Better funding of ECEC programmes for the very youngest children is a challenge, while making pre-primary education affordable is equally important. Primary and secondary education benefit from substantial public investment, significantly reducing household contributions, but funding for pre-primary education relies more heavily on private sources. At this level, children are more likely to be enrolled in private institutions, leading to greater household expenditure. Households account for 13% of total expenditure on pre-primary education on average across OECD countries and the share exceeds 20% in countries such as Australia, Denmark, Slovenia, Portugal and the United Kingdom, highlighting the need for increased public investment targeted on disadvantaged families in these countries to support equitable access for all children (OECD, 2024<sup>[1]</sup>, Chapter C3). Among these countries, this is the case for example in Slovenia, where the government covers 23% of ECEC services for all parents subject to income tax in Slovenia, with the possibility of subsidising pre-school education services up to 100%, depending on the family's socio-economic status.

## Primary education

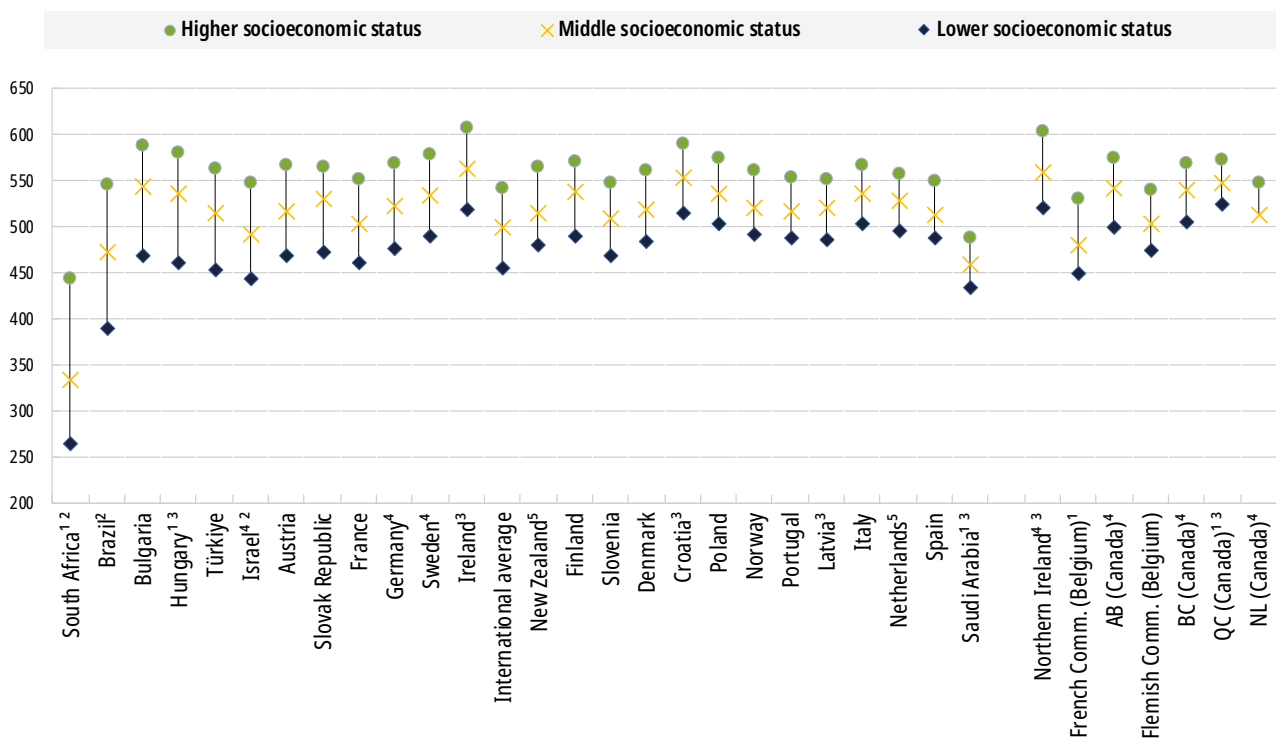
**Skills: Further socio-economic and gender inequalities start to emerge in primary education.**

Equity challenges are also visible in primary education. The most obvious disparities stem from socio-economic factors that influence the development of foundational skills (mathematics and reading) among the most disadvantaged, but gender inequalities, although less marked, also emerge in primary education.

For instance, the Progress in International Reading Literacy Study (PIRLS) evaluates the

reading comprehension and literacy skills of fourth-grade students. In 2021, it found that the socio-economic status (SES) of students' households consistently affects their performance in literacy across countries and other participants, with students from higher SES backgrounds outperforming their peers from lower ones. The resulting disparities are the highest in Brazil, Bulgaria, Hungary and South Africa, where the gaps in performance are over 120 points. In contrast, the gaps are relatively modest in the Netherlands, Saudi Arabia, Spain and Quebec (Canada), at no more than 62 points (Figure 2).

**Figure 2 • Average achievement of students in PIRLS 2021 survey, by socio-economic status (2021)**  
Students in their fourth grade of schooling



### Notes:

The PIRLS 2021 study divided students into higher, middle or lower socio-economic status based on the Home Socio-economic Status scale.

1. Data are available for at least 70% but less than 85% of the students.
2. Assessed one year later than originally scheduled.
3. Delayed assessment of fourth grade cohort at the beginning of fifth grade.
4. Data are available for at least 50% but less than 70% of the students.
5. Data are available for at least 40% but less than 50% of the students - interpret with caution.

Countries and other participants are ranked in descending order of the difference in achievement between the higher and lower socio-economic status groups.

Source: IEA's Progress in International Reading Literacy Study - PIRLS 2021, <https://www.iea.nl/studies/iea/pirls/2021>.

Although the extent of the disparities varies across countries, the overall trend underscores the need for targeted interventions to support disadvantaged students and reduce inequalities in educational attainment. These include policies aimed at improving early literacy interventions, providing equitable access to high-quality education, and helping all families to foster a conducive learning environment for their children, regardless of socio-economic status.

Although less marked than in secondary education (Figure 4.), gender inequalities are also apparent in primary education. The PIRLS study found gender differences in reading performance in all OECD countries among fourth-grade primary students (IEA, 2023<sup>[6]</sup>). The differences are less pronounced for mathematics, with the 2019 Trends in International Mathematics and Science Study (TIMSS) only recording significant gaps among fourth-grade primary students of that age in half of OECD countries (IEA, 2020<sup>[7]</sup>). The lowest gaps for mathematics were observed in Japan (1-point advantage for girls), Bulgaria (2-point advantage for boys), Finland and Republic of Türkiye (3-point), Norway (4-point), Lithuania and Latvia (5-point) while the widest gaps were in Canada (19-point advantage for boys), Portugal (17-point), Spain (15-point), France (14-point), Slovak Republic and Italy (12-point).

In France, a recent study even found detectable gaps between boys and girls in mathematics as early as the end of the first semester of the first year of primary school, even though they started the year at the same level (Breda, Sultan Parraud and Touitou, 2024<sup>[8]</sup>). It is also interesting to note that, whatever their level of proficiency, particularly in mathematics, girls in France declare themselves less confident than boys about their assessment results, whether in sixth grade, tenth grade or the first year of vocational training. Similarly, at all levels studied, they look forward to the coming school year with less serenity than boys (Andreu et al., 2023<sup>[9]</sup>). This is an important issue, and not just in France.

**Resources: Recent efforts have been made to rebalance investment towards lower levels of education.**

Although inequalities are rooted in the earliest levels of education, countries have often long under-invested in precisely these levels. Spending per student is still higher at higher levels of education in almost all OECD countries, although the extent of the increase varies considerably from country to country. On average, spending per student amounted to around USD 11 900 at primary level, USD 13 300 at secondary level and USD 20 500 at tertiary level in 2021 (OECD, 2024<sup>[1]</sup>, Chapter C1).

Another very clear trend is that, despite the financial difficulties many countries experienced due to the recent COVID-19 pandemic and its effects on their economies, investment in education has risen between 2015 and 2021. On average, in OECD countries, total spending on primary to tertiary education per full-time equivalent student rose by 1.8% between 2015 and 2021 (OECD, 2024<sup>[1]</sup>, Chapter C1). This was the result of a slight increase in expenditure (2.1%) and nearly stable numbers of students (a 0.2% increase in the number of full-time-equivalent students).

Along with these increases, a new pattern is emerging in education spending. Although upper secondary education has long benefited from greater funding, in recent years many countries appear to be gradually reversing this trend. Data from 33 countries show investment in primary and lower secondary education is rising faster than in upper secondary education in most countries. Between 2015 and 2021, spending per full-time equivalent student rose by 2.4% per year on average for primary education and by 2.0% per year for lower secondary education. In contrast, the increase for upper secondary education was just 1.6% per year during that period (Figure 3). This shift is especially noteworthy given that changes in the number of students enrolled in primary,

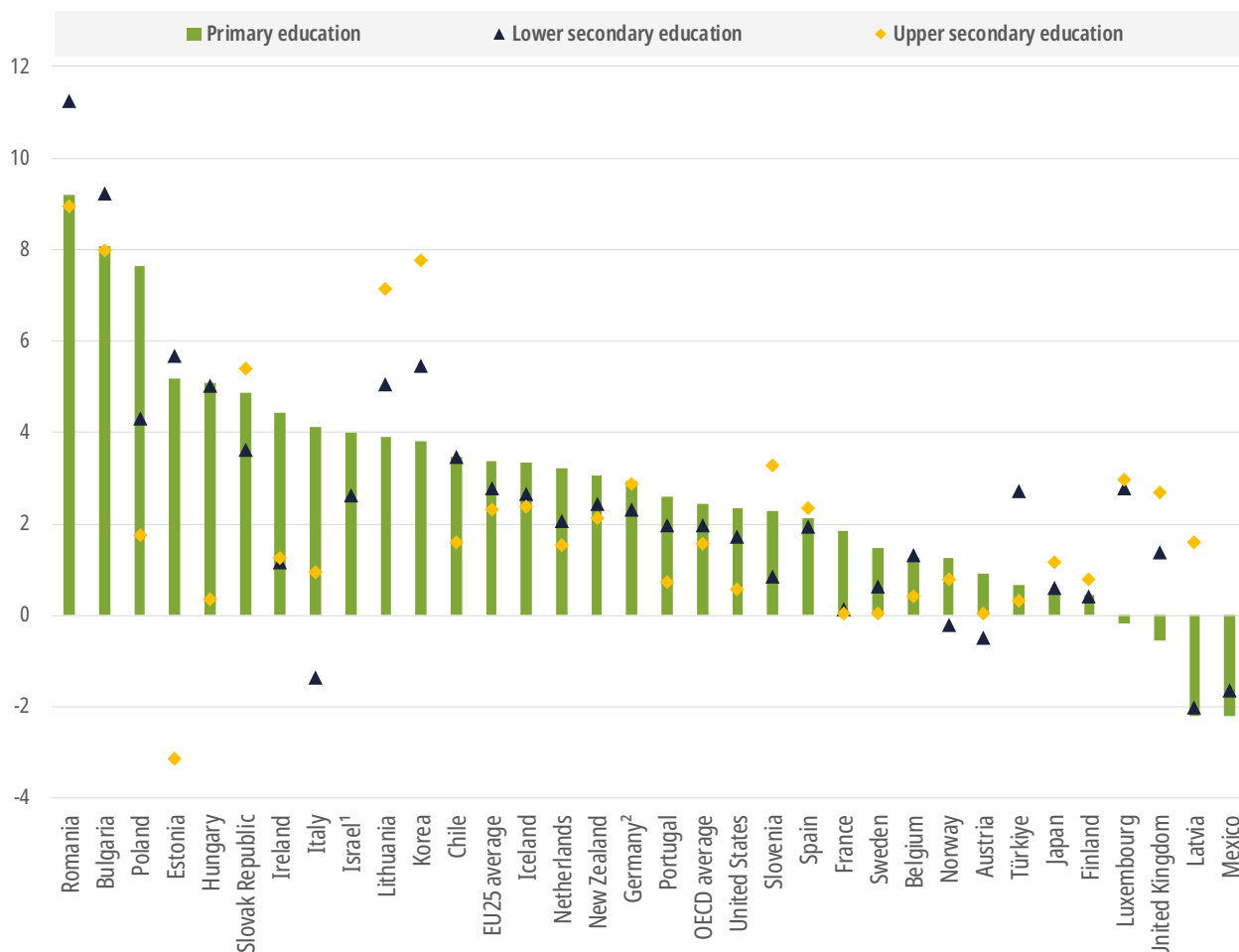
lower secondary and upper secondary remained relatively stable in most countries during 2015-21.

An increasing financial focus on primary education (as opposed to secondary education) is notable between 2015 and 2021 in several countries, including Poland (+7.6% per year for primary education and +3.2% per year for secondary education), Italy (+4.1% for primary and +0.1% for secondary), Estonia (+5.2% for

primary and +1.5 % for secondary), Ireland (+4.4% for primary and 1.1% for secondary), Hungary (+5.1 for primary and +2.3% for secondary), France (+1.8 % for primary and +0.1% for secondary) and Netherlands (+3.2% for primary and +1.8% for secondary). This reflects a better understanding of the significant impact that high-quality early education can have on students' overall development and future academic success (Figure 3 and Chapter C1).

**Figure 3 • Average annual change in expenditure per student, by levels of education (2015 to 2021)**

In per cent, based on full-time equivalent students, constant prices



Notes:

- 1. Lower secondary includes upper secondary education.
- 2. Upper secondary includes lower secondary vocational education.

Countries are ranked in descending order of the average annual change in expenditure on primary educational institutions per full-time equivalent student.

Source: Education at a Glance 2024, Table C1.3.

## Secondary education

Secondary education represents a pivotal stage for students as they solidify their foundational skills, develop other essential skills and begin to specialise their studies, setting the stage for higher education and future careers. The quality and equity of secondary education have profound implications for both individual success and societal development.

**Skills: Even in the most equitable countries, the most disadvantaged secondary students do not perform as well as their more advantaged peers**

The proportion of students achieving at least a minimum level of proficiency in reading and mathematics is an indicator of equity, as it demonstrates whether all students have access to high-quality education and the opportunity to develop essential skills, regardless of their socio-economic background, immigration status or gender. High proficiency rates across diverse groups suggest an equitable education system that effectively supports all learners.

There are significant disparities in mathematics proficiency related to students' socio-economic status, underscoring persistent equity challenges. Even in the most equitable countries, the most disadvantaged secondary school students do not manage to achieve the same level of performance as their more advantaged peers. Countries like Brazil and Peru have the widest gaps in the share of students of high and low socio-economic status achieving at least PISA level 2 in mathematics, based on the index of economic, social and cultural status (ESCS). Estonia and Japan are the only countries where the difference between the top and bottom quartile is less than 20% (Figure 4).

The differences are less striking for immigration background. There is no uniform pattern in differences in proficiency related to immigration status; Indonesia and Mexico have substantial

gaps favouring non-immigrant students, whereas in Australia, Hungary and Saudi Arabia, immigrant students outperform their non-immigrant peers (Figure 4). This may suggest that some education systems are more inclusive than others, but also highlight differences in the socio-economic backgrounds of immigrant students. In PISA 2022, the share of disadvantaged students is almost 37% among immigrant students and 22% among non-immigrant students on average across OECD countries. In some countries, immigrant students may have advantaged backgrounds, while in others they tend to come from disadvantaged contexts. The difference in the share of disadvantaged students by immigration background is the largest in Greece, Norway and Slovenia among countries and economies in PISA 2022 (more than 35 percentage points more among immigrant students) (OECD, 2023<sup>[10]</sup>, Figure I.7.3).

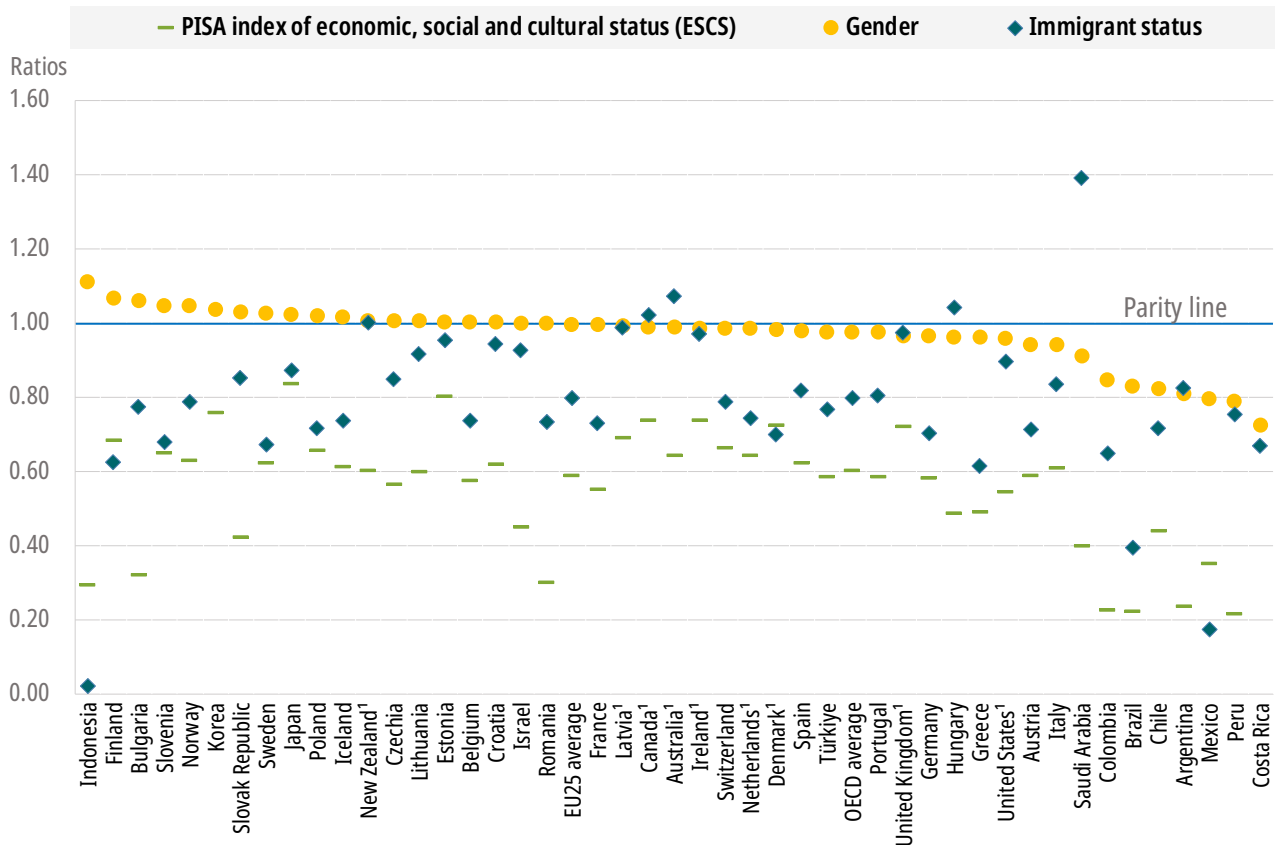
In contrast with the other two dimensions, the gender gap in the proportion of students achieving at least minimum proficiency in mathematics is small in most countries (Figure 4). Among OECD and partner countries, those in Latin America have the widest gender gap in mathematics proficiency in favour of boys, which raises questions. In contrast, the gap is in favour of girls in Bulgaria, Finland and Indonesia, which is also a cause for concern, especially as the same trend in favour of girls is also visible in reading (OECD, 2024<sup>[11]</sup>, SDG Chapter).

However, these figures need to be put into perspective, because if the comparison had focused on reading, there would have been greater differences in favour of girls. In the PISA 2022 assessment, girls outperform boys by an average of 24 points in reading in 2022 (roughly equivalent to one year of schooling), while boys had a 9-point advantage in mathematics (OECD, 2023<sup>[10]</sup>).



**Figure 4•Parity indices for minimum proficiency in mathematics, by socio-economic background, gender and immigration status (2022)**

Indicator SDG 4.1.1



**How to read this figure:** In Portugal, the proportion of children from the bottom quartile of the PISA ESCS index achieving at least PISA level 2 in mathematics is 40% lower than that of children from the top ESCS quartile. The proportion of students achieving at least PISA level 2 in mathematics is almost equal for girls and for boys (a parity index of 1 indicates perfect parity). The proportion of immigrants achieving at least PISA level 2 in mathematics is 20% lower than that of non-immigrants.

**Notes:**

The ESCS parity index refers to the ratio of the value for the bottom quartile over the value for the top quartile of the ESCS index. ESCS refers to the PISA index of economic, social and cultural status. The gender parity index refers to the ratio of the value for girls over the value for boys. The immigrant status parity index refers to the ratio of the value for immigrants over the value for non-immigrants. This index would probably be different if ESCS status of immigrants and non-immigrants students were taken into account.

1. Caution is required when interpreting estimates because one or more PISA sampling standards were not met (see PISA 2022 Reader's Guide, Annexes A2 and A4).

Countries are ranked in descending order of the gender parity index.

Source: Education at a Glance 2024, SDG Table 2.

**Failing to achieve minimum proficiency in core subjects also affects the development of other essential skills, such as creative thinking**

PISA 2022 assessed 15-year-old students' capacity to think creatively, defined as the ability to engage in the generation, evaluation and improvement of original and diverse ideas (OECD, 2024<sup>[11]</sup>). The PISA 2022 creative thinking data provide the first insights into how well education systems are preparing students to think outside the box in different task contexts.

The PISA report shows that students from disadvantaged backgrounds score significantly lower in creativity, reflecting both the difficult environment in which many of them live and the under-resourced curricula of schools, in which creative activities and practices are often sidelined. However, academically resilient students who, despite their socio-economic disadvantage, have attained educational excellence, are represented in a large share in countries like Korea, Canada, Estonia and Latvia. The assessment also found gender gaps

in creativity in most education systems, with girls outperforming boys in all types of tasks examined. These gaps cannot be explained solely by girls' performance in the core subjects studied in PISA. Girls' lead in creativity remains notable in around half of the participating countries and economies, even after taking into account their results in reading and mathematics (OECD, 2024<sup>[11]</sup>).

Another important finding is that students need a baseline level of skills in the core subject areas to excel in creative thinking. In other words, students who performed at the lowest levels in creative thinking tended to also perform at the lowest levels in mathematics. For instance, very few students without a baseline proficiency in mathematics were strong creative thinkers. This makes sense: without a minimum level of knowledge and experience in a given context, it would be very hard to generate appropriate, different or original ideas (OECD, 2024<sup>[11]</sup>).

**Choice of private or public institutions: Private school enrolment has slightly increased over the last decade, with advantaged students over-represented ...**

The share of students enrolled in private institutions is another indicator of equity. Public and private schools may differ in their access to resources, socio-economic segregation, the effectiveness of public funding, and differences in educational outcomes and opportunities. Enrolment in private schools can also contribute to equity through inclusion. For instance, in Latvia, students with special needs or learning difficulties often experience difficulties attending public schools, whereas their needs are better addressed by private schools. Monitoring this indicator is useful in ensuring that all students have equitable access to high-quality education, regardless of their socio-economic background.

The share of students enrolled in private institutions increases with the levels of education from primary upwards. On average, 23% of upper secondary students were enrolled in private institutions in 2022, compared to 15% in primary education and 18% in lower secondary education. The share of students enrolled in upper secondary education exceeds 50% in five countries: Australia, Belgium, Chile,

the Netherlands and the United Kingdom. Between 2013 and 2022, the proportion of students enrolled in private institutions at the upper secondary level increased on average by about 4 percentage points, from 18% to 23%. Australia, Portugal and Spain saw a more significant increase, particularly in the share of students enrolled in upper secondary vocational private programmes, which almost doubled in Australia and increased by 14 percentage points in Portugal and 12 percentage in Spain (OECD, 2024<sup>[1]</sup>, Chapters B2 and B3).

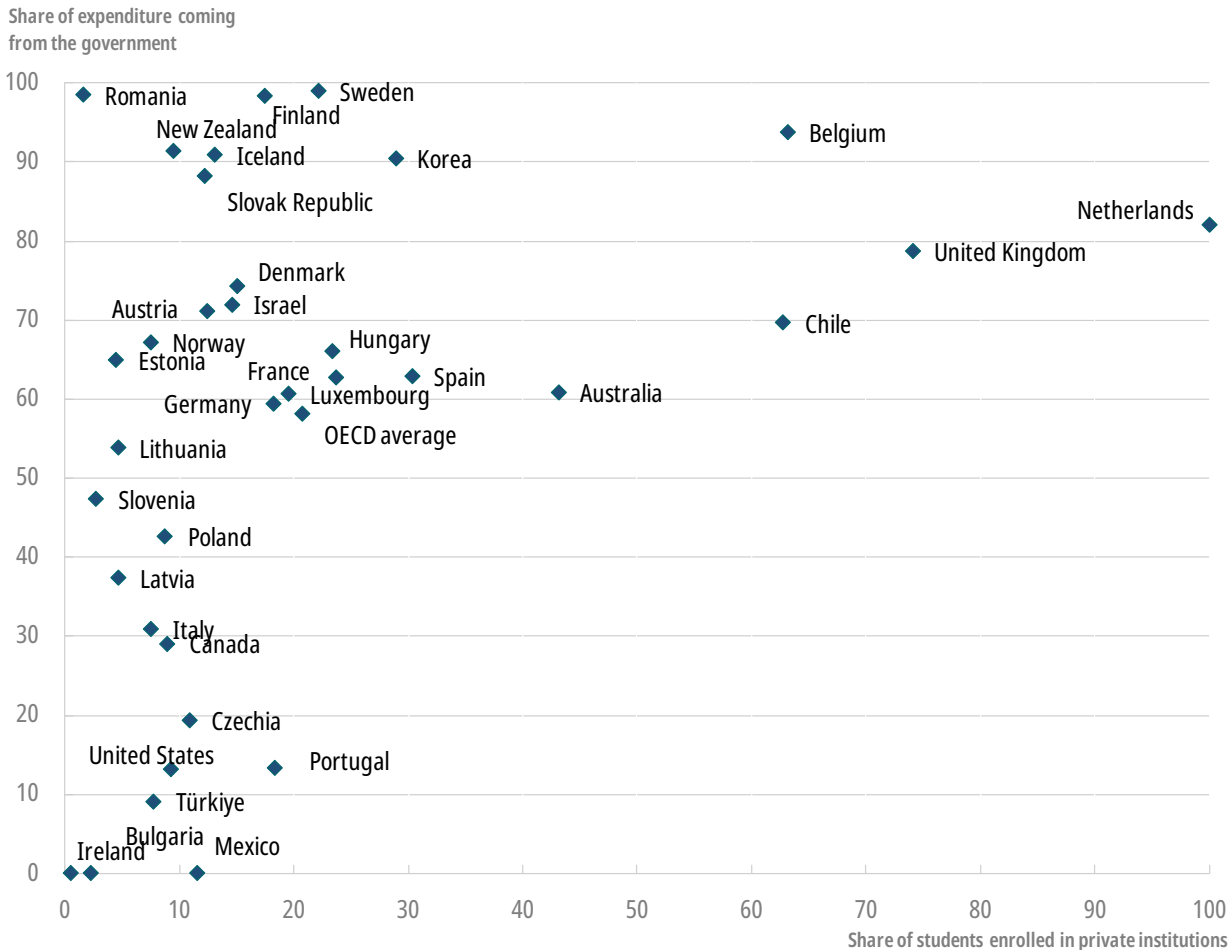
A large share of students attending private schools is not necessarily a problem if they have a similar distribution of disadvantaged and advantaged students as public schools, but this is not the case in most countries. According to PISA 2022, on average across OECD countries, about 26% of socio-economically advantaged 15-year-old students were enrolled in private schools, compared to only 13% of their disadvantaged peers. The largest differences related to socio-economic status tended to be in Latin American countries, such as Argentina, Brazil, Chile, Colombia and Peru. Interestingly, in Hungary, where many schools are managed by the private sector, there was almost no difference in private school enrolment rates between students with advantaged and disadvantaged backgrounds (OECD, 2024<sup>[12]</sup> and OECD, 2023<sup>[13]</sup>).

**... and they are largely financed by government funds in many countries**

One question for policy makers is whether the funding of the private education sector is a source of inequity. How private schools are funded can vary significantly across countries. In some systems, private schools are funded in the same way as public schools and may enrol a large share of students. In other countries, private schools require students' families to fully fund their education and enrol only a small share of students. The equity implications of these different funding models are obviously very different. There may also be non-financial barriers to access – for example, selection mechanisms into private schools may act as a vehicle for social segregation.

**Figure 5•Share of government funding and share of enrolment in private secondary educational institutions (2021)**

In per cent



**Notes:**

The share of students enrolled in private institutions is based on enrolment data adjusted to the financial year and may therefore differ from data on enrolment based on the school year.

Source: Education at a Glance 2024, Table C3.2 and Education at a Glance Database, <https://data-explorer.oecd.org/>.

Public schools are, as might be expected, mainly publicly funded, in line with the principle that the provision of education should be a central task of the state. More surprisingly, private schools are also largely publicly funded, with only 42% of their funding at secondary level coming from private sources on average, although there are significant differences between countries. In countries where the private sector is relatively large, with an above-average share of students enrolled in private institutions, the share of expenditure coming from the government also tends to be relatively high. For example, over half of secondary students in Belgium, Chile, the Netherlands and the

United Kingdom are enrolled in private institutions and the government funds at least 65% of the expenditure on such institutions (Figure 5). In these countries, students from less advantaged socio-economic backgrounds are less likely to face financial barriers to private education. Inclusive admissions policies can prevent students from privileged socio-economic groups being concentrated in private schools and foster a more diverse learning environment. These considerations are prompting many countries to consider how to increase social diversity and get more disadvantaged students enrolled in private schools (OECD, 2024<sup>[12]</sup>).

### Completion rates: **Upper secondary completion rates reveal wide variations between countries and underlying equity issues**

The upper secondary completion rate is a key indicator of equity because it reveals whether students from all backgrounds have the support and resources necessary to complete their education. High completion rates across diverse socio-economic, gender and ethnic groups indicate that the education system is providing equitable opportunities for all students to succeed.

On average across countries with available data, 72% of students who enter upper secondary education successfully complete it within its theoretical duration. Two years after the end of the theoretical duration, the average completion rate has increased to 82%. However, these figures mask significant variations – and underlying equity issues – between countries (OECD, 2023<sup>[14]</sup>, Chapter B3).

First, there are gender disparities in upper secondary completion rates, with female students consistently outperforming their male peers across all countries with available data. On average, 76% of female students complete upper secondary education within the theoretical duration, compared with only 67% of male students. However, as male students tend to take longer to complete their programmes, the gender gap in completion rates after an additional two years is slightly narrower. This highlights the need for targeted support for male students to help them stay on track and complete their education within the expected timeframe (OECD, 2023<sup>[14]</sup>, Chapter B3).

Second, students' educational backgrounds also play a significant role in both upper secondary completion rates and the type of programmes they complete. Students with parents with lower attainment have markedly lower upper secondary completion rates compared to their peers whose parents have tertiary educational attainment, with the discrepancy being particularly pronounced for those in vocational programmes (OECD, 2024<sup>[1]</sup>, Chapter B3). Students whose parents have lower educational attainment are also substantially

over-represented in vocational programmes in all countries except Slovenia (OECD, 2023<sup>[15]</sup>).

Third, being a first- or second-generation immigrant also affects students' likelihood of completing upper secondary education. In almost all countries with available data, upper secondary completion rates among first-generation immigrants (those born outside the country and whose parents were also born in another country, excluding international students) and second-generation immigrants (those born in the country, but whose parents were both born in another country) are lower than those of students without an immigrant background (OECD, 2024<sup>[1]</sup>, Chapter B3). However, the discrepancy in the completion rates between immigrant and non-immigrant students varies depending on programme orientation. With the exception of Finland and Iceland, the difference in completion rates between those with and without an immigrant background is wider for vocational programmes than general ones in the countries with available data. For instance, in Italy, the completion rate of non-immigrants in a general programme is 34 percentage points higher than that of immigrants of the first generation. This figure decreases to 29 percentage points difference for students enrolled in vocational programmes. It is important to note that students from an immigrant background are more likely to study vocational subjects than general subjects (OECD, 2015<sup>[16]</sup>).

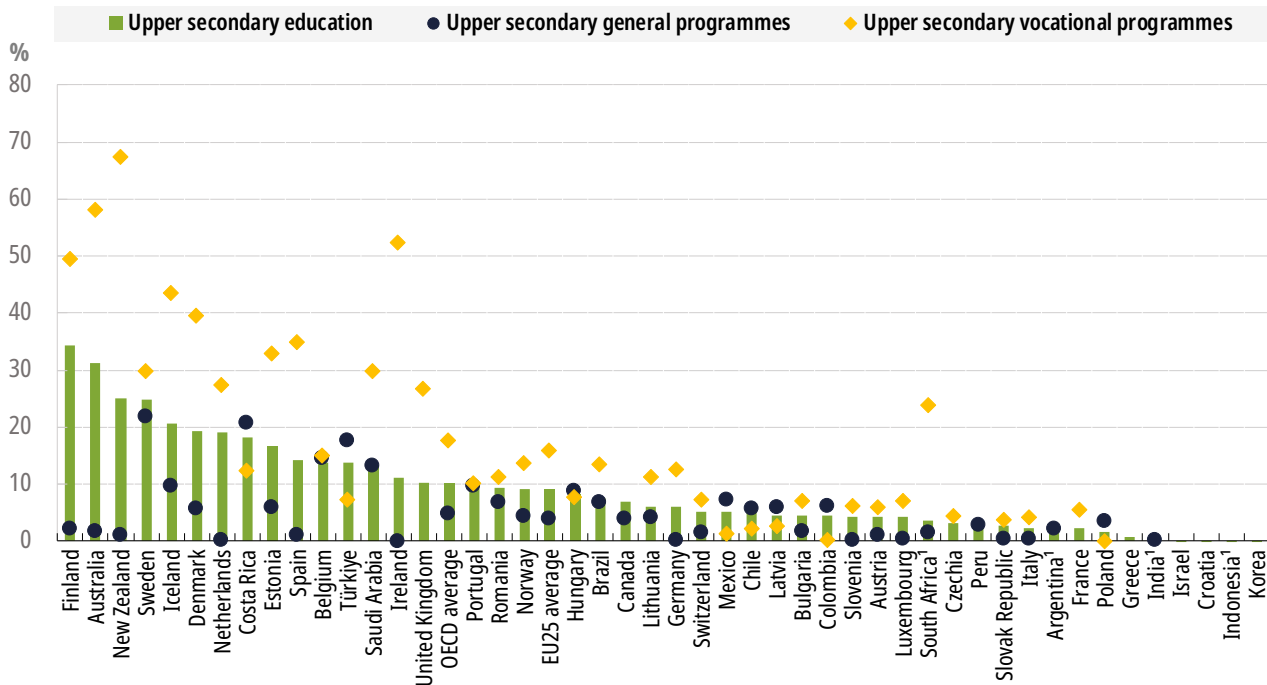
### Skill development for adults: **Upper secondary adult education programmes provide important opportunities for adults who struggled in their initial education or who wish to upskill or reskill**

Adult education programmes are essential for individuals who struggled with initial education or wish to enhance their skills. These programmes offer adults the chance to acquire vital new skills, improve their employment opportunities, or achieve personal and professional fulfilment, regardless of their past educational challenges or chosen paths.

Although enrolment in formal education is less common among the older population, in some countries they make up a significant share of those in upper secondary education.

**Figure 6•Share of students aged 25 and above among all students in upper secondary education, by programme orientation (2022)**

In per cent



**Notes:**

1. Year of reference differs from 2022. Refer to the source table for more details.

Countries are ranked in descending order of the share of students aged 25 and over enrolled in upper secondary education programmes.

Source: Education at a Glance 2024, Table B3.3.

Adults aged 25 and over make up more than 20% of all upper secondary students at the upper secondary level in Australia, Finland, Iceland, New Zealand and Sweden, where the majority of these students enrolled in vocational programmes. Furthermore, more than 18% of students enrolled in upper secondary general programmes are 25 and over in Costa Rica, Sweden and the Türkiye. Notably, in both Costa Rica and Türkiye – the two OECD countries with the largest shares of young adults without upper secondary attainment – older upper secondary students are more likely to be in general programmes than vocational ones (Figure 6).

The provision of formal adult education programmes at the upper secondary level varies from country to country. For example, countries such as Belgium, Colombia, Costa Rica and Sweden have dedicated programmes for adults, while others such as Chile, Italy, the Slovak Republic, Slovenia and Türkiye offer combined programmes that provide both initial and formal adult education.

To effectively promote adult participation in formal education, it is crucial to tailor strategies to meet the needs of adult learners. For instance, France, the French Community of Belgium and Spain have public organisations in their education ministries that ensure the provision of open and distance learning for learners of all ages. Most European countries also offer modularised education programmes, providing flexible learning pathways for adults to achieve their educational goals. (Pilz et al., 2017<sup>[17]</sup>). Other countries have also put in place governance arrangements and policies to ensure co-operation between stakeholders involved in adult learning. In Iceland, a cross-sectoral co-ordinating body for adult education policies and measures, named the Education and Training Service Centre (ETSC; Fræðslumiðstöð atvinnulífsins), serves as the designated focal point for supporting for the development of adult education, basic skills and second-chance education (Sigurðardóttir et al., 2020<sup>[18]</sup>).

### Tackling teacher shortages: **Inequalities in secondary education are worsened by teacher shortages, which disproportionately affect disadvantaged schools and students**

Teacher shortages are increasing in many countries. In more than half of the education systems surveyed in PISA 2022, school principals were more likely to report teacher shortages than their counterparts were in 2018. On average, the share of students enrolled in schools whose principals reported that instruction is hindered by a lack of teaching staff increased by 21 percentage points, from 26% in 2018 to 47% in 2022. In Australia, Belgium, Chile, France, Latvia, the Netherlands, Poland and Portugal, the increase exceeded 30 percentage points. However, it is important to note that these measures are based on principals' perceptions, and are not objective measures of staff shortages. Principals in different countries may have different perceptions of what constitutes a shortage of teaching or support staff in their schools (OECD, 2023<sup>[13]</sup> and OECD, 2024<sup>[1]</sup>, Chapter D5).

These shortages are problematic because PISA data also shed light on the relationship between resource shortages and student performance in mathematics. Teaching staff shortages are associated with weaker student performance on PISA even after accounting for the socio-economic profile of students and schools. At the same time, PISA data show that schools serving more disadvantaged students tend to suffer from more shortages of education staff than those serving students from more privileged backgrounds (OECD, 2023<sup>[13]</sup>, Chapter 5). From an equity perspective, this is concerning as the students who most need high-quality learning resources seem to be the ones with the least access to them.

### **Most countries face a shortage of teachers, particularly in mathematics and science**

For the first time, Education at a Glance 2024 includes quantitative data allowing teacher shortages to be compared at two points in time: the start of the 2014/15 and 2022/23 academic years. For the purposes of this analysis, a country

is said to have a teacher shortage if some vacant teaching posts have not been filled by fully qualified teachers at the start of the year or, for countries with competitive examinations, if the number of available teaching posts is greater than the number of successful applicants selected to fill them. Of the 21 countries included in the analysis, only Greece, Korea and Türkiye were not experiencing teacher shortages at the start of the 2022/23 academic year, mirroring their situation in 2014/15. Of the remaining countries, nine faced shortages across all subjects, while in the other nine the shortages were limited to certain fields of education. It is important to note, however, that some countries may increase the number of job openings to avoid an initial shortage of teachers (OECD, 2024<sup>[1]</sup>, Chapter D5).

Among the nine countries with shortages in certain fields, a common pattern emerges. All of them faced a shortage of mathematics teachers, highlighting the global challenge in attracting and retaining staff to teach this critical subject. Similarly, all except France lacked adequate numbers of science teachers. However, none reported shortages of teachers in social studies such as history and geography, suggesting a relative abundance of fully qualified teachers in these subjects compared to those in science, technology, engineering or mathematics (STEM) fields (Chapter D5).

Teacher shortages are less severe in subjects like history and geography than in STEM fields for several reasons. One key factor is gender differences in fields of study within tertiary education. Women are generally less represented in STEM fields in tertiary education and are over-represented in the teaching profession (OECD, 2024<sup>[1]</sup>, Chapter B4). This means there is a smaller pool of individuals with STEM backgrounds entering teaching. History and geography also benefit from a larger pool of graduates, increasing the supply of potential teachers in these subjects. Furthermore, graduates from STEM fields also have more lucrative career alternatives outside of teaching, which further reduces the number of individuals entering the teaching profession with backgrounds in these subjects (OECD, 2024<sup>[1]</sup>, Chapter D5).

### Increased salaries and allowances could help countries attract and retain high-quality teaching staff, as could improving working conditions.

To attract high-quality teaching staff, in addition to offering competitive salaries, countries could also offer more opportunities for professional development and mobility, reduce their administrative workload, and improve the image of teachers in the eyes of the public. It is by activating all these levers that the profession might become more attractive.

Comparing teachers' salaries with those of other workers with equivalent qualifications offers an interesting perspective. In almost all countries, and at almost all levels of education, teachers' actual salaries were lower than those of tertiary-educated workers in 2023. In lower secondary education, average salaries were 16% lower than those of other tertiary graduates, while at the upper secondary level the gap was still 12%. There were only a few countries where teachers' actual salaries reach or exceed those of tertiary-educated or similarly educated workers on average (Costa Rica and Portugal, and at the upper secondary level in Germany) (OECD, 2024<sup>[1]</sup>, Chapter D3).

However, countries have made efforts to improve the situation, and some slight progress can be seen. On average, across the OECD countries with comparable data for both 2015 and 2023, statutory salaries increased by about 5% in real terms at the primary level, 4% at the lower secondary level (general programmes) and 5% at the upper secondary level (general programmes). By raising salaries, countries aim to make the teaching profession more attractive and financially viable, thereby addressing teacher shortages and improving students' educational outcomes (OECD, 2024<sup>[1]</sup>, Chapter D3).

Providing additional compensation to teachers teaching in challenging circumstances (such as in remote areas or socio-economically disadvantaged schools) may also help to avoid disparities in the availability and quality of educational services within a country when combined with other measures. The literature shows that such allowances on their own have mixed results when it comes to filling teaching

positions in remote or socio-economically disadvantaged schools (OECD, 2019<sup>[19]</sup>).

These allowances are not as widely deployed by OECD countries as might be expected. For instance, only about one-third of countries and other participants with available data (13 out of 39) offer lower secondary teachers allowances for teaching in remote areas. In addition to the geographical disadvantages of living in remote areas, teaching in these areas entails additional challenges due to the constraints imposed by small schools (OECD, 2021<sup>[20]</sup>). Therefore, these allowances are usually intended not just to make it easier to recruit teachers and but also to retain high-quality teachers in remote areas (as in Israel, Japan and Norway, for example) (OECD, 2024<sup>[1]</sup>, Chapter D3).

Allowances for teaching in socio-economically disadvantaged schools are only offered in Chile, France and Hungary at lower secondary level. In France and Hungary, this is a fixed amount (a percentage of the base salary in Hungary and a fixed amount complemented by a further amount depending on work-related objectives in France). In Chile, teachers are compensated by moving up the salary scale, a permanent increase that remains in place even if the teacher moves to another school (OECD, 2024<sup>[1]</sup>, Chapter D3 and Table D3.8).

The nature of teachers' workloads is also crucial for the profession's attractiveness. Having to spend a large share of working hours on non-teaching duties can make the profession less appealing. Administrative duties, meetings and extracurricular responsibilities can overwhelm teachers, leaving less time for classroom interaction and student engagement.

To make teaching more appealing, it is crucial to balance non-teaching responsibilities and ensure that teachers can focus more on their primary role – educating students. At the upper secondary level, teachers spend 43% of their working time on teaching on average, ranging from less than 32% in Japan, Norway and Türkiye, to 61% or more in Luxembourg, Peru and Scotland (United Kingdom) (OECD, 2024<sup>[1]</sup>, Chapter D4).

## Tertiary education

The transition from secondary to tertiary education can be a pivotal and often stressful phase for students, marked by critical decisions that will shape their academic and professional trajectories. Inequalities entrenched in secondary education frequently persist into tertiary education. There is a notable lack of equity indicators assessing the knowledge and skills acquired by students during their tertiary studies, or covering the impact of various crises such as the COVID-19 pandemic on students' mental health. Nevertheless, existing indicators can provide insight into the demographic profiles of students starting and completing tertiary education, alongside the financial mechanisms supporting their academic journeys. These indicators contribute to our understanding of how inequalities stemming from earlier educational stages manifest themselves in tertiary education and can inform efforts to foster inclusivity.

**Financing: Reducing the financial barriers to access to higher education for disadvantaged students is a challenge for most countries, with no single model for achieving it**

The financing of tertiary education is a major concern for education policy makers. As the expansion of tertiary education is set to continue, the challenge for countries is to find additional resources to maintain the quality of learning and increase equity. A well-designed and well-resourced student support programme can help to meet the policy goals of equity and inclusion in tertiary education systems.

Two measures can be used to distinguish the differences in countries' current approaches to the financing of tertiary education: the balance between private and public funding, and the availability of public subsidies. When comparing the data on these two dimensions, three models emerge: no tuition fees and high levels of

financial support to students (Denmark, Finland, Norway and Sweden); high tuition fees and high levels of financial support to students (Australia, England (UK), Lithuania, New Zealand and the United States); and low or moderate tuition fees and targeted financial support for less than 50% of tertiary students (Austria, the Flemish and French Communities of Belgium, Croatia, France, Germany Italy, Romania, and Spain) (OECD, 2024<sup>[1]</sup>, Table C5.1 and Figure 7).

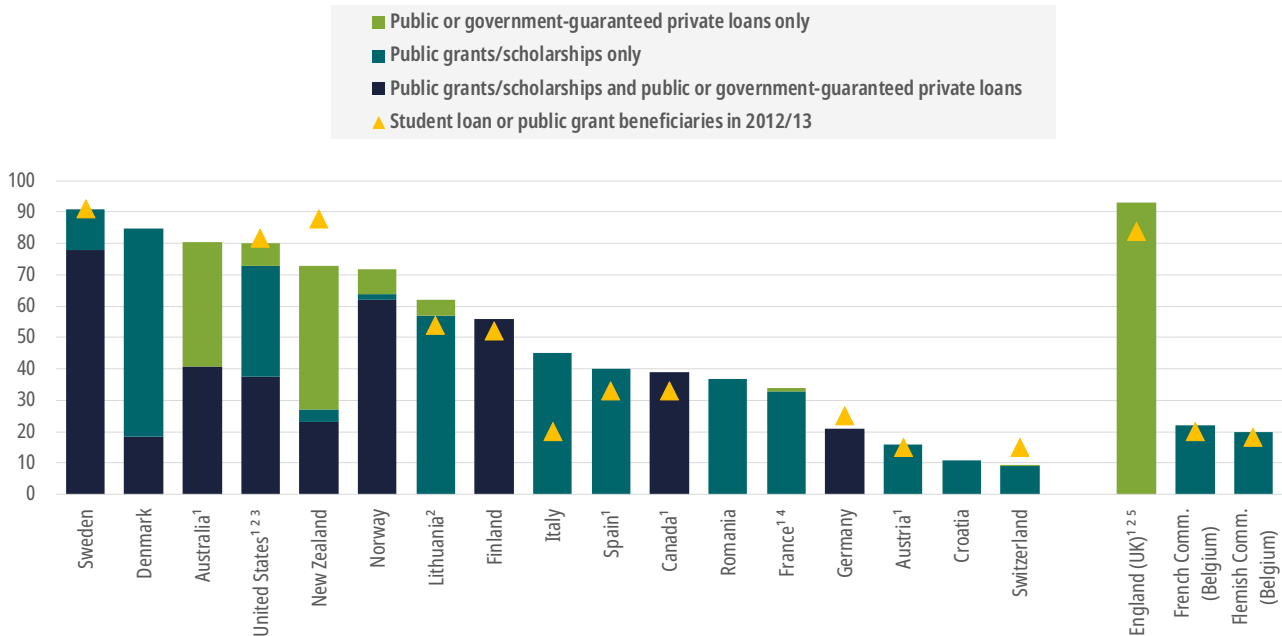
These groupings have been relatively stable for several decades, despite the measures taken by many countries during and following the COVID-19 pandemic, both in terms of the cost of education and the public support available to students. Countries with high tuition fees also tend to be those where private entities other than households make a more significant contribution to funding tertiary institutions. They also tend to have student financial support systems that offer all students loans with income-contingent repayments combined with means-tested grants. In contrast, students in countries with more progressive tax regimes often pay low or no tuition fees and have access to generous public subsidies for tertiary education but face high income tax rates on their earnings later in life (OECD, 2024<sup>[1]</sup>, Chapter C5).

It is interesting to note that the OECD countries where students have to pay high tuition fees but benefit from substantial financial aid do not have lower levels of access to higher education than the OECD average. This shows that financial aid systems targeted at students' economic needs can also enable disadvantaged students to access higher education. Similarly, there is no evident correlation between the financial support given to tertiary students and the level of tertiary attainment, implying that no particular system is deterring large numbers of students from completing a tertiary degree (OECD, 2024<sup>[1]</sup>, Chapters B4 and C5).



**Figure 7•Trends in the share of students receiving public financial support (2012/13 and 2022/23) and breakdown by type of subsidy (2022/23)**

In per cent



Notes:

1. Reference years : academic year 2020/21 for Canada, calendar year 2021 for Australia; and academic year 2021/22 for Austria, England (UK), France Spain; academic year 2019/20 for United States.
2. Reference year for trends : academic year 2011/12 for England (UK) and the United States; and calendar year 2014 for Lithuania.
3. The distribution of loans refers to short-cycle tertiary and bachelor's or equivalent programmes only.
4. Public institutions only.
5. Government-dependent private institutions instead of public institutions.

Countries and other participants are ranked in descending order of the share of tertiary students receiving any form of public support in 2022/23.

Source: Education at a Glance 2024, Table C5.3.

**Gender gaps in access to tertiary education: Women are starting - and completing - tertiary education at far higher levels than men, but there are large gender disparities in many fields of study**

Over the past decade, access to tertiary education has risen much faster for women than for men. This may be due partly to boys' underperformance in core subjects (mathematics or reading) in secondary education or to their over-representation in upper secondary vocational education and training (VET) programmes, which sometimes offer fewer opportunities for access to higher education. Across OECD countries, 55% of students enrolled in upper secondary VET

programmes were male (OECD, 2023<sup>[15]</sup>), while 56% of first-time entrants into tertiary education were female in 2022 (OECD, 2024<sup>[1]</sup>, Table B4.2).

Women make up the majority of new entrants in tertiary education in every OECD country. The share is the highest in Iceland, where 64% of first-time entrants are women, and it is lowest in Germany, Japan, Korea and Switzerland (Table B4.2). Women are also more likely to finish their tertiary degree than men, often by a considerable margin. In 2023, there were 1.4 female graduates for every male graduate at bachelor's and master's level (OECD, 2023<sup>[14]</sup>).

Young women also continue to consistently outpace their male peers in tertiary attainment across all OECD countries. On average across

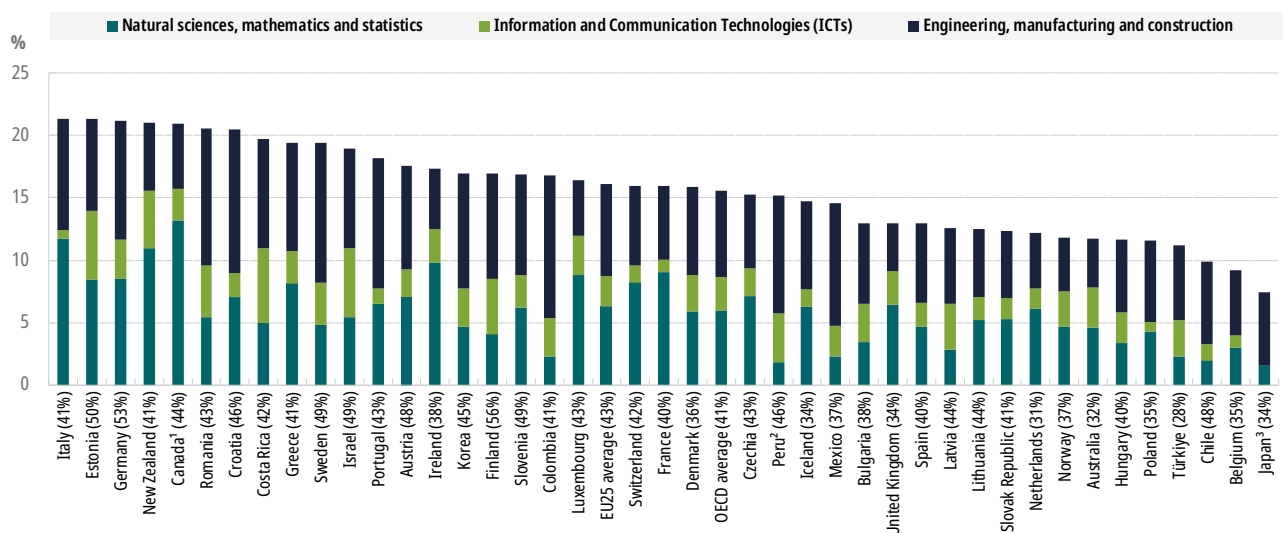
OECD countries, 54% of young women had a tertiary degree compared to 41% of young men. In fact, a greater share of young women have attained tertiary education than young men in all OECD countries except Mexico, where both shares are 28%. Although the gender gap widened by 1 percentage point in favour of women on average between 2016 and 2023, it narrowed by at least 3 percentage points in Costa Rica, Finland, Ireland and Portugal (OECD, 2024<sup>[1]</sup>, Table A1.2). Addressing the underachievement of boys, especially those from disadvantaged backgrounds, can yield positive outcomes without detracting from girls' progress. Studies indicate that boys' performance in school is particularly sensitive to socio-economic factors, suggesting that policies targeting disadvantaged students, regardless of gender, could help address underperformance among boys (Delaney and Devereux, 2021<sup>[2]</sup>).

Despite the overall trend in favour of women, there were large gender disparities in many fields of study. For instance, women were strongly under-represented in STEM fields while men were under-represented in fields such as education or health and welfare.

Only 15% of female new entrants to tertiary education choose a STEM field on average, compared to 41% of male new entrants. These disparities persisted across countries, with Chile and Finland showing the widest gaps, and the Netherlands and Türkiye the smallest (Figure 8).

Progress in encouraging more women to pursue STEM-related fields has been slow, with the share of female new entrants who chose to study STEM fields increasing by less than 1 percentage point between 2015 and 2022 across OECD countries. Luxembourg stands out with the share of female new entrants choosing a STEM field increasing from 8% to 16% over the past six years. More worryingly, the share of female new entrants who chose a STEM field has fallen by at least 5 percentage points in Greece, Mexico, Poland and the United Kingdom. Meanwhile, only 4% of all male new entrants opted to study the field of education, and 8% chose health and welfare, with no significant changes since 2015. No country had a greater share of men than women choosing to studying health and welfare (OECD, 2024<sup>[1]</sup>, Table B4.2).

**Figure 8•Share of women in STEM fields among all female tertiary new entrants, by field of study (2022)**



### Notes:

The percentage in parentheses represents the share of male new entrants into STEM fields among all male new entrants.

1. Year of reference differs from 2022. Refer to the Education at a Glance Database for more details.

2. Only includes new entrants into bachelor's programmes.

3. All fields of study include the field of information and communication technologies.

Countries are ranked in descending order of the share of female new entrants into STEM fields among all female new entrants.

Source: Education at a Glance 2024, Table B4.2 and Education at a Glance Database.

Access to tertiary education for foreign students: **Fees from the growing numbers of internationally mobile students can help subsidise tertiary education systems, keeping student costs at a more equitable level**

Internationally mobile students bring diverse cultural perspectives, enriching the educational experience of all students. This exposure helps national students develop a global vision, fostering mutual understanding and respect. Interaction between students from different backgrounds can reinforce intercultural competence, an essential skill in an increasingly globalised world. This is why encouraging foreign students to enrol in a country's higher education system can help create a more inclusive environment.

In general, students become more likely to study internationally as they reach more advanced levels of education. International students account for only 5% of average enrolment in bachelor's programmes, but they make up 15% in master's programmes and 25% in doctoral programmes. Despite the COVID-19 pandemic in 2020 and 2021, the proportion of mobile students – international or foreign – among all tertiary enrolments rose in nearly all countries between 2013 and 2022. Interestingly, countries that already had a significant proportion of international students enrolled in tertiary education in 2013 have seen this share increase further. For instance, in Australia, the proportion of international students grew from 18% to 23%. In the United Kingdom, it rose from 17% to 22%, and in Canada, the percentage of foreign students increased from 10% to 19%. New Zealand is an exception, with a 6 percentage-point decrease in the share of mobile students attributed largely to stringent travel restrictions coinciding with the start of the academic year. Many central and eastern European countries also saw very large increases in international students, albeit from low levels in 2013. In Estonia, the share of international students increased from 3% in 2013 to 11% in 2022. Similarly, the share increased from 4% to 13% in Latvia, and from 5% to 12% in the Slovak Republic (OECD, 2024<sup>[1]</sup>, Table B4.3).

As countries try to strike a balance between keeping student costs at a level that allows

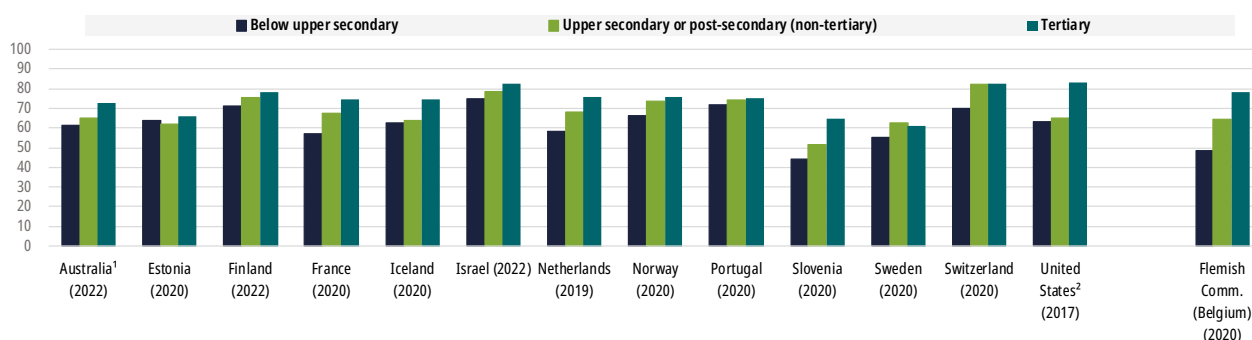
equitable access to tertiary education and finding sufficient funding for their tertiary education systems, they are increasingly choosing to charge foreign students higher tuition fees. For example, some countries with highly subsidised tertiary education systems, such as Finland and Sweden, have started charging tuition fees for non-European Union students in recent years, thereby joining a long list of countries where foreign students pay more than national ones. In total, more than two-thirds of countries with available data charge higher tuition fees for foreign students, contributing significantly to the funding of tertiary educational institutions. The difference between national and foreign students can be significant in some countries. For instance, in Australia, Canada, Finland, the Netherlands, New Zealand, Romania and the United States, public institutions charge foreign master's students on average over USD 6 000 more per year than national ones. For instance, in Finland, students from outside the EU/EEA are charged about USD 14 000 per year for master's programmes in public institutions, while no tuition fees are applied to national (or EU/EEA) students (OECD, 2024<sup>[1]</sup>, Chapter C5).

Completion rates: **Whether students complete their tertiary programmes is strongly influenced by their parental and immigration background**

Data on tertiary completion rates were collected in 2022, disaggregated by two equity dimensions: parents' educational attainment and immigration background. The results underscore the importance of looking beyond national averages to analyse outcomes for potentially disadvantaged subgroups. A total of 14 OECD countries and other participants were able to provide the relevant data for parental background, and their data showed significant differences in tertiary completion patterns. Slovenia and the United States have the greatest difference in completion rates (based on the theoretical duration plus three years in Slovenia and plus two years in the United States) between students with at least one tertiary-educated parent and those whose parents had lower attainment. In several other countries, such as Portugal, Sweden and Switzerland, completion rates differ less according to parental background (Figure 9).

**Figure 9•Completion rate of students who entered a bachelor’s or equivalent programme, by parents’ educational attainment (latest available year)**

Completion rate of full-time students by the duration plus three years, in per cent



**Notes:**

The year of reference for the data (in parentheses next to the country name) corresponds to the graduation year three years after the theoretical end of the programme. The reference year for the entrance cohort changes depending on the duration of programmes. Parents’ educational attainment refers to the highest educational level attained by at least one parent.

1. Data refer only to programmes with a theoretical duration of three, four or five years in Australia.
2. Data are provided for the theoretical duration plus two years in the United States (not three years).

Source: Education at a Glance 2024, Table B4.4.

Different patterns also emerged when considering students’ immigration status across countries. In the Netherlands and Slovenia, students with any immigrant background – first or second generation – had completion rates (after the theoretical duration plus three years) that were at least 15 percentage points lower than for those without such a background. In Finland and Israel, the differences between

second-generation immigrants and non-immigrants were small, but first-generation immigrants had lower completion rates, which may reflect barriers to adjusting to the culture and language of the host country. In the United States, first-generation immigrants had slightly higher completion rates than the other two categories (OECD, 2024<sup>[1]</sup>, Table B4.4).

# Creating equal opportunities: from education to workforce integration

## Leaving education without an upper secondary qualification

**Trends in attainment rates: The share of the population who left education without an upper secondary qualification has fallen in the last decade, but national data often hide regional differences**

Adults without upper secondary attainment are at a considerable risk of poor social and labour-market outcomes throughout their lives. Reducing the number of young adults without an upper secondary qualification has been a priority and most countries have made progress in this area, seeing the proportion of young people leaving school with no qualifications fall steadily over time.

Over the period from 2016 to 2023, there has been a shift towards greater educational achievement among young adults (25-34 year-olds) in OECD countries across the entire attainment spectrum. Among OECD countries with comparable data for both years, there has been a 3 percentage-point fall in the share of young adults with below upper secondary attainment, with falls of more than 10 percentage points in Costa Rica, Mexico, Portugal and Türkiye (Figure 10). Even countries where the share of young adults with below upper secondary attainment was already small have seen improvements, with the share in the United States falling from 9% in 2016 to 6% in 2023 (OECD, 2024<sup>[1]</sup>, Chapter A1).

However, national level data often hide regional differences. For instance in Colombia, when considering all working-age adults, the share of 25-64 year-olds with below upper secondary attainment varies from 19% in Bogotá District

to 57% in Caquetá, a difference of almost 40 percentage points (OECD, 2024<sup>[1]</sup>, Chapter A1). Similarly, in Canada, Portugal and Türkiye, there is a gap of 30 percentage points or more between the regions with the largest and the smallest shares of adults with below upper secondary attainment (OECD, 2023<sup>[22]</sup>).

Regions which contain the capital city also tend to have a smaller share of adults with lower educational attainment than the rest of the country. This is the case for both below upper secondary attainment and upper secondary or post-secondary non-tertiary attainment. In contrast, in Belgium, the Brussels Capital Region has the largest share of adults with below upper secondary attainment (21%). In Mexico City, 31% of adults have upper secondary or post-secondary non-tertiary attainment, which is the highest share across regions (OECD, 2023<sup>[23]</sup> and OECD, 2024<sup>[1]</sup>, Chapter A1).

**The rise in educational attainment of the population has led to a drop in the number of those who are neither employed nor in education or training (NEET)**

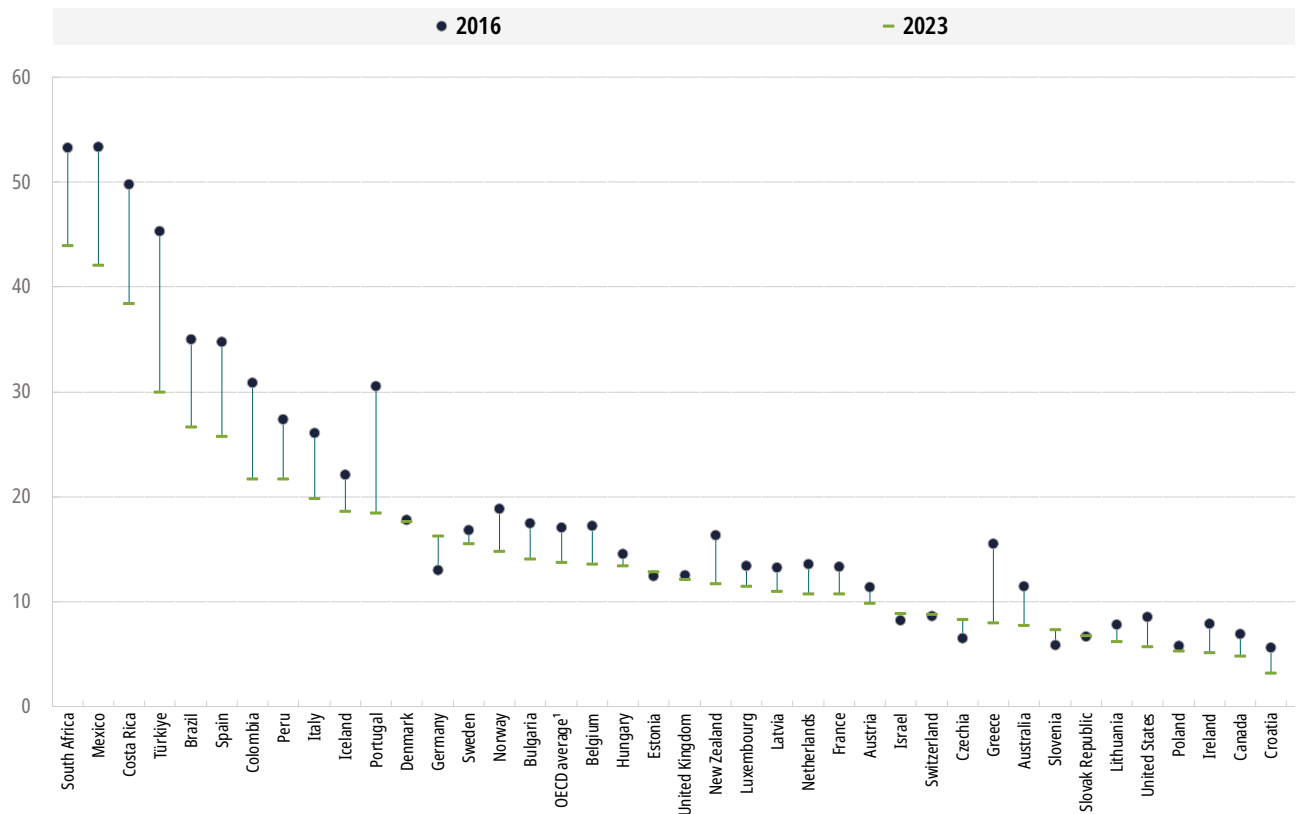
Understanding how 18-24 year-olds are doing in the job market is particularly important because people in this age group have usually just completed upper secondary education (typically between the age of 17 and 19, see (OECD, 2024<sup>[1]</sup>, Chapter B3). Their labour-market status reflects how open the job market is to new school leavers and how easily they can enter the workforce.

In most OECD countries with comparable trend data, the share of 18-24 year-olds who are NEET has fallen between 2016 and 2023, from 16% to 14% on average in OECD countries with data for both years.

However, there were a few exceptions. In Estonia, Colombia, Costa Rica and Lithuania the share has risen by more than 2 percentage points over this period (OECD, 2024<sup>[1]</sup>, Chapter A2).

**Figure 10•Trends in the share of 25-34 year-olds with below upper secondary attainment (2016 and 2023)**

In per cent



Notes:

1. The OECD average is derived from the unweighted mean of all countries with available and comparable data for both years. Countries are ranked in descending order of the share of 25-34 year-olds with below upper secondary attainment in 2023.

Source: Education at a Glance 2024, Table A1.2.

**Relationship between educational attainment and performance: Increasing educational attainment comes despite students' performance in assessments stagnating or even declining in recent decades**

The overall increase in attainment does not reflect student performance in standardised assessments. When PISA mathematics or reading performances are compared over time, students' test scores have tended to decline, or at least not to improve, since the start of the 21st century. More worryingly, PISA 2022 saw an unprecedented drop in performance.

In most of the countries and other participants that have comparable results for both 2022 and 2018, mean performance in mathematics and reading fell. Mean performances in OECD countries fell by 10 score points in reading and almost 15 score points in maths on average – the latter nearly three times the size of any previous consecutive change between rounds (Chapter A1 and OECD, 2023<sup>[10]</sup>).

It will be interesting to see whether this significant drop in students' maths and reading proficiency will translate into an increase in the share of those leaving school without an upper

secondary qualification in the future, or whether the steady decline observed over the last decade will continue. More generally, the long-term trend highlights the need to not just ensure that students stay in school, but also to emphasise the quality of education necessary to achieve high levels of academic proficiency.

**Attainment and background: Men and students whose parents have not attained upper secondary are still over-represented among those leaving education without upper secondary education**

Closer examination of those who leave school without completing upper secondary education reveals persistent inequalities. In 2023, as in 2016, young men (25-34 year-olds) were more likely than young women to lack an upper secondary qualification, with the share averaging 15% for men and 12% for women in 2023. Interestingly, in most OECD countries, the fall in young adults with below upper secondary attainment has not primarily been driven by a faster reduction for one gender or the other over the period. The gender gap in favour of women still persists, as the share of those leaving education without qualification fell by an average of 3 percentage points for both young men and women in OECD countries with comparable data for both years. However, there are notable exceptions. In Iceland, for example, the proportion of young men without an upper secondary diploma fell sharply from 28% in 2016 to 22% in 2023, while for young women the share fell only slightly, from 16% to 15%. Conversely, Türkiye has seen substantial improvements in attainment among young women, with the proportion of those without upper secondary qualifications falling from 49% to 31%, while among young men the drop was from 42% in 2016 to 29% in 2023 (OECD, 2024<sup>[1]</sup>, Table A1.2).

When analyses cover the entire population, individuals with parents who have low educational attainment tend to be over-represented among those who did not attain upper secondary education. On average, 30% of adults (25-64 year-olds) whose parents did not complete upper secondary education fail to do so themselves. In contrast, the share is 8% among adults with at least one parent who completed upper secondary education,

and 4% among adults with a tertiary-educated parent. Education is often regarded as a means to equalise opportunities but when attainment passes down from one generation to the next, this can perpetuate inequalities instead. To promote social inclusion and enhance socio-economic outcomes both now and in the future, it is crucial for countries to ensure all young people have equitable access to high-quality education (OECD, 2024<sup>[1]</sup>, Chapter A1).

**The pattern is more complex for foreign born-adults, but they tend to make up a greater share of adults with below upper secondary educational attainment than at other levels**

In many OECD, partner and accession countries with available data, foreign-born adults are also over-represented among adults with below upper secondary educational attainment. On average across OECD countries, 24% of adults with below upper secondary educational attainment are foreign-born, compared to 15% of those with upper secondary or post-secondary non-tertiary educational attainment and 19% of those with tertiary educational attainment (OECD, 2024<sup>[1]</sup>, Chapter A1).

Interpretation of these figures needs to take into account the overall size of the immigrant population in each country. For instance, Switzerland has a relatively large share of foreign-born adults (38%), but they make up an even larger share of those with below upper secondary educational attainment, at nearly 75%, compared to only 14% of all adults (both foreign- and native-born) with below upper secondary attainment in the country (OECD, 2024<sup>[1]</sup>, Chapter A1).

One consistent trend across OECD countries is that the share of tertiary-educated adults among native-born and foreign-born adults generally aligns with a country's overall educational attainment distribution. For instance, in countries with a large share of adults with below upper secondary attainment, this tends to be the case for both native- and foreign-born populations. Similarly, in Canada, the share of tertiary-educated adults is notably high among native-born adults (59%) and even higher among foreign-born adults (73%), regardless of their age at arrival (OECD, 2024<sup>[1]</sup>, Chapter A1).

## Leaving education with at least an upper secondary qualification

Upper secondary and tertiary attainment: **Today, an upper secondary qualification is considered the norm, while a bachelor's degree has become the most common tertiary attainment level**

Although more young adults than ever before are obtaining an upper secondary qualification, there has been a slight decrease in the share of those with upper secondary or post-secondary non-tertiary education as their highest attainment level because more of them are going on to obtain a tertiary qualification. In 2023, 39% of 25-34 year-olds had upper secondary or post-secondary non-tertiary educational attainment on average across OECD countries with comparable data for both years, a decline of 2 percentage point compared to 2016. For young men, the share has fallen by 1 percentage point to 44% while for young women it has fallen by 2 percentage points to 34% (OECD, 2024<sup>[1]</sup>, Table A1.2).

Bachelor's or equivalent degrees are the most common tertiary attainment level among all adults (25-64 year-olds) with a tertiary qualification, but in some countries master's or equivalent degrees are more prevalent (OECD, 2024<sup>[1]</sup>, Table A1.1). The share of young adults (25-34 year-olds) with a tertiary degree increased by 5 percentage points between 2016 and 2023 on average for OECD countries. Remarkable increases – by 10 percentage points or more in Chile, Ireland, Spain and Türkiye – highlight dynamic changes in some educational systems. This may reflect a shift towards a knowledge-based economy where higher qualifications are required (OECD, 2024<sup>[1]</sup>, Table A1.2).

**Regardless of their initial attainment levels, adults will continue to need lifelong skills development**

The adoption of artificial intelligence and the transition to a low-carbon economy are having a profound impact on the skills the labour market requires. Workers from brown occupations (e.g. tire builders) or highly automatable jobs (e.g. cashiers) do not have, in general, sufficient skills to transition to green jobs (Tyros, Andrews and de Serres, 2023<sup>[24]</sup>). Adult learning systems need to adapt in response to the emergence of new job profiles and skill requirements. However, there is no evidence yet to support any massive increase in participation in adult learning participation. On average across the OECD and accession countries participating in the EU Adult Education Survey (EU-AES) in both 2016 and 2022, participation rates in formal and/or non-formal education and training remained unchanged, at 45% in 2016 and 2022. Women are slightly more likely than men to participate in adult education and training. The gender gap in women's favour widened from 1 percentage point in 2016 to 3 percentage points in 2022 on average across OECD and accession countries with comparable data for both years (OECD, 2024<sup>[1]</sup>, Chapter A5).

There are many obstacles to participation in adult learning. Among adults who would like to participate in adult learning but did not, scheduling conflicts were the most commonly cited barrier in two-thirds of countries. Costs and family commitments are also commonly cited in most countries. However, it is the lack of a perceived need for any further education and training that can be the real barrier. On average across the OECD and accession countries taking part in EU-AES, 70% of 25-64 year-olds who did not participate in education and training reported they had no need to do so. This share varies considerably across countries, ranging from 41% in the Netherlands to over 90% in Bulgaria and Lithuania (OECD, 2024<sup>[1]</sup>, Chapter A5).



## The impact of qualifications on employment opportunities

Employment rates and earnings by educational attainment: **In most countries, achieving a higher level of education typically leads to improved job opportunities and earnings for young people**

It is well known, and unsurprising that greater educational attainment generally offers better job opportunities for young people. Having at least an upper secondary education qualification significantly improves individuals' employment prospects, earning potential and job stability. It also provides a foundation for lifelong learning and further education, equipping people with the essential skills and knowledge needed in the modern labour market.

The difficult labour-market situation faced by workers without an upper secondary qualification is reflected in young adults' employment rates. On average across OECD countries, 61% of 25-34 year-olds with below upper secondary attainment are employed, compared to 79% of those with upper secondary or post-secondary non-tertiary attainment. The employment rate for young adults with tertiary attainment is even higher, at 87% (OECD, 2024<sup>[1]</sup>, Table A3.2).

Between 2016 and 2023, employment rates have slightly improved for young adults of all attainment levels in most countries with comparable trend data. The increases tend to be the highest for those with tertiary attainment. However, the rapidly evolving capacity of artificial intelligence (AI) has created fears of job losses or fewer job openings for some non-routine, cognitive tasks performed by more highly educated adults (Acemoglu et al., 2022<sup>[25]</sup>; Boronovi et al., 2023<sup>[26]</sup>). The impact of AI on the labour market has remained small in 2022 and 2023 because it has not yet been widely adopted. However, progress is so rapid that the effects in 2024 should be measured carefully (OECD, 2024<sup>[1]</sup>, Chapter A3).

25-64 year-old workers without an upper secondary qualification face challenges beyond employment; they also typically earn lower wages. In OECD countries, workers who lack an upper secondary education earn, on average, 18% less than those who have attained that level.

The difference is over 50% in Chile but only 7% in Australia and Lithuania, while in Finland, the earnings of workers with and without upper secondary attainment are similar. On the other hand, the average earnings premium for obtaining a tertiary education is about 56% higher compared to workers with only an upper secondary education. Country differences also vary widely for this measure: the earnings advantage for tertiary-educated workers is 25% or less in Denmark, Norway and Sweden, but over 100% in Chile, Colombia and Costa Rica (OECD, 2024<sup>[1]</sup>, Table A4.1).

A key indicator of education-related labour-market inequalities is the proportion of individuals at each attainment level who earn significantly more or less than the median. On average across OECD countries, 28% of workers with below upper secondary attainment earn at or below half the median, compared to 17% of workers with upper secondary or post-secondary non-tertiary and 10% of tertiary-educated workers. Conversely, just 26% of workers with below upper secondary attainment earn more than the median, while the share reaches 42% of those with upper secondary or post-secondary non-tertiary educational attainment and 69% among workers with a tertiary degree (OECD, 2024<sup>[1]</sup>, Table A4.2).

Employment rates and earnings by gender: **While girls and women clearly outperform boys and men in education, the picture is reversed when they enter the labour market**

By almost all available measures, girls and women have better educational outcomes than boys and men, and the gap is widening in many cases. However, the picture is reversed when they enter the labour market. In all OECD countries, key labour-market outcomes are worse for women than for men. For instance, among all adults (25-64 year-olds), the gender difference in employment rates is 21 percentage points on average for those with below upper secondary attainment, but it narrows to 14 percentage points on average among those with upper secondary or post-secondary non-tertiary attainment.

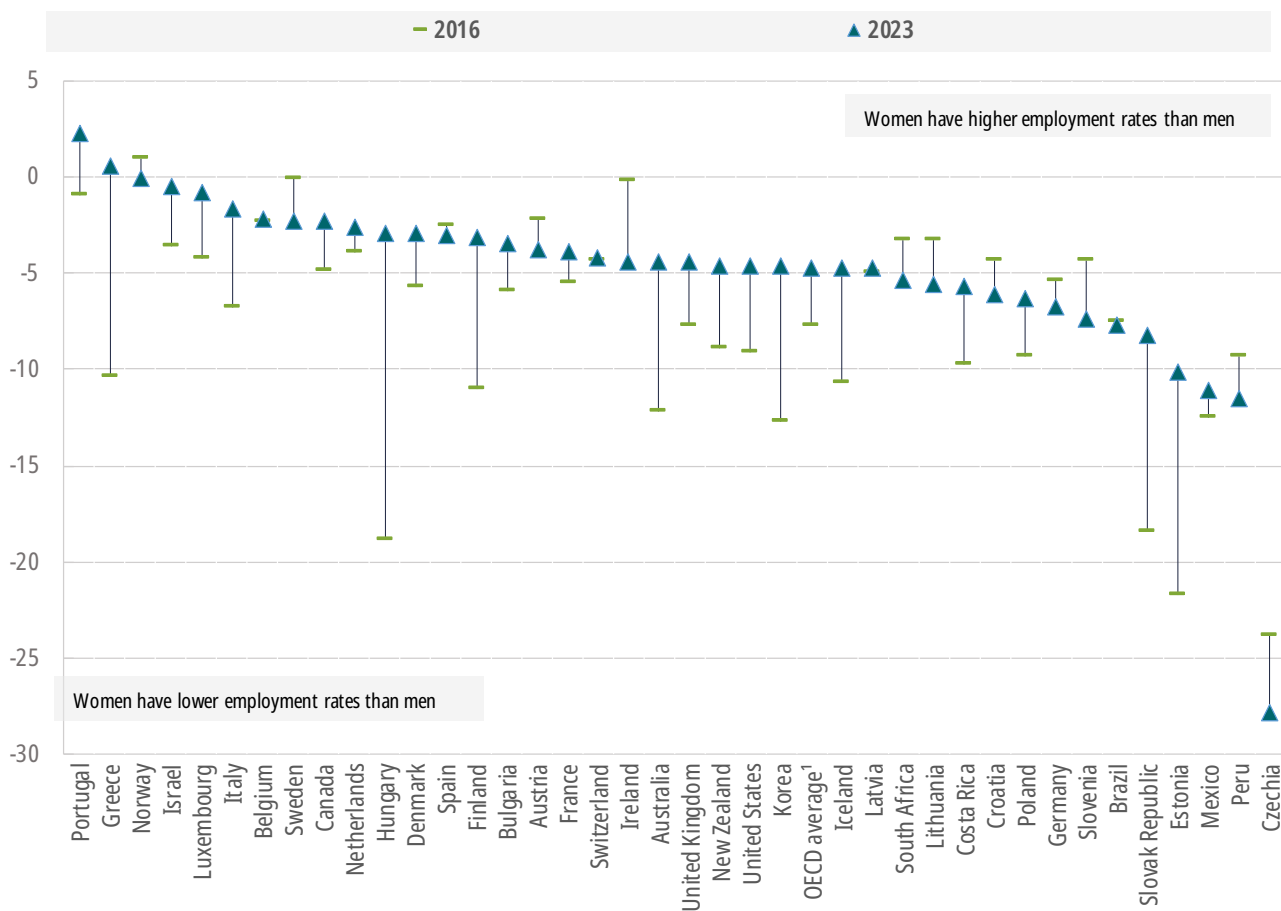
Among those with tertiary attainment the gender gap closes even further to 7 percentage points (OECD, 2024<sup>[1]</sup>, Chapter A3).

This trend is visible across all age groups. However, the gender gap in employment has narrowed in most countries. Between 2016 and 2023, among 25-34 year-olds with at least a bachelor's or equivalent degree, the gender gap in employment rates, favouring men, has fallen from 8 percentage points to 5 percentage points on average across OECD countries with comparable trend data. It fell by at least 10 percentage points in Estonia, Greece, Hungary and the Slovak Republic, often due to strong policy measures. For example, the Estonian

government has introduced policies aimed at reconciling work and family life, while Hungary has used initiatives to encourage women to pursue studies in fields traditionally dominated by men. In Greece and Portugal, young women with at least a bachelor's or equivalent degree now have similar or higher employment rates than men (Figure 11). Combined with changing cultural norms, women's advantages in social and interpersonal skills may have played some role in the narrowing of gender gaps in employment rates, particularly among those with higher levels of educational attainment (Cortes, Jaimovich and Siu, 2018<sup>[27]</sup>; Deming, 2017<sup>[28]</sup>).

**Figure 11•Trends in the gender difference in employment rates among 25-34 year-olds with at least a bachelor's or equivalent degree (2016 and 2023)**

In percentage points; employment rates of women minus employment rates of men



Notes:

1. The OECD average is derived from the unweighted mean of all countries with available and comparable data for both years. Countries are ranked in descending order of the difference in employment rates between 25-34 year-old men and 25-34 year-old women in 2023.

Source: Education at a Glance Database.

**Younger women have consistently higher inactivity rates than younger men across all attainment levels in almost all countries, but the rates are especially high among those who have not completed upper secondary education**

While unemployment receives most public attention, the economic inactivity rate – the share of people who are neither working nor actively looking for a job – is another important measure of labour-market participation. Younger women have consistently higher inactivity rates than younger men across all attainment levels except for tertiary-educated women in Portugal, but the rates are especially high among those who have not completed upper secondary education. On average across OECD countries, the gender difference in inactivity rates is about 25 percentage points for 25-34 year-olds with below upper secondary attainment, compared to 15 percentage points among those with upper secondary or post-secondary non-tertiary attainment and 6 percentage points for those with tertiary attainment (OECD, 2023<sup>[22]</sup>, Figure A3.4).

Higher inactivity rates among women with a tertiary qualification can be attributed to several factors. Firstly, societal expectations and traditional gender roles often pressure women to prioritize family and caregiving responsibilities over their careers, leading to career interruptions or decisions to not engage in the workforce at all. Additionally, the lack of flexible work arrangements and affordable childcare options makes it challenging for highly educated women to balance professional and personal life effectively. Moreover, workplace discrimination and the gender pay gap can also discourage women from pursuing or continuing their careers, as they might feel undervalued and face limited opportunities for advancement. Finally, the overqualification phenomenon, where women with tertiary education are unable to find suitable employment matching their skills and qualifications, further contributes to their decision to remain inactive in the labour market (OECD, 2023<sup>[29]</sup>).

**Although gender gaps in employment rates have closed slightly, men still earn more than women at all attainment levels**

Although gender differences in employment rates narrow with increasing educational attainment, the gender gap in earnings does not change as much across educational attainment levels. On average across OECD countries, tertiary-educated young women working full-time and for the full year earn 83% of the earnings of their male peers, compared to 84% for those with upper secondary or post-secondary non-tertiary attainment and 85% for those with below upper secondary attainment (OECD, 2024<sup>[1]</sup>, Table A4.3). As women are more likely to work part-time and/or part year than men, the earnings gap is wider among all workers than among full-time full-year workers (OECD, 2023<sup>[30]</sup>).

The gender pay gap may reflect differences in the effects of job mobility; women are less likely than men to be promoted or to get considerable wage increases when they change employers. Moreover, career breaks for women around the age of childbirth remain an important contributor to wage differences between men and women in many OECD countries (OECD, 2022<sup>[31]</sup>). Women are more likely to seek less competitive paths and greater flexibility at work in order to deal with their family commitments, which lead to lower earnings than men with the same educational attainment and, while there have been improvements in gender pay equality, significant disparities still exist globally (OECD, 2023<sup>[32]</sup> and OECD, 2024<sup>[1]</sup>, Chapter A4).

**Differences in field of study choices contribute to the gender pay gap, but even within the same fields, women with tertiary qualifications often earn less than men.**

Differences in the choice of field of study between men and women are often considered to be one reason for the gender pay gap for those with a tertiary qualification. For example, men are more likely than women to study in the fields of science, technology, engineering and mathematics (STEM), which are associated with higher earnings, while a larger share of women study fields associated with relatively lower earnings, including education, and arts and humanities (see Chapter B4).

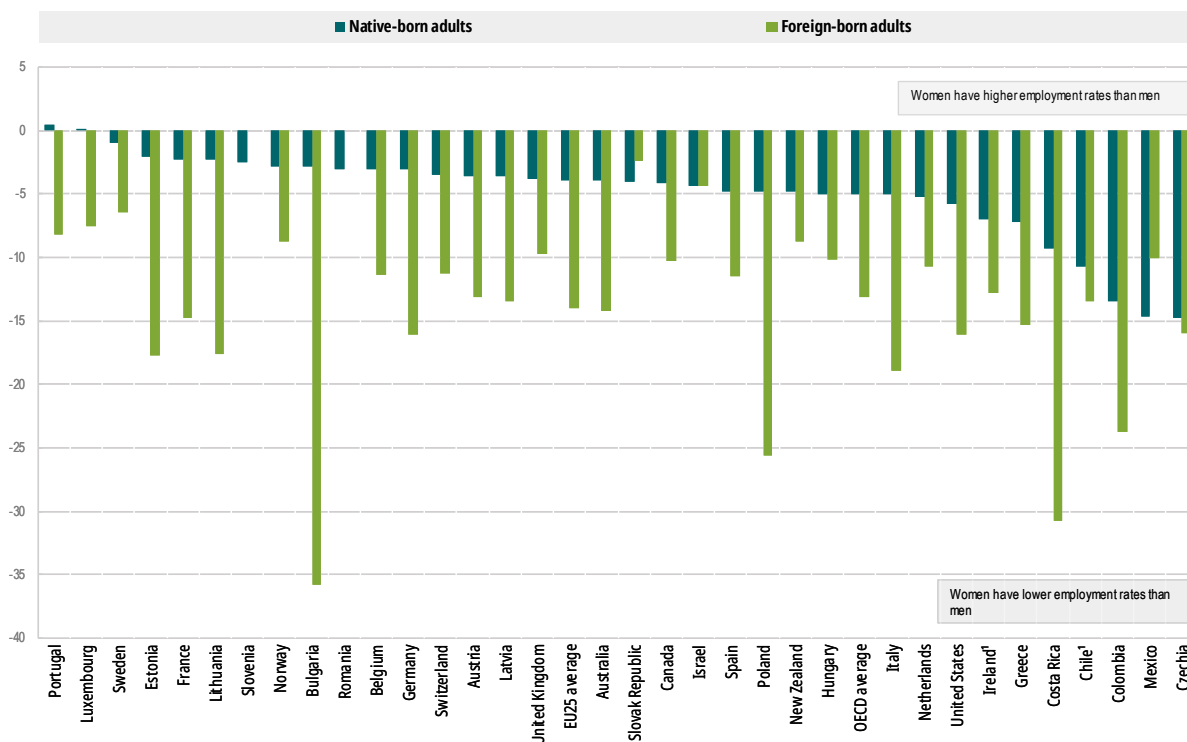
However, women who graduate from the same tertiary fields as men often also earn less than their male counterparts due to a variety of factors, including gender-based discrimination, differences in negotiation practices, and the undervaluing of work traditionally performed by women (International Labour Organization, 2022<sup>[33]</sup>) and (OECD, 2017<sup>[34]</sup>). This gender pay gap is evident across all fields of study but varies in magnitude. For instance, the pay gap is smaller than the average in fields like education and information and communication technologies (ICT), where the disparity is less pronounced. However, in fields such as business, administration, and law, the gender pay gap is notably larger, reflecting deeper systemic biases and structural barriers that women face in these professions (OECD, 2022<sup>[35]</sup>, OECD, 2020<sup>[36]</sup>).

Employment rates and earnings by migration status: **Employment rates for foreign-born adults are generally lower than their native-born peers, with foreign-born women facing a dual challenge**

For both native-born and foreign-born adults, the likelihood of being employed increases with higher educational attainment, but the rise is steeper for native-born adults, suggesting that labour markets tend to underutilise the potential skills of foreign-born adults. On average across OECD countries, 60% of native-born adults and 63% of foreign-born adults with below upper secondary education are employed, rising to 77% of native-born and 75% of foreign-born adults with upper secondary or post-secondary non-tertiary attainment. For those with tertiary attainment, the employment rates are 88% for native-born and 82% for foreign-born adults (OECD, 2024<sup>[1]</sup>, Chapter A3). These differences may reflect differences in the size and characteristics of a country's foreign-born population as well as other factors.

**Figure 12•Gender difference in employment rates among tertiary-educated adults, by country of birth (2023)**

In percentage points; 25-64 year-olds; employment rates of women minus employment rates of men



Notes:

1. Year of reference differs from 2023. Refer to the source table for more details.

Countries are ranked in descending order of the difference in employment rates between native-born tertiary-educated men and women.

Source: Education at a Glance 2024, Table A3.4.

Although the labour market presents challenges for all women, the situation is particularly daunting for those who are foreign born, who face a dual challenge regardless of their level of educational attainment. For instance, among tertiary-educated adults, the gender gap in employment rates for native-born adults averages 5 percentage points in favour of men across OECD countries, but is more than double that among foreign-born adults, reaching 13 percentage points (Figure 12).

### Foreign-born workers also face an earnings gap in many countries

Foreign-born individuals can face systemic barriers that hinder their economic integration and ability to benefit from their educational qualifications. They may struggle more than their native-born peers to find employment due to issues such as unrecognised foreign credentials, insufficient skills, language barriers or discrimination. As a result, they are more likely to accept any available job, often leading to lower earnings than their native-born counterparts (OECD, 2023<sup>[37]</sup>).

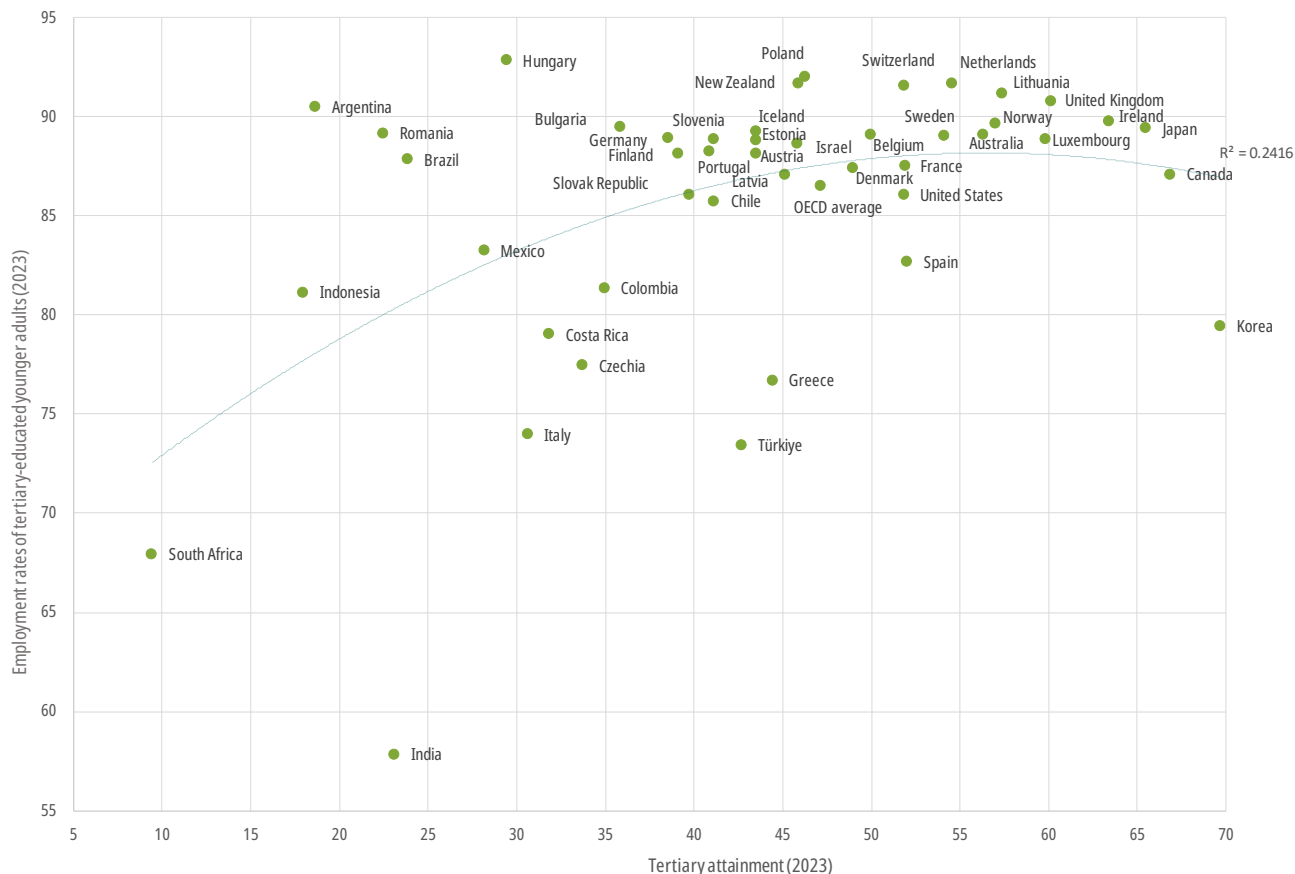
Higher educational qualifications are generally associated with a smaller earnings gap between foreign-born and native-born workers, although notable variations exist. For example, in Latvia and the United States, foreign-born adults with tertiary education earn slightly more than native-born adults, on average. However, in Austria and Italy, tertiary-educated foreign-born workers earn significantly less, indicating barriers to economic opportunities despite high education levels (OECD, 2024<sup>[1]</sup>, Chapter A4).

### Tertiary attainment rates and employment: The countries with the largest share of tertiary graduates do not necessarily offer them the highest employment rates

The relationship between educational attainment and employment rates is multifaceted, shaped by various economic, social, and institutional factors. Higher educational attainment is associated with better employment opportunities for young people, a trend consistent across all countries. However, labour-market dynamics vary significantly between countries, influencing how much advantage a tertiary qualification confers. Consequently, although higher education improves individuals' employment prospects within a given country, the overall correlation between tertiary attainment rates and the employment rates of young adults (25-34 year-olds) with tertiary attainment is relatively weak (Figure 13). Moreover, this correlation is influenced by several non-OECD countries, including India, Indonesia and South Africa, where tertiary attainment rates are very low and employment rates differ markedly from those in OECD countries.

**Figure 13 • Relationship between overall tertiary attainment rates and tertiary employment rates among 25-34 year-olds (2023)**

In per cent



**Notes:**

Year of reference differs from 2023: 2022 for Chile and Indonesia.

Source: Education at a Glance 2024, Chapters A1 and A3.

Figure 13 illustrates the complex relationship between the level of education attained and the opportunities offered by the labour market. For instance, countries with strong upper secondary VET systems offering many opportunities to pursue studies in short-cycle tertiary, bachelor’s or master’s programmes and with a high demand for skilled labour, such as Germany, the Netherlands, and Switzerland, have higher employment rates than the OECD average among young adults with tertiary education. However, they also offer good employment prospects for young adults completing upper secondary VET programmes, making the employment benefit of tertiary education relatively small.

In these countries, the employment rate differs by 5 percentage points or less between those with upper secondary and those with tertiary education, compared to an average increase of 8 percentage points across OECD countries (Chapter A3).

Conversely, in some southern European and Latin American countries, such as Colombia, Costa Rica, Greece, Italy, Spain, and Türkiye, employment rates of young adults remain low for those with tertiary education (Figure 13). However, young adults with only an upper secondary qualification have even greater difficulty finding jobs in these countries, making the benefit of tertiary education relatively high.

Thus, the employment rate increases by at least 9 percentage points with tertiary education in all these countries with the exception of Italy where the increase is only of 5 percentage points, compared to an average increase of 8 percentage points across OECD countries (Chapter A3).

The share of the population who are highly educated can also play a crucial role in the trends observed in Figure 13. In countries where a large proportion of the population holds a tertiary degree, such as Canada and Korea, competition for jobs might dilute the relative advantage of having a tertiary qualification. This highlights the need for better collaboration between the education sector and the labour market, to prevent an oversupply of graduates in certain fields.

Policy makers could address these complexities by developing targeted strategies to improve alignment between education systems and labour-market demands. This might include investing in vocational training and lifelong learning programmes at tertiary level of education to ensure that individuals acquire skills adapted to ever-changing economic contexts. In addition, policies that promote economic growth and job creation would also be needed to maximise the employment benefits of increasing levels of attainment. By understanding and addressing the various factors that influence the relationship between education and employment, governments can create more equitable and efficient pathways from one to the other.

# References

- Acemoglu, D. et al. (2022), "Artificial intelligence and jobs: Evidence from online vacancies", *Journal of Labor Economics*, Vol. 40/S1, pp. S293-S340, <https://doi.org/10.1086/718327>. [25]
- Andreu, S. et al. (2023), Les filles moins confiantes que les garçons concernant l'année à venir et sur leurs performances, notamment en mathématiques, Note d'Information, n° 23.24, *DEPP*, <https://doi.org/10.48464/ni-23-24>. [9]
- Borgonovi, F. et al. (2023), "Emerging trends in AI skill demand across 14 OECD countries", *OECD Artificial Intelligence Papers*, No. 2, OECD Publishing, Paris, <https://doi.org/10.1787/7c691b9a-en>. [26]
- Breda, T., J. Sultan Parraud and L. Touitou (2024), "Le décrochage des filles en mathématiques dès le CP: Une dynamique diffuse dans la société", *Notes IPP*, No. 101, Institut des Politiques Publiques, [https://www.ipp.eu/wp-content/uploads/2024/01/Note\\_IPP\\_\\_\\_decrochage\\_filles\\_mathematiques-4.pdf](https://www.ipp.eu/wp-content/uploads/2024/01/Note_IPP___decrochage_filles_mathematiques-4.pdf). [8]
- Cortes, G., N. Jaimovich and H. Siu (2018), "The 'end of men' and rise of women in the high-skilled labor market", *NBER Working Paper*, No. 24274, National Bureau of Economic Research, Cambridge, MA, <https://doi.org/10.3386/w24274>. [27]
- Delaney, J. and P. Devereux (2021), "The economics of gender and educational achievement: Stylized facts and causal evidence", in *Oxford Research Encyclopedia of Economics and Finance*, Oxford University Press, <https://doi.org/10.1093/acrefore/9780190625979.013.663>. [21]
- Deming, D. (2017), "The growing importance of social skills in the labor market\*", *The Quarterly Journal of Economics*, Vol. 132/4, pp. 1593-1640, <https://doi.org/10.1093/qje/qjx022>. [28]
- IEA (2023), PIRLS 2021 International Results in Reading, International Association for the Evaluation of Educational Achievement, <https://pirls2021.org/results/>. [6]
- IEA (2020), TIMSS 2019 International Results in Mathematics and Science, International Association for the Evaluation of Educational Achievement, <https://timss2019.org/reports/>. [7]
- International Labour Organization (2022), Global Wage Report 2022–23. The impact of inflation and COVID-19 on wages and purchasing power, <https://doi.org/10.54394/ZLFG5119>. [33]
- OECD (2024), Education at a Glance 2024: OECD Indicators, OECD Publishing, Paris. [1]
- OECD (2024), How do public and private schools differ in OECD countries?, OECD Publishing, Paris, <https://doi.org/10.1787/90348307-en>. [12]
- OECD (2024), OECD Tax-Benefit web calculator, <https://www.oecd.org/els/soc/benefits-and-wages/tax-benefit-web-calculator/> (accessed on 10 May 2024). [4]
- OECD (2024), PISA 2022 Results (Volume III): Creative Minds, Creative Schools, OECD Publishing, Paris, <https://doi.org/10.1787/765ee8c2-en>. [11]
- OECD (2023), Education and earnings, [http://stats.oecd.org/Index.aspx?datasetcode=EAG\\_EARNINGS](http://stats.oecd.org/Index.aspx?datasetcode=EAG_EARNINGS). [30]
- OECD (2023), Education at a Glance 2023 Sources, Methodologies and Technical Notes, OECD Publishing, Paris, <https://doi.org/10.1787/d7f76adc-en>. [22]
- OECD (2023), Education at a Glance 2023: OECD Indicators, OECD Publishing, Paris, <https://doi.org/10.1787/e13bef63-en>. [14]
- OECD (2023), Equity, diversity and inclusion in early childhood education and care , OECD Education Policy Perspectives, n° 83, OECD publishing, Paris, <https://doi.org/10.1787/72ab31c1-en>. [5]
- OECD (2023), G7 Gender Equality Implementation Report 2023: Promoting Gender Equality Through G7 Policy, OECD Publishing, Paris, <https://doi.org/10.1787/b7117089-en>. [32]



- OECD (2023), International Migration Outlook 2023, OECD Publishing, Paris, <https://doi.org/10.1787/b0f40584-en>. [37]
- OECD (2023), Joining Forces for Gender Equality: What is Holding us Back?, OECD Publishing, Paris, <https://doi.org/10.1787/67d48024-en>. [29]
- OECD (2023), OECD Regional Database - Education, [https://data-explorer.oecd.org/?fs%5b0%5d=Topic%2C1%7CEducation%23EDU%23%7CSubnational%20education%20indicators%23EDU\\_GEO%23&pg=0&fc=Topic&bp=true&snb=6](https://data-explorer.oecd.org/?fs%5b0%5d=Topic%2C1%7CEducation%23EDU%23%7CSubnational%20education%20indicators%23EDU_GEO%23&pg=0&fc=Topic&bp=true&snb=6) (accessed on 20 July 2022). [23]
- OECD (2023), PISA 2022 Results (Volume I): The State of Learning and Equity in Education, PISA, OECD Publishing, Paris, <https://doi.org/10.1787/53f23881-en>. [10]
- OECD (2023), PISA 2022 Results (Volume II): Learning During – and From – Disruption, PISA, OECD Publishing, Paris, <https://doi.org/10.1787/a97db61c-en>. [13]
- OECD (2023), Spotlight on Vocational Education and Training: Findings from Education at a Glance 2023, Figure 5, OECD Publishing, Paris, <https://doi.org/10.1787/acff263d-en>. [15]
- OECD (2022), Education equity dashboard, OECD website, <https://www.oecd.org/education/education-equity-dashboard/>. [2]
- OECD (2022), “Same skills, different pay: Tackling gender inequalities at firm level”, OECD, Paris, <https://www.oecd.org/gender/same-skills-different-pay-2022.pdf>. [31]
- OECD (2022), What are the earnings advantages from education?, OECD Publishing, Paris, <https://doi.org/10.1787/1e25b89e-en>. [35]
- OECD (2021), Delivering Quality Education and Health Care to All: Preparing Regions for Demographic Change, *OECD Rural Studies*, OECD Publishing, Paris, <https://doi.org/10.1787/83025c02-en>. [20]
- OECD (2020), Early Learning and Child Well-being: A Study of Five-year-Olds in England, Estonia, and the United States, OECD Publishing, Paris, <https://doi.org/10.1787/3990407f-en>. [3]
- OECD (2020), How have women’s participation and fields of study choice in higher education evolved over time?, *Education Indicators in Focus, No. 74*, OECD Publishing, Paris, [https://www.oecd.org/en/publications/2020/03/how-have-women-s-participation-and-fields-of-study-choice-in-higher-education-evolved-over-time\\_2833394b.html](https://www.oecd.org/en/publications/2020/03/how-have-women-s-participation-and-fields-of-study-choice-in-higher-education-evolved-over-time_2833394b.html). [36]
- OECD (2019), Working and Learning Together: Rethinking Human Resource Policies for Schools, *OECD Reviews of School Resources*, OECD Publishing, Paris, <https://doi.org/10.1787/b7aaf050-en>. [19]
- OECD (2017), The Pursuit of Gender Equality: An Uphill Battle, OECD Publishing, Paris, <https://doi.org/10.1787/9789264281318-en>. [34]
- OECD (2015), Immigrant Students at School: Easing the Journey towards Integration, *OECD Reviews of Migrant Education*, OECD Publishing, Paris, <https://doi.org/10.1787/9789264249509-en>. [16]
- Pilz, M. et al. (2017), “Modularisation approaches in Initial Vocational Education: Evidence for policy convergence in Europe?”, *Journal of Vocational Education & Training*, Vol. 70/1, pp. 1-26, <https://doi.org/10.1080/13636820.2017.1392994>. [17]
- Sigurðardóttir, S. et al. (2020), “Iceland: Challenges in educational governance in Iceland: The establishment and role of the national agency in education”, in *Educational Authorities and the Schools, Educational Governance Research*, Springer International Publishing, Cham, [https://doi.org/10.1007/978-3-030-38759-4\\_4](https://doi.org/10.1007/978-3-030-38759-4_4). [18]
- Tyros, S., D. Andrews and A. de Serres (2023), “Doing green things: skills, reallocation, and the green transition”, *OECD Economics Department Working Papers, No. 1763*, OECD Publishing, Paris, <https://doi.org/10.1787/286a5007-en>. [24]

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