How does socio-economic status influence entry into tertiary education?

EDUCATION INDICATORS IN FOCUS

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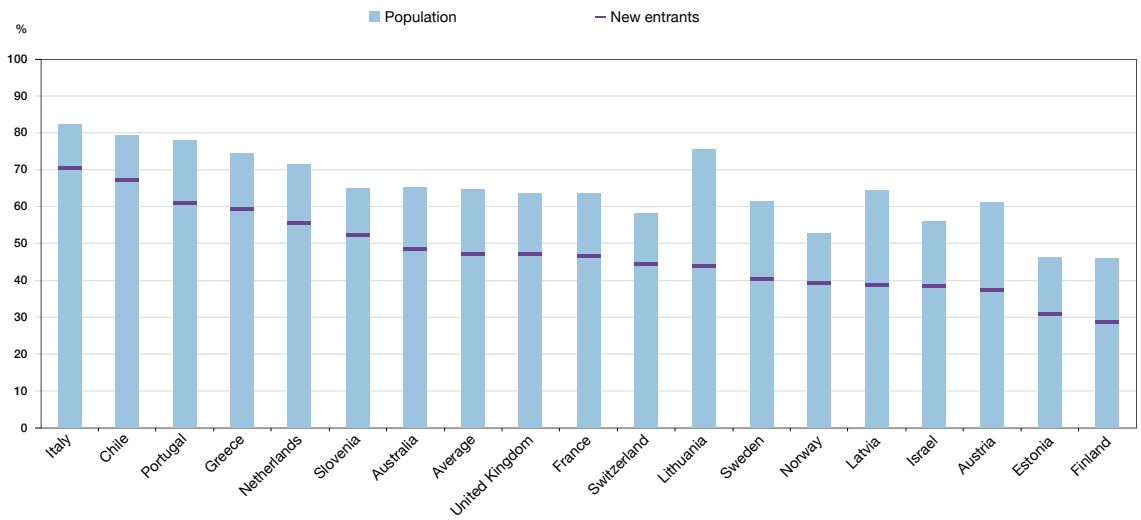
- In all countries with available data, individuals whose parents are not tertiary educated are considerably less likely to enter tertiary education.
- The period from the start of upper secondary and into tertiary education is particularly important in determining students' future education or career choices. Several factors during this period may explain the inequality observed in tertiary education: the choice of upper secondary programme, upper secondary completion, learning outcomes, students' aspirations and barriers to entry to tertiary education.
- Students without tertiary-educated parents are more likely to leave the education system at each education milestone: their representation tends to fall every step of the way from starting upper secondary education to successfully completing it, and on to entry into tertiary education.

Inequalities in entry to tertiary education reflect inequalities accumulated earlier on

Growing evidence that a tertiary education is associated with better labour-market and social outcomes (OECD, 2018[1]) has raised a number of questions around access to higher education and brought equity to the forefront of the policy debate on tertiary education.

Figure 1 highlights the extent of socio-economic inequality among entrants to bachelor's, long first degree or equivalent programmes, using parental education as a proxy.[1] In all countries with available data, individuals whose parents have not attained tertiary education are considerably under-represented among new entrants to bachelor's, long first degree or equivalent programmes. On average in these countries, 65% of 18-24 year olds do not have tertiary-educated parents, but this is the case for only 47% of new tertiary entrants.

Figure 1 / Share of 18-24 year-olds whose parents have not attained tertiary education among new entrants to bachelor's, long first degree or equivalent programmes and in the population (2015)



How to read this figure: In Italy, 18-24 year-olds with no tertiary-educated parents represent 82% of the total population of that age group, but only 71% of new entrants to bachelor's, long first degree or equivalent programmes.
Note: Reference years may be different from 2015. Please see *Education at a Glance 2018* Annex 3 for details.
Countries are ranked in descending order of the share of individuals whose parents have not attained tertiary education among new entrants.
Source: OECD (2018[1]), Education at a Glance 2018: OECD Indicators, https://dx.doi.org/10.1787/eag-2018-en.

[1] Throughout this EDIF, parents' educational attainment – i.e. whether an individual has at least one tertiary-educated parent, or no tertiary-educated parents – is used as a proxy for socio-economic background. Parental education is linked to income and wealth, and evidence shows that it is highly correlated with a variety of educational outcomes, such as attainment levels (OECD, 2018[1]) and skills acquisition (OECD, 2013[7]).

Inequalities observed at the tertiary level may not just reflect barriers to entry into tertiary institutions, but also the accumulation of inequalities from earlier levels of education. In particular, the period from the start of upper secondary and into tertiary education is important in determining students' future education and career path. Several factors relating to this period can affect the transition from upper secondary to tertiary level: choice of upper secondary programme (vocational or general education), completing upper secondary education, learning outcomes, student aspirations and, finally, barriers to entry into tertiary education.

The impact of socio-economic differences in the transition from upper secondary to tertiary education provides only a window into the causes and accumulation of inequalities throughout education. These have several dimensions and could even begin in early childhood education. However, this analysis helps shed light on possible causes of inequities from this critical transition phase.

Choice of upper secondary programme

The choice of upper secondary programme may influence participation in tertiary education. In many countries, students from a potentially disadvantaged background are more likely to enrol in vocational upper secondary education than their peers, which may in turn make them less likely to pursue tertiary education if the programme is strictly oriented towards the labour market or does not grant the necessary credentials or competencies to enter tertiary education.

A survey of eight countries and economies with available data (Finland, the Flemish community of Belgium, France, Israel, Netherlands, Norway, Sweden and the United States) found that students with lower-educated parents are substantially over-represented in vocational programmes. Indeed, in nearly every country or economy with available data, the share of students whose parents have not attained upper secondary education is at least twice as high among entrants to vocational programmes as among entrants to general programmes (OECD, 2018[1]).

Although successful vocational programmes provide students with the tools needed to succeed in their working life and to move between different tracks and study options (OECD, 2010[2]), this is not always the case. In the Netherlands, for example, 40% of upper secondary students enrol in two- or three-year vocational programmes that do not grant access to tertiary education. Important equity concerns arise if the choice of upper secondary programme orientation is mainly determined by students' socio-economic background.

Completion of upper secondary education

In addition to influencing the choice of upper secondary programme orientation, students' socio-economic background can have an important impact on their likelihood of completing this level of education.

Figure 2 shows the share of students who complete upper secondary education within the theoretical duration of the programme in which they entered, by parental education. The results highlight that, for both general and vocational programmes, students with at least one tertiary-educated parent are more likely to complete upper secondary education than students whose parents have not attained tertiary education. This is true for every country with available data, although to varying degrees.

In most countries, the gap between these two groups of students is similar across general and vocational programmes. This indicates that potentially disadvantaged students are less likely to complete regardless of the programme orientation.

Learning outcomes and student aspirations

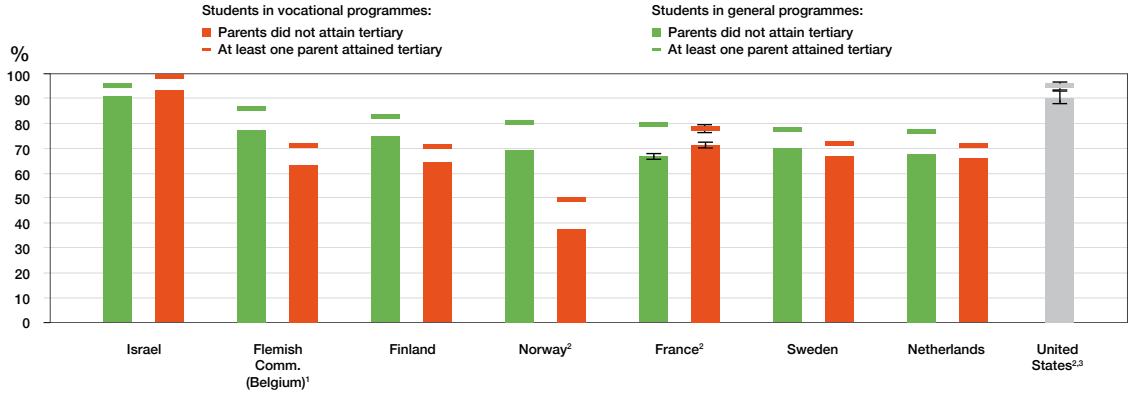
Students' socio-economic background does not just influence their choice of upper secondary programme and their likelihood of completing it, it can also affect their learning outcomes, and their beliefs and aspirations. This in turn can affect their likelihood of pursuing tertiary education. If students from potentially disadvantaged socio-economic backgrounds are less likely to perform well in school and have lower expectations about further education, these factors can help explain the under-representation of these groups among tertiary students.

On average across OECD countries, 15-year-old students in the bottom quarter of the economic, social and cultural status (ESCS)[2] index (the most disadvantaged students) were 2.8 times more likely not to attain the baseline level of proficiency in science in the latest Programme for International Student Assessment (PISA) than those in the top quarter of the index (the most advantaged students). While there is significant variation in the magnitude of this risk, the association between socio-economic disadvantage and low performance is statistically significant in all PISA-participating countries and economies.

[2] The PISA index of economic, social and cultural status (ESCS) was created using student reports on parental occupation, the highest level of parental education, and an index of home possessions related to family wealth, home educational resources and possessions related to "classical" culture in the family home.

Figure 2 / Completion rate of upper secondary education, by parents' educational attainment and programme orientation (2015)

Completion of any upper secondary programme within the theoretical duration of the programme which the student entered



Note: France and the United States have provided data based on longitudinal studies whereas the other countries provided data based on registries. The error bars included for France and the United States correspond to the 95% confidence interval.
1. Parents' educational attainment refers to mother's educational attainment.
2. Year of reference other than 2015. Please see *Education at a Glance 2018* Annex 3 for further information (http://dx.doi.org/10.1787/eag-2018-36-en).
3. Data for the United States refer to general and vocational programmes combined.
Countries and economies are ranked in descending order of completion rate in general programmes of students with at least one tertiary-educated parent.
Source: OECD (2018[1]), Education at a Glance 2018: OECD Indicators, https://dx.doi.org/10.1787/eag-2018-en.

This shows the pervasiveness of the impact of socio-economic background on student achievement, no matter how well school systems perform as a whole (OECD, 2016[3]).

In addition to learning outcomes, expectations about the future also help shape students' careers and decision to pursue further education. PISA 2015 results show that, on average across OECD countries, some 66% of students in the top quarter of the ESCS index expect to complete a university degree, compared to only 26% of students in the bottom quarter. In fact, the difference in expectations between these two groups is high and significant in every PISA-participating country (OECD, 2017[4]).

Barriers to entry into tertiary education

Students from disadvantaged backgrounds may also be disproportionately affected by barriers to entry into tertiary education. These range from selective admissions procedures to high tuition fees or costs of living and limited financial support to students.

Selective admission processes to enter tertiary education exist in about half of OECD member and partner countries. In these countries, tertiary institutions select students based on a number of different criteria, including entry exams, grade averages, interviews and work experience. These may represent additional barriers for students from disadvantaged backgrounds, particularly in countries where upper secondary performance is strongly influenced by socio-economic factors (OECD, 2016[3]). Disadvantaged students also tend to have less access to information, support and guidance to navigate admission processes (Wyness, 2017[5]). However, while open access admission systems may seem more equitable at entry, they may be less so at graduation if the students who enter do not have the skills required to complete their degree successfully.

Entry into tertiary education also often incurs costs for students and their families, both in tuition fees and living expenses, which can act as an important obstacle to entry if there is insufficient financial support available to students. OECD countries have different approaches to setting tuition fees and providing financial support to students, including grants, scholarships and loans. Student financial support systems that offer loans with income-contingent repayment to all students combined with means-tested grants, can be an effective way to promote access and equity while sharing the costs of higher education between the state and students (OECD, 2012[6]).

Putting it all together: The evolution of inequalities in the transition between upper secondary and tertiary education

All these factors demonstrate how inequalities may accumulate as students progress from upper secondary to tertiary education. Figure 3 provides a visualization of this process by showing the distribution of students by their parents' educational attainment at three different stages: (1) entry to upper secondary education; (2) graduation from upper secondary education within the theoretical duration; and (3) entry to tertiary education. In most countries, the share of students whose parents are not tertiary educated decreases at each step, highlighting the fact that potentially disadvantaged students are less likely to advance through education.

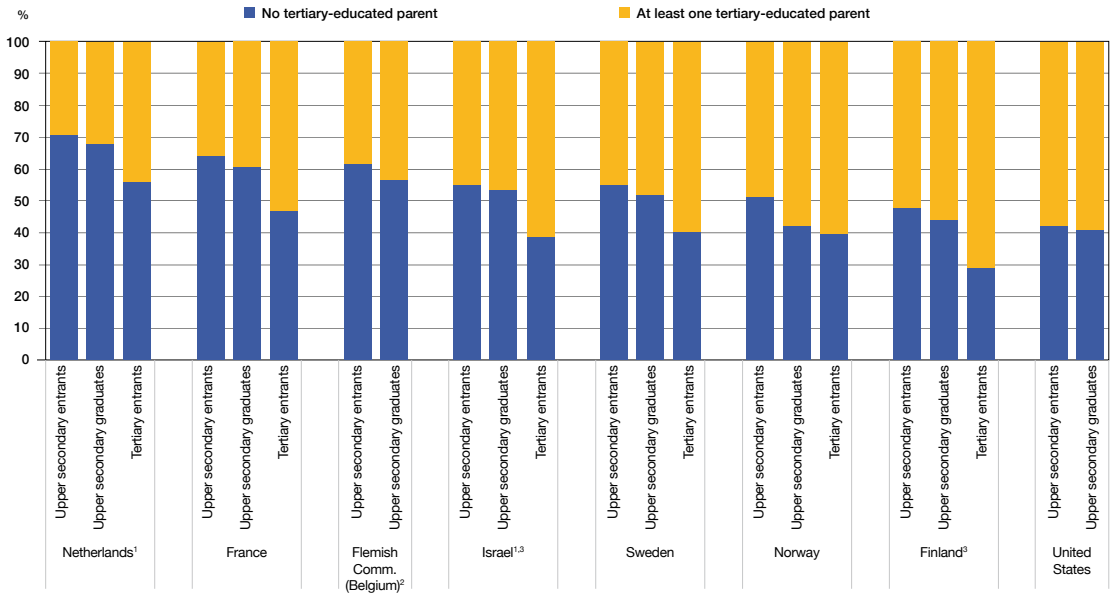
This figure also highlights how inequalities can intensify at different stages in different countries. Norway and Israel, for example, display different patterns in the evolution of inequality between these two levels. In Israel, students with no tertiary-educated parents are almost as likely to complete upper secondary education as those with at least one tertiary-educated parent, but their representation drops considerably at the tertiary level.

In contrast, in Norway, students whose parents have not attained tertiary education are less likely to complete upper secondary education than students with at least one tertiary-educated parent. However, those who do complete this level are almost equally likely to move on to tertiary education as their more advantaged counterparts. This finding may be partially explained by Norway's tertiary system, characterised by open admissions, no tuition fees in public institutions (where over 80% of students enrol), and a strong financial support system to meet all students' living costs. Norway also performed above average in terms of both student performance and equity in education in the last round of PISA.

Nevertheless, several other factors could help explain the difference in pattern between Israel and Norway, and between all countries presented in Figure 3. In addition to the factors highlighted in previous sections, these might include expected labour market outcomes, social and cultural views, as well as the quality of student orientation and more generally how well institutions accommodate students from different socio-economic backgrounds.

Figure 3 / Upper secondary entrants, upper secondary graduates and tertiary entrants aged 18-24, by parents' educational attainment

Upper secondary entrants 2010-12, upper secondary graduates by the theoretical duration of the programme 2013-14 and tertiary entrants 2015



Note: True cohort data is used for upper secondary entrants and graduates, and cross cohort for tertiary entrants. Tertiary entrants refer to the 18-24 year-old age group, and educational programmes short-cycle tertiary, bachelor's and master's long first degree programmes.
1. Tertiary entrants do not include short-cycle tertiary programmes.
2. Parents' educational attainment refers to mother's educational attainment.
3. For Israel, reference year for entrants in upper secondary education is 2013 and for upper secondary graduates it is 2015. For Finland, reference year for tertiary entrants is 2016.
Countries and economies are ranked in descending order of the share of upper secondary entrants with no tertiary-educated parent.
Source: OECD (2018[1]), *Education at a Glance 2018: OECD Indicators*, https://dx.doi.org/10.1787/eag-2018-en.

The bottom line

Across OECD countries, individuals without tertiary-educated parents tend to be considerably under-represented among entrants to tertiary education. However, inequalities tend to accumulate throughout an individual's educational career. In particular, the period from starting upper secondary to entering tertiary education is critical in determining students' future career and education choices. Understanding how socio-economic disparities at earlier levels may influence entry rates to tertiary education will be essential if policy makers are to design better policies to improve equity.

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