

2. Education and training¹

The educational attainment of the population, as well as participation in education and training, showed some improvement and some stability in 2019 compared to previous years. In particular, there was an increase in the number of children attending nursery school and an increase in the share of graduates in STEM disciplines; at the same time, there was a decrease in the share of 18-24-year-olds who had dropped out of the education and training system and in the share of NEETs. The percentage of 25-64-year-olds with at least upper-secondary education, the percentage of 30-34-year-olds with tertiary education and participation in lifelong learning remained stable, although at lower levels comparing to the EU27 average.

The pandemic caused a setback in almost all indicators in this domain, especially in 2020. In 2021, there were first signs of recovery, which were consolidated for some indicators in 2022. In 2021, 29.5% of 0-2-year-olds are enrolled in nursery school (28% in 2019); 9.9% of 25-64-year-olds participate in lifelong learning (7.1% in 2019) and 12.7% of 18-24-year-olds who are no longer in education or training (13.3% in 2019). There are also positive signs for 25-64-year-olds with at least a secondary education in 2022, 63.0% (62.3% in 2019). The share of young people with a tertiary degree (27.4% in 2022), the share of people who have participated in 2 or more cultural activities outside the home (23.1% in 2022) and the share of people who use libraries (10.2% in 2022) increase in 2022, but fail to return to 2019 levels.

Of particular concern, however, is the indicator on reading books and newspapers, which shows a continuous decline since 2010: in 2022, 35.9% of people aged 6 and over read 4 or more books a year and/or read newspapers 3 or more times a week, compared with 36.6% in 2021, 38.0% in 2019 and 44.4% in 2010 (Table 1).

Table 1. Education and training indicators: value for the latest available year and percentage changes for different periods

Indicators	Starting year	Latest available year	Latest available year value	Percentage changes			
				2019 compared with starting year	2021 compared with 2019	2022 compared with 2021	2022 compared with 2019
Children aged 0-2 years enrolled in nursery school (%)	2010	2021	29.5	●	●	-	-
Participation in the school system of children aged 4-5 (%)	2013	2021	92.8	●	●	-	-
People with at least upper secondary education level (25-64 years old) (%)	2018	2022	63.0	●	●	●	●
People having completed tertiary education (30-34 years old) (%)	2018	2022	27.4	●	●	●	●
First-time entry rate to university by cohort of upper secondary graduates (%)	2013	2020	51.9	●	-	-	-
Early leavers from education and training (%)	2018	2022	11.5	●	●	●	●
People not in education, employment, or training (NEET) (%)	2018	2022	19.0	●	●	●	●
Participation in life-long learning (%)	2018	2022	9.6	●	●	●	●
Inadequate level of literacy (students in grade 8) (%)	2018	2022	38.6	●	●	●	●
Inadequate level of numeracy (students in grade 8) (%)	2018	2022	43.6	●	●	●	●
Individuals with basic or above basic overall digital skills (%) (a)	2021	2021	45.7	-	-	-	-
STEM graduates (%)	2012	2020	1.65	●	-	-	-
Cultural participation outside the home (%)	2010	2022	23.1	●	●	●	●
Reading books and newspapers (%)	2010	2022	35.9	●	●	●	●
Use of libraries (%)	2019	2022	10.2	-	●	●	●

● Better ● Worse ● Stable - Not available

(a) No comparisons are available for the indicator on Individuals with basic or above basic overall digital skills.

Note: If the relative change between the two years exceeds 1% it is considered positive (green), if it is lower than -1% it is considered negative (red).

In the range -1 and +1% the change is considered stable (yellow). The polarity of the indicator was taken into account when calculating the changes to consider the improvement or worsening in terms of well-being.

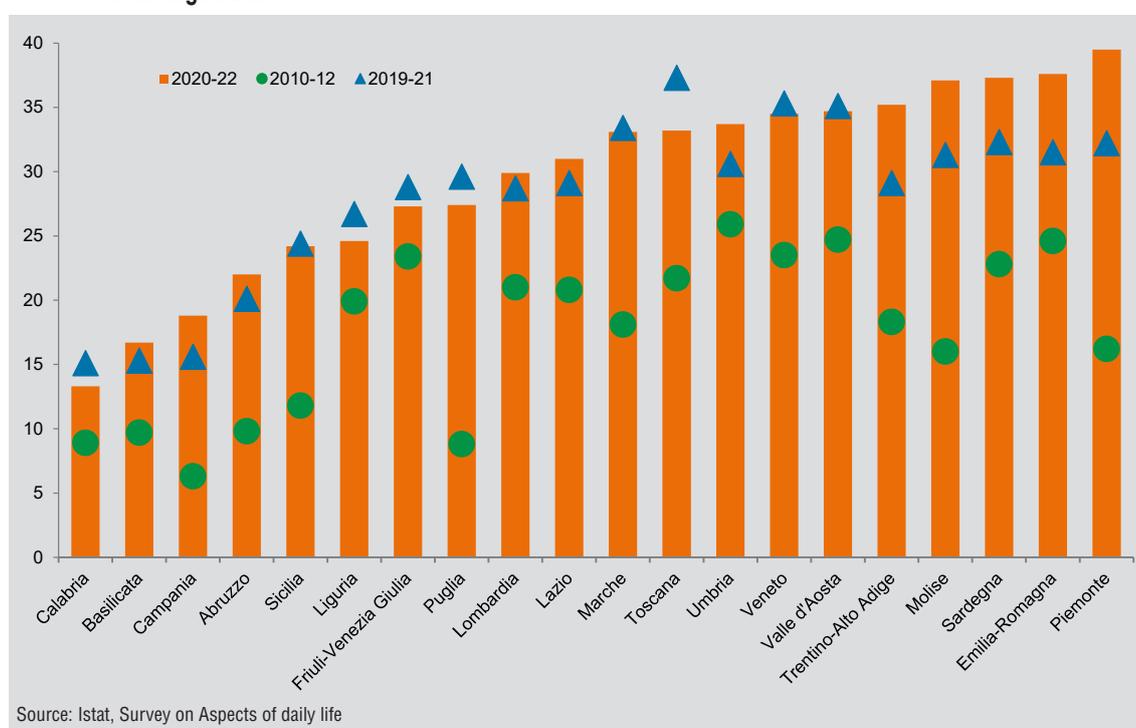
¹ This chapter was edited by Barbara Baldazzi, with contributions from Emanuela Bologna, Claudia Buseti, Raffaella Cascioli, Donatella Grassi, Giulia Milan, Marina Musci, Miria Savioli, Azzurra Tivoli and Laura Zannella.

In 2022 the number of children attending childcare services returns to grow

In the three-year period 2020-2022, 29.5% of 0-2-year-olds are enrolled in early childcare services (1.5 percentage points higher than in 2019-2021). Despite this progress, inclusion remains highest in the North-east (35.2% of 0-2-year-olds enrolled in nurseries) and Central regions (32.2%), falling to 20.7% in the South (Figure 1).

By the age of 4-5, almost all children are enrolled in education; however, in the 2020/2021 school year, the percentage of children attending pre-school or the first year of primary school fell slightly to 92.8% (it was 95.9% in 2019/2020), reaching 96.6% in the South and falling to 90.7% in the Centre.

Figure 1. Children aged 0-2 years enrolled in early childcare services by region. Years 2010/12-2019/21-2020/22. Percentage values



Back to growth for the number of secondary school and tertiary graduates in 2022, but Italy is still far behind the European average

In 2022, 63.0% of 25-64-year-olds have at least upper secondary qualification or diploma (+0.3 percentage points compared to 2021), compared to around 79.5% as European average. In Italy, 65.7% of women have at least an upper secondary qualification; among men, the share of graduates is 60.3% (Figure 2).

In 2022, 27.4% of young people aged 30-34 in Italy has a tertiary degree, an increase compared to the previous year (26.8%), especially among men. However, Italy is still far from the average of European Union countries, where the share of young people with a university degree or tertiary qualification exceeds 42% (Figure 3).

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Figure 2. People with at least upper secondary education level (25-64 years old) in Italy and in EU27. Quarterly data I 2018-IV 2022. Percentage values

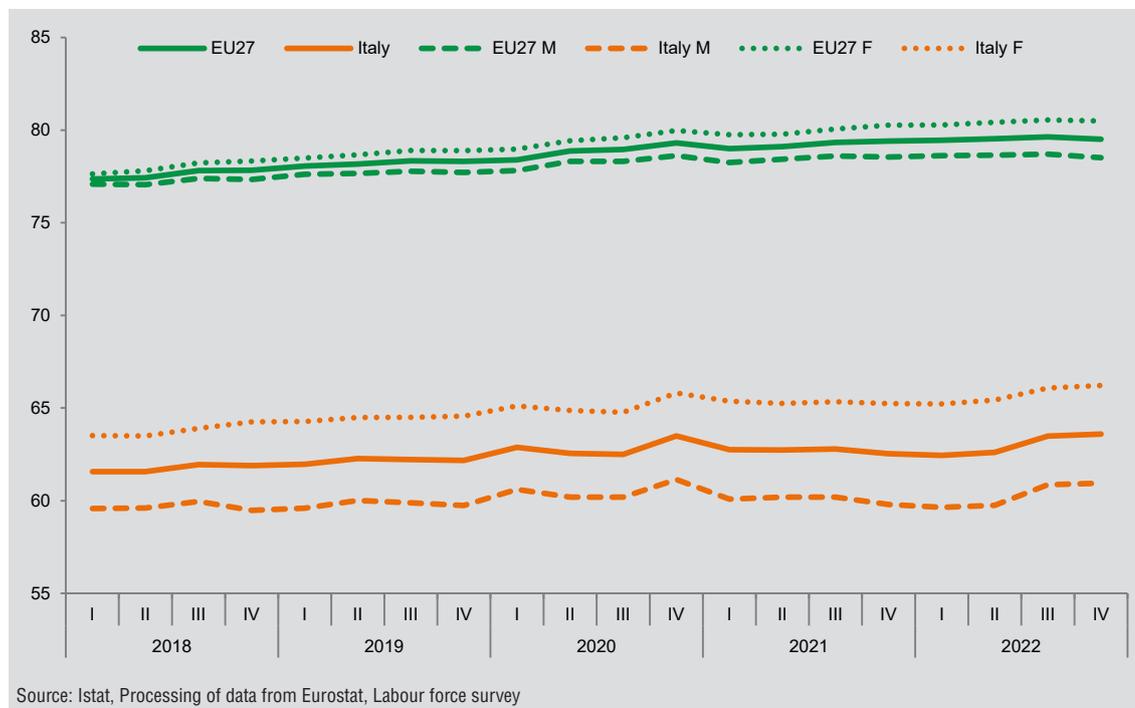
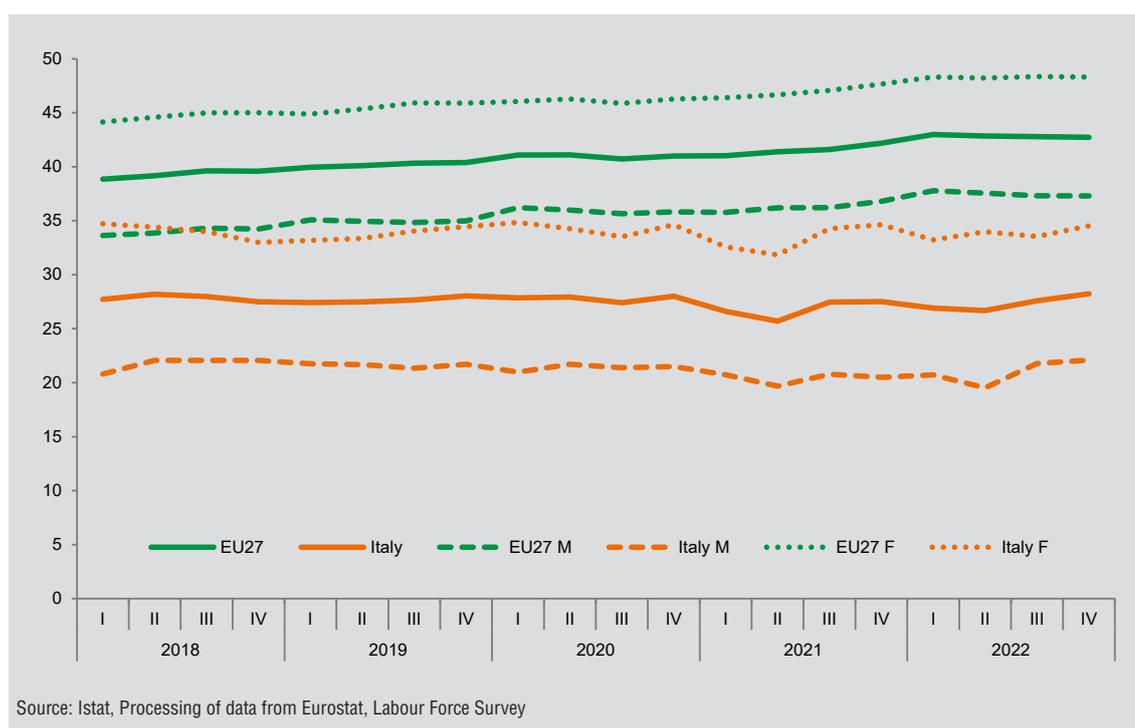


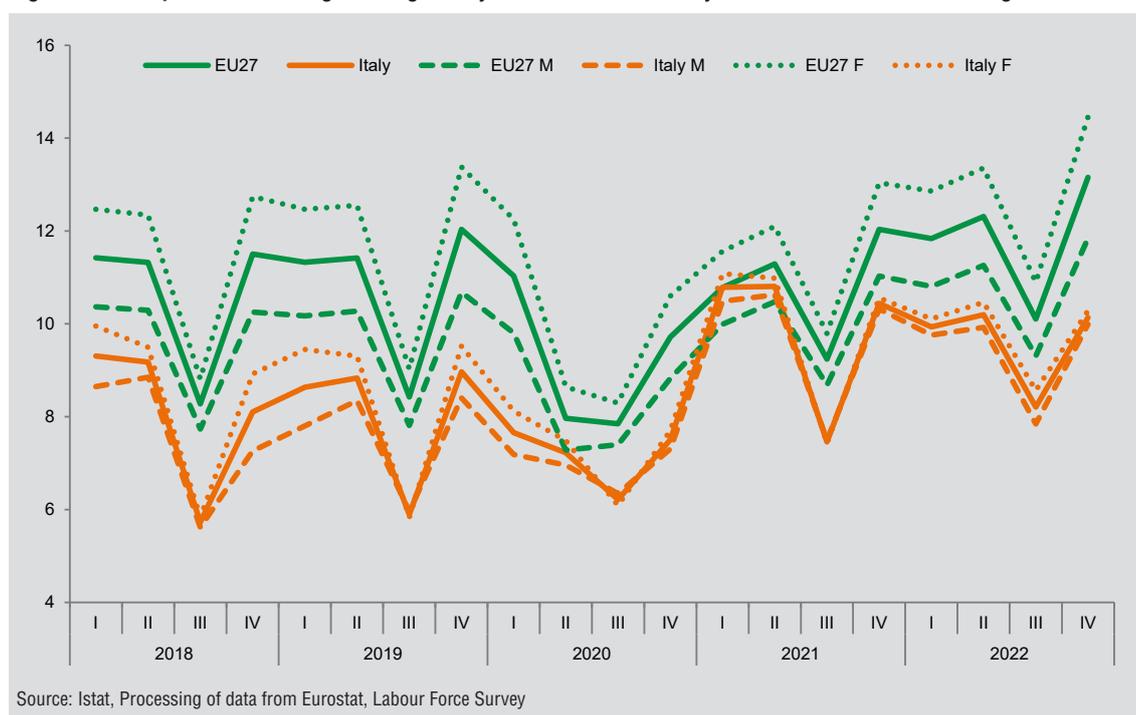
Figure 3. People having completed tertiary education (30-34 years old) in Italy and in EU27. Quarterly data I 2018-IV 2022. Percentage values



Participation in lifelong learning remains high in 2022

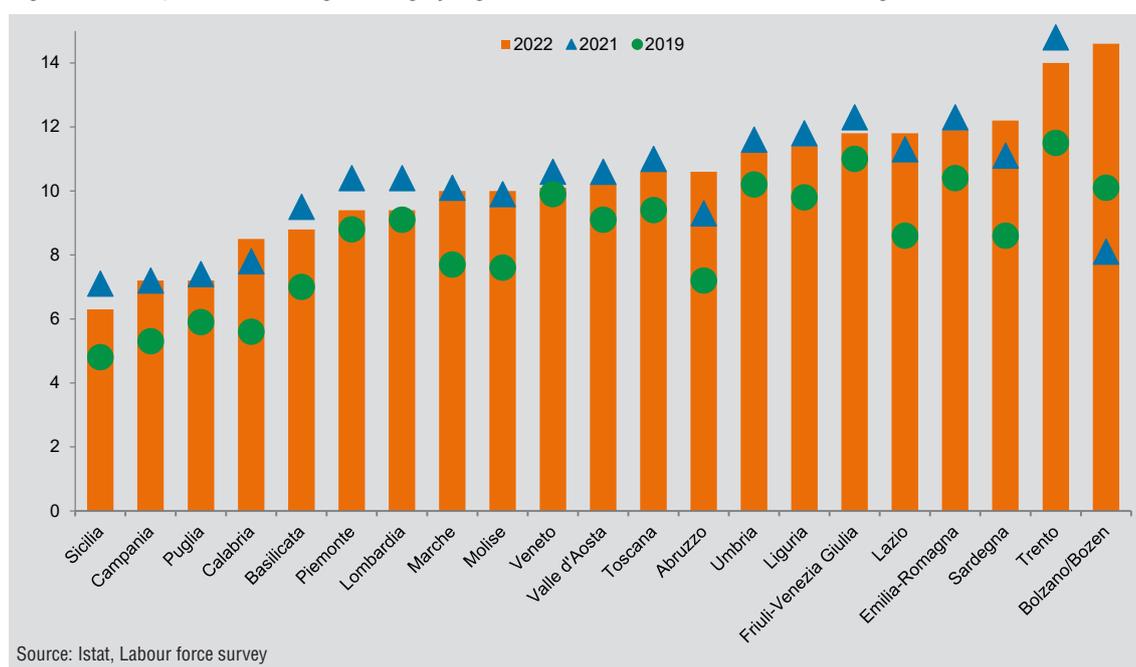
In Italy in 2022, 9.6% of the population aged 25-64 participated in life-long learning in the four weeks preceding the interview (Figure 4). This figure is stable compared to 2021 (9.9%) and clearly recovering from the low level of participation recorded in 2020 (7.1%). In all regions, participation in life-long learning in 2022 exceeds that observed in 2019 (8.1% for the national average - Figure 5).

Figure 4. Participation in life-long learning in Italy and in EU27. Quarterly data I 2018-IV 2022. Percentage values



Source: Istat, Processing of data from Eurostat, Labour Force Survey

Figure 5. Participation in life-long learning by region. Years 2019, 2021 and 2022. Percentage values

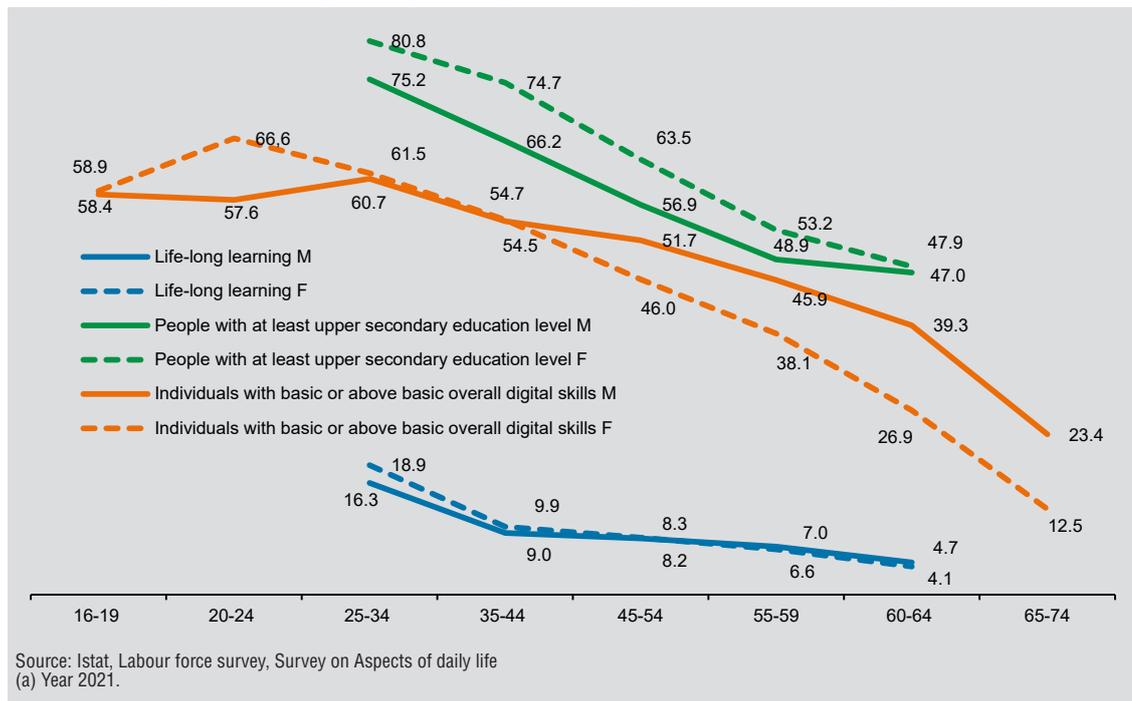


Source: Istat, Labour force survey

Significant generational differences in educational attainment, participation in life-long learning and digital skills

In 2021, just under half of those aged 16-74 who have used the internet in the last three months have at least basic digital skills. The proportion rises to 61.7% for the 20-24 age group and falls rapidly with age, to 17.7% among 65-74-year-olds (Figure 6).

Figure 6. People with at least upper secondary education level (25-64 years old), participation in life-long learning and Participation in life-long learning (a) by age class and gender. Year 2022. Percentage values



More women than men hold a tertiary qualification, but fewer in science disciplines

In the European Union (EU27) as a whole, about 4.2 million people have a tertiary degree in 2020, of which 454,000 in Italy (37,000 more than in 2019); they represent 84 per 1,000 of young people aged 20-29 (the reference population conventionally used to measure the intensity of the phenomenon). In Italy this indicator is 74.6 per 1,000 and has been rising steadily in recent years (it was 42 per 1,000 in 2010), while it is above 100 in Denmark, France, Hungary and Ireland (Figure 7).

In Italy in 2020, the share of the population aged 20-29 with a tertiary education in STEM fields (Scientific, Technological, Engineering and Mathematical) is 19.6 per thousand for men and 13.2 per thousand for women, both below the European average (Figure 8).

Figure 7. STEM graduates in Europe. Year 2020. Per 1,000 population aged 20-29

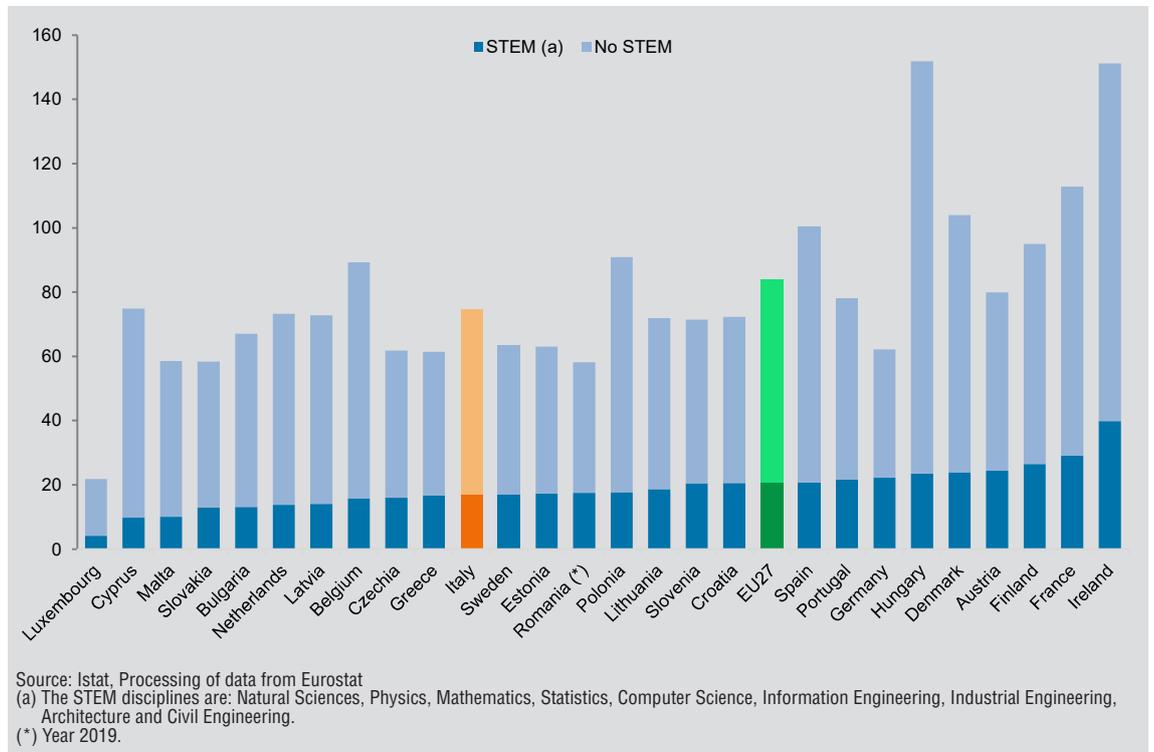
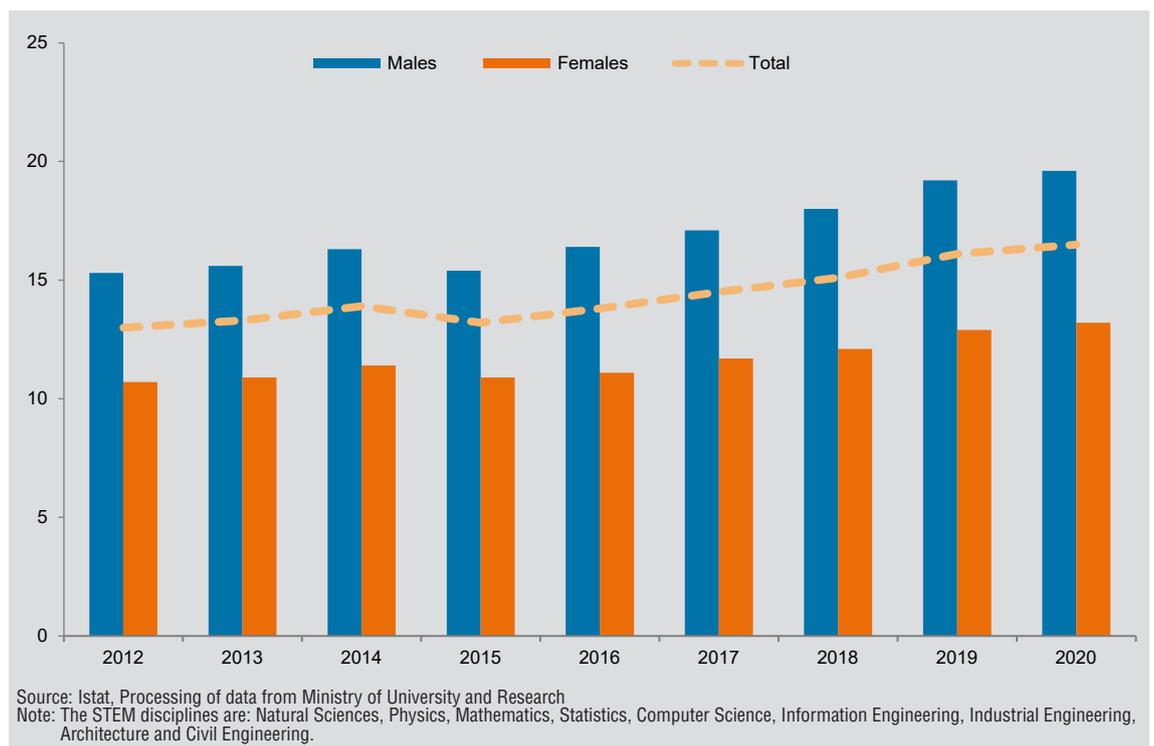


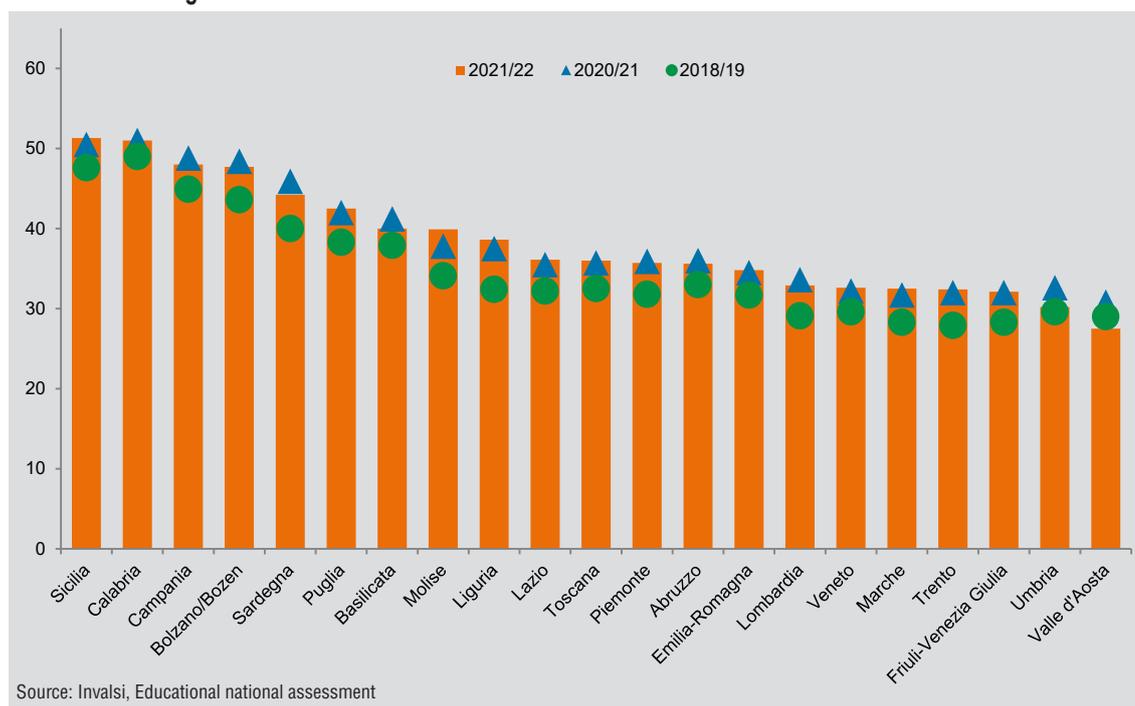
Figure 8. STEM graduates by gender. Years 2012-2020. Per 1,000 population aged 20-29



Pupils's skills still deeply unequal and penalised by the pandemic

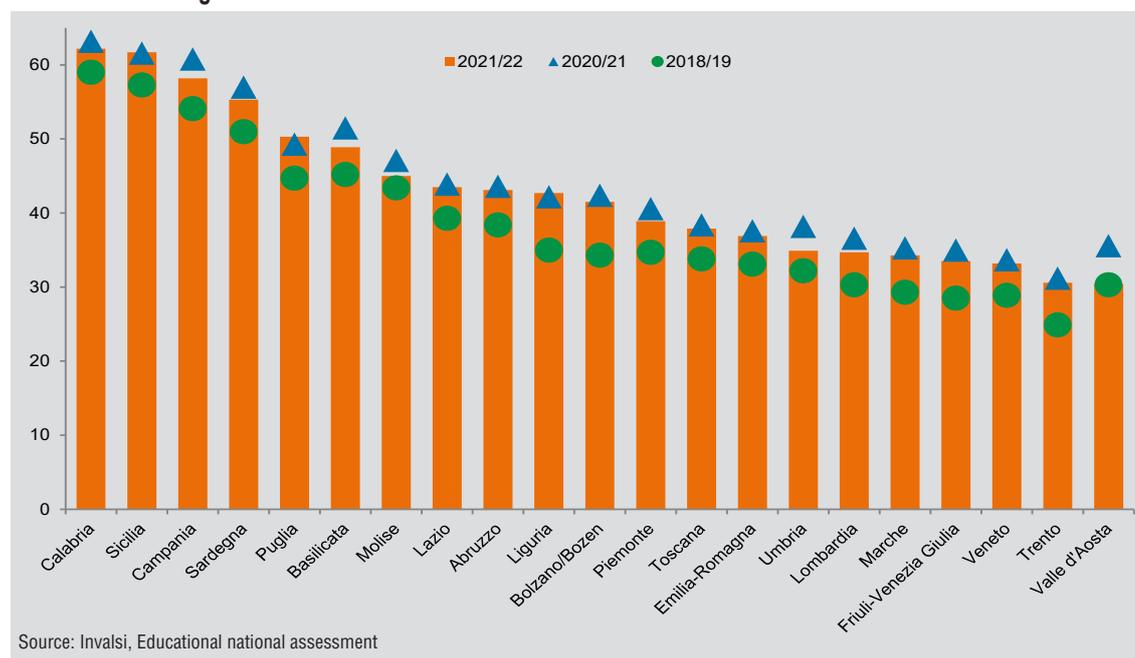
In the 2021/2022 school year, there was no recovery in the skills of secondary school pupils after the deterioration occurred during the pandemic years. The share of those who have not reached at least a sufficient level of competence (the low performers) is 38.6% for literacy (it was 35.2% in 2018/2019 - Figure 9) and 43.6% for numeracy (it was 39.6% in 2018/2019 - Figure 10).

Figure 9. Inadequate level of literacy (students in grade 8) by region. School years 2018/19, 2020/21 and 2021/22. Percentage values



Source: Invalsi, Educational national assessment

Figure 10. Inadequate level of numeracy (students in grade 8) by region. School years 2018/19, 2020/21 and 2021/22. Percentage values

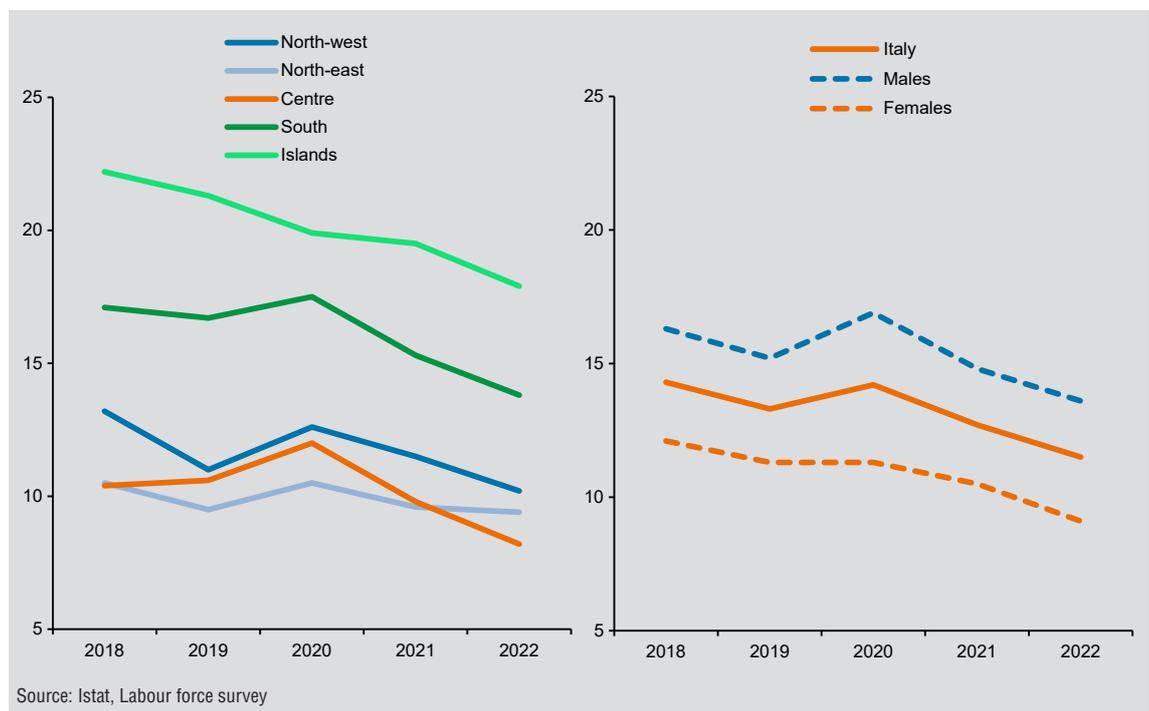


Source: Invalsi, Educational national assessment

The proportion of young people leaving education and training early is falling but large territorial differences remain

In 2022, 11.5% of young people aged 18-24 have completed their education with an upper secondary degree, an improvement on the previous year (12.7%). However, there is still a gender gap which penalises boys, who tend to drop out more often (13.6% compared to 9.1% for girls - Figure 11).

Figure 11. Early leavers from education and training by geographical area and gender. Years 2018-2022. Percentage values



NEETs also fall in 2022

The percentage of young people no longer in education, training or employment, known as NEETs (Neither in Employment nor in Education and Training), is also improving. Out of the total number of 15-29-year-olds, the share of NEETs is 19.0%, lower than 2020 (23.7%) and 2021 (23.1%), years in which the impact of the pandemic on youth employment was particularly pronounced (Figure 12).

Cultural participation increases in 2022, still remaining below pre-pandemic levels

The gradual reopening of cultural venues to the public during 2021 allowed the level of out-of-home cultural participation to recover and, reaching 23.1% in 2022, almost three times higher than the previous year, but still far from the pre-pandemic levels (-12 percentage points compared to 2019 - Figure 13).

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Figure 12. People not in education, employment, or training (NEET) in Italy and in EU27 by gender. Quarterly data I 2018-IV 2022. Percentage values

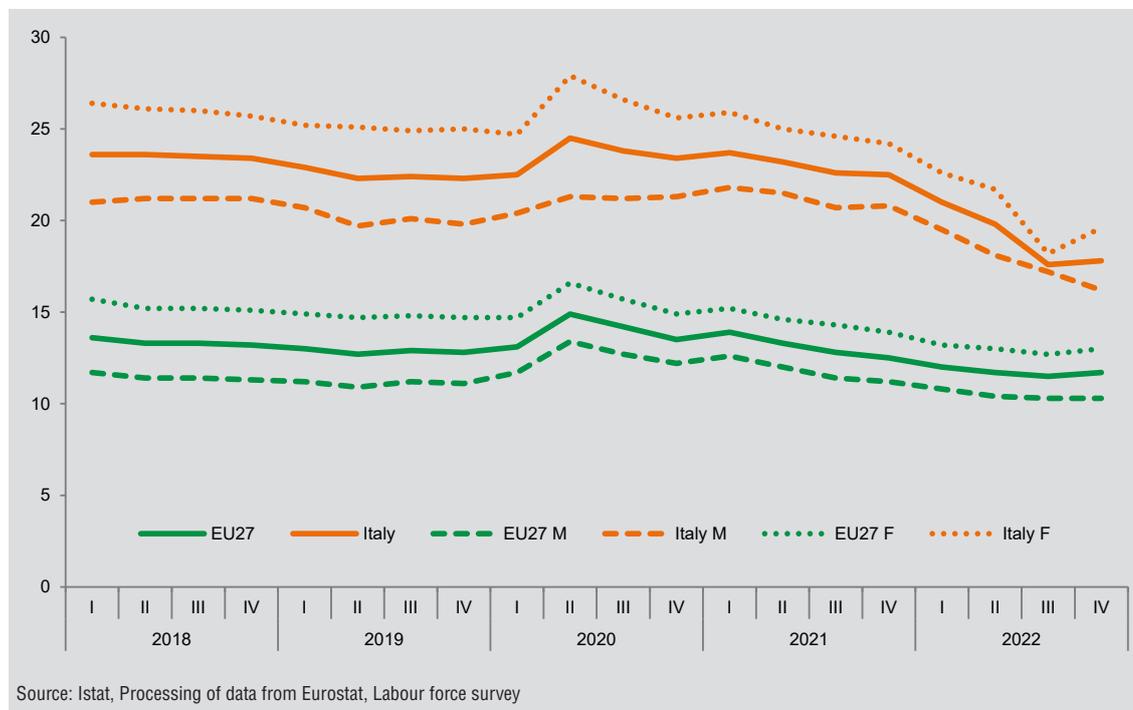
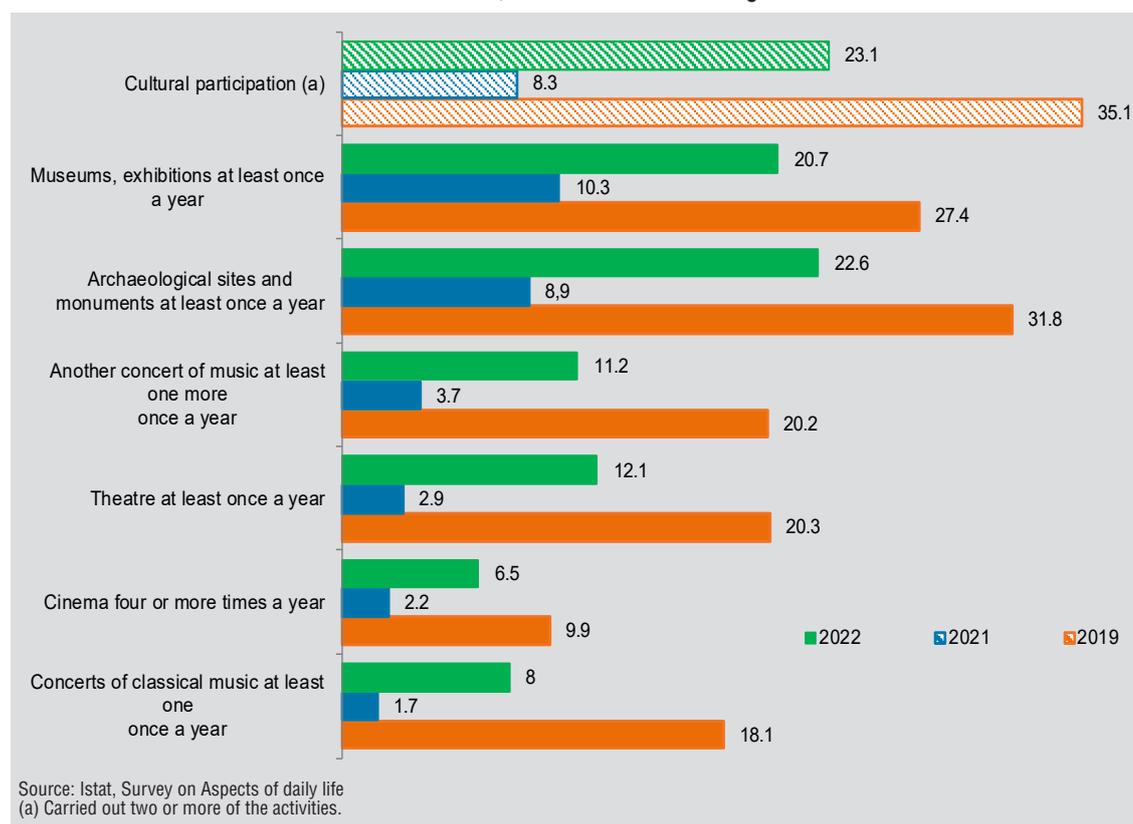


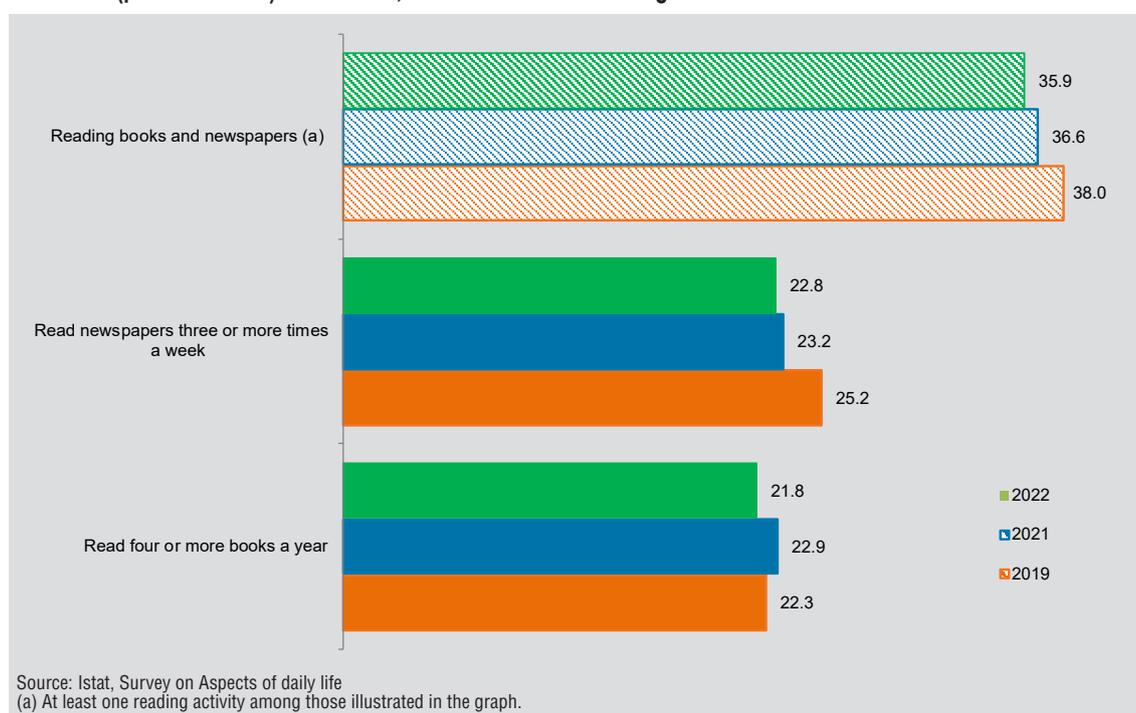
Figure 13. Persons aged 6 years and older who engaged in 2 or more cultural activities outside the home in the 12 months before the interview. Years 2019, 2021 and 2022. Percentage values



Reading books and/or newspapers continues to fall in 2022

In 2022, the indicator monitoring the reading of books and/or newspapers stands at 35.9% (-0.7 percentage points compared with the previous year). This is in line with the negative trend observed since 2010, when the number of people aged six and over who read four or more books per year and/or read newspapers was 44.4%. In particular, in 2022, the proportion of those who read at least four books a year decreases (-1.1 percentage points), while reading newspapers at least three times a week remains stable at 22.8% (Figure 14).

Figure 14. Persons aged 6 and older who read at least 4 books in the year and/or at least 3 newspapers per week (print or online). Years 2019, 2021 and 2022. Percentage values



Increase in library use in 2022, but still below the pre-pandemic levels

In 2022, the share of library users is 10.2%, a recovery of almost three percentage points compared to the previous year, but still far from the pre-pandemic levels (-5.1 points compared to 2019).

Indicators

- 1. Children aged 0-2 years enrolled in nursery school:** Pupils aged 0-2 years enrolled in early childcare services (per 100 children aged 0-2 years).
Source: Istat, Survey on Aspects of daily life.
- 2. Participation in the school system of children aged 4-5:** Percentage of children aged 4-5 years participating in pre-primary education or in primary education on total children aged 4-5 years.
Source: Istat, Processing of data from Ministry of Education.
- 3. People with at least upper secondary education level (25-64 years old):** Percentage of people aged 25-64 years having completed at least upper secondary education (ISCED level not below 3) on total people aged 25-64 years.
Source: Istat, Labour force survey.
- 4. People having completed tertiary education (30-34 years old):** Percentage of people aged 30-34 years having completed tertiary education (ISCED 5, 6, 7 or 8) on total people aged 30-34 years.
Source: Istat, Labour force survey.
- 5. First-time entry rate to university by cohort of upper secondary graduates:** Proportion of new-graduates from upper secondary education enrolled for the first time at university in the same year of upper secondary graduation (cohort-specific rate). Students enrolled in "Istituti Tecnici Superiori", "Istituti di Alta Formazione Artistica, Musicale e Coreutica", "Scuole superiori per Mediatori linguistici" and at foreign universities are excluded.
Source: Ministry of Education; Ministry of University and Research.
- 6. Early leavers from education and training:** Percentage of people aged 18-24 years who have achieved only lower secondary (ISCED 2) and are not included in a training program on total people aged 18-24 years.
Source: Istat, Labour force survey.
- 7. People not in education, employment, or training (NEET):** Percentage of people aged 15-29 years that are not in education, employment, or training on total people aged 15-29 years.
Source: Istat, Labour force survey.
- 8. Participation in life-long learning:** Percentage of people aged 25-64 years participating in formal or non-formal education on total people aged 25-64 years.
Source: Istat, Labour force survey.
- 9. Inadequate level of literacy (students in grade 8):** Share of students in grade 8 (third year of lower secondary education) who do not reach an adequate level of proficiency in literacy competence (level 2 out of 5 levels).
Source: Invalsi, Educational national assessment.
- 10. Inadequate level of numeracy (students in grade 8):** Share of students in grade 8 (third year of lower secondary education) who do not reach an adequate level of proficiency in numerical competence (level 2 out of 5 levels).
Source: Invalsi, Educational national assessment.
- 11. Individuals with basic or above basic overall digital skills:** Percentage of people aged 16-74 with basic or above basic digital skills in all 5 areas (Information and data literacy, Communication and collaboration, Digital content creation, Safety and Problem solving), identified in the "Digital competence framework 2.0".
Source: Istat, Survey on Aspects of daily life.
- 12. STEM graduates:** Graduates in tertiary education, in science, math., computing, engineering, manufacturing, construction per 100 residents aged 20-29. The numerator includes graduates with a Short-cycle tertiary education, Bachelor's or equivalent level, Master's or equivalent level, Doctoral or equivalent level (levels 5-8 of Isced 2011).
Source: Istat, Processing of data from Ministry of University and Research.
- 13. Cultural participation outside the home:** Percentage of people aged 6 years and over who have carried out 2 or more activities in the 12 months before the interview out of total people aged 6 years and over. The activities considered are 6: going to the cinema at least four times; at least once to: theatre; exhibitions and museums; archaeological sites, monuments; concerts of classical music, opera; concerts of other kind of music.
Source: Istat, Survey on Aspects of daily life.
- 14. Reading books and newspapers:** Percentage of people aged 6 and over who have read at least four books a year for reasons not strictly educational or professional (paper books, e-books, online books, audio books) and / or have read newspapers (paper and/ or online) at least three times per week out of total people aged 6 years and over.
Source: Istat, Survey on Aspects of daily life.
- 15. Use of libraries:** Percentage of people aged 3 and over who went to the library at least once in the past 12 months before interview out of total people aged 3 years and over.
Source: Istat, Survey on Aspects of daily life.

Indicators by region and geographic area

REGIONS GEOGRAPHIC AREAS	Children aged 0-2 years enrolled in nursery school (a)	Participation in the school system of children aged 4-5 (b)	People with at least upper secondary education level (25-64 years old) (c)	People having completed tertiary education (30-34 years old) (d)	First-time entry rate to university by cohort of upper secondary graduates (e)	Early leavers from education and training (f)
	2020/2022	2020/2021	2022	2022	2020	2022
Piemonte	39.5	93.1	64.0	25.6	55.7	11.0
Valle d'Aosta/Vallée d'Aoste	34.7	95.9	62.1	30.6	42.6	13.3
Liguria	24.6	91.8	69.6	25.2	58.1	10.3
Lombardia	29.9	90.3	65.4	31.3	55.7	9.9
Trentino-Alto Adige/Südtirol	35.2	93.8	70.8	28.8	35.2	10.5
<i>Bolzano/Bozen</i>	<i>27.1</i>	<i>92.4</i>	<i>69.5</i>	<i>25.2</i>	<i>13.5</i>	<i>13.5</i>
<i>Trento</i>	<i>44.9</i>	<i>95.5</i>	<i>72.0</i>	<i>32.4</i>	<i>55.9</i>	<i>7.3</i>
Veneto	34.5	91.3	65.6	27.6	52.7	9.5
Friuli-Venezia Giulia	27.3	92.8	71.2	29.2	55.3	7.7
Emilia-Romagna	37.6	91.1	68.1	33.2	55.6	9.5
Toscana	33.2	93.0	65.5	29.4	55.9	10.7
Umbria	33.7	94.8	71.5	30.8	61.1	7.3
Marche	33.1	94.5	65.9	28.5	57.8	5.8
Lazio	31.0	87.9	72.1	35.9	55.3	7.4
Abruzzo	22.0	95.7	68.4	27.3	59.1	9.3
Molise	37.1	94.2	63.1	32.9	59.5	8.3
Campania	18.8	97.2	53.8	23.4	41.5	16.1
Puglia	27.4	96.1	52.5	19.6	50.6	14.6
Basilicata	16.7	98.7	63.0	23.6	55.6	5.3
Calabria	13.3	96.4	56.6	23.5	50.9	10.3
Sicilia	24.2	93.7	52.4	17.8	46.8	18.8
Sardegna	37.3	95.0	54.6	22.1	50.1	14.7
North	33.4	91.4	66.3	29.6	54.4	9.9
North-west	32.1	91.2	65.4	29.3	55.8	10.2
North-east	35.2	91.7	67.6	30.0	52.6	9.4
Centre	32.2	90.7	69.2	32.7	56.2	8.2
South and islands	22.8	95.8	54.8	21.6	47.2	15.1
South	20.7	96.6	55.8	22.9	47.1	13.8
Islands	27.0	93.9	52.9	18.8	47.5	17.9
Italy	29.5	92.8	63.0	27.4	51.9	11.5

(a) Per 100 children aged 0-2;

(b) Per 100 children aged 4-5;

(c) Per 100 persons aged 25-64;

(d) Per 100 persons aged 30-34;

(e) Specific cohort rate;

(f) Per 100 persons aged 18-24;

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People not in education, employment, or training (NEET) (g)	Participation in life-long learning (c)	Inadequate level of literacy (students in grade 8) (h)	Inadequate level of numeracy (students in grade 8) (h)	Individuals with basic or above basic overall digital skills (i)	STEM graduates (j)	Cultural participation outside the home (k)	Reading books and newspapers (k)	Use of libraries (l)
15.4	9.4	35.7	38.9	48.7	16.4	23.5	40.5	10.6
15.3	10.2	27.5	30.4	50.3	12.4	23.1	45.5	20.8
14.8	11.4	38.6	42.7	49.1	17.6	20.0	39.5	8.3
13.6	9.4	32.9	34.7	51.0	15.3	26.6	44.4	15.7
10.5	14.3	....	....	49.7	8.4	29.3	54.9	26.6
9.9	14.6	47.7	41.5	47.6	3.1	27.0	55.7	27.3
11.1	14.0	32.4	30.6	51.7	14.0	31.5	54.2	25.9
13.1	10.1	32.6	33.2	50.1	16.7	25.6	41.5	12.9
13.5	11.8	32.1	33.5	52.3	18.5	24.9	47.9	11.1
12.2	11.9	34.8	36.9	51.2	16.5	24.7	44.0	13.6
13.8	10.6	36.0	37.9	49.8	13.8	25.5	39.4	12.0
14.4	11.2	30.2	34.9	50.0	17.0	22.0	32.0	7.9
13.1	10.0	32.5	34.3	46.0	18.4	23.8	35.2	10.4
17.0	11.8	36.1	43.5	52.9	18.2	30.1	36.4	7.3
17.9	10.6	35.6	43.1	43.1	19.7	23.0	32.3	6.1
20.9	10.0	39.9	45.0	37.7	21.5	19.3	32.3	6.1
29.7	7.2	48.0	58.2	34.2	15.9	21.9	22.7	5.9
26.0	7.2	42.5	50.3	38.5	15.9	13.7	23.4	5.1
20.6	8.8	40.0	48.9	36.1	18.3	14.8	22.6	5.8
28.2	8.5	51.0	62.2	33.8	16.0	12.0	23.0	5.2
32.4	6.3	51.3	61.7	34.0	13.5	15.5	21.2	4.4
21.4	12.2	44.2	55.3	45.4	13.5	21.8	41.7	10.7
13.5	10.3	33.9	35.8	50.4	15.8	25.3	43.5	13.9
14.2	9.6	....	....	50.2	15.7	25.1	42.9	13.7
12.5	11.3	....	....	50.7	15.9	25.5	44.3	14.2
15.3	11.2	35.2	40.0	50.9	16.8	27.2	36.9	9.2
27.9	7.8	46.7	56.4	36.5	15.5	17.7	24.8	5.7
26.9	7.8	....	....	36.3	16.4	17.9	24.1	5.6
30.1	7.8	....	....	36.9	13.5	17.1	26.3	6.0
19.0	9.6	38.6	43.6	45.7	16.5	23.1	35.9	10.2

(g) Per 100 persons aged 15-29

(h) Per 100 students attending grade III of secondary school;

(i) Per 100 persons aged 16-74;

(j) Per 100 inhabitants aged 20-29;

(k) Per 100 persons aged 6 and over;

(l) Per 100 persons aged 3 and over.

