B ICT students

Students of and graduates from ICT fields of education (in short ICT students and graduates) are **defined** by the International Standard Classification of Education: Fields of Education and Training 2013 used in the Czech Republic **(CZ-ISCED-F 2013).** ICT-related studies correspond to the broad filed of education **Information and Communication Technologies (class 06)** of this classification that involves detailed defined fields of education as follows:

Computer use (0611);

Database and network design and administration (0612);

Software and applications development and analysis (0613);

ICT not elsewhere classified (0619) and

Inter-disciplinary programmes and qualifications involving ICT (0688).

Note: The 0619 and 0688 fields of education are merged into one category called here ICT n.e.c. and Inter-disciplinary ICT fields. The field of study Computer Use (0611) is not part of the study plan at universities.

Detail description of **CZ-ISCED-F 2013** is available here *(only in Czech)*: https://www.czso.cz/csu/czso/klasifikace-oboru-vzdelani-cz-isced-f-2013

Education at universities presented in this chapter for Czechia belongs to the tertiary level of education and **includes bachelor, follow-up master, master and doctoral study programmes.** Master and follow-up master study programmes together are called here master programmes. Studies can be delivered in full-time, distance, or combined type of education.

Data for the Czech Republic were obtained from data sources of the **Ministry of Education, Youth, and Sports (MEYS)**, namely from **the Union Information from Students' Registers (SIMS)**. The source database of SIMS is continually completed and updated, including retrospective corrections. Detailed information about the SIMS database is available here *(only in Czech)*: https://sims.msmt.cz/

Data on university students are always as at **31 December of the reference year**; data on graduates are **for the entire school year**.

Numbers of students and graduates are given **as headcount**, i.e. each student is included in a particular piece of data only once, including students, who study in more study programmes or fields of education at the same time. The total numbers of students and graduates thus do not have to be equal to the sums of students and graduates of respective types of study programmes or field of education.

Eurostat database was used for **the international comparisons.** Data about number of students of and graduates from ICT fields of education contain information for tertiary level of education, i.e. including, for example, higher vocational schools. For this reason, the data for the Czech Republic from Eurostat differ from the data published by the CZSO available in the SIMS database. The main reason is mainly a slightly different definition of levels of tertiary education.

For more information on ICT students see *(only in Czech):*
https://www.czso.cz/csu/czso/studenti-a-absolventi-ict-oboru-vysokoskolskeho-studia

B ICT students and graduates

Table B1 University students of ICT fields of education in Czechia by gender, age and citizenship

Number of students

	2019	2020	2021
Total	**20 368**	**21 647**	**22 442**
Gender			
Men	16 991	17 940	18 555
Women	3 377	3 707	3 887
Age			
Under 20 years	2 244	2 522	2 709
20-24 years	13 463	14 136	14 608
25-29 years	3 251	3 462	3 436
30-34 years	766	802	924
35 + years	644	725	765
Citizenship			
Czech citizens	14 909	15 359	15 535
Foreigners, total	**5 459**	**6 288**	**6 907**
Slovakia	3 204	3 248	3 163
Russia	716	1 081	1 323
Ukraine	422	535	661
Kazakhstan	226	313	398
other countries	891	1 111	1 362

Figure B1 University students of ICT fields of education

Legend: Thous. students — % of all university students

6,5% 6,6% 6,6% 6,7% 6,7% 6,6% 6,6% 6,7% 6,9% 7,1% 7,2% 7,4%

25,7 25,8 25,2 24,7 23,3 21,5 20,5 20,0 20,0 20,4 21,6 22,4

2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021
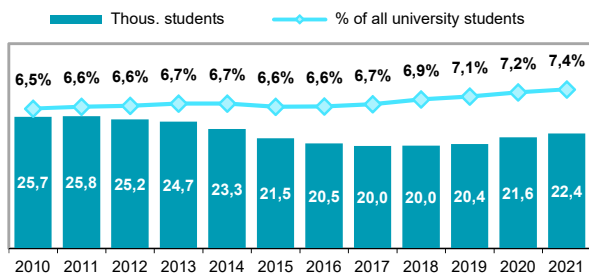
Figure B2 University students of ICT, by gender

Legend: Men — Women

	Men	Women
2021	83%	17%
2015	86%	14%
2010	88%	12%
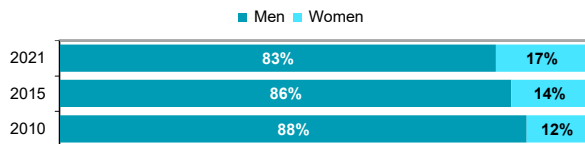
Figure B3 University students of ICT, by citizenship

Legend: Czech — Foreigners

	Czech	Foreigners
2021	69%	31%
2015	79%	21%
2010	87%	13%
2005	91%	9%
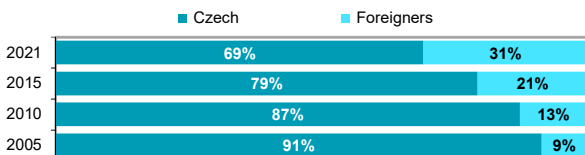
Source: CZSO calculation based on MEYS database

B ICT students and graduates

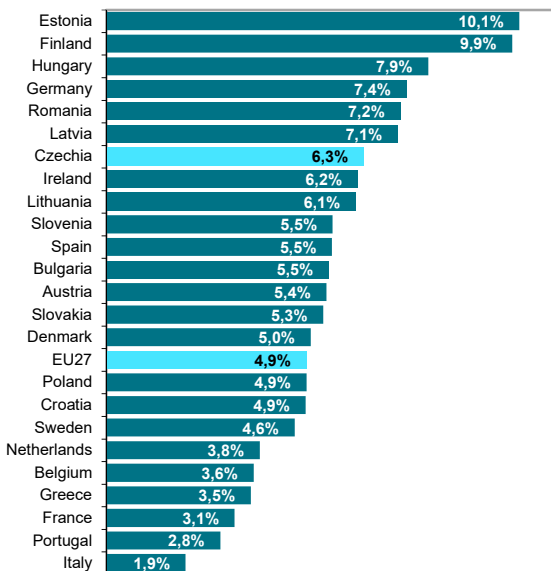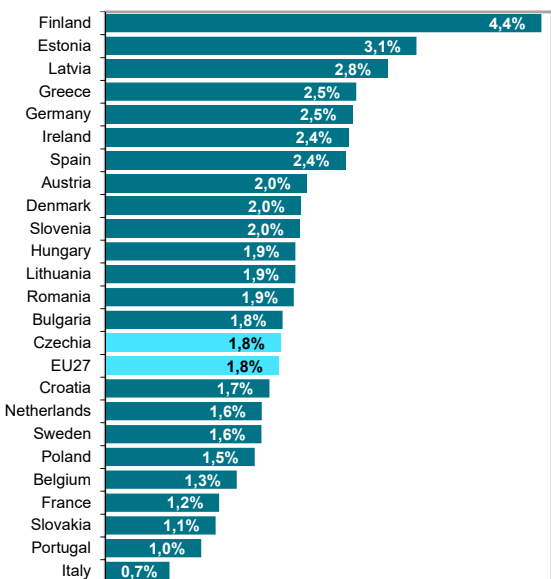### Figure B4 Tertiary students of ICT; 2020
(% of all tertiary students)

Country	%
Estonia	10,1%
Finland	9,9%
Hungary	7,9%
Germany	7,4%
Romania	7,2%
Latvia	7,1%
Czechia	6,3%
Ireland	6,2%
Lithuania	6,1%
Slovenia	5,5%
Spain	5,5%
Bulgaria	5,5%
Austria	5,4%
Slovakia	5,3%
Denmark	5,0%
EU27	4,9%
Poland	4,9%
Croatia	4,9%
Sweden	4,6%
Netherlands	3,8%
Belgium	3,6%
Greece	3,5%
France	3,1%
Portugal	2,8%
Italy	1,9%

Figure B5 Tertiary students of ICT; 2020
(% of population aged 20 to 29 years)

Country	%
Finland	4,4%
Estonia	3,1%
Latvia	2,8%
Greece	2,5%
Germany	2,5%
Ireland	2,4%
Spain	2,4%
Austria	2,0%
Denmark	2,0%
Slovenia	2,0%
Hungary	1,9%
Lithuania	1,9%
Romania	1,9%
Bulgaria	1,8%
Czechia	1,8%
EU27	1,8%
Croatia	1,7%
Netherlands	1,6%
Sweden	1,6%
Poland	1,5%
Belgium	1,3%
France	1,2%
Slovakia	1,1%
Portugal	1,0%
Italy	0,7%

Source: CZSO calculation based on Eurostat database

B ICT students and graduates

Table B2 University students of ICT fields of education in Czechia by selected characteristics

Number of students

	2019	2020	2021
Total	**20 368**	**21 647**	**22 442**
Students of public universities	19 805	21 013	21 617
Students of private universities	572	644	828
Studies			
Full-time studies	17 810	18 943	19 653
Distance and combined studies	2 572	2 726	2 803
Study programme			
Bachelor	14 568	15 693	16 330
Master	5 034	5 108	5 188
Doctoral	775	856	931
Field of study			
Database and network design and administration	1 664	1 454	1 097
Software and applications development and analysis	12 756	14 384	16 133
ICT n.e.c. and Inter-disciplinary ICT fields	5 985	5 848	5 256

Figure B6 University students of ICT, by studies

Full-time studies ■ Distance and combined studies

2021: 88% / 12%
2015: 86% / 14%
2010: 82% / 18%

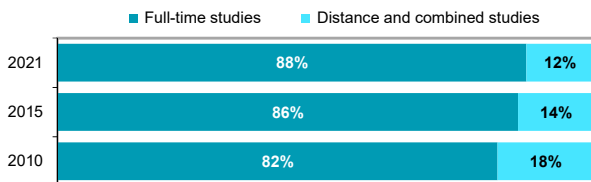**Figure B7 University students of ICT, by study programme**

■ Bachelor ■ Master ■ Doctoral

2021: 73% / 23% / 4%
2015: 67% / 28% / 4%
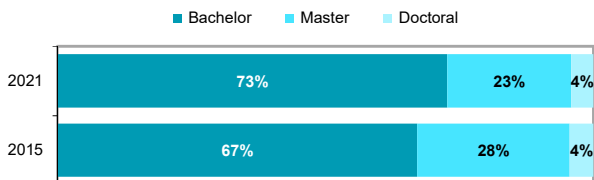
Figure B8 University students of ICT, by field of study

Software and applications development and analysis: 16 133 / 13 759
Inter-disciplinary ICT programmes and ICT not elsewhere classified: 5 256 / 9 678
Database and network design and administration: 1 097

■ 2021
■ 2010
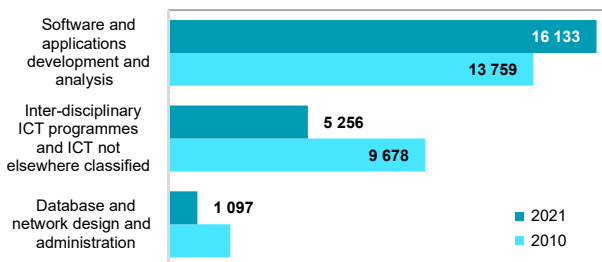
Source: CZSO calculation based on MEYS database

B ICT students and graduates

Figure B9 Tertiary students of ICT field of education by study programme; 2020
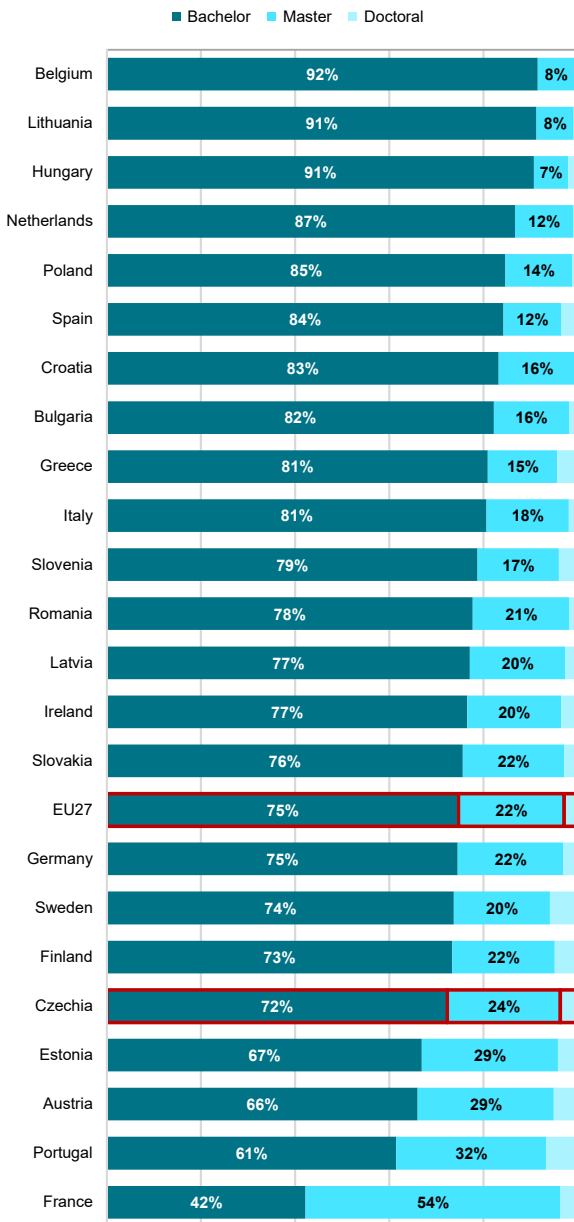
■ Bachelor ■ Master ■ Doctoral

Country	Bachelor	Master
Belgium	92%	8%
Lithuania	91%	8%
Hungary	91%	7%
Netherlands	87%	12%
Poland	85%	14%
Spain	84%	12%
Croatia	83%	16%
Bulgaria	82%	16%
Greece	81%	15%
Italy	81%	18%
Slovenia	79%	17%
Romania	78%	21%
Latvia	77%	20%
Ireland	77%	20%
Slovakia	76%	22%
EU27	75%	22%
Germany	75%	22%
Sweden	74%	20%
Finland	73%	22%
Czechia	72%	24%
Estonia	67%	29%
Austria	66%	29%
Portugal	61%	32%
France	42%	54%

Source: CZSO calculation based on Eurostat database

Table B3 University graduates from ICT fields of education in Czechia by gender, age and citizenship

Number of graduates

	2019	2020	2021
Total	**3 606**	**3 673**	**3 801**
Gender			
Men	2 955	2 983	3 091
Women	651	690	710
Age			
20-24 years	1 751	1 864	2 039
25-29 years	1 592	1 567	1 525
30-34 years	154	142	135
35 + years	109	100	102
Citizenship			
Czech citizens	2 641	2 734	2 786
Foreigners, total	**965**	**939**	**1 015**
Slovakia	708	628	721
Russia	87	97	89
Ukraine	37	66	61
Kazakhstan	22	16	20
other countries	111	132	124

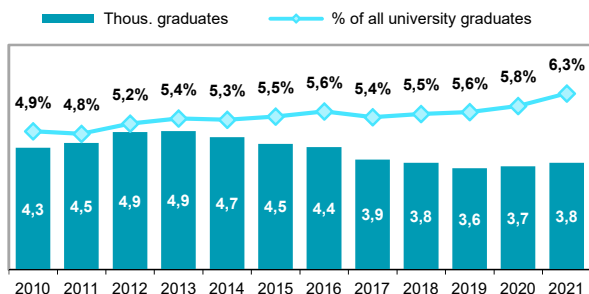**Figure B10 University graduates from ICT fields of education**

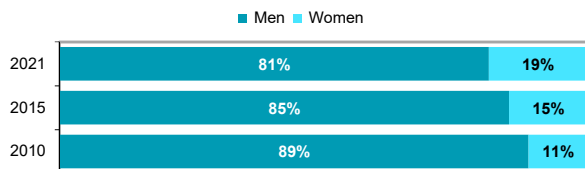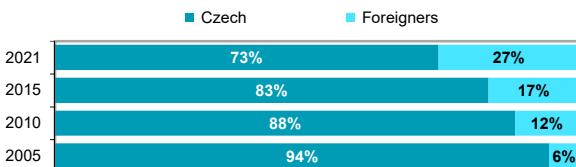**Figure B11 University graduates from ICT, by gender**

Figure B12 University graduates from ICT, by citizenship

Source: CZSO calculation based on MEYS database

B ICT students and graduates

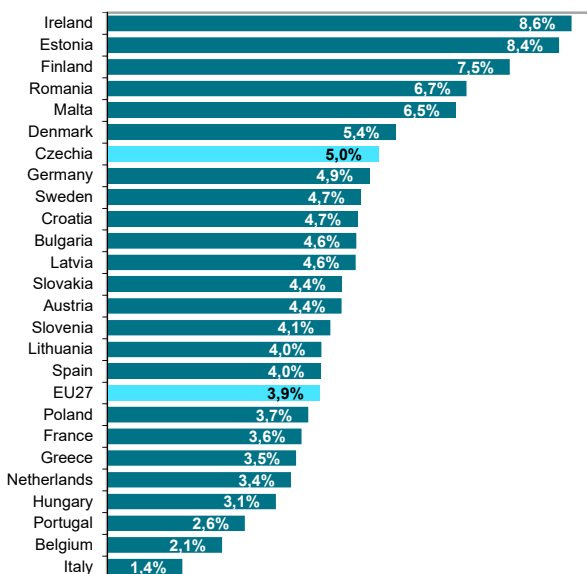## Figure B13 Tertiary graduates from ICT; 2020
(% of all tertiary graduates)

Country	%
Ireland	8,6%
Estonia	8,4%
Finland	7,5%
Romania	6,7%
Malta	6,5%
Denmark	5,4%
Czechia	5,0%
Germany	4,9%
Sweden	4,7%
Croatia	4,7%
Bulgaria	4,6%
Latvia	4,6%
Slovakia	4,4%
Austria	4,4%
Slovenia	4,1%
Lithuania	4,0%
Spain	4,0%
EU27	3,9%
Poland	3,7%
France	3,6%
Greece	3,5%
Netherlands	3,4%
Hungary	3,1%
Portugal	2,6%
Belgium	2,1%
Italy	1,4%

Figure B14 Tertiary graduates from ICT; 2020
(% of population aged 20 to 29 years)

Country	%
Ireland	1,30%
Finland	0,71%
Denmark	0,56%
Estonia	0,53%
Hungary	0,48%
Romania	0,42%
France	0,41%
Spain	0,40%
Austria	0,35%
Poland	0,34%
Latvia	0,34%
Croatia	0,34%
Czechia	0,32%
EU27	0,32%
Bulgaria	0,31%
Germany	0,30%
Sweden	0,30%
Slovenia	0,30%
Lithuania	0,29%
Slovakia	0,25%
Netherlands	0,25%
Greece	0,22%
Portugal	0,20%
Belgium	0,17%
Italy	0,10%
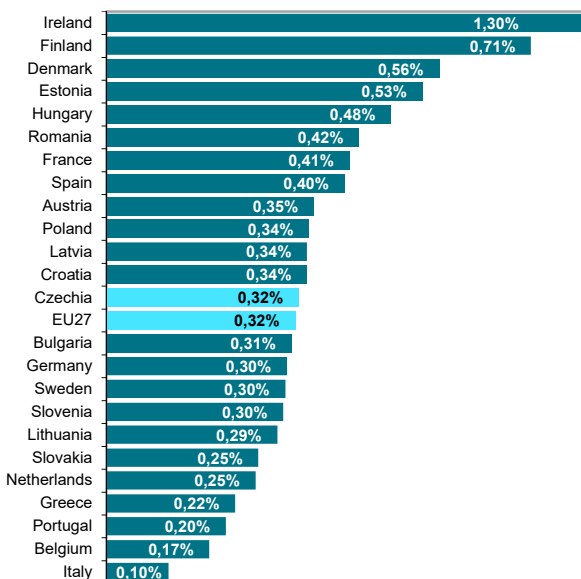
Source: CZSO calculation based on Eurostat database

B ICT students and graduates

**Table B4 University graduates from ICT fields
of education in Czechia by selected characteristics**

Number of graduates

	2019	2020	2021
Total	**3 606**	**3 673**	**3 801**
Graduates from public universities	3 566	3 633	3 732
Graduates from private universities	40	40	69
Studies			
Full-time studies	3 307	3 337	3 503
Distance and combined studies	299	336	298
Study programme			
Bachelor	1 957	2 081	2 241
Master	1 580	1 543	1 497
Doctoral	69	49	63
Field of study			
Database and network design and administration	512	456	431
Software and applications development and analysis	1 810	1 947	2 011
ICT n.e.c. and Inter-disciplinary ICT fields	1 284	1 270	1 359

Figure B15 University graduates from ICT, by studies
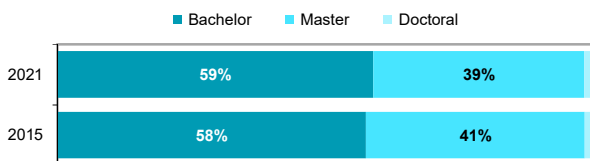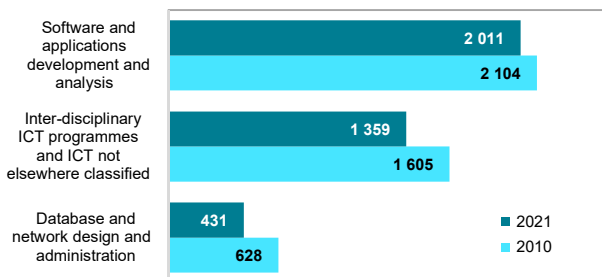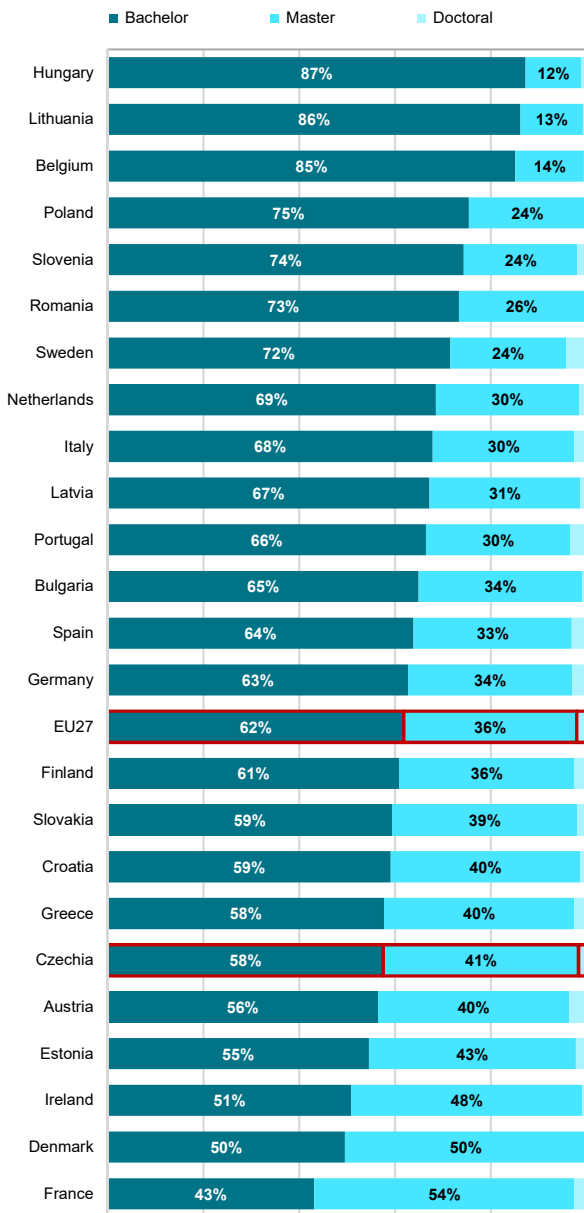

Fig. B16 University graduates from ICT, by study programme

Figure B17 University graduates from ICT, by field of study

Source: CZSO calculation based on MEYS database

**Figure B18 University graduates from ICT,
by study programme; 2020**

■ Bachelor ■ Master ■ Doctoral

Country	Bachelor	Master
Hungary	87%	12%
Lithuania	86%	13%
Belgium	85%	14%
Poland	75%	24%
Slovenia	74%	24%
Romania	73%	26%
Sweden	72%	24%
Netherlands	69%	30%
Italy	68%	30%
Latvia	67%	31%
Portugal	66%	30%
Bulgaria	65%	34%
Spain	64%	33%
Germany	63%	34%
EU27	62%	36%
Finland	61%	36%
Slovakia	59%	39%
Croatia	59%	40%
Greece	58%	40%
Czechia	58%	41%
Austria	56%	40%
Estonia	55%	43%
Ireland	51%	48%
Denmark	50%	50%
France	43%	54%

Source: CZSO calculation based on Eurostat database

B ICT students and graduates

Figure B19 Share of women among all tertiary students of ICT fields of education; 2020
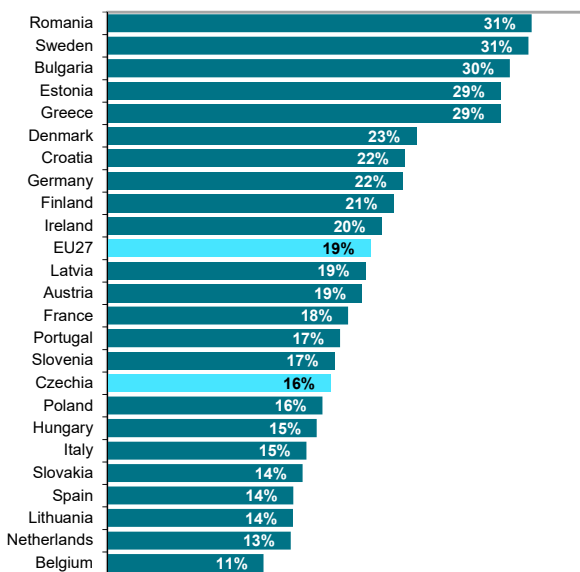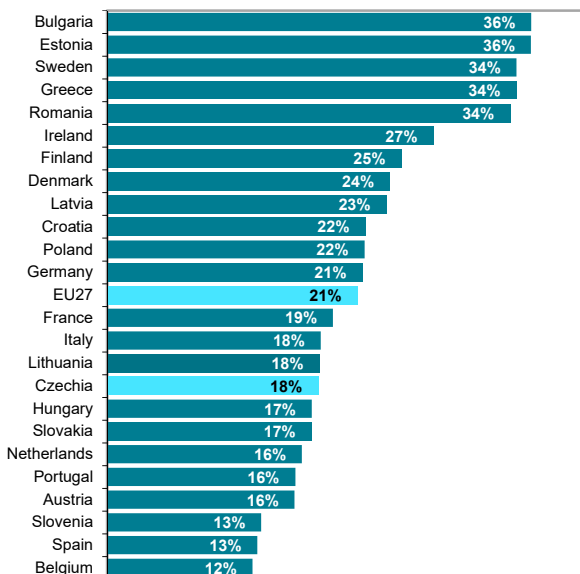
Country	Percentage
Romania	31%
Sweden	31%
Bulgaria	30%
Estonia	29%
Greece	29%
Denmark	23%
Croatia	22%
Germany	22%
Finland	21%
Ireland	20%
EU27	19%
Latvia	19%
Austria	19%
France	18%
Portugal	17%
Slovenia	17%
Czechia	16%
Poland	16%
Hungary	15%
Italy	15%
Slovakia	14%
Spain	14%
Lithuania	14%
Netherlands	13%
Belgium	11%

Figure B20 Share of women among all tertiary graduates from ICT fields of education; 2020

Country	Percentage
Bulgaria	36%
Estonia	36%
Sweden	34%
Greece	34%
Romania	34%
Ireland	27%
Finland	25%
Denmark	24%
Latvia	23%
Croatia	22%
Poland	22%
Germany	21%
EU27	21%
France	19%
Italy	18%
Lithuania	18%
Czechia	18%
Hungary	17%
Slovakia	17%
Netherlands	16%
Portugal	16%
Austria	16%
Slovenia	13%
Spain	13%
Belgium	12%

Source: CZSO calculation based on Eurostat database