F Education and digital skills

Numbers of schools with internet access and connection speed, as well as numbers of schools with website and student information system were collected by **Czech School Inspection** in years 2011/2012 and 2016/2017 as part of survey on ICT use at nursery, basic, secondary and higher professional schools.

Numbers of desktop computers, tablets and laptops both with and without internet connection calculated per 100 students in different levels of schools have been collected by **Ministry of Education**, **Youth and Sports.** Numbers of schools equipped with school wireless network and school intranet come from the same source. These indicators have been collected from nurseries, basic, secondary, and higher professional schools every year since 2005 (nursery schools since 2014).

Reference period: 30/9 of the reference year

PISA 2015, survey conducted by OECD, has been used for data on usage of selected ICT by 15-year-old students in the Czech Republic as well as in other countries. The survey itself contained of six questionnaires. Data presented in this chapter come from the questionnaire targeted on and answered by 15-year-old students.

Further information on PISA survey: http://www.oecd.org/pisa/

Sample Survey on ICT Use in Households and by Individuals has been used as a source for data on **computer skills** of individuals (this survey is described in details in the opening text of Chapter C). Eurostat database has been used for international comparison. Data contained in this chapter presents mainly information about usage of different kinds of software.

Sample Survey on ICT Use in Households and by Individuals has been also used as a source for data on different activities carried out by students. Eurostat database has been used for international comparison. *Data from this database was extracted in March 2018.*

Comparability of data published by the CZSO and Eurostat: The data for the Czech Republic published by Eurostat slightly differs from the data published by the CZSO. This difference is due to the fact that Eurostat includes solely individuals aged between 16 and 74 years. The CZSO provides as standard the data for the whole adult population aged 16 and over. *This is the reason why the tables in this publication give dual total values for the Czech Republic: total aged 16 and over and total aged 16-74.*

Reference period (data for all individuals and students): last 3 months before the time of answering the questions (unless otherwise stated)

Data on ICT field of education comes from the **Ministry of Education, Youth and Sports in the Czech Republic** data sources**.**

ICT field of education (Computing: ISCED 48) is according to the international classification ISCED 97 divided into two detailed fields: **Computer science** (ISCED 481) and **Use of computers** (ISCED 482). In the Czech Republic tertiary education includes **Higher professional education and University education** which is provided by Universities at Bachelor's or equivalent level (ISCED 6), Master's or equivalent level (ISCED 7) and Doctoral or equivalent level (ISCED 8).

Data on the **numbers and structure** of ICT professionals comes from the **Labour Force Sample Survey (LFS)** of the Czech Statistical Office.

ICT professionals (ISCO 25) refer to comprising analysts and software and computer applications developers and specialists in the field of databases and computer network. Their classification is based on the Classification of Occupations (CZ-ISCO) the corresponding national classification in the Czech Republic developed on the basis of the **International Standard Classification of Occupations (ISCO-08)**.

For more information on Eurostat databases see:

http://ec.europa.eu/eurostat/web/digital-economy-and-society/data/database and

http://ec.europa.eu/eurostat/web/digital-economy-and-society/data/comprehensive-database

Further information on Education can be found at:

https://www.czso.cz/csu/czso/information_technologies_in_schools

https://www.czso.cz/csu/czso/lidske_zdroje_pro_informacni_technologie
(in Czech only)

F Education and digital skills

Tab. F1 Schools in the Czech Republic with the internet access; 2016/2017

%

	Download speed		
	less than 30 Mbit/s	31 to 100 Mbit/s	at least 100 Mbit/s
Nursery schools	77,6	16,6	3,6
Basic schools	66,9	27,4	5,6
Secondary schools and higher professional schools	45,8	42,5	11,6

percentage of all schools of a given type

Figure F1 Schools with at least 31 Mbit/s internet download speed; 2016/2017
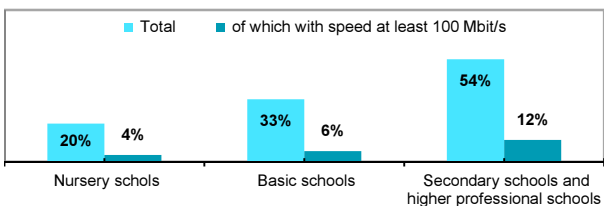
percentage of all schools of a given type

Tab. F2 Schools with a website and student information system

%

	School year 2011/2012	School year 2016/2017
Website		
Nursery schools	.	87,1
Basic schools	51,0	96,4
Secondary schools and higher professional schools	96,9	99,3
Student information system		
Basic schools	35,8	94,5
Secondary schools and higher professional schools	92,7	98,9

percentage of all schools of a given type

Figure F2 Basic and secondary schools with a website and student information system
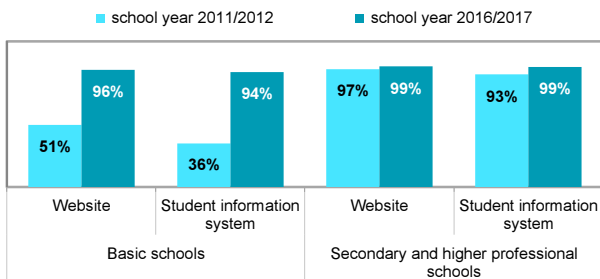
Source: Czech School Inspection, 2018

Tab. F3 Computers available to students in the Czech Republic by type of device; 2017

Number of devices per 100 students

	Total	Desktop computer	Portable computer	Tablet
Basic schools - first stage	**18,2**	13,4	2,4	2,4
Basic schools - second stage	**28,6**	21,7	3,2	3,7
Secondary schools	**25,0**	20,5	2,6	1,9
Higher professional schools	**47,7**	42,7	3,9	1,1

Figure F3 The number of tablets per 100 students in a given type of schools
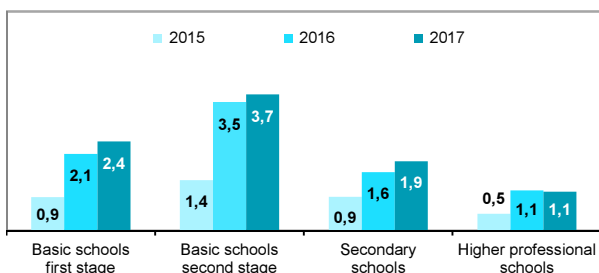
Figure F4 The number of portable computers with internet connection per 100 students in a given type of schools
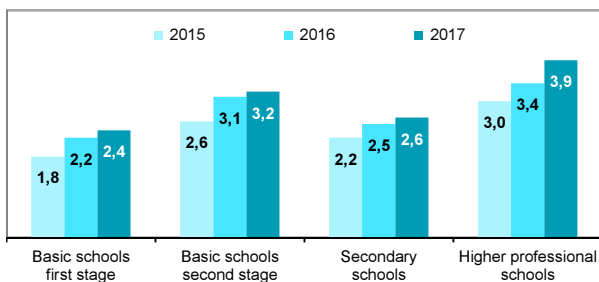
Figure F5 Types of computers available to students; 2017

Source: Ministry of Education, Youth and Sports of the Czech Republic, 2018

Tab. F4 Computers in schools available to students by type and age of devices; 2017

Thous.

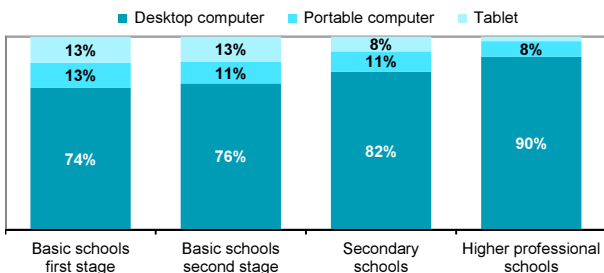|	Total*	Less than 2 years	3-9 years	10 years and more
Total	**261,8**	**44,4**	**200,4**	**17,0**
Desktops	198,9	27,7	154,9	16,3
Laptops	33,5	6,8	26,0	0,7
Tablets	29,4	9,9	19,5	0,0
Basic schools - first stage	**104,6**	**15,5**	**82,2**	**6,9**
Desktops	76,9	8,5	61,8	6,6
Laptops	13,6	2,6	10,7	0,3
Tablets	14,1	4,5	9,6	0,0
Basic schools - second stage	**100,2**	**15,4**	**79,6**	**5,2**
Desktops	75,9	9,1	61,8	5,1
Laptops	11,3	2,2	8,9	0,2
Tablets	13,1	4,1	8,9	0,0
Secondary schools	**105,5**	**19,5**	**78,8**	**7,3**
Desktops	86,4	14,6	64,8	7,0
Laptops	11,1	2,1	8,7	0,3
Tablets	8,0	2,8	5,2	0,0
Higher professional school	**11,3**	**2,2**	**8,4**	**0,6**
Desktops	10,1	2,0	7,5	0,6
Laptops	0,9	0,1	0,7	0,0
Tablets	0,3	0,1	0,2	0,0

For methodological reasons total counts of computers are lower than counts of individual education stages. Schools usually cover more than one educational stage, where one computer is counted toward each stage whereas the totals count that computer as one computer only.

Figure F6 Age of computers available to basic and secondary school students by type of devices; 2017
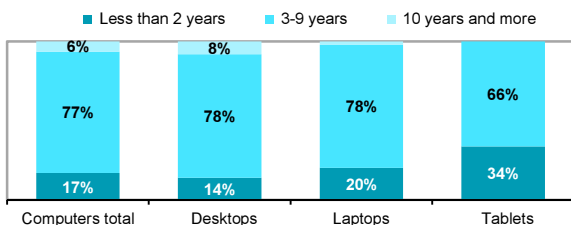
Figure F7 Age of computers available to students by type of school; 2017
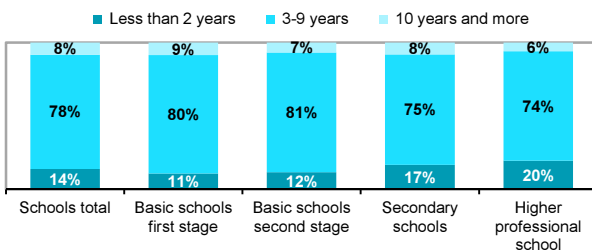
Source: Ministry of Education, Youth and Sports of the Czech Republic, 2018

Tab. F5 15 years old students in the Czech Republic having access to selected ICTs; 2015

	at home	at school
Internet	98,7	90,4
Mobile phone	93,1	.
Portable computer	87,5	28,6
Desktop computer	82,9	79,5
Tablet	68,4	22,7
E-book reader	26,2	12,9
MP3/MP4 player	70,8	.
Printer	78,1	.

as a percentage of all 15 years old students

Figure F8 15 years old students having access to selected ICTs; 2015
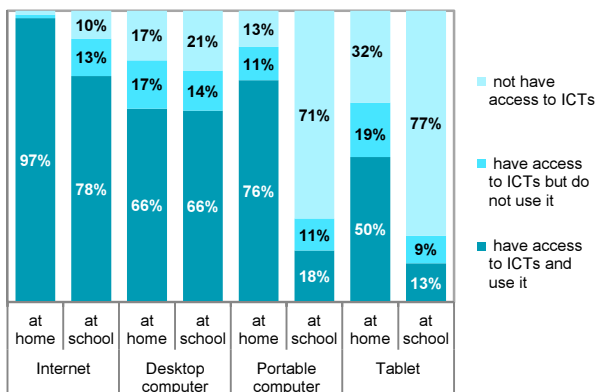
Figure F9 15 years old students using a computer at school by type of school; 2015
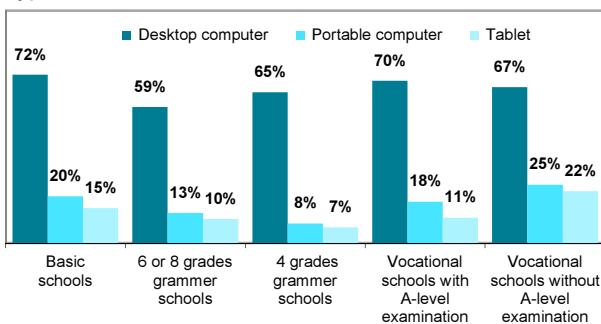
as a percentage of all 15 years old students at given type of school

Source: OECD, survey PISA, 2015

Figure F10 15 years old students in EU countries with the internet access at school; 2015

- Have access to the internet and use it
- Have access to the internet but do not use it
- Do not have access to the internet

Country	Have access and use it	Have access but do not use it	Do not have access
United Kingdom	90%	7%	3%
Netherlands	86%	8%	6%
Finland	82%	11%	7%
Bulgaria	81%	9%	10%
Austria	80%	14%	6%
Slovakia	78%	12%	10%
Czech Republic	78%	13%	10%
France	75%	16%	9%
Sweden	74%	17%	9%
Slovenia	72%	18%	10%
EU28	71%	18%	10%
Luxembourg	71%	20%	9%
Lithuania	70%	24%	6%
Hungary	69%	20%	11%
Greece	68%	23%	8%
Spain	68%	21%	11%
Portugal	65%	29%	6%
Ireland	65%	27%	8%
Belgium	65%	20%	15%
Croatia	60%	23%	17%
Denmark	58%	33%	8%
Estonia	58%	33%	10%
Italy	57%	25%	18%
Poland	55%	29%	17%
Latvia	52%	40%	8%

as a percentage of all 15 years old students in a given country

Source: OECD, survey PISA, 2015

Tab. F6 Students in the Czech Republic aged 16+ using the internet for selected activities; 2015-2017*

%

	Total	Males	Females
Using the internet	**99,1**	**98,9**	**99,4**
Using mobile connections	83,1	83,0	83,1
Using the internet for learning activities:			
On-line course	6,9	5,9	8,0
Using on-line learning material	38,7	32,7	42,7
Communication with instructors or other students	30,9	29,2	32,7
Using the internet for other activities:			
Participating in social networks	93,8	93,1	94,5
Reading online news	83,5	82,6	84,6
Playing games	63,2	78,7	46,2
Searching for travel-related information	57,9	52,7	63,6
Purchasing over the internet	37,5	35,3	40,1
Internet banking	34,2	31,4	37,3

as a percentage of all students aged 16+ in a given group

* numbers are moving average calculated for years 2015-2017

Figure F11 Students and individuals aged 16+ using the internet for selected activities; 2015 - 2017
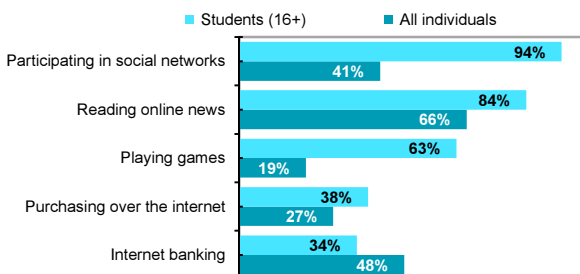
as a percentage of all students aged 16+ in a given group

Figure F12 Students and individuals aged 16+ accessing the Internet via mobile phone by type of connection
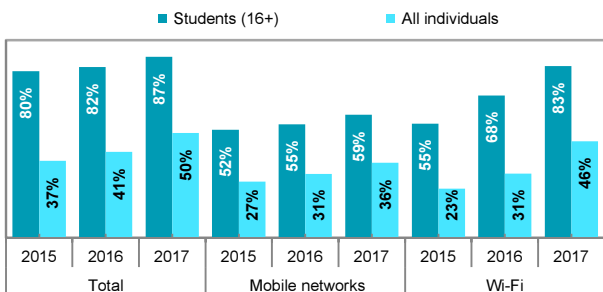
as a percentage of all students and individuals

Source: Czech Statistical Office, ICT use survey in households, 2018

Figure F13 Students in EU countries aged 16+ using the internet for selected activities; 2017

■ Using on-line learning material
■ Communication with instructors or other students

Country	Using on-line learning material	Communication with instructors or other students
Finland	86%	70%
Sweden	71%	73%
Estonia	65%	78%
Austria	64%	33%
Lithuania	60%	57%
Spain	55%	53%
Portugal	55%	44%
United Kingdom	55%	46%
Latvia	53%	54%
Czech Republic	50%	39%
Germany	49%	32%
EU28	45%	39%
Italy	44%	46%
Croatia	43%	34%
Netherlands	42%	53%
Slovenia	42%	30%
Slovakia	39%	23%
Bulgaria	38%	32%
Hungary	37%	35%
Romania	37%	21%
France	32%	31%
Belgium	29%	31%
Poland	28%	20%
Greece	6%	11%

as a percentage of all students (16+) in a given country

Source: Eurostat, 2018

Tab. F7 Individuals in the Czech Republic with selected computer skills; 2017

%

	Copying files	Editing photos*	Program-ming
Total (aged 16+)	**59,3**	**24,7**	**3,9**
Total (aged 16-74)	64,0	26,9	4,3
Sex:			
Males (aged 16+)	63,9	30,9	7,1
Females (aged 16+)	54,8	18,7	0,9
Age group:			
16-34 year-olds	85,6	45,4	8,8
35-54 year-olds	70,8	27,4	3,7
55 year-olds and over	29,9	7,7	0,8
Education attainment level (aged 25+):			
Basic	14,3	3,6	0,0
Secondary without A-level exam.	38,8	10,8	0,5
Secondary with A-level exam. or Higher professional	67,5	25,1	3,1
University	87,1	43,8	10,4
Specific groups:			
Women on maternity leave	75,0	31,0	0,6
Students (aged 16+)	93,0	57,0	11,4
Pensioners	19,1	3,9	0,3

as a percentage of all individuals in a given socio-demographic group

* using software to edit photos, video or audio files

Figure F14 Photo editing software use by sex and age; 2017
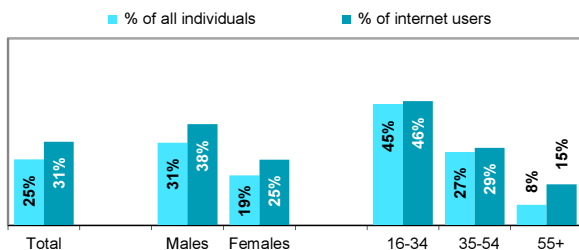
Figure F15 Programming by sex and age; 2017
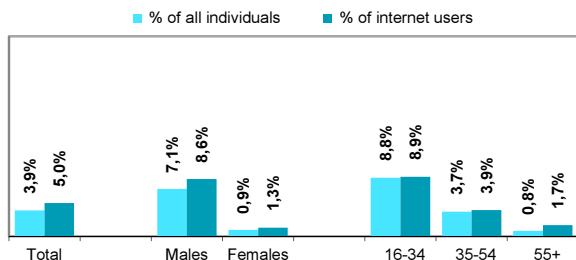
Source: Czech Statistical Office, ICT use survey in households, 2018

Figure F16 Individuals in EU countries, who used specialised software to edit photos, video or audio files; 2017

■ **% of all individuals (16-74)**
□ % of internet users (16-74)

Country	% of all individuals	% of internet users
Finland	54%	57%
United Kingdom	50%	53%
Austria	49%	55%
Netherlands	48%	50%
Sweden	47%	49%
Denmark	47%	48%
Germany	46%	51%
Lithuania	41%	52%
Portugal	37%	50%
Spain	37%	43%
EU28	36%	42%
Estonia	36%	40%
Malta	33%	41%
France	33%	37%
Slovenia	32%	40%
Belgium	32%	36%
Poland	31%	40%
Cyprus	30%	36%
Czech Republic	27%	31%
Hungary	27%	34%
Slovakia	27%	32%
Italy	25%	36%
Ireland	24%	30%
Croatia	18%	26%
Greece	16%	23%
Latvia	15%	19%
Romania	14%	19%
Bulgaria	10%	15%

Source: Eurostat, 2018

Tab. F8 Individuals in the Czech Republic who declared they used selected Office software; 2017

%

	Word processing software*	Spreadsheet software**	Presentation software***
Total (aged 16+)	**53,9**	**41,0**	**24,5**
Total (aged 16-74)	58,2	44,4	26,7
Sex:			
Males (aged 16+)	57,1	43,9	27,9
Females (aged 16+)	50,9	38,1	21,3
Age group:			
16-34 year-olds	80,2	67,4	48,3
35-54 year-olds	63,2	46,9	25,8
55 year-olds and over	26,8	17,1	6,9
Education attainment level (aged 25+):			
Basic	11,8	5,1	1,3
Secondary without A-level exam.	29,7	14,7	6,5
Secondary with A-level exam. or Higher professional	63,7	48,0	23,3
University	85,0	75,9	52,9
Specific groups:			
Women on maternity leave	65,7	51,9	31,6
Students (aged 16+)	89,4	80,1	67,2
Pensioners	16,3	8,8	2,4

as a percentage of all individuals in a given socio-demographic group
* e.g. MS Word or OpenOffice Writer
** e.g. MS Excel or OpenOffice Calc
*** e.g. MS PowerPoint or Prezi

Figure F17 Word processing software use by sex and age; 2017

■ % of all individuals   ■ % of internet users

	Total	Males	Females	16-34	35-54	55+
% of all individuals	54%	57%	51%	80%	63%	27%
% of internet users	68%	70%	67%	82%	67%	53%
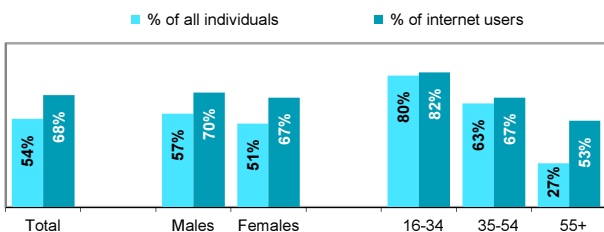
Figure F18 Spreadsheet software use by sex and age; 2017
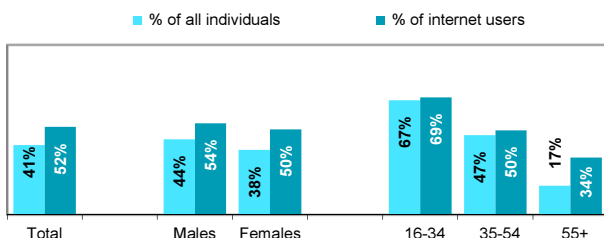
■ % of all individuals   ■ % of internet users

	Total	Males	Females	16-34	35-54	55+
% of all individuals	41%	44%	38%	67%	47%	17%
% of internet users	52%	54%	50%	69%	50%	34%

Source: Czech Statistical Office, ICT use survey in households, 2018

**Figure F19 Individuals in EU countries
who used spreadsheet software*; 2017**

■ Total   ■ using advanced functions

Country	Total	Advanced
Netherlands	57%	36%
Denmark	56%	30%
Finland	51%	34%
Sweden	51%	28%
United Kingdom	49%	34%
Austria	46%	33%
Belgium	45%	22%
Slovenia	45%	32%
Czech Republic	44%	19%
Estonia	43%	28%
Slovakia	42%	22%
Lithuania	41%	26%
France	40%	27%
Germany	40%	33%
Malta	39%	31%
Greece	39%	18%
EU28	38%	25%
Portugal	38%	32%
Spain	36%	22%
Hungary	35%	24%
Ireland	34%	20%
Croatia	32%	13%
Latvia	31%	21%
Italy	31%	20%
Poland	28%	13%
Cyprus	24%	12%
Bulgaria	16%	9%
Romania	14%	8%

0%   25%   50%   75%

* e.g. MS Excel or OpenOffice Calc
as a percentage of all individuals aged 16 to 74 in a given country

Source: Eurostat, 2018

Tab. F9 University students of ICT in the Czech Republic

Number of students

	2014	2015	2016
Total	**18 175**	**17 757**	**17 251**
of which 25 years and older	4 441	4 508	4 424
Sex:			
Males	15 606	15 162	14 543
Females	2 569	2 595	2 708
Study programme:			
Bachelor (ISCED level 6)	12 260	11 994	11 787
Master (ISCED level 7)	4 979	4 811	4 574
Doctoral (ISCED level 8)	945	963	899
Nationality:			
Czech	14 365	13 676	12 937
Foreigners	3 810	4 081	4 314

Figure F20 University students of ICT field of education in CZ
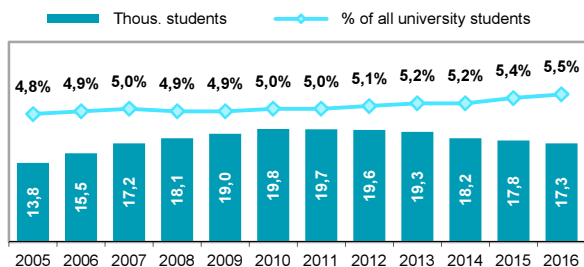

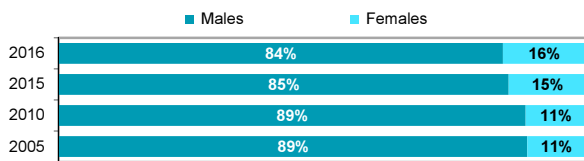
Figure F21 University students of ICT by sex in CZ
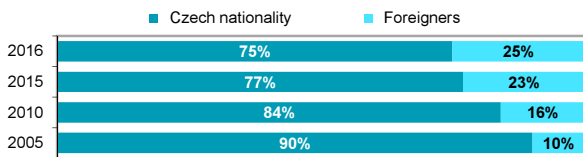

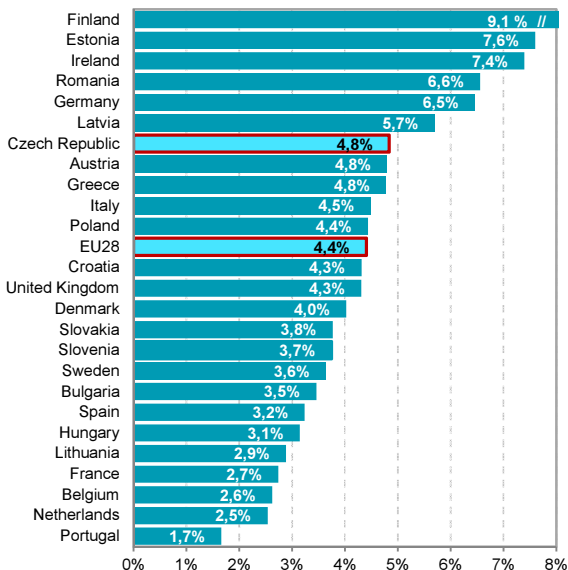## Figure F22 University students of ICT by nationality in CZ

Figure F23 University students of ICT by study programme in CZ

Source: CZSO calculation based on MEYS database, 2018
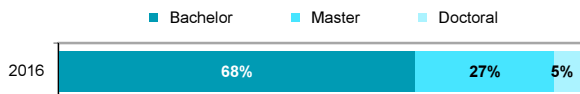
Figure F24 ICT tertiary students in EU countries*; 2015 (as a percentage of all tertiary students*)

Country	Value
Finland	9,1 % //
Estonia	7,6%
Ireland	7,4%
Romania	6,6%
Germany	6,5%
Latvia	5,7%
Czech Republic	4,8%
Austria	4,8%
Greece	4,8%
Italy	4,5%
Poland	4,4%
EU28	4,4%
Croatia	4,3%
United Kingdom	4,3%
Denmark	4,0%
Slovakia	3,8%
Slovenia	3,7%
Sweden	3,6%
Bulgaria	3,5%
Spain	3,2%
Hungary	3,1%
Lithuania	2,9%
France	2,7%
Belgium	2,6%
Netherlands	2,5%
Portugal	1,7%

Figure F25 ICT tertiary students in EU countries*; 2015 (as a percentage of population aged 20 to 29 years)
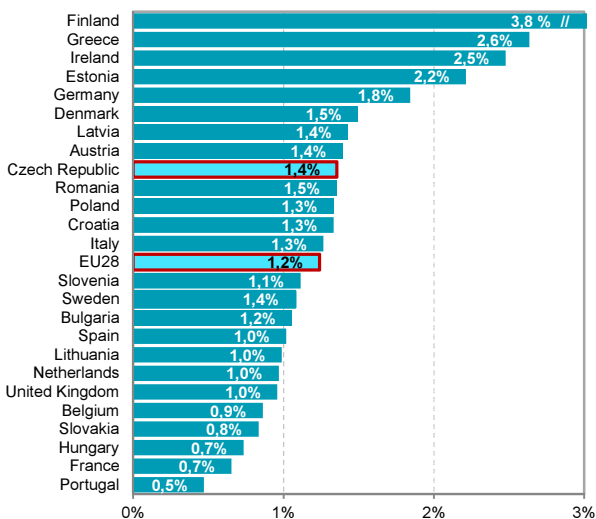
Country	Value
Finland	3,8 % //
Greece	2,6%
Ireland	2,5%
Estonia	2,2%
Germany	1,8%
Denmark	1,5%
Latvia	1,4%
Austria	1,4%
Czech Republic	1,4%
Romania	1,5%
Poland	1,3%
Croatia	1,3%
Italy	1,3%
EU28	1,2%
Slovenia	1,1%
Sweden	1,4%
Bulgaria	1,2%
Spain	1,0%
Lithuania	1,0%
Netherlands	1,0%
United Kingdom	1,0%
Belgium	0,9%
Slovakia	0,8%
Hungary	0,7%
France	0,7%
Portugal	0,5%

Tertiary education comprises here only ISCED-2011 classification levels 6 (Bachelor or equivalent level) and 7 (Master or equivalent level)

Source: CZSO calculation based on Eurostat database, 2018

Tab. F10 University graduates of ICT in the Czech Republic

Number of graduates

	2014	2015	2016
Total	**3 764**	**3 638**	**3 463**
Males	3 314	3 161	2 951
Femalse	450	477	512
Study programme:			
Bachelor (ISCED level 6)	2 107	2 059	1 874
Master (ISCED level 7)	1 589	1 503	1 504
Doctoral (ISCED level 8)	69	76	85
Nationality:			
Czech	3 133	2 934	2 750
Foreigners	631	704	713

Figure F26 University graduates in ICT bachelor programmes in CZ
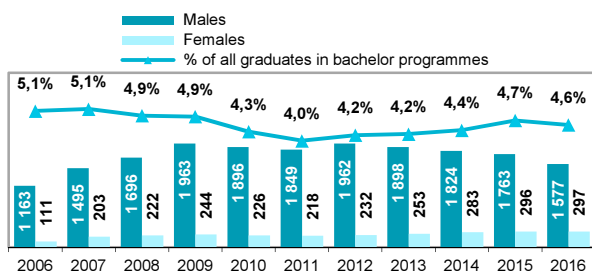

Figure F27 University graduates in ICT master programmes in CZ

Figure F28 University graduates in ICT by nationality in CZ

Source: CZSO calculation based on MEYS database, 2018

Figure F29 University graduates in ICT in EU countries*; 2015

Country	Thous. person	Country	Person
Germany	23,7	Ireland	3 822
United Kingdom	22,3	Czech Rep.	3 774
France	18,6	Finland	3 632
Poland	15,7	Netherlands	3 101
Italy	10,8	Greece	2 875
Spain	7,7	Denmark	2 696
Romania	7,0	Austria	2 357
Ireland	3,8	Bulgaria	1 921
Czech Republic	3,8	Sweden	1 900
Finland	3,6	Slovakia	1 678
Netherlands	3,1	Croatia	1 456
Greece	2,9	Hungary	1 400
Denmark	2,7	Belgium	1 227
Austria	2,4	Portugal	774
Bulgaria	1,9	Lithuania	579
Sweden	1,9	Latvia	541
Slovakia	1,7	Estonia	500
Croatia	1,5	Slovenia	498
Hungary	1,4		
Belgium	1,2		
Portugal	0,8		
Lithuania	0,6		
Latvia	0,5		
Estonia	0,5		
Slovenia	0,5		

Figure F30 University graduates in ICT* in EU countries; 2015 (% of all graduates*)

Country	%
Ireland	6,7%
Finland	6,6%
Romania	5,4%
Estonia	4,9%
Germany	4,6%
Greece	4,4%
Austria	4,3%
Denmark	4,3%
Latvia	4,2%
Croatia	4,1%
Czech Republic	4,0%
United Kingdom	3,6%
France	3,6%
EU28	3,5%
Slovenia	3,1%
Bulgaria	3,1%
Poland	3,1%
Italy	3,0%
Sweden	2,9%
Slovakia	2,9%
Spain	2,5%
Netherlands	2,2%
Hungary	2,1%
Lithuania	1,8%
Belgium	1,1%
Portugal	1,1%

* Tertiary education comprises here only ISCED-2011 classification levels 6 (Bachelor or equivalent level) and 7 (Master or equivalent level).

Source: CZSO calculation based on Eurostat database, 2018

**Figure F31 Share of females in all ICT students (%)
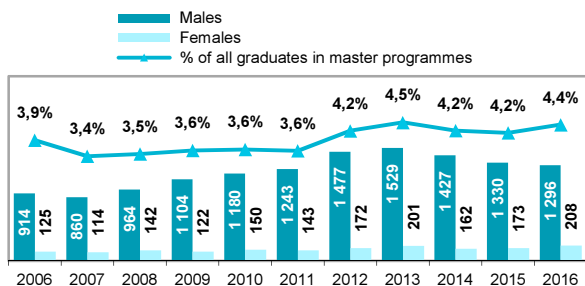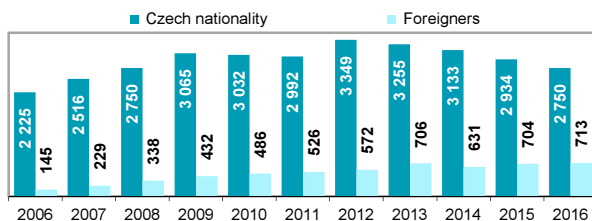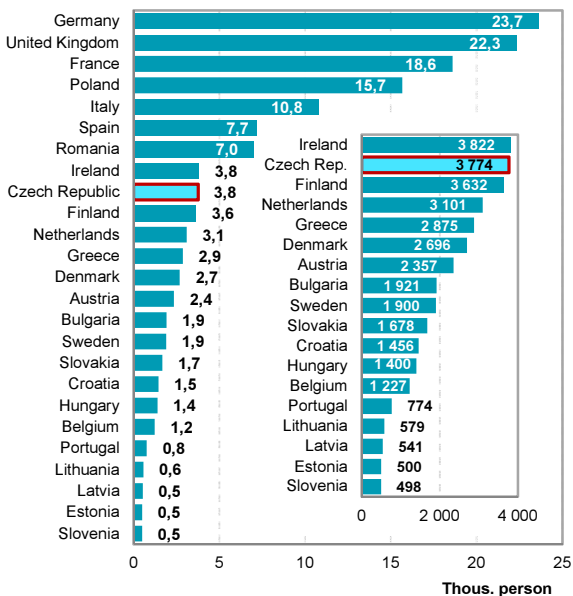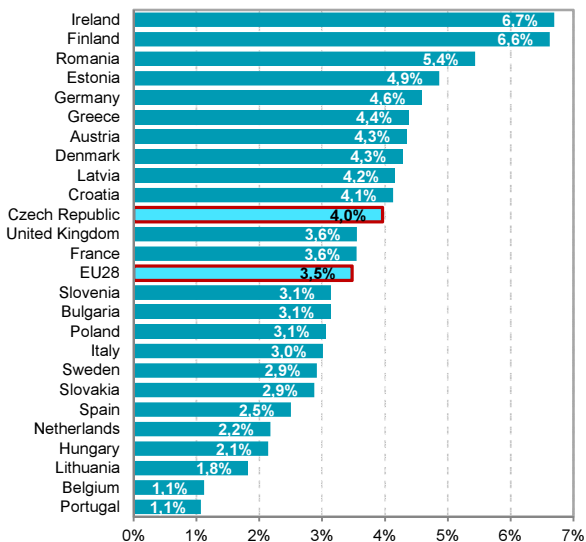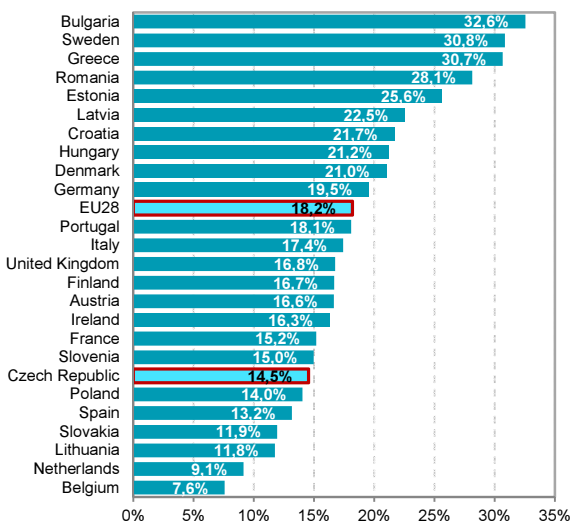in EU countries*; 2015**

Country	%
Bulgaria	32,6%
Sweden	30,8%
Greece	30,7%
Romania	28,1%
Estonia	25,6%
Latvia	22,5%
Croatia	21,7%
Hungary	21,2%
Denmark	21,0%
Germany	19,5%
EU28	18,2%
Portugal	18,1%
Italy	17,4%
United Kingdom	16,8%
Finland	16,7%
Austria	16,6%
Ireland	16,3%
France	15,2%
Slovenia	15,0%
Czech Republic	14,5%
Poland	14,0%
Spain	13,2%
Slovakia	11,9%
Lithuania	11,8%
Netherlands	9,1%
Belgium	7,6%

**Figure F32 University students of ICT* by gender
in EU countries; 2015
(% of university students males/females total*)**

Country	Females	Total
Finland	2,8%	16,3%
Estonia	3,3%	13,7%
Ireland	2,4%	12,5%
Latvia	2,2%	10,9%
Romania	3,4%	10,2%
Germany	2,6%	10,0%
Czech Republic	1,2%	9,9%
Poland	1,1%	9,3%
Austria	1,5%	8,6%
Italy	1,4%	8,5%
Slovakia	0,7%	8,3%
United Kingdom	1,3%	8,1%
Slovenia	0,9%	8,1%
EU28	1,5%	7,9%
Croatia	1,7%	7,8%
Denmark	1,4%	7,6%
Greece	3,0%	6,5%
Spain	0,8%	6,2%
Sweden	1,9%	6,1%
Lithuania	0,6%	6,0%
Belgium	0,4%	5,5%
Hungary	1,2%	5,4%
France	0,7%	5,3%
Bulgaria	2,1%	5,1%
Netherlands	0,4%	4,8%
Portugal	0,6%	2,9%

Legend: ■ Males ■ Females

** Tertiary education comprises here only ISCED-2011 classification levels 6
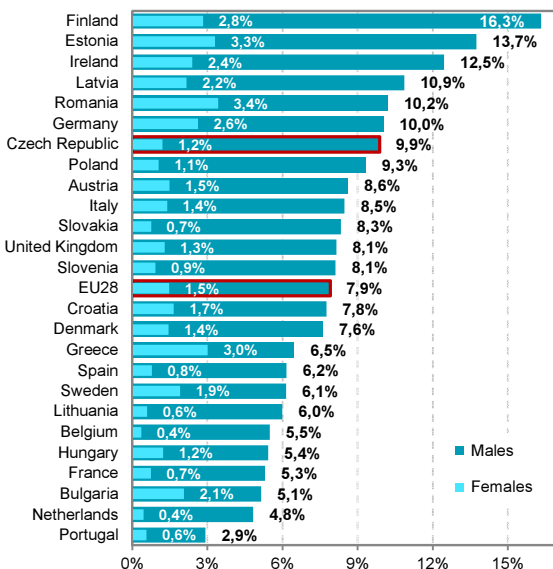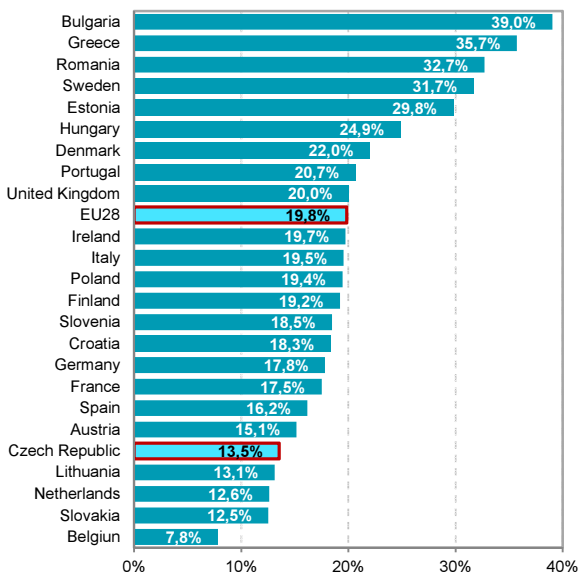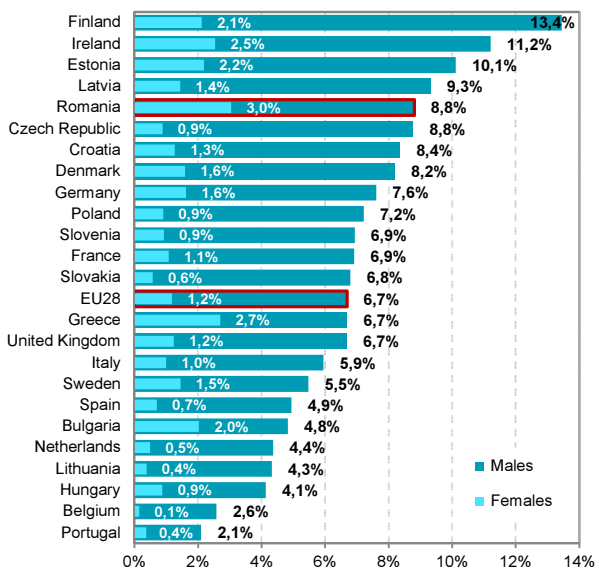(Bachelor or equivalent level) and 7 (Master or equivalent level).*

Source: CZSO calculation based on Eurostat database, 2018

Figure F33 Share of females in all ICT graduates (%)* in EU countries; 2015

Country	Share
Bulgaria	39,0%
Greece	35,7%
Romania	32,7%
Sweden	31,7%
Estonia	29,8%
Hungary	24,9%
Denmark	22,0%
Portugal	20,7%
United Kingdom	20,0%
EU28	19,8%
Ireland	19,7%
Italy	19,5%
Poland	19,4%
Finland	19,2%
Slovenia	18,5%
Croatia	18,3%
Germany	17,8%
France	17,5%
Spain	16,2%
Austria	15,1%
Czech Republic	13,5%
Lithuania	13,1%
Netherlands	12,6%
Slovakia	12,5%
Belgiun	7,8%

Figure F34 University graduates in ICT* by sex; 2015 (% of university graduates males/females total*)

Country	Females	Total
Finland	2,1%	13,4%
Ireland	2,5%	11,2%
Estonia	2,2%	10,1%
Latvia	1,4%	9,3%
Romania	3,0%	8,8%
Czech Republic	0,9%	8,8%
Croatia	1,3%	8,4%
Denmark	1,6%	8,2%
Germany	1,6%	7,6%
Poland	0,9%	7,2%
Slovenia	0,9%	6,9%
France	1,1%	6,9%
Slovakia	0,6%	6,8%
EU28	1,2%	6,7%
Greece	2,7%	6,7%
United Kingdom	1,2%	6,7%
Italy	1,0%	5,9%
Sweden	1,5%	5,5%
Spain	0,7%	4,9%
Bulgaria	2,0%	4,8%
Netherlands	0,5%	4,4%
Lithuania	0,4%	4,3%
Hungary	0,9%	4,1%
Belgium	0,1%	2,6%
Portugal	0,4%	2,1%

Legend: ■ Males ■ Females

Tertiary education comprises here only ISCED-2011 classification levels 6 (Bachelor or equivalent level) and 7 (Master or equivalent level).

Source: CZSO calculation based on Eurostat database, 2018

Tab. F11 ICT professionals in the Czech Republic

Thousands of persons

	2014	2015	2016
Total (CZ-ISCO 25)	**63,4**	**66,6**	**71,9**
Males	56,5	59,9	65,4
Females	6,9	6,7	6,6
Occupation:			
Software and apps developers and analysts	44,9	44,9	46,6
Database and network professionals	18,6	21,6	25,3
By status in employment:			
Self-employed	13,2	12,1	14,2
Employees	50,2	54,5	57,7
By employer activity:			
Industry and construction	6,2	7,8	10,5
Information and communication	43,1	41,8	45,1
Public administration, Education and Healthcare	4,5	5,0	4,9
Other branches	9,5	12,0	11,4
Age group:			
up to 29 years	14,5	15,8	15,5
30-39 years	25,4	25,5	28,3
40-49 years	12,1	15,3	17,7
50+ years	11,6	10,0	10,4
Highest level of education attainment level:			
Secondary with A-level examination	10,1	10,9	11,2
Bachelor's and Higher professional	11,1	9,9	10,3
Master's and Doctoral	42,2	45,7	50,5

Figure F35 ICT professionals
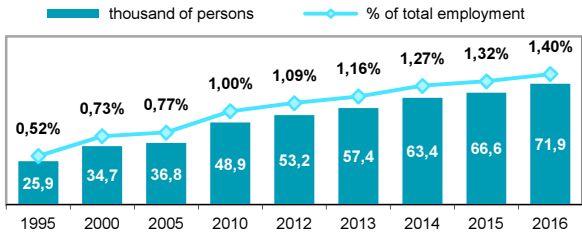
Figure F36 ICT professionals by sex

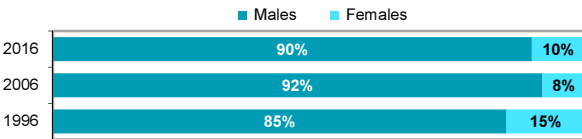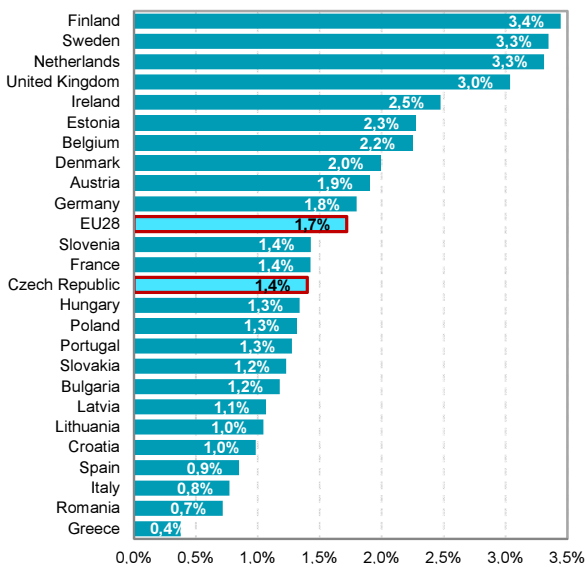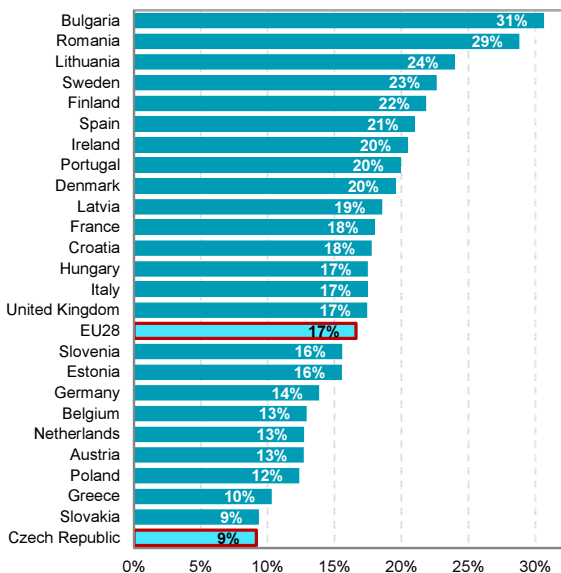## Figure F37 ICT professionals by level of education; 2016

Source: CZSO, Labour Force Survey, 2018
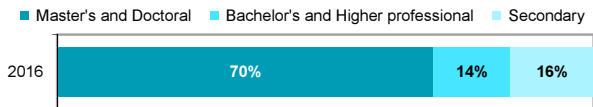
**Figure F38 ICT Professionals in EU countries; 2016
(as a percentage of total employment)**

Country	Percentage
Finland	3,4%
Sweden	3,3%
Netherlands	3,3%
United Kingdom	3,0%
Ireland	2,5%
Estonia	2,3%
Belgium	2,2%
Denmark	2,0%
Austria	1,9%
Germany	1,8%
EU28	1,7%
Slovenia	1,4%
France	1,4%
Czech Republic	1,4%
Hungary	1,3%
Poland	1,3%
Portugal	1,3%
Slovakia	1,2%
Bulgaria	1,2%
Latvia	1,1%
Lithuania	1,0%
Croatia	1,0%
Spain	0,9%
Italy	0,8%
Romania	0,7%
Greece	0,4%

**Figure F39 Females in ICT Professionals in EU countries (%);
2016**

Country	Percentage
Bulgaria	31%
Romania	29%
Lithuania	24%
Sweden	23%
Finland	22%
Spain	21%
Ireland	20%
Portugal	20%
Denmark	20%
Latvia	19%
France	18%
Croatia	18%
Hungary	17%
Italy	17%
United Kingdom	17%
EU28	17%
Slovenia	16%
Estonia	16%
Germany	14%
Belgium	13%
Netherlands	13%
Austria	13%
Poland	12%
Greece	10%
Slovakia	9%
Czech Republic	9%

calculation based on Eurostat database, European Labour Force Survey, 2018

Tab. F12 Earnings of ICT professionals in the Czech Republic

Average gross monthly earnings (wage) in CZK

	2014	2015	2016
Total (CZ ISCO 25)	**49 259**	**51 319**	**53 241**
Males	50 206	52 296	54 325
Females	42 381	43 701	45 369
Sphere of activity (earnings):			
Business (wage sphere)	50 558	52 643	54 391
Government (salary sphere)	32 006	33 607	35 422
Age group:			
under 24 years	27 669	28 393	30 237
25-34 years	45 124	47 296	48 582
35-44 years	56 903	58 751	60 624
45-54 years	50 431	52 543	55 882
55+ years	45 441	46 338	49 522
Highest level of education attainment level:			
Master's and Doctoral	54 387	56 172	58 831
Bachelor's and Higher professional	43 611	46 238	48 644
Secondary with A-level examination	43 324	44 930	47 751

Figure F40 Earnings of ICT professionals by sphere of activity

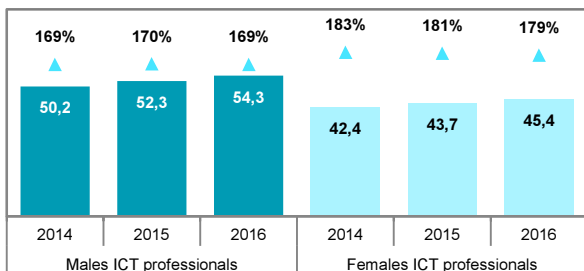- Average gross monthly earnings (wage) in thous. CZK
- ▲ as % of average gross monthly earnings in the total, wage and salary sphere
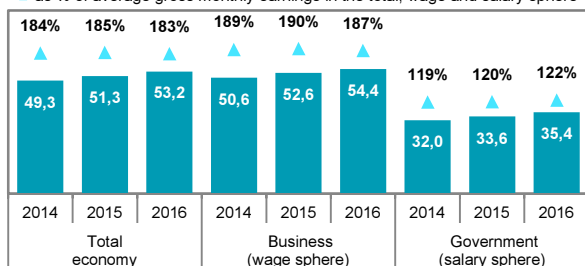
Figure F41 Earnings of ICT professionals by sex

- Average gross monthly earnings (wage) in thous. CZK
- ▲ as % of average gross monthly earnings of all males and females workers


Source: CZSO, Structural Earnings Statistics, 2018

Tab. F13 Earnings of ICT professionals in the Czech Republic according to their occupation and branch

Average gross monthly earnings (wage) in CZK

	2014	2015	2016
Total (CZ ISCO 25)	**49 259**	**51 319**	**53 241**
Selected occupation (ISCO unit groups):			
Systems analysts (ISCO 2511)	54 708	56 843	58 868
Software developers (ISCO 2512)	53 722	55 216	58 049
Applications programmers (ISCO 2514)	47 140	49 620	51 210
Database designers and admin.(ISCO 2521)	44 868	47 001	49 319
Systems administrators (ISCO 2522)	43 118	45 306	47 432
Data security specialists (ISCO 2524)	58 068	58 789	61 073
Selected industries (NACE Sections):			
Manufacturing (NACE: C)	43 760	45 769	46 246
Wholesale and retail trade (NACE: G)	40 631	40 868	41 938
Information and communication (NACE: J)	54 238	56 457	57 786
Financial and insurance activities (NACE: K)	59 932	61 962	64 436
Public administration (NACE: O)	33 055	34 929	36 657
Education (NACE: P)	35 442	35 763	37 421
Human health and social work act. (NACE: Q)	35 237	36 649	37 713

Figure F42 Average gross monthly wage of ICT professionals in selected occupations (CZK thousand)
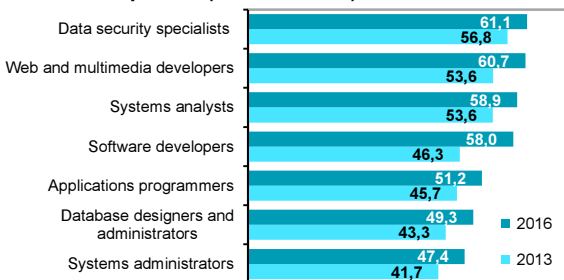
Figure F43 Average gross monthly wage of ICT professionals in selected branches (CZK thousand)
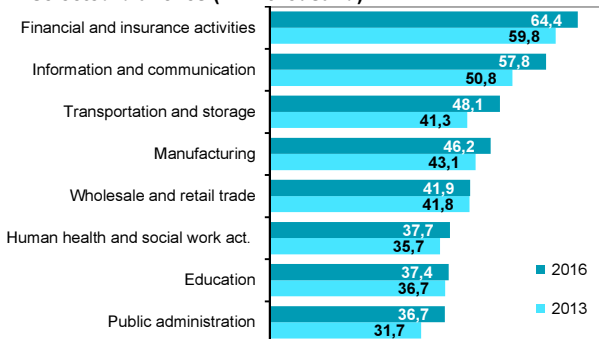
## Tab. F14 Earnings of software and applications developers and analysts in the Czech Republic

Average gross monthly earnings (wage) in CZK

	2014	2015	2016
Total (CZ ISCO 251)	**50 909**	**53 075**	**55 404**
Males	51 923	54 062	56 531
Females	43 596	45 245	47 313
Sphere of activity (earnings):			
Business (wage sphere)	51 493	53 662	55 916
Government (salary sphere)	33 567	35 077	37 206
Age group:			
25-34 years	46 621	48 513	50 215
35-44 years	60 253	62 326	65 529
45-54 years	51 282	53 637	58 844
55+ years	45 941	47 162	52 483
Highest level of education attainment level:			
Master's and Doctoral	55 291	57 285	60 297
Bachelor's and Higher professional	45 064	47 294	50 087
Secondary with A-level examination	44 747	46 164	49 530

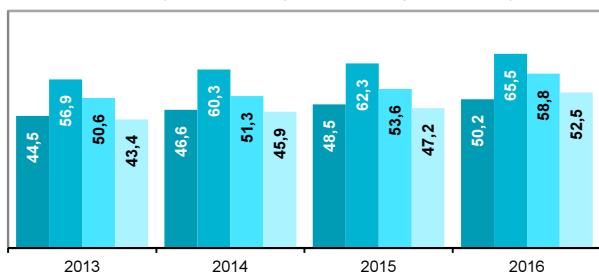## Figure F44 Average gross monthly wage of software and apps developers and analysts by sphere of activity (CZK thous.)

■ Total economy   ■ Business (wage sphere)   Government (salary sphere)
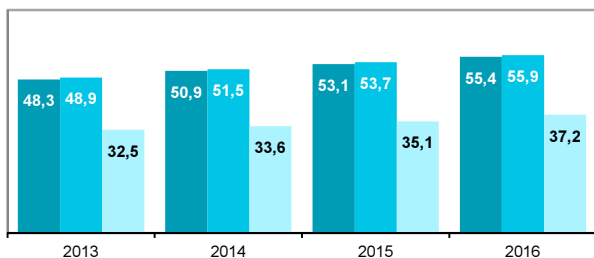
Figure F45 Average gross monthly wage of software and apps developers and analysts by age (CZK thous.)

■ 25-34 years   ■ 35-44 years   ■ 45-54 years   55+ years

Source: CZSO, Structural Earnings Statistics, 2018