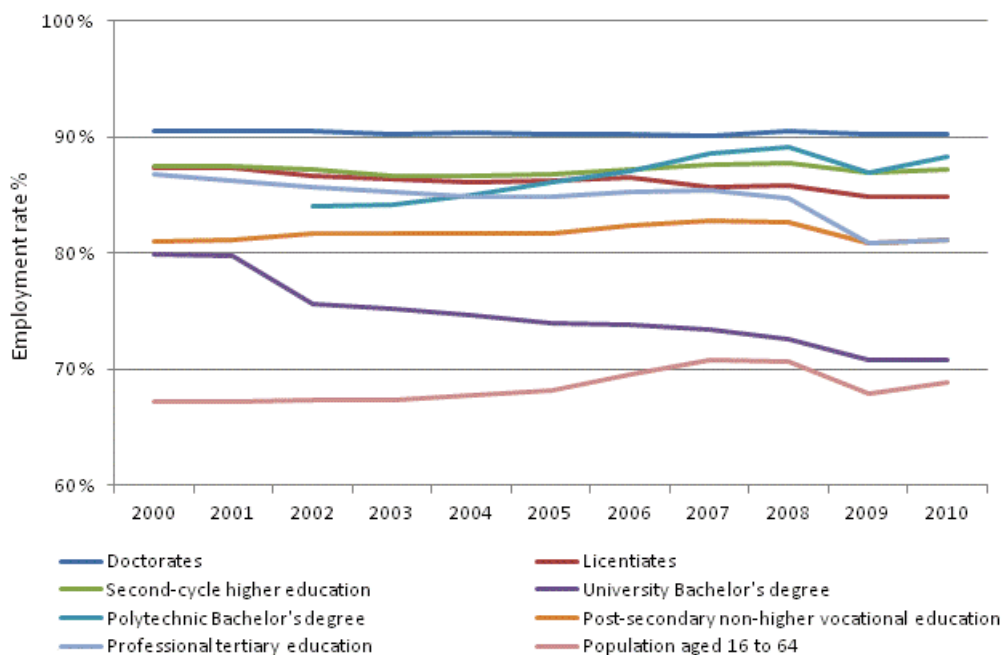


# Human resources of science and technology in 2011

## Employment rate of highly educated people is high

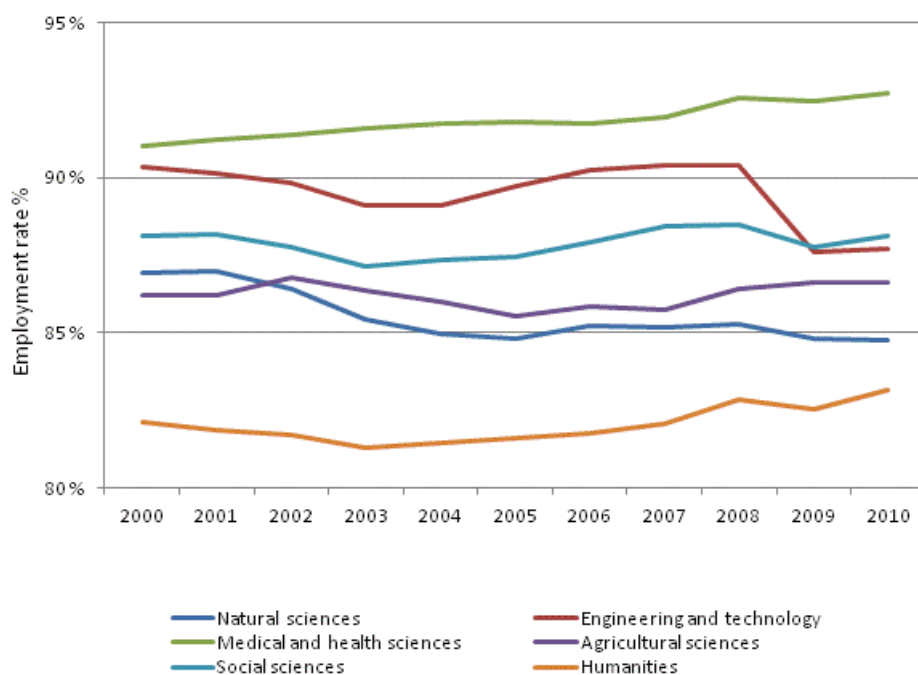
According to Statistics Finland, the employment rate of those with tertiary level degrees was 83.8 per cent in 2010. The figure was 15 percentage points higher than for people aged 15 to 64, on average. The employment rate has, as a rule, improved in all levels of education up to the recession in 2008, after which the employment rate of those with lower-level tertiary qualifications, in particular, decreased temporarily. The employment rate of doctors has remained high, at over 90 per cent throughout the decade. The employment rate of those with polytechnic degrees and higher-level university degrees is also at a record level.

### Employment rate of those with tertiary level degrees by level of qualification in 2000-2010



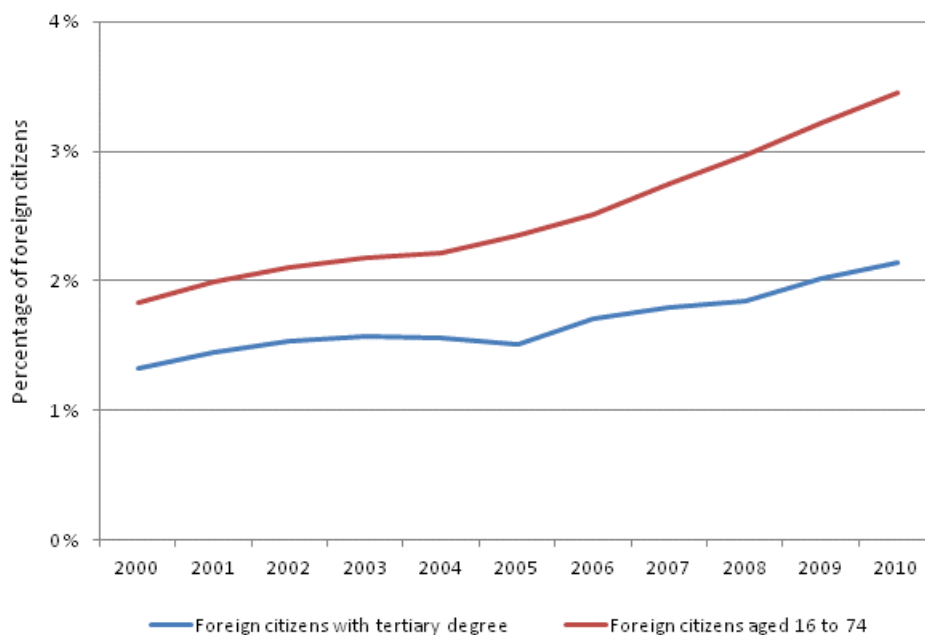
The employment rate of those with higher-level tertiary qualifications and postgraduate level degrees in the field of technology dropped by some three percentage points due to the recession, to 88 per cent. The development of the employment rate among those with degrees from natural sciences has also been descending. Their employment rate decreased by two percentage points during the 2000s, and was slightly under 85 per cent in 2010. The employment rate of those with higher-level tertiary qualifications within the fields of medical and health grew to nearly 93 per cent by the end of the reference period. The employment rate of those who had studied humanities also improved.

**Employment rate of those with higher-level tertiary qualifications and postgraduate level degrees by field of science in 2000-2010**



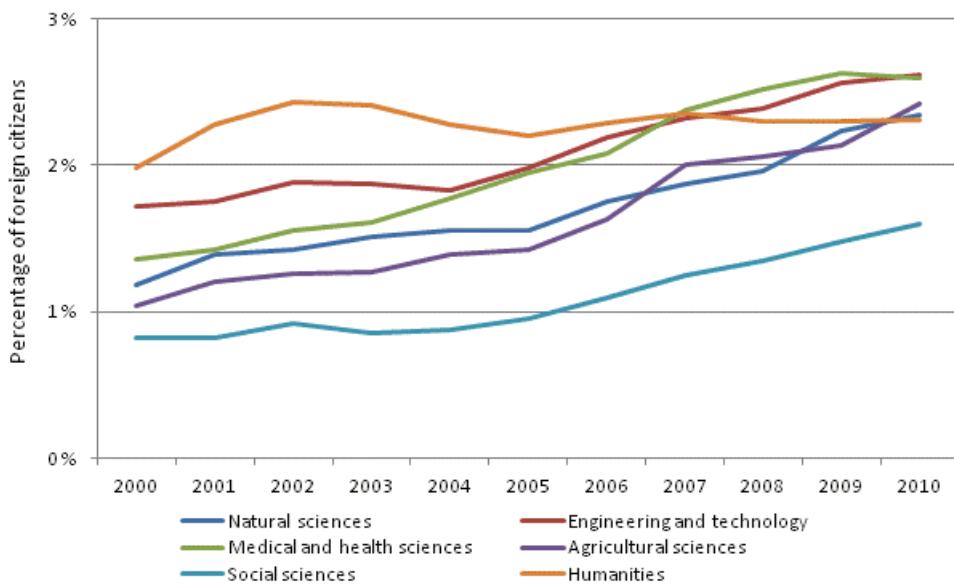
There were 1.19 million people with tertiary level degrees in 2010. Of these, good two per cent were foreign citizens. The share of foreign citizens has grown by one percentage point over a decade. Over the same period, the share of all foreign citizens aged between 16 and 74 has increased by 1.7 percentage points. A majority of the foreigners, 37 per cent, came from EU countries. Thirty per cent came from other European countries, 19 per cent from Asia, and 14 per cent from other parts of the world.

### Share of highly educated foreign citizens of the population in 2000-2010

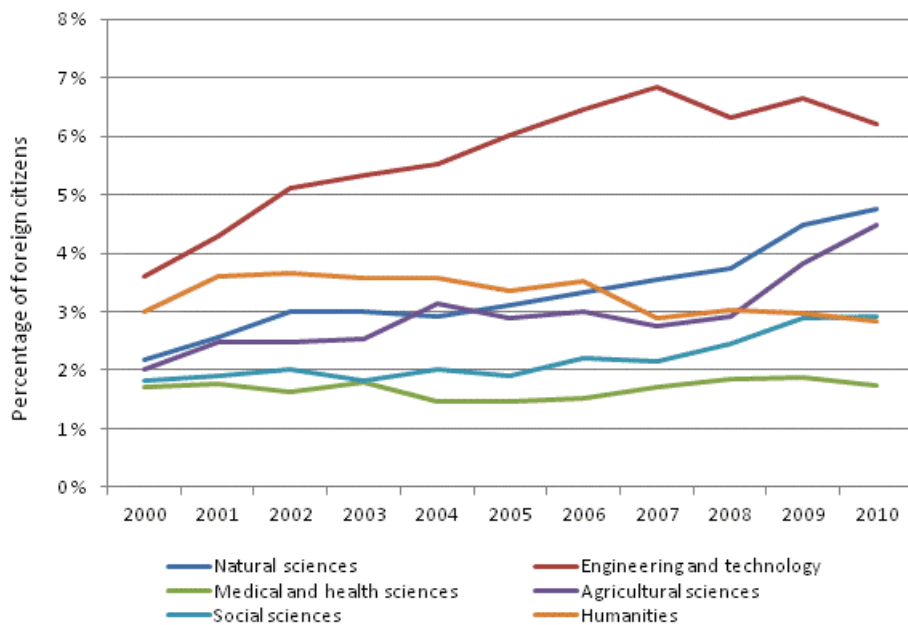


The share of employed foreign citizens with higher-level tertiary qualifications and post-graduate level degrees in their own reference group grew steadily in the 2000s, apart from those with degrees in humanities. Differences between fields of science were small. In the fields of medical and health and technology, foreign citizens with a degree represented a slightly higher share. Social sciences, in turn, attracted in relative terms somewhat fewer foreign citizens to Finland than other fields. This was due to the large number of teachers in the field of social sciences. When looking at the people with the highest level of education, doctors, the situation changes. The share of foreign doctors of science in technology among all doctors of science in technology increased by three percentage points over a decade, stabilising at around 6.5 per cent. The share of foreign doctors of medical sciences has remained low, below two per cent throughout the reference period.

**Share of employed persons among those with higher-level tertiary qualifications and post-graduate level degrees by field of science in 2000-2010**



**Share of employed persons among foreign citizens with doctor's degrees by field of science in 2000-2010**



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## Appendix tables päivitetään uuteen vuoteen

**Appendix table 1. Tertiary degrees by the field of science in 1991, 2000 and 2011**

Tertiary degree	Fields of science	Year (completion of degree)		
		1991	2000	2011
Tertiary degrees total	Fields of science total	38 134	37 225	51 441
Doctorate	Fields of science total	542	1 142	1 653
	Natural sciences	121	245	352
	Engineering and technology	78	152	286
	Medical and health sciences	187	330	361
	Agricultural sciences	13	43	60
	Social sciences	80	234	399
	Humanities	63	138	195
Licentiate	Fields of science total	615	746	203
	Natural sciences	136	177	34
	Engineering and technology	154	145	37
	Medical and health sciences	22	27	5
	Agricultural sciences	18	9	1
	Social sciences	167	269	100
	Humanities	118	119	26
Higher-level tertiary degree	Fields of science total	10 161	12 404	14 752
	Natural sciences	877	1 377	1 543
	Engineering and technology	1 538	2 009	2 191
	Medical and health sciences	1 626	1 661	2 352
	Agricultural sciences	213	219	332
	Social sciences	4 241	4 980	5 912
	Humanities	1 666	2 158	2 422
Other tertiary degrees	Fields of science total	26 816	22 933	34 833

**Appendix table 2. Population with a tertiary degree in 2000 and 2010**

Tertiary degree	Fields of science	2000		2010	
		Total	of which women	Total	of which women
Tertiary degrees total	Fields of science total	959 363	527 502	1 190 974	678 858
Doctorate	Fields of science total	14 111	4 375	25 528	10 573
	Natural sciences	3 226	874	5 616	2 029
	Engineering and technology	1 813	205	3 958	780
	Medical and health sciences	4 564	1 741	7 131	3 652
	Agricultural sciences	619	237	934	412
	Social sciences	2 390	785	5 187	2 421
	Humanities	1 499	533	2 702	1 279

Tertiary degree	Fields of science	2000		2010	
		Total	of which women	Total	of which women
Licentiate	Fields of science total	8 466	2 951	9 002	3 742
	Natural sciences	1 801	596	1 766	678
	Engineering and technology	2 203	337	2 363	449
	Medical and health sciences	226	175	247	193
	Agricultural sciences	202	86	159	65
	Social sciences	2 619	1 073	3 064	1 597
	Humanities	1 415	684	1 403	760
Higher-level tertiary degree	Fields of science total	223 751	111 838	331 616	180 634
	Natural sciences	23 628	11 194	34 935	17 086
	Engineering and technology	38 267	6 043	59 196	12 039
	Medical and health sciences	25 133	15 784	33 663	22 878
	Agricultural sciences	9 009	4 036	9 345	4 683
	Social sciences	89 321	47 120	137 941	81 762
	Humanities	38 393	27 661	56 536	42 186
Other tertiary degrees	Field of science undefined	713 035	408 338	824 828	483 909

**Appendix table 3. Population with a tertiary degree by principal activity in 2010**

Tertiary degree	Field of science	16–74 year old population	In labour force	Employed	Unemployed	Not in labour force
Tertiary degrees total	Fields of science total	1 190 974	956 492	907 088	49 404	234 482
Doctorate	Fields of science total	25 528	21 372	20 793	579	4 156
	Natural sciences	5 616	4 619	4 448	171	997
	Engineering and technology	3 958	3 488	3 399	89	470
	Medical and health sciences	7 131	5 993	5 928	65	1 138
	Agricultural sciences	934	765	737	28	169
	Social sciences	5 187	4 353	4 236	117	834
	Humanities	2 702	2 154	2 045	109	548
Licentiate	Fields of science total	9 002	6 861	6 527	334	2 141
	Natural sciences	1 766	1 265	1 181	84	501
	Engineering and technology	2 363	1 901	1 816	85	462
	Medical and health sciences	247	192	187	5	55
	Agricultural sciences	159	117	112	5	42
	Social sciences	3 064	2 374	2 293	81	690
	Humanities	1 403	1 012	938	74	391
Higher-level tertiary degree	Fields of science total	331 616	281 303	269 227	12 076	50 313
	Natural sciences	34 935	28 993	27 417	1 576	5 942
	Engineering and technology	59 196	51 15	48 676	2 478	8 042
	Medical and health sciences	33 663	29 045	28 685	360	4 618
	Agricultural sciences	9 345	7 510	7 210	300	1 835
	Social sciences	137 941	118 965	114 537	4 428	18 976
	Humanities	56 536	45 636	42 702	2 934	10 900
Other tertiary degrees	Field of science undefined	824 828	646 956	610 541	36 415	177 872

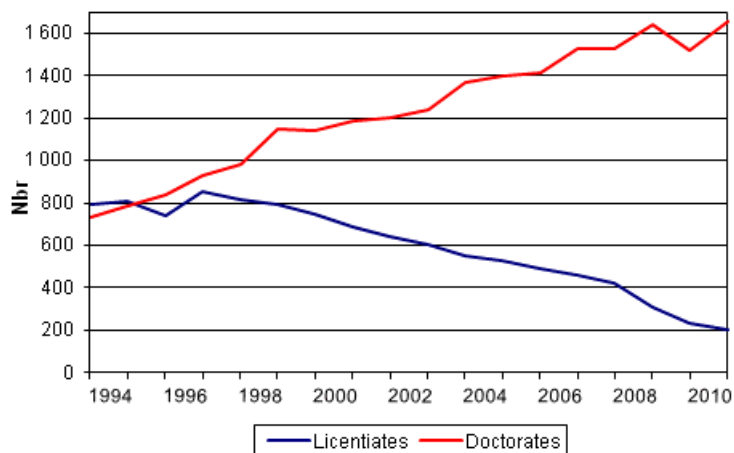
**Appendix table 4. Employed population with tertiary level education in 2010**

Industrial activity 2008	Tertiary degree total	Doctorate	Licensiate	Higher tertiary degree	Other tertiary degree
Toimialat yhteensä	907 088	20 793	6 527	269 227	610 541
Agriculture, forestry and fishing	16 796	83	29	2 279	14 405
Mining and quarrying	1 281	16	9	304	952
Manufacture of food, beverages and tobacco	7 075	45	10	1 458	5 562
Manufacture of textiles and leather	1 953	1	5	256	1 691
Manufacture of wood and paper, printing	13 431	50	41	2 739	10 601
Manufacture of coke and petroleum, rubber and plastic products	4 277	22	28	996	3 231
Manufacture of chemicals and pharmaceutical products	7 160	321	100	2 629	4 110
Manufacture of basic metals and metal products	12 040	47	60	2 426	9 507
Manufacture of computer, electronic and optical products, electrical equipment	27 475	513	252	11 139	15 571
Other machinery and equipment	18 571	128	73	5 277	13 093
Motor vehicles	3 542	15	15	671	2 841
Other manufacturing	12 107	71	50	2 036	9 950
Electricity, gas and water supply and waste management	9 020	66	42	2 162	6 750
Construction	26 989	15	46	2 671	24 257
Whole sale and retail trade, accommodation and food service	92 697	309	158	13 282	78 948
Transportation and storage	23 284	33	30	3 023	20 198
Computer programming and consultancy	28 322	276	166	11 118	16 762
Other information and communication	24 291	172	101	8 096	15 922
Financial and insurance activities	31 008	149	127	8 864	21 868
Research institutes in public sector	8 155	1 804	377	4 019	1 955
Other research and development	3 212	405	85	1 532	1 190
Professional and technical activities	71 740	725	479	25 368	45 168
Administrative and support service activities	27 696	95	52	5 478	22 071
Public administration	74 195	1 041	759	25 816	46 579
Universities	27 168	7 950	1 135	12 785	5 298
Other tertiary level education	12 063	940	760	6 596	3 767
Other education	88 959	577	593	55 674	32 115
Health and social services	174 987	4 037	521	31 842	138 587
Other industries	49 257	632	324	15 959	32 342
Industry unknown	8 337	255	100	2 732	5 250



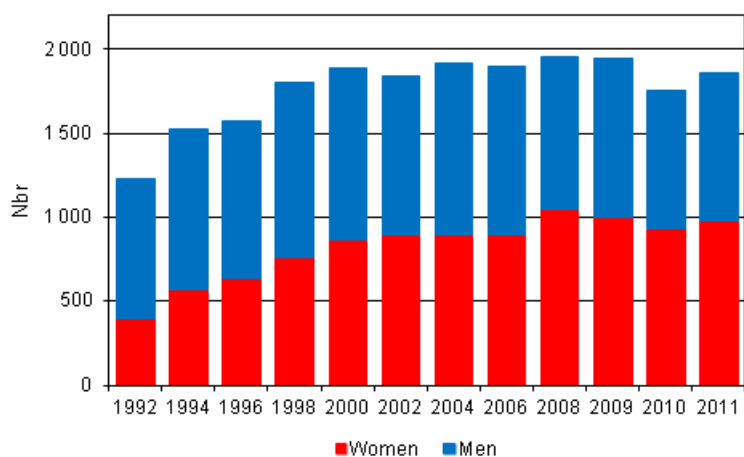
## Appendix figures

**Appendix figure 1. Doctorate and licentiate degrees in 1994 – 2011**



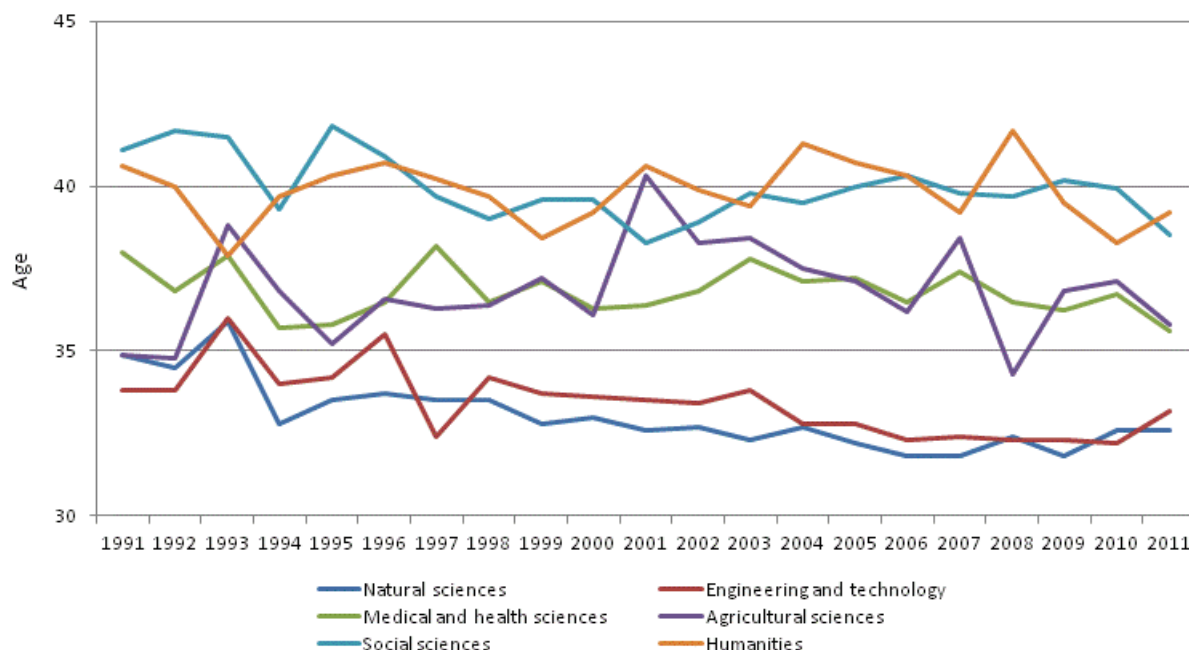
Doctorate degrees attained in 2011 numbered 1,653, which is 133 more than in the previous year. The popularity of licentiate's degree continued to decline. Only 203 licentiate's degrees were completed in 2011.

**Appendix figure 2. Doctorate level degrees by gender 1992 - 2011**



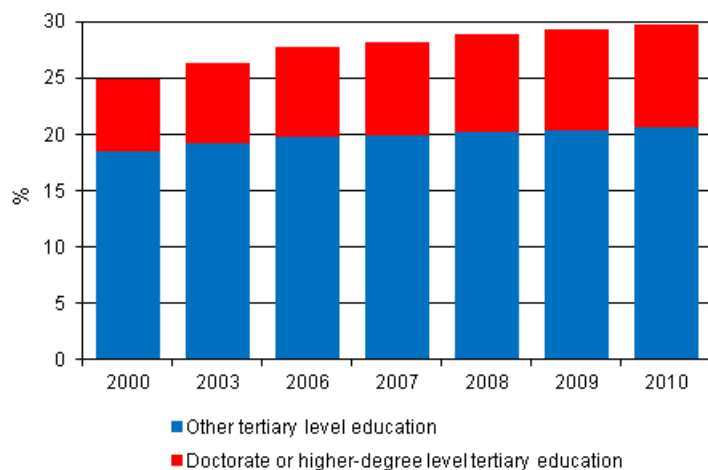
In 2011, 53 per cent of those having completed doctorate degrees were women. As recently as in the early 1990s, less than one-third of the completers of doctorate degrees were women.

**Appendix figure 3. Persons with doctorate degree, median ages by the field of science in 1992 - 2011**



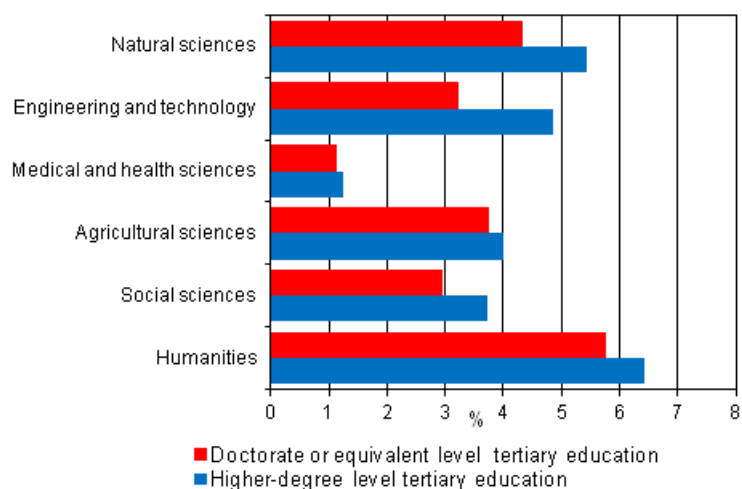
The youngest doctorate degree holders are found in the fields of natural sciences and technology. Their median age is about 33 years. The completers of doctorate degrees in the fields of social sciences, and humanities and arts are about six years older.

**Appendix figure 4. Persons with tertiary degrees as a proportion of the population aged 16 to 74 in 2000 - 2010**



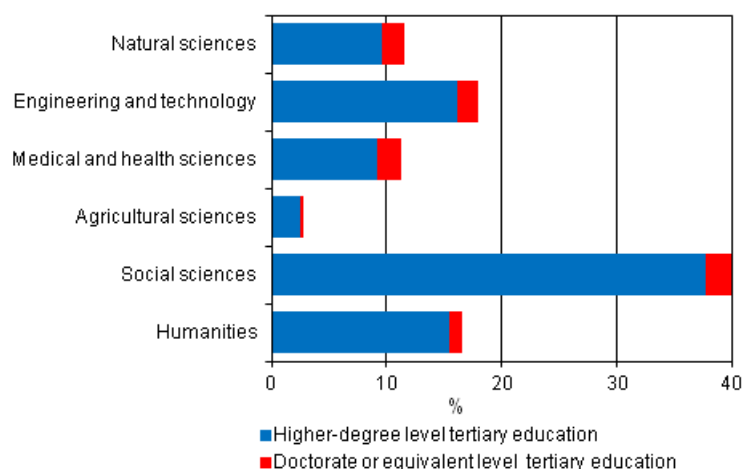
The share of the population with tertiary level degrees has grown steadily at the annual rate of 0.5 per cent throughout the 2000s. In 2010, 29.9 per cent of the population were highly educated. Nine per cent of the population had completed doctorate or higher university level degrees.

**Appendix figure 5. Unemployment rates of persons with doctorate level and higher-degree level tertiary education by the field of science in 2010**



The unemployment rate among the highly educated population was five percentage points lower than for the whole population. In 2010, 5.2 per cent of them were unemployed. At that time, the unemployment rate for the whole population was 10.4 per cent. The unemployment rate for those with higher level university degrees was 4.3 per cent and for those with doctorate level degrees 3.2 per cent. The employment situation among the persons with the highest level of education was the best for those with degrees in medical and health sciences. Only one per cent of them were unemployed. The holders of degrees in humanities and arts, in turn, found it most difficult to become employed. Their unemployment rate was six per cent.

**Appendix figure 6. Persons with doctorate level and higher-degree level tertiary education as a percentage by the field of science in 2010**



Forty per cent of the completers of higher university or doctorate level education had degrees in social sciences. The large proportion of social sciences is explained by the fact that in addition to actual social sciences, this main group also includes education, law and business. The next largest groups, or some 17 per cent, of the highly educated population were found in both humanities and arts, and technology. Those with doctorate level degrees distribute more evenly across the fields of science. The fields of social, medical and health, and natural sciences each had around one-fifth of the persons with doctorate level degrees.

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Source: Human resources of science and technology 2011. Statistics Finland