



CEDEFOP

European Centre for the Development
of Vocational Training

Alphametrics (AM)



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econometrics*

connecting you to the future

Employment patterns by 'Field of Study' and earnings by education

***Skillsnet* technical workshop**

10-11 May, 2012 - Venice

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**wiiw, Vienna
Alphametrics, UK**



Researchcentrum voor Onderwijs
en Arbeidsmarkt

Research Centre for Education
and the Labour Market

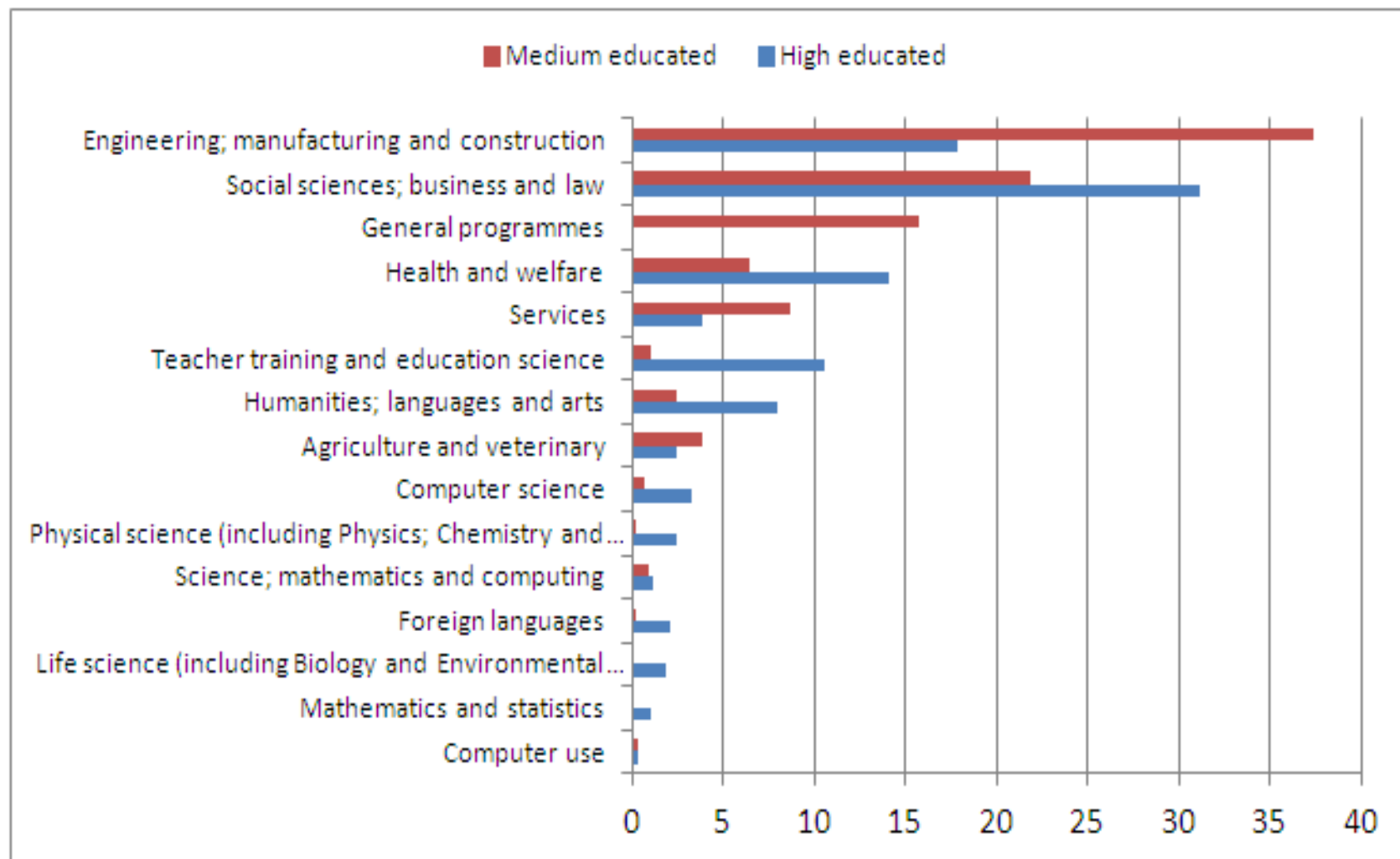
WARWICK INSTITUTE *for*
EMPLOYMENT RESEARCH



LFS data

- ❖ Update of data until 2010
- ❖ Countries: EU-27, plus others
- ❖ NACE rev. 1 versus NACE rev. 2
- ❖ Coverage (demand data)
 - ❖ 33 countries
 - ❖ 60 sectors for NACE rev. 1 and 94 sectors in NACE rev. 2
 - ❖ 149 3-digit occupations
 - ❖ 7 educational groups (ISCED 0-1, 2, 3 short, 3 other, 4, 5, 6)
 - ❖ 5 age groups (15-24, 25-54, 55-64, 65-69, 70+)
 - ❖ 2 sex variables
 - ❖ **Field of study**
- ❖ Coverage (supply data)
 - ❖ 3 employment states
 - ❖ 56 age groups (15-69, 70+)
 - ❖ Education, sex
 - ❖ Field of study

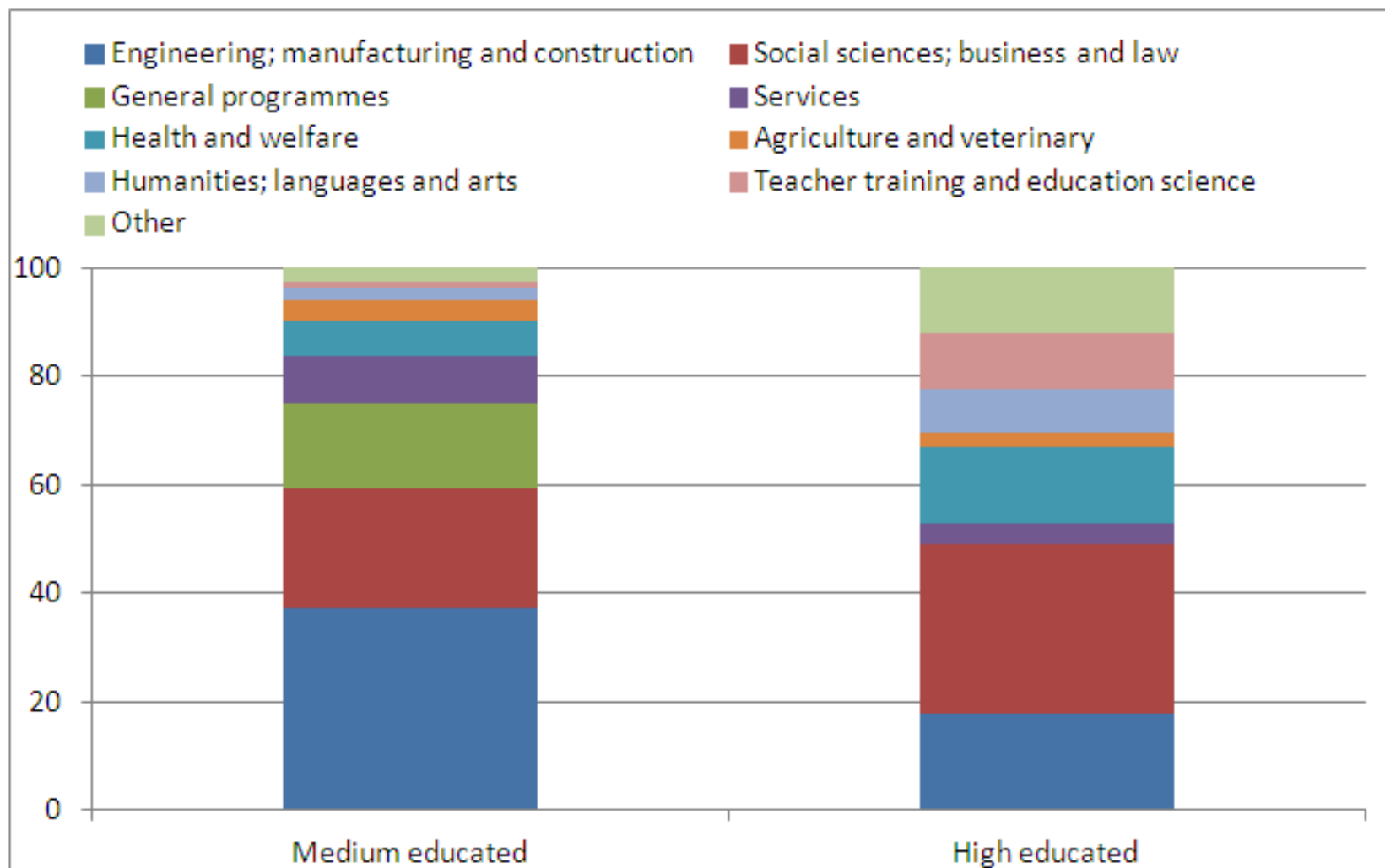
Field of study: Engineering etc. and social sciences dominate EU-27, in % of total, 2010



Note: Not including "No answer" and "Unknown"

Field of study – largest groups

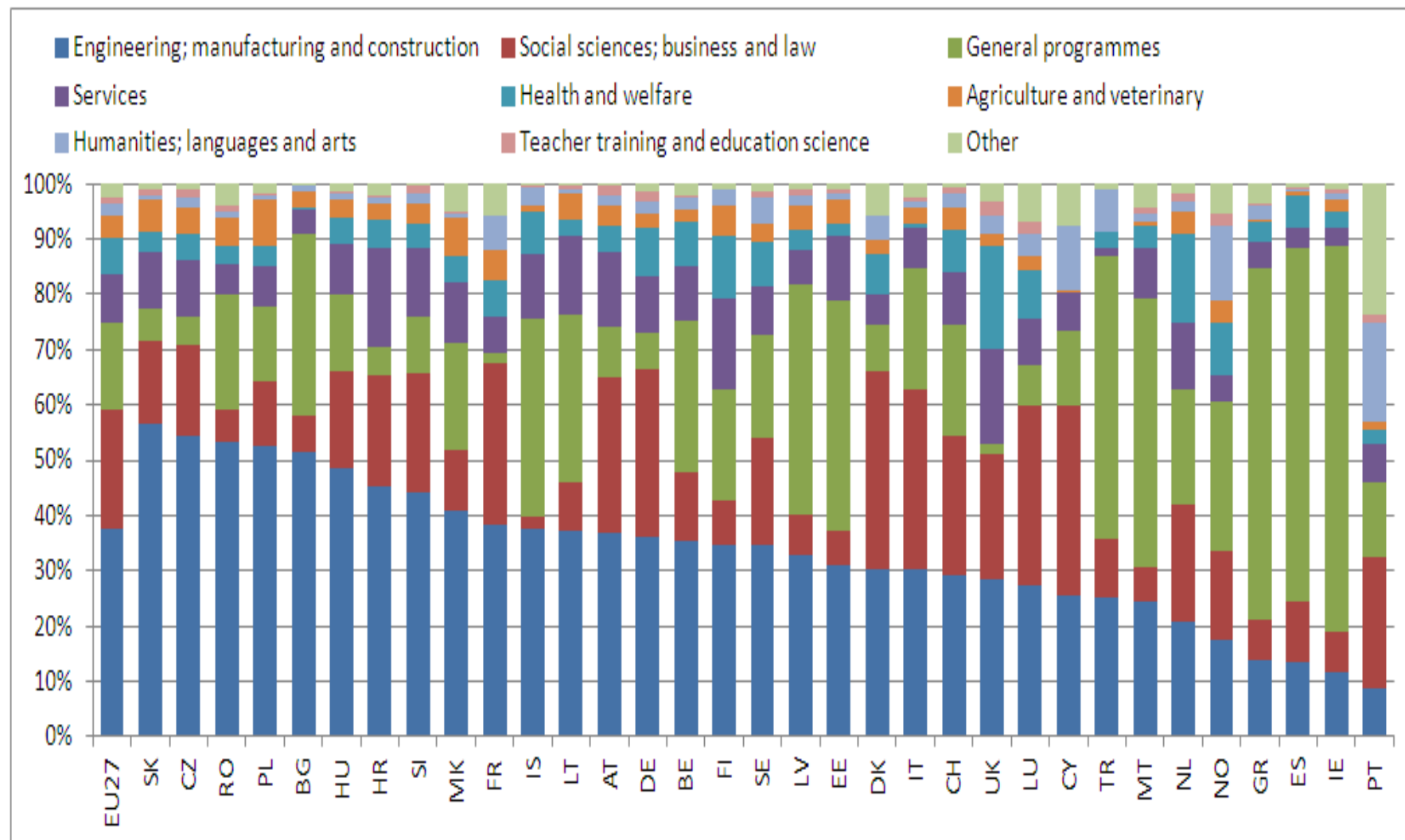
EU-27, in % of total, 2010



Note: Not including "No answer" and "Unknown"

Field of study by country – Medium educated

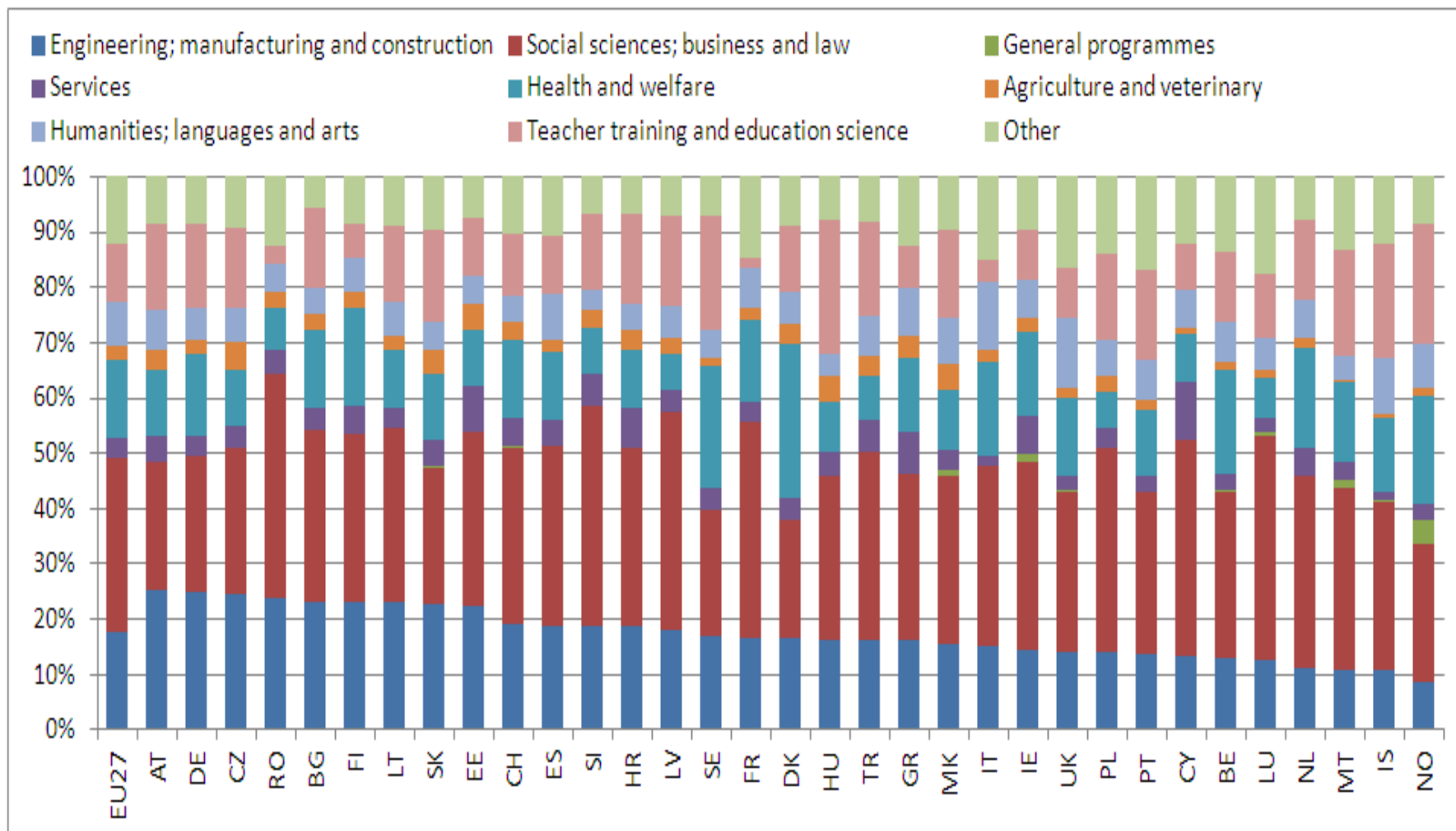
in % of total employed, 2010



Note: Not including "No answer" and "Unknown"

Field of study by country – High educated

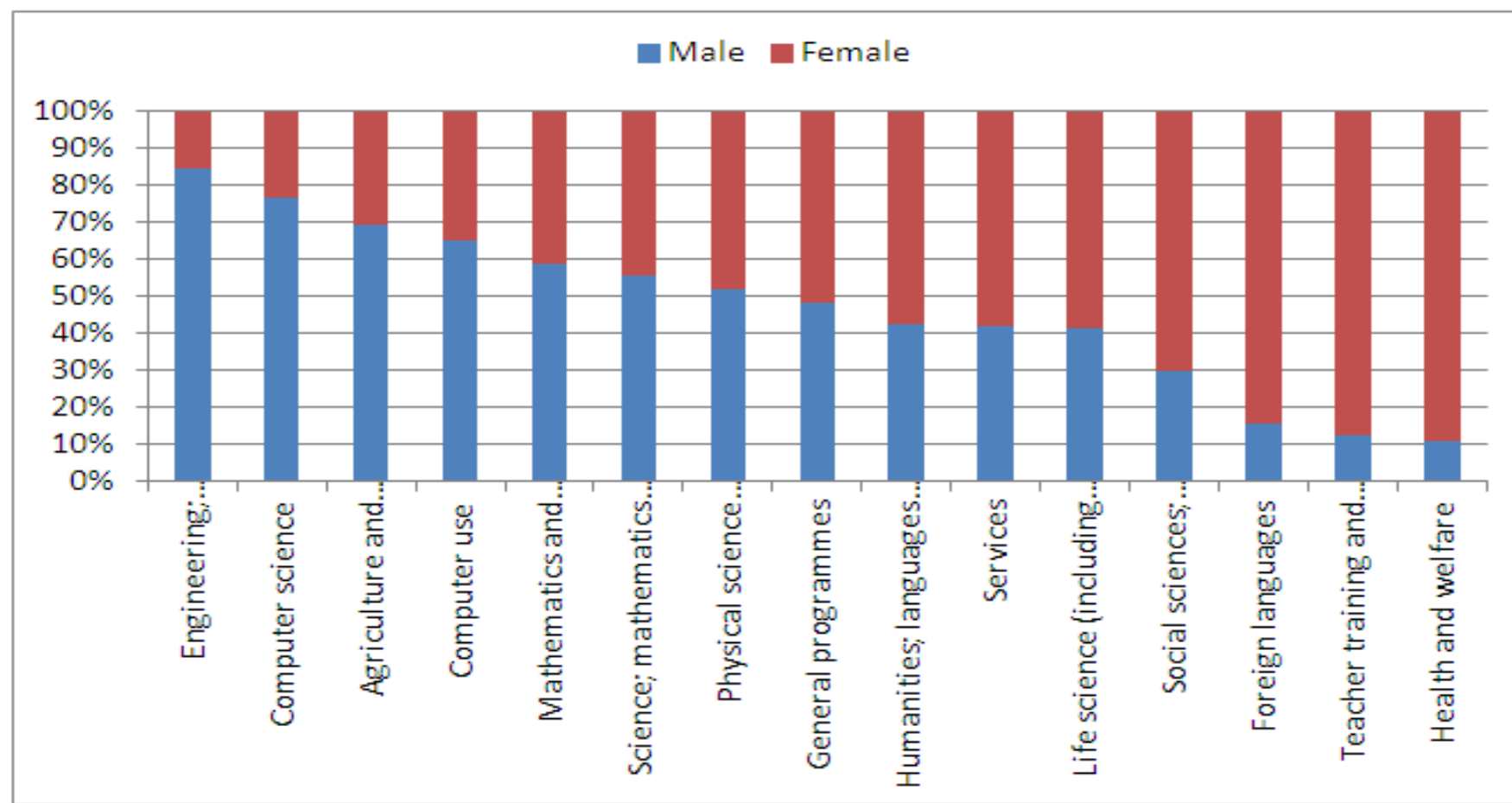
in % of total employed, 2010



Note: Not including "No answer" and "Unknown"

Field of study – by sex

Medium educated
in % of total employed, 2010

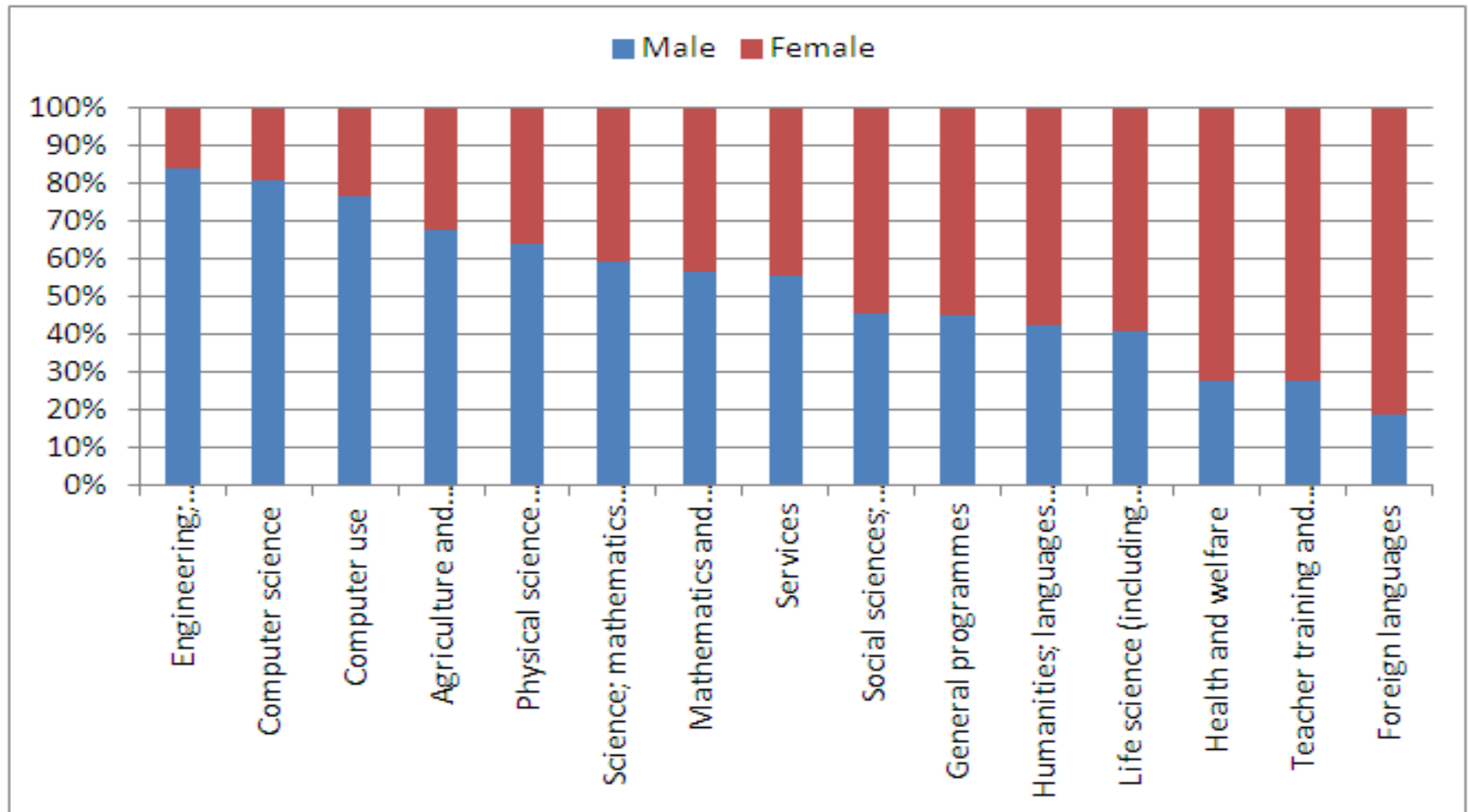


Note: Not including "No answer" and "Unknown"

Field of study – by sex

High educated

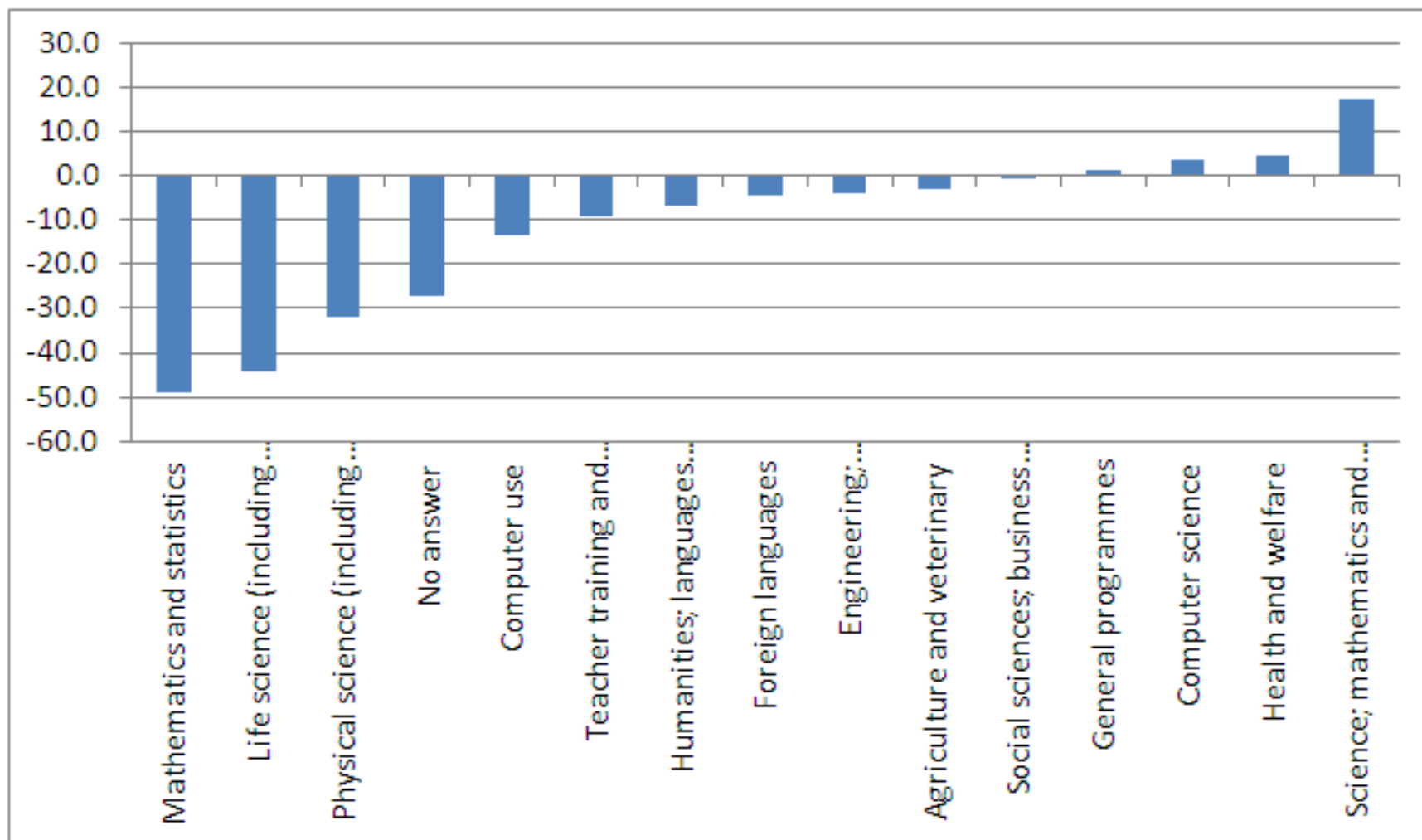
in % of total high educated, 2010



Note: Not including "No answer" and "Unknown"

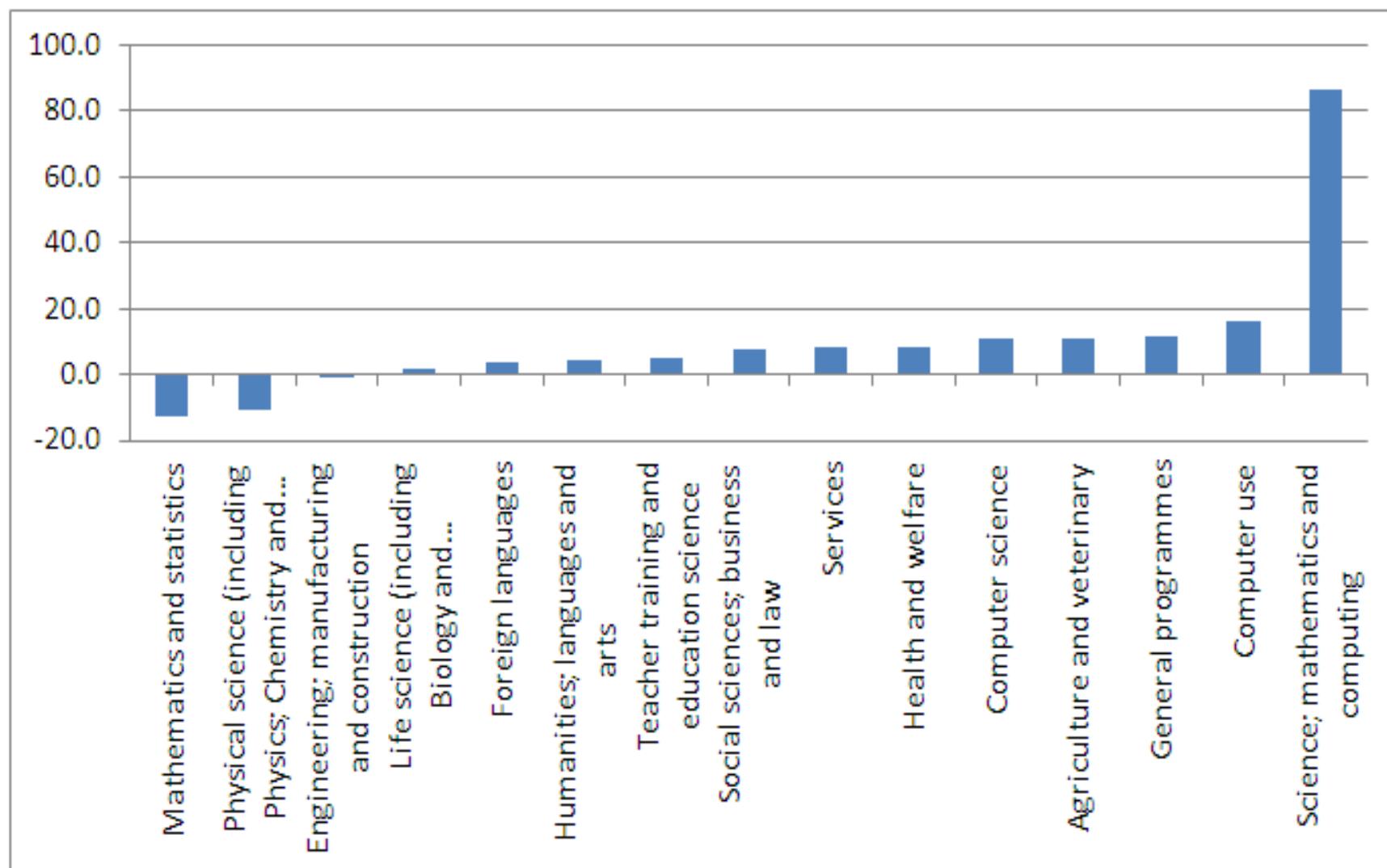
Field of study – 2010 compared to 2008

Medium educated, in %



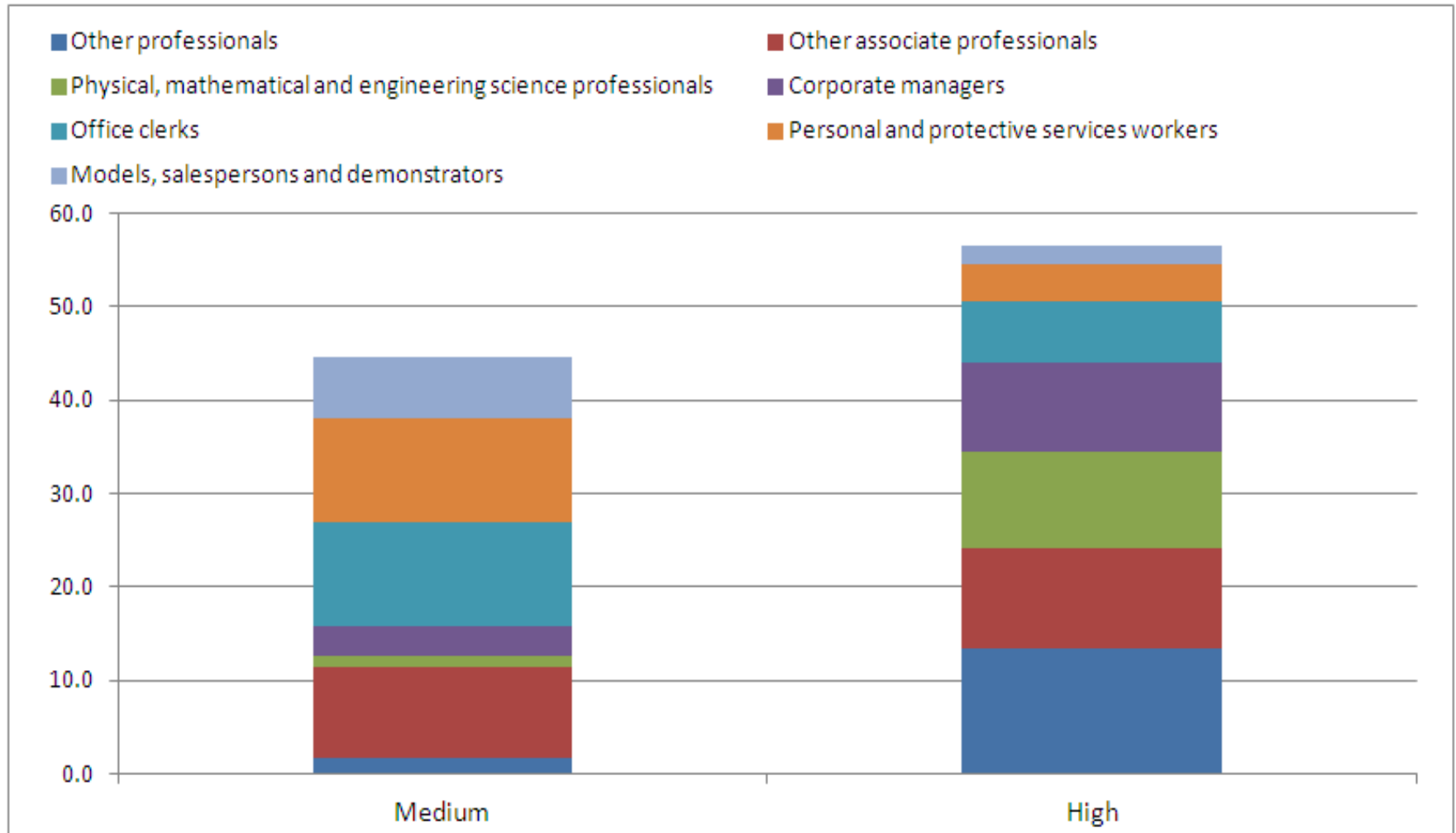
Field of study – 2010 compared to 2008

High educated, in %



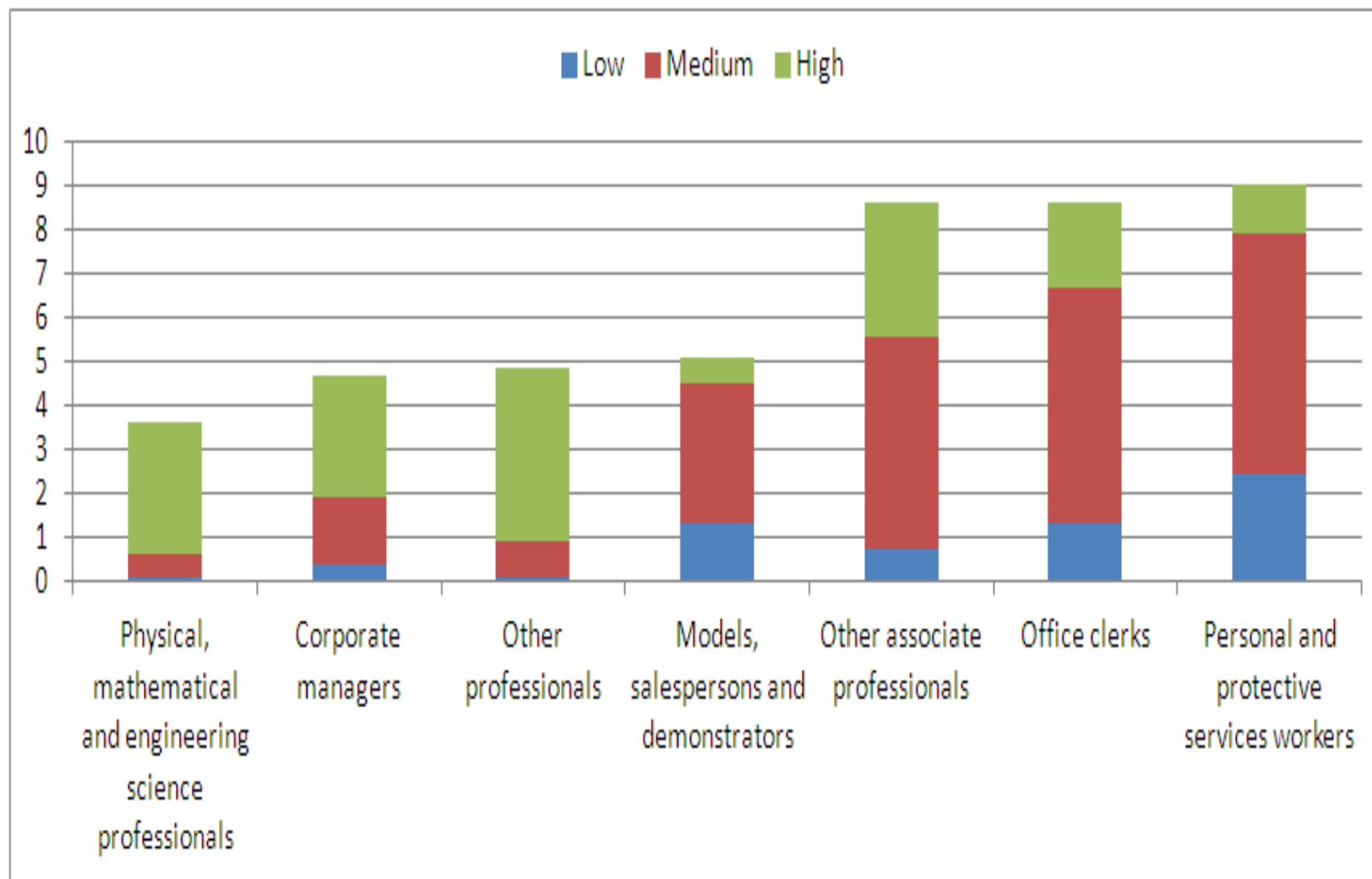
Share of (selected) occupations by education

EU-27, 2010, in %



Share of (selected) occupations in total employment, by education

EU-27, 2010, in %



Occupations by field of study – high educated

in %, EU-27, 2010

Corporate managers (ISCO 12): 58.8%

	Share
Social sciences; business and law	46.9
Engineering etc.	21.3
Humanities; languages and arts	5.1
Health and welfare	4.6
Teacher training and education science	4.1
Other	18.0

Other professionals (ISCO 24): 80.6%

	Share
Social sciences; business and law	62.5
Humanities; languages and arts	11.4
Health and welfare	7.6
Engineering etc.	5.2
Teacher training and education science	3.6
Other	9.7

Physical, mathematical and engineering science professionals (ISCO 21): 82.5%

	Share
Engineering etc.	55.3
Computer science	13.9
Social sciences; business and law	9.3
Physical	5.7
Teacher training and education science	3.6
Other	12.2

Other associate professionals (ISCO 34): 35.6%

	Share
Social sciences; business and law	53.3
Engineering etc.	9.7
Humanities; languages and arts	9.6
Health and welfare	6.6
Teacher training and education science	5.3
Other	15.5

Occupations by field of study – medium educated

in %, EU-27, 2010

Corporate managers (ISCO 12): 33.5%

	Share
Engineering etc.	33.2
Social sciences; business and law	31.2
General programmes	16.2
Services	7.4
Humanities; languages and arts	2.7
Other	9.3

Other professionals (ISCO 24): 17.2%

	Share
Social sciences; business and law	37.3
General programmes	23.9
Engineering etc.	13.9
Humanities; languages and arts	8.2
Health and welfare	4.7
Other	12.0

Physical, mathematical and engineering science professionals (ISCO 21): 15.6%

	Share
Engineering etc.	41.1
General programmes	18.3
Social sciences; business and law	14.6
Computer science	10.1
Science; mathematics and computing	4.3
Other	11.6

Other associate professionals (ISCO 34): 55.7%

	Share
Social sciences; business and law	48.1
General programmes	17.3
Engineering etc.	15.4
Health and welfare	5.8
Services	5.0
Other	8.4

Occupations by field of study – medium educated in %, EU-27, 2010

Other professionals (ISCO 24): 17.2%

Social sciences; business and law	37.3
General programmes	23.9
Engineering etc.	13.9
Humanities; languages and arts	8.2
Health and welfare	4.7
Other	12.0

Office clerks (ISCO 41): 62.5%

	Share
Social sciences; business and law	49.5
General programmes	19.2
Engineering etc.	14.7
Services	6.8
Health and welfare	2.7
Other	7.1

Personal and protective services workers (ISCO 51): 60.4%

	Share
Services	25.8
Health and welfare	20.4
General programmes	16.7
Engineering etc.	16.2
Social sciences; business and law	13.9
Other	7.0

Models, salespersons and demonstrators (ISCO 52): 63.3%

	Share
Social sciences; business and law	38.6
General programmes	21.7
Engineering etc.	19.8
Services	8.5
Health and welfare	3.1
Other	8.3

Occupations by field of study – Comparison across countries in %, 2010

Physical, mathematical and engineering science professionals (ISCO 21)

Germany

Field of Study	Share
Engineering etc.	50.8
Teacher training and education science	13.3
Computer science	10.2
Social sciences; business and law	8.5
Physical science	6.7
Other	10.5

France

Field of study	Share
Engineering etc.	49.4
Computer science	18.7
Social sciences; business and law	14.8
Physical science	5.0
Science; mathematics and computing	2.2
Other	9.9

UK

Field of Study	Share
Engineering etc.	49.6
Computer science	16.3
Social sciences; business and law	10.2
Physical science	9.9
Science; mathematics and computing	3.0
Other	11.0

Italy

Field of Study	Share
Engineering etc.	79.2
Science; mathematics and computing	8.8
Computer science	4.7
Life science	3.0
Health and welfare	1.8
Other	2.5

Occupations by field of study – Comparison across countries

in %, 2010

Other professionals (ISCO 24)

Germany

Field of Study	Share
Social sciences; business and law	55.6
Health and welfare	13.4
Humanities; languages and arts	10.6
Engineering etc.	6.1
Teacher training and education science	5.8
Other	8.5

France

Field of study	Share
Social sciences; business and law	58.9
Humanities; languages and arts	12.0
Engineering etc.	10.2
Computer science	3.7
Health and welfare	3.3
Other	11.9

UK

Field of Study	Share
Social sciences; business and law	56.7
Humanities; languages and arts	16.4
Health and welfare	8.8
Engineering etc.	3.2
Mathematics and statistics	2.8
Other	12.1

Italy

Field of Study	Share
Social sciences; business and law	76.4
Humanities; languages and arts	12.2
Engineering etc.	3.6
Foreign languages	3.0
Science etc.	1.5
Other	3.3

Occupations by field of study – Comparison across countries

in %, EU-27, 2010

Corporate managers (ISCO 12)

Germany		France	
Field of Study	Share	Field of study	Share
Social sciences; business and law	42.7	Social sciences; business and law	66.6
Engineering etc.	31.8	Engineering etc.	13.9
Teacher training and education science	6.3	Services	3.3
Physical science	3.4	Foreign languages	3.0
Services	3.0	Computer science	2.6
Other	12.8	Other	10.6

UK		Italy	
Field of Study	Share	Field of Study	Share
Social sciences; business and law	41.0	Social sciences; business and law	46.5
Engineering etc.	18.4	Engineering etc.	19.5
Humanities; languages and arts	9.4	Health and welfare	10.2
Health and welfare	6.3	Humanities; languages and arts	7.5
Computer science	4.6	Science; mathematics and computing	6.3
Other	20.3	Other	10.0

Next steps

- ❖ Country-specific patterns
- ❖ Differences across countries
- ❖ Supply side

Analysis of earnings by education level

- Data on earnings from LFS – deciles of monthly net pay. No data for 5 MS
- Converted to monetary amounts on basis of EU-SILC gross earnings data
- Analysis confined to full-time employed (working 35 hours or more a week) and aged 25-64 (to exclude those who have not completed education)
- LFS data for 2009 and 2010 combined to increase sample size – EU-SILC data for earnings year 2008 (2009 just become available)
- Mean monthly earnings calculated for those employed with different levels of education (low=basic education; medium =upper secondary, high=tertiary)
- Issues examined :
 - How far does education level affect earnings?
 - Does education level affect earnings with occupations?

Mean monthly earnings of full-time employed, aged 25-64

EUR in terms of Purchasing Power Standards (PPS)

NL	3316	FI	2380	PT	1163
LU	3248	GR	2156	CZ	1093
DK	2840	CY	2093	EE	1018
DE	2729	IT	2014	LV	996
IE	2677	FR	1915	SK	913
UK	2676	ES	1878	LT	906
SE	2605	MT	1815	HU	795
BE	2537	SI	1666	BG	689
AT	2496	PL	1250	RO	532

Mean monthly earnings of full-time employed, aged 25-64

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Mean monthly earnings differences by education level, full-time, 25-64

Upper secondary=100

	Low	High		Low	High
PT	79	173	AT	81	127
HU	79	151	DE	88	127
LV	84	149	MT	85	127
LT	88	144	EE	93	126
SI	82	141	BE	95	124
RO	82	136	FR	93	123
LU	74	135	IE	93	123
CZ	84	134	FI	97	122
BG	87	129	NL	91	120
ES	91	128	IT	90	120
CY	82	128	DK	93	113

Mean monthly earnings differences by education level, full-time, 25-64

Upper secondary=100

	Low	High		Low	High
PT	79	173	AT	81	127
HU	79	151	DE	88	127
LV	84	149	MT	85	127
LT	88	144	EE	93	126
SI	82	141	BE	95	124
RO	82	136	FR	93	123
LU	74	135	IE	93	123
CZ	84	134	FI	97	122
BG	87	129	NL	91	120
ES	91	128	IT	90	120
CY	82	128	DK	93	113

Mean monthly earnings differences by education level, full-time, 25-64

Countries where no LFS data

Upper secondary=100

	High	Low
PL	80	169
UK	85	152
GR	82	144
SK	70	143
SE	94	126

Mean monthly earnings difference by education level, full-time, 25-64

Upper secondary=100

ISCO	DE		FR	
	Low	High	Low	High
10+11+12	90	117	100	117
21	100	121	101	111
22+24	82	118	93	111
31	87	113	96	102
32+34	88	110	99	103
41+42	88	113	99	102
51	78	116	95	104
52	96	113	99	106
71	91	113	98	110
72	91	110	96	111
73+74	92	112	97	102
81+82	96	111	93	112
83	100	102	97	96
91+92+93	93	98	96	99

Mean monthly earnings difference by education level, full-time, 25-64

Upper secondary=100

ISCO	IT		ES	
	Low	High	Low	High
10+11+12	74	115	99	112
21	93	102		103
22+24	89	110	59	107
31	96	102	79	91
32+34	97	106	91	98
41+42	96	105	96	100
51	94	105	91	104
52	100	112	100	99
71	99	95	100	109
72	97	94	97	114
73+74	98	93	97	98
81+82	98	100	93	112
83	98	100	100	104
91+92+93	99	94	97	100

Mean monthly earnings difference by education level, full-time, 25-64
Upper secondary=100

ISCO	NL		PT	
	Low	High	Low	High
10+11+12	90	130	68	115
21	102	101	102	143
22+24	98	105	91	141
31	95	102	87	107
32+34	99	113	94	130
41+42	94	106	94	115
51	95	105	84	120
52	89	117	93	95
71	98	118	96	116
72	96	118	81	88
73+74	96	97	79	100
81+82	92	109	87	93
83	99	90	87	80
91+92+93	98	102	89	113

Mean monthly earnings difference by education level, full-time, 25-64
Upper secondary=100

	CZ		HU	
	Low	High	Low	High
10+11+12	88	126	93	129
21		115	63	122
22+24	84	120	78	124
31	86	116	80	115
32+34	79	113	92	126
41+42	96	113	89	114
51	87	134	92	118
52	99	122	92	111
71	95	157	87	105
72	93	126	84	103
73+74	86	157	78	100
81+82	91	110	87	111
83	99	93	91	117
91+92+93	97	120	93	107

Mean monthly earnings difference by education level, full-time, 25-64
Upper secondary=100

	RO		BG	
	Low	High	Low	High
10+11+12	70	114	85	129
21		139		162
22+24		134	43	138
31	62	101	76	110
32+34	71	112	77	102
41+42	81	109	83	111
51	81	130	78	125
52	95	118	94	113
71	92	109	94	123
72	91	118	95	116
73+74	94	111	91	121
81+82	85	110	86	128
83	92	94	91	121
91+92+93	97	144	92	108