

Overqualified third-level graduates in the Irish labour market



**Maynooth
University**
National University
of Ireland Maynooth



skills mismatch

Overqualification/overeducation/vertical mismatch (this analysis-specifically, with third level qualifications)

- skill gaps, skill shortages
- field of study (horizontal) mismatch
- skill obsolescence.
- Workers, firms, wider economy

Policy relevance

Overeducation/skill underutilization/vertical mismatch can be costly for individuals, potentially undermines productivity and growth at a firm level and by extension at the macro level.

Overqualification can negatively affect workers through lower job satisfaction and is associated with lower returns to education in the form of earnings.

Lower job satisfaction in turn affects firms through staff turnover and productivity.

Overeducation possibly associated with lower productivity as it may represent a shortage of skills supply available for employers.

At a macroeconomic level, national welfare, potential growth and productivity are all undermined without full utilization of skills available within the economy.

From a spending perspective, revenue is potentially wasted on non-productive education with policy implications for utilising and targeting the existing skills of the labour force more efficiently (McGuinness 2006).

Structure

- Part 1: Job evaluation method
- Part 2: Tertiary Education in Ireland
- Part 3: Occupational structure of the Irish Labour Market (by age, gender)
- Part 4: Overqualification (age, gender, occupation, field of study, sector, nationality, employment contract/conditions)

Job Evaluation method

‘The job evaluation method compares individual educational attainment with occupational job entry requirements, that are based on the assessments of professional job analysts in the context of drafting occupational dictionaries (such as DOT or O*NET in the United States, SOC in the UK or, more recently, ESCO, in the EU)’ (Delaney et al. 2020)

ISCO-08 major groups	Skill level
Managers	3+4
Professionals	4 (ISCED level 5a or higher)
Technician and Associate Professional	3 (ISCED level 5b)
Clerical support workers	2 (ISCED level 2, 3, 4)
Service and sales workers	
Skilled agricultural, forestry, & fishery workers	
Craft and related trades workers	
Plant and machine operators, and assemblers	
Elementary occupations	1 (ISCED level 1)

The International Standard Classification of Education ([ISCED 2011](#)) provides a comprehensive framework for organising education programmes and qualification by applying uniform and internationally agreed definitions to facilitate comparisons of education systems across countries.

■ Table 1.3 ■

Comparison of levels of education between ISCED 2011 and ISCED 1997

ISCED 2011		ISCED 1997	
01	Early childhood educational development		–
02	Pre-primary education	0	Pre-primary education
1	Primary education	1	Primary education or first stage of basic education
2	Lower secondary education	2	Lower secondary education or second stage of basic education
3	Upper secondary education	3	(Upper) secondary education
4	Post-secondary non-tertiary education	4	Post-secondary non-tertiary education
5	Short-cycle tertiary education	5	First stage of tertiary education (not leading directly to an advanced research qualification) (5A, 5B)
6	Bachelor's or equivalent level		
7	Master's or equivalent level		
8	Doctoral or equivalent level	6	Second stage of tertiary education (leading to an advanced research qualification)

The framework used for the design and construction of ISCO-08 is based on two main concepts: the concept of the kind of work performed or job, and the concept of skill.

<https://www.ilo.org/public/english/bureau/stat/isco/docs/annex1.pdf>

Skill level -Skill level is defined as a function of the complexity and range of tasks and duties to be performed in an occupation. Skill level is measured operationally by considering one or more of:

- the level of formal education defined in terms of the International Standard Classification of Education (ISCED-97)² required for competent performance of the tasks and duties involved;

Measurement

ISCO-08 major groups	Skill level
Managers	3+4
Professionals	4 (ISCED level 5a or higher)
Technician and Associate Professional	3 (ISCED level 5b)
Clerical support workers	2 (ISCED level 2, 3, 4)
Service and sales workers	
Skilled agricultural, forestry, & fishery workers	
Craft and related trades workers	
Plant and machine operators, and assemblers	
Elementary occupations	1 (ISCED level 1)

Examples of occupations in ISCO categories

- within the broader Managers group include *Legislators, Chief Executive Officers* and *Product Development Managers*.
- *Teachers, Doctors, Nurses, Software Developers* and *Civil Engineers* are examples of occupations classified as Professionals (the largest occupational group)
- Information and Communications Technicians, Building Surveyors, Pilots and Radiographers are in the Associate Professionals and Technicians group.

4 Clerical Support Workers

41 General and Keyboard Clerks

411 General Office Clerks

4110 General Office Clerks

412 Secretaries (general)

4120 Secretaries (general)

413 Keyboard Operators

4131 Typists and Word Processing Operators

4132 Data Entry Clerks

42 Customer Services Clerks

421 Tellers, Money Collectors and Related Clerks

4211 Bank Tellers and Related Clerks

4212 Bookmakers, Croupiers and Related Gaming Workers

4213 Pawnbrokers and Money-lenders

4214 Debt Collectors and Related Workers

5 Services and Sales Workers

51 Personal Services Workers

511 Travel Attendants, Conductors and Guides

5111 Travel Attendants and Travel Stewards

5112 Transport Conductors

5113 Travel Guides

512 Cooks

5120 Cooks

513 Waiters and Bartenders

5131 Waiters

5132 Bartenders

514 Hairdressers, Beauticians and Related Workers

5141 Hairdressers

5142 Beauticians and Related Workers

6 Skilled Agricultural, Forestry and Fishery Workers

61 Market-oriented Skilled Agricultural Workers

611 Market Gardeners and Crop Growers

6111 Field Crop and Vegetable Growers

6112 Tree and Shrub Crop Growers

7 Craft and Related Trades Workers

71 Building and Related Trades Workers (excluding Electricians)

711 Building Frame and Related Trades Workers

7111 House Builders

7112 Bricklayers and Related Workers

7113 Stonemasons, Stone Cutters, Splitters and Carvers

7114 Concrete Placers, Concrete Finishers and Related Workers

7115 Carpenters and Joiners

7119 Building Frame and Related Trades Workers Not Elsewhere Classified

8 Plant and Machine Operators and Assemblers

81 Stationary Plant and Machine Operators

811 Mining and Mineral Processing Plant Operators

8111 Miners and Quarriers

8112 Mineral and Stone Processing Plant Operators

8113 Well Drillers and Borers and Related Workers

8114 Cement, Stone and Other Mineral Products Machine Operators

812 Metal Processing and Finishing Plant Operators

8121 Metal Processing Plant Operators

8122 Metal Finishing, Plating and Coating Machine Operators

813 Chemical and Photographic Products Plant and Machine Operators

8131 Chemical Products Plant and Machine Operators

8132 Photographic Products Machine Operators

9 Elementary Occupations

91 Cleaners and Helpers

911 Domestic, Hotel and Office Cleaners and Helpers

9111 Domestic Cleaners and Helpers

9112 Cleaners and Helpers in Offices, Hotels and Other Establishments

912 Vehicle, Window, Laundry and Other Hand Cleaning Workers

9121 Hand Launderers and Pressers

9122 Vehicle Cleaners

9123 Window Cleaners

9129 Other Cleaning Workers

92 Agricultural, Forestry and Fishery Labourers

921 Agricultural, Forestry and Fishery Labourers

9211 Crop Farm Labourers

9212 Livestock Farm Labourers

9213 Mixed Crop and Livestock Farm Labourers

9214 Garden and Horticultural Labourers

9215 Forestry Labourers

9216 Fishery and Aquaculture Labourers

Table 3 Shares and estimates of tertiary graduates by broad group (ISCED5+), %'s, 000's

	2008	2012	2019
All adults (20+) (%)	28.5	32.6	37
20- 34yrs (%)	32.5	34.1	34.1
Male (%)	26.4	30.1	34.3
Female (%)	30.6	35	39.6
Male, 20-34yrs (%)	26.9	28.8	31
Female, 20-34yrs (%)	38	39.2	37.1
in employment (ILO=1) (%)	38.0	46.8	49.0
in employment (ILO=1) (000's)	797	859	1,107
20-34yrs, in employment (%)	45.6	53.8	52.8
20-34yrs, in employment (000's)	409	358	365
Male, in employment (%)	32.7	41.5	43.6
Male, in employment (000's)	385	407	533
Female, in employment (%)	44.6	52.8	55.3
Female, in employment (000's)	410	452	574

Source: CSO, Labour Force Survey, author's calculations

Share of adults (20+) with third level qualifications-> 28.5-37%

Share of those in employment-> 38.0 – 49.0%

Table 4 Employment rate by age, sex and Educational attainment (ISCED) (%)

	2008	2012	2019
All ISCED 2011 levels			
15-64 yrs	69.7	59.9	69.5
15-39 yrs	70.9	58.3	65.8
Tertiary education (levels 5-8)			
15-64 yrs	85.4	79.8	85.2
15-39 yrs	87.1	81.5	87.1
Males			
All ISCED 2011 levels			
15-64 yrs	77.0	63.7	75.0
15-39 yrs	75.6	59.6	69.4
Tertiary education (levels 5-8)			
15-64 yrs	85.4	79.8	85.2
15-39 yrs	91.1	84.3	90.9
Females			
All ISCED 2011 levels			
15-64 yrs	62.2	56.2	64.2
15-39 yrs	66.1	57.0	62.3
Tertiary education (levels 5-8)			
15-64 yrs	81.4	76.7	81.5
15-39 yrs	84.2	79.3	84.1

Source: CSO, Labour Force Survey, author's calculations

Table 5 ISCO breakdown of Irish Employment (%)

	2008	2012	2019
1. Managers	6.7	8.3	8.4
2. Professionals	20.7	24.1	24.2
3. Technicians and Associate Professionals	10.1	11.0	11.5
4. Clerical Support Workers	9.9	9.3	8.9
5. Services and Sales Workers	18.6	19.7	19.6
6. Skilled Agricultural, Forestry and Fishery Workers	4.8	4.8	3.7
7. Craft and Related Trades Workers	11.9	8.4	9.1
8. Plant and Machine Operators and Assemblers	6.5	5.5	6.0
9. Elementary Occupations	10.8	8.9	8.6

Source: CSO, Labour Force Survey, author's calculations

Table 6 ISCO breakdown (20-34) (%)

	2008	2012	2019
1. Managers	4.5	5.3	4.4
2. Professionals	21.6	24.5	25.7
3. Technicians and Associate Professionals	10.6	11.4	11.1
4. Clerical Support Workers	11.2	10.0	9.2
5. Services and Sales Workers	20.4	24.6	25.0
6. Skilled Agricultural, Forestry and Fishery Workers	1.8	1.4	1.4
7. Craft and Related Trades Workers	13.5	9.2	9.1
8. Plant and Machine Operators and Assemblers	5.4	4.1	4.5
9. Elementary Occupations	11.1	9.6	9.6

Source: CSO, Labour Force Survey, author's calculations

**Table 9 Managers, Professionals and Technicians and Associate prof's
(% of employment)**

	2008	2012	2019
20+	37.5	43.4	44.1
20-34	36.8	41.1	41.2
Men	34.4	41.8	42.3
Women	41.4	45.2	46.2
ISCO 4-9			
All	62.5	56.6	55.9
20-34	63.2	58.9	58.8
Men	65.6	58.2	57.7
Women	58.6	54.8	53.8

Source: CSO, Labour Force Survey, author's calculations

This indicator is now used in official statistics as an experimental indicator to measure over-qualification. Although not yet methodologically grounded, it gives useful insight and the intuitive reasoning is straightforward (Eurostat).

Whole economy
 (% of people aged 20-64 with tertiary education and working in ISCC)

	2008	2012	2019
EU27(from 2020)	20.4	20.7	21.9
BE	22.8	21.5	20.0
BG	20.2	24.0	22.9
CZ	7.5	12.5	15.1
DK	14.6	12.0	13.5
DE	21.1	18.0	18.2
EE	27.6	26.8	23.1
IE	30.0	28.8	30.0
EL	19.9	24.5	32.3
ES	33.3	35.2	36.6
FR	20.7	20.0	21.7
HR	11.3	13.0	14.3
IT	15.1	19.5	20.2
CY	32.0	33.4	33.6
LV	18.1	21.0	21.5
LT	20.1	15.4	24.4
LU	4.0	4.2	4.8
HU	11.4	14.3	15.0
MT	6.7	12.4	18.2
NL	13.8	16.0	16.3
AT	22.7	23.5	28.8
PL	16.2	19.0	18.9
PT	14.7	12.1	14.8
RO	9.4	14.5	16.1
SI	7.1	11.6	16.0
SK	9.8	17.3	22.6
FI	17.8	19.0	17.7
SE	14.7	16.0	15.3
IS	8.5	11.1	13.9
NO	13.1	12.9	16.2
CH	20.9	21.1	19.8
ME	.	17.8	15.8
MK	.	19.6	26.3
RS	.	.	26.9
TR	.	29.6	35.3

https://ec.europa.eu/eurostat/documents/7894008/9596077/Methodological_note.pdf

Note: only workers are overqualified

Table 11 Overqualification rate
(% with tertiary qualifications in ISCO 4-9 positions)

	2008	2012	2019
All (20-64)	30.4	29.0	30.1
Under 35's	37.2	36.4	35.0
Men	30.6	27.7	28.6
Women	30.3	30.1	31.4

Source: CSO, Labour Force Survey, author's calculations

Table 12 Overqualification (ooo's)

	2008	2012	2019
All (20+)	242.6	249.4	333.5
Under 35's	152.2	130.4	127.9
Men	123.3	115.3	156.3
Women	130.7	139.5	185.7

Source: CSO, Labour Force Survey, author's calculations

Remember: not included are Potential Labour Supply

Table 13 Field of Education (ISCED-F), 2019

	All (Leaving cert+)	All (tertiary grads)
Generic programmes and qualifications	34.9	2.2
Education	6.4	10.8
Arts and humanities	5.2	9.2
Social sciences, journalism and information	1.8	3.3
Business, administration and law	16.3	26.6
Natural sciences, mathematics and statistics	3.3	6.3
Information and Communication Technologies (ICTs)	4.5	7.3
Engineering, manufacturing and construction	8.8	10.2
Agriculture, forestry, fisheries and veterinary	2.3	2.3
Health and welfare	11.4	17.0
Services	5.2	4.7

Source: CSO, Labour Force Survey, author's calculations

Table 14 Field of Education (ISCED-F), Tertiary graduates (ISCED 5+), 2019

	Male	Female	under 35	under 35, Male	under 35, Female
Generic programmes and qualifications	2.2	2.3	2.4	2.9	1.9
Education	5.9	14.9	10.3	5.7	14.1
Arts and humanities	7.7	10.4	9.6	8.4	10.6
Social sciences, journalism and information	2.3	4.2	3.6	2.8	4.2
Business, administration and law	27.9	25.5	25.9	26.3	25.6
Natural sciences, mathematics and statistics	7.1	5.6	7.6	7.4	7.9
Information and Communication Tech... (ICTs)	11.5	3.9	8.9	14.8	4.0
Engineering, manufacturing and construction	19.1	2.7	8.8	15.6	3.1
Agriculture, forestry, fisheries and veterinary	3.4	1.4	2.4	3.5	1.5
Health and welfare	8.7	24.0	16.1	9.4	21.7
Services	4.2	5.2	4.5	3.3	5.5

Source: CSO, Labour Force Survey, author's calculations

Table 15 Overqualification rates by Field of Education, 2019 (%)

	All	Male	Female	u35's
Generic programmes and qualifications	39.2	39.1	39.4	45.7
Education	19.0	14.0	20.6	22.3
Arts and humanities	34.9	32.0	36.8	46.2
Social sciences, journalism and information	34.4	36.8	33.3	37.3
Business, administration and law	32.1	25.7	38.1	38.7
Natural sciences, mathematics and statistics	23.7	21.7	26.1	26.9
Information and Communication Tec... (ICTs)	22.7	20.8	28.2	22.5
Engineering, manufacturing and construction	33.3	34.0	28.7	35.4
Agriculture, forestry, fisheries and veterinary	59.4	65.6	46.1	72.4
Health and welfare	21.8	22.2	21.6	25.6
Services	53.6	42.7	61.8	62.2

Source: CSO, Labour Force Survey, author's calculations

Table 17 Overqualification by sector, Industry

	2008	2012	2019
Employment	302,275	235,525	287,750
% ISCO 4-9	70.8	63.6	64.4
% Employed with tertiary education	32.4	40.7	44.6
Overqualification rate	42.1	35.2	39.9
Overqualification	41,263	33,733	51,179
Share of sector under 35	42.9	36.3	29.8
% ISCO 4-9 (under 35's)	74.3	67.3	68.4
% Employed with tertiary education (under 35's)	38.9	47.3	48.7
Overqualification rate (under 35's)	49.1	40.6	44.2
Overqualification (under 35's)	24,800	16,392	18,416

Source: CSO, Labour Force Survey, author's calculations

64.4% of jobs do not require third level qualifications (ISCO 4-9)

44.6% of workers in the sector have third level qualifications

39.9% of workers with tertiary qualifications in the sector are working in jobs with lower training requirements

Table 19 Overqualification by sector, Wholesale and retail trade; repair of motor vehicles

	2008	2012	2019
Employment	326,100	275,000	303,400
% ISCO 4-9	76.4	72.5	75.4
% Employed with tertiary education	20.6	29.7	28.1
Overqualification rate	58.0	51.3	55.7
Overqualification	38,861	41,857	47,479
Share of sector under 35	50.9	45.5	37.8
% ISCO 4-9 (under 35's)	78.2	76.7	82.9
% Employed with tertiary education (under 35's)	27.6	37.8	30.0
Overqualification rate (under 35's)	65.3	60.9	66.4
Overqualification (under 35's)	29,891	28,730	22,799

Source: CSO, Labour Force Survey, author's calculations

Table 21 Overqualification by sector, Accommodation and food service activities

	2008	2012	2019
Employment	136000	123750	178100
% ISCO 4-9	68.3	66.7	67.6
% Employed with tertiary education	25.1	30.7	29.9
Overqualification rate	48.2	49.5	52.5
Overqualification	16,428	18,792	27,912
Share of sector under 35	59.6	56.7	49.9
% ISCO 4-9 (under 35's)	72.2	73.6	77.5
% Employed with tertiary education (under 35's)	33.2	36.6	32.5
Overqualification rate (under 35's)	57.7	60.5	69.2
Overqualification (under 35's)	15,557	15,538	19,976

Source: CSO, Labour Force Survey, author's calculations

Table 28 Overqualification by sector Human health and social work activities

	2008	2012	2019
Employment	242000	256500	290000
% ISCO 4-9	43.8	43.9	44.7
% Employed with tertiary education	56.5	62.0	63.5
Overqualification rate	17.1	20.3	22.2
Overqualification	23,341	32,368	40,892
Share of sector under 35	34.4	28.9	26.8
% ISCO 4-9 (under 35's)	42.0	44.8	45.1
% Employed with tertiary education (under 35's)	66.6	69.5	69.3
Overqualification rate (under 35's)	22.8	28.8	26.3
Overqualification (under 35's)	12,659	14,810	14,161

Source: CSO, Labour Force Survey, author's calculations

Table 33 Overqualification by Nationality, Central and Eastern bloc of EU members

	2008	2012	2019
% ISCO 4-9	87.1	85.2	77.5
% Employed with tertiary education	31.8	37.4	39.7
Overqualification rate	72.0	71.3	59.1
20-34 yrs			
% ISCO 4-9	86.0	83.6	77.11
% Employed with tertiary education	34.7	39.9	36.1
Overqualification rate	72.1	71.8	56.7

Source: CSO, Labour Force Survey, author's calculations

Table 35 Overqualification rate:
(% of people aged 20+ with tertiary education in ISCO 4-9)

	2008	2012	2019
Part-time workers	41.9	46.1	45.9
Part-time due to caring responsibilities	37.0	33.5	42.9
Underemployed	57.0	58.3	58.5
Would like more hours	38.2	38.7	42.2
Temporary contracts	36.8	37.0	38.3
Involuntarily temporary	37.0	41.0	37.4

Source: CSO, Labour Force Survey, author's calculations

Overqualified third level graduates rates by Occupation	2008	2012	2019
Clerical support workers	33.58	41.03	48.95
Service and Sales Workers	21.56	27.58	28.03
Skilled Agricultural, Forestry and Fishing workers	10.24	10.56	15.12
Craft and Related Trades Workers	17.14	20.73	20.01
Plant and Machine Operators and Assemblers	9.43	13.6	18.82
Elementary Occupations	10.47	15.29	16.45

Table 5 ISCO breakdown of Irish Employment (%)

	2008	2012	2019
1. Managers	6.7	8.3	8.4
2. Professionals	20.7	24.1	24.2
3. Technicians and Associate Professionals	10.1	11.0	11.5
4. Clerical Support Workers	9.9	9.3	8.9
5. Services and Sales Workers	18.6	19.7	19.6
6. Skilled Agricultural, Forestry and Fishery Workers	4.8	4.8	3.7
7. Craft and Related Trades Workers	11.9	8.4	9.1
8. Plant and Machine Operators and Assemblers	6.5	5.5	6.0
9. Elementary Occupations	10.8	8.9	8.6

Source: CSO, Labour Force Survey, author's calculations

Clerical support workers			
	2008	2012	2019
levels 0- 2	11.24	8.2	6.57
levels 3 and 4	56.76	52.64	46.22
Levels 5-8	32.01	39.16	47.2
Mode	30	32	600
	19.20%	33.50%	30.10%
Service and Sales Workers			
	2008	2012	2019
levels 0- 2	29.61	21.37	13.94
levels 3 and 4	49.49	51.84	58.77
Levels 5-8	20.89	26.79	27.3
Mode	30	32	304
	20.70%	33.50%	31.10%

■ Table 1.3 ■

Comparison of levels of education between ISCED 2011 and ISCED 1997

ISCED 2011		ISCED 1997	
01	Early childhood educational development		–
02	Pre-primary education	0	Pre-primary education
1	Primary education	1	Primary education or first stage of basic education
2	Lower secondary education	2	Lower secondary education or second stage of basic education
3	Upper secondary education	3	(Upper) secondary education
4	Post-secondary non-tertiary education	4	Post-secondary non-tertiary education
5	Short-cycle tertiary education	5	First stage of tertiary education (not leading directly to an advanced research qualification) (5A, 5B)
6	Bachelor's or equivalent level		
7	Master's or equivalent level		
8	Doctoral or equivalent level	6	Second stage of tertiary education (leading to an advanced research qualification)

Thanks!



**Maynooth
University**
National University
of Ireland Maynooth

