NI Skills Barometer 2019

Information pack

Ulster University Economic Policy Centre

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NI Skills Barometer 2019

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Acronyms and NQF qualification classifications

Acronyms

Acronym	Full Name
NI	Northern Ireland
UK	United Kingdom
UUEPC	Ulster University Economic Policy Centre
DfE	Department for the Economy
HE	Higher Education
FE	Further Education
NQF	National Qualification Framework
JACS	Joint Academic Coding System
SSA	Sector Subject Area
SIC	Standard Industrial Classification
SOC	Standard Occupational Classification
GCSE	General Certificate of Secondary Education
HESA	Higher Education Statistics Agency
OECD	Organisation for Economic Cooperation and Development

NQF scale

NQF level	Description
Level 8	PhD (or equivalent)
Level 7	Masters (or equivalent)
Level 6	Undergraduate degree (or equivalent)
Level 4-5	Foundation degree/HND/HNC (or equivalent)
Level 3	A-level (or equivalent)
Level 2	5 GCSEs A*-C (or equivalent)
Level 1	5 GCSEs D-G (or equivalent)
Level 0	Below NQF level 1/no qualifications

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Introduction

NI Skills Barometer background and economic modelling approach

NI Skills Barometer background

NI Skills Barometer 2019

Ulster University Economic Policy Centre (UUEPC) were commissioned by Department for the Economy (DfE) to report on the quantum of future skill requirements for Northern Ireland (NI).

The NI Skills Barometer involved the development of an economic model to forecast future skills needs and skills gaps by qualification level, subject area and sector. The project was originally commissioned in 2015 and has been updated at two year intervals.

The quantitative findings of the research have benefitted a wide range of stakeholders including: careers advisors, young people and parents; teachers and schools; business groups; DfE; and wider government.

This update report is the third publication in relation to the NI Skills Barometer and provides contextual analysis which underpins skills forecasts, outputs from the assessment of future skills demand, a review of supply side indicators and overall skill balances.

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Methodological approach
Identify demand and supply side factors

Demand side indicators

- **Demand for jobs (by sector and occupation)**
  - *Expansion demand*
  - *Replacement demand*
- **Demand for skills (by NQF and subject area)**
  - *Current skills mix*
  - *Projected skills mix*

Plan for high growth

Supply side indicators

- **Supply of people (by age)**
  - *Demographics of NI population*
- **Supply of qualifications (by subject area and NQF)**
  - *Gross supply*
  - *Net supply*
  - *Effective supply*

Supply/ Demand (im)balance

- **Identify the annual average supply gap**
  - *By NQF level*
  - *By subject studied (JACS and SSAs)*

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Modelling approach – high growth

Skills planning under an aspirational scenario

It is prudent to plan for skill needs in an aspirational nature based on economic ambitions of an economy. The economic cost of skills shortages and skills mismatches can be substantial.

For example, if businesses are unable to meet their demand for skilled labour the competitiveness of an economy will fall, productive capacity decreases ultimately dampening future job growth.

Likewise, it is important to have in place measures to offset any potential individual costs if policy ambitions are not met leading to an oversupply of skills.

For example, a contingency plan may include conversion courses for redundant workers or training rights for young people unable to secure employment after graduation.

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UUEPC economic model

The NI economy is to create 8.5k additional jobs per annum under UUEPC's high growth scenario

UUEPC produces regular economic forecasts for NI under three scenarios: lower scenario; baseline scenario; and high growth scenario.

The **baseline scenario** outlines the most likely economic outcome for NI. Whereas, the **high growth scenario** is aligned to outcomes associated with NI achieving future policy success.

This report will focus on outcomes associated with a high growth scenario as it is prudent to plan for skill needs in an aspirational nature based on economic ambitions of an economy.

Employment (jobs), high growth scenario versus baseline scenario, NI (2001-2028)

Legend: UUEPC baseline scenario — UUEPC high growth scenario

Y-axis: Workforce jobs (700,000 – 1,000,000)
X-axis: 2001–2028

Forecast

Source: UUEPC

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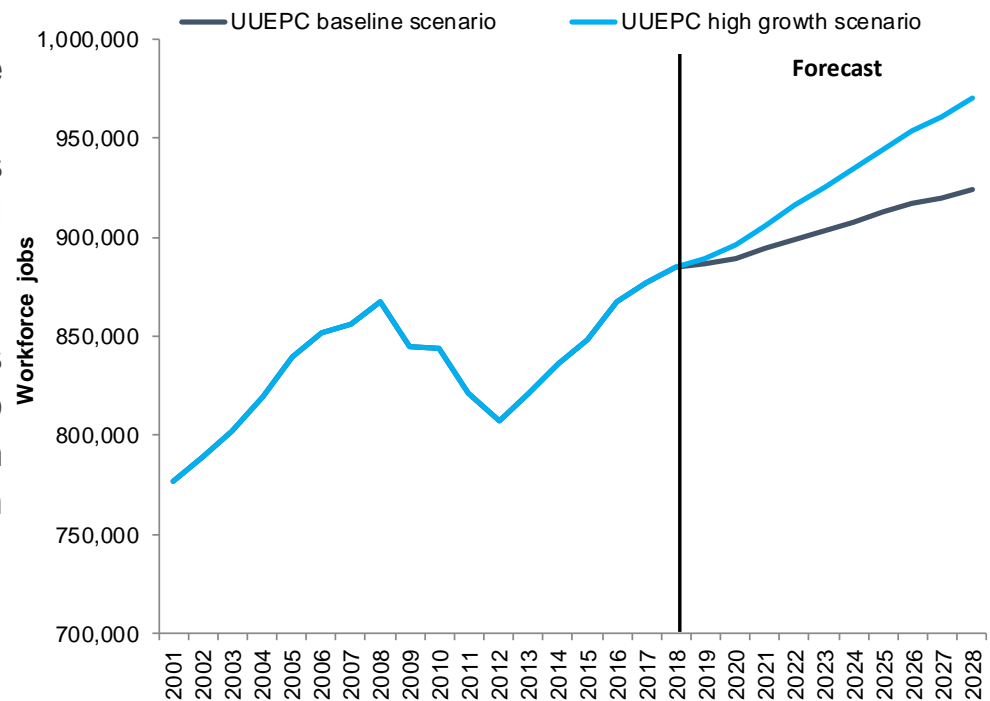
UUEPC's high growth scenario
NI Skills Barometer 2019

UUEPC produces regular economic forecasts outlining the most likely economic outcome (baseline scenario) and an aspirational economic outcome based on NI achieving its economic ambitions (high growth scenario)*.

At the macro level, the assumptions applied to the high growth scenario are based on the following principles:

- **The NI employment rate will converge but not completely reach the current** United Kingdom (UK) **employment rate** (assumed to increase from 70% to 74%). Overall the level of job creation from 2018-2028 under the high growth scenario is lower than the ten year period to 2008 (9.6% compared to 18.8%). In contrast the baseline forecast employment growth over the coming decade is 4.4%.
- The **largest growth is applied to the higher value added sectors** as identified in the Draft Industrial Strategy (i.e. professional services, ICT and manufacturing). Although growth in ICT, professional services and finance is ambitious it remains lower than growth over the period 1997-2008.
- A significant number of additional jobs have also been allocated to the health sector, which is expected to benefit from additional government spending. Whereas, lower but appropriate levels of growth are applied to the wider supporting sectors such as hospitality, construction, administration and support services and retail.

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Annex A1 and Annex A2 provide a detailed analysis of economic outputs under the baseline scenario and the high growth scenario.

High growth versus baseline jobs

UUEPC's high growth scenario creates 46k jobs above the baseline by 2028 in NI

Industry	Total jobs 2018 baseline	Job growth (absolute terms) 2018-2028		Job growth (% change)	
		Baseline scenario	High growth scenario	High growth scenario (2018-2028)	Actual (1997-2007)
Agriculture	29,640	-1,110	-250	-0.8%	-27.0%
Mining	2,150	-30	-30	-1.6%	67.8%
Manufacturing	95,190	+5,480	+10,430	11.0%	-21.3%
Electricity & gas	2,280	-80	+100	4.2%	-43.0%
Water supply & waste	6,740	+180	+350	5.2%	20.7%
Construction	56,490	+3,910	+6,630	11.7%	57.3%
Wholesale & retail	139,790	+560	+2,410	1.7%	27.3%
Transport & storage	31,130	+1,020	+2,010	6.5%	19.9%
Restaurants and hotels	52,990	+3,190	+6,660	12.6%	31.0%
Information & communication	22,500	+4,430	+11,360	50.5%	84.9%
Finance & insurance	20,620	+730	+4,350	21.1%	23.4%
Real estate	10,420	-90	+260	2.5%	227.2%
Professional scientific & technical	44,860	+5,470	+11,780	26.3%	96.1%
Administrative & support services	61,040	+5,130	+8,230	13.5%	98.1%
Public admin & defence	53,430	-900	+590	1.1%	-1.9%
Education	74,780	+1,270	+3,290	4.4%	11.8%
Health & social work	134,840	+6,550	+11,320	8.4%	20.0%
Arts & entertainment	20,710	+1,600	+3,080	14.9%	31.4%
Other service activities	25,680	+1,830	+2,820	11.0%	-2.1%
Total	**885,290**	**+39,130**	**+85,380**	**9.6%**	**17.3%**

Source: UUEPC

Note: Figures may not sum to total due to rounding

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Note: The labour market outlook is presented in 'job-based' terms and therefore differs from forecasts calculated on 'people-based' terms (i.e. some people have more than one job). It is essential to convert the forecasts from 'jobs' to 'people' based to determine the skills requirements of the labour market.

Key findings

NI Skills Barometer 2019

Key findings - Skills Barometer 2019

Over the next decade 33% of job opportunities will require at least degree level qualifications

Average annual net requirement from education and migration by qualification (NQF), NI (2018-2028)

NQF Level	Number of people
NQF Level 6+	8,780
NQF Level 4-5	2,910
NQF Level 3	5,930
NQF Level 2	5,960
Below NQF 2	2,710

Number of people

33% of the net requirement require degree level qualifications

Total = 26,300 p.a.

Only 10% of the net requirement will require qualifications below NQF level 2

Source: UUEPC

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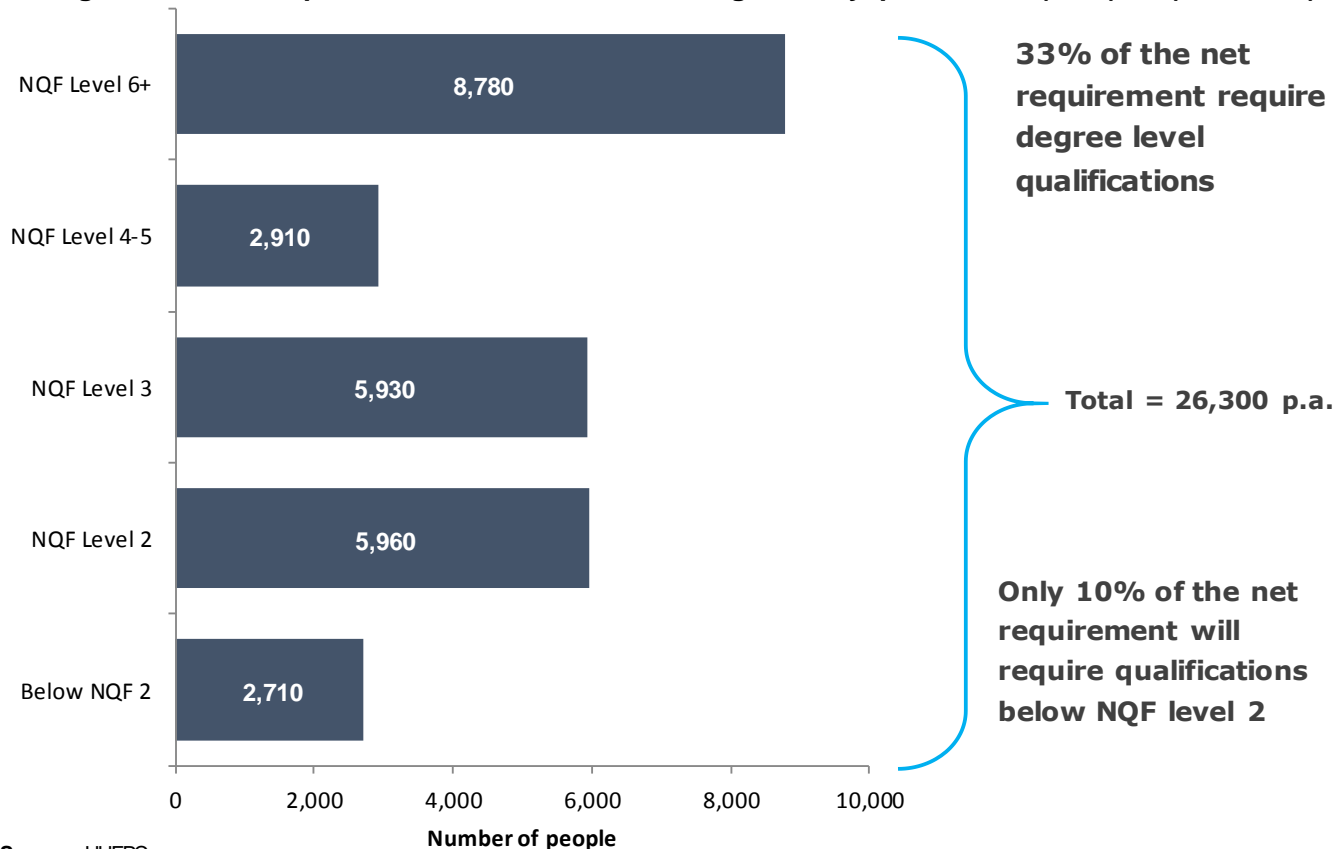
Key findings - Skills Barometer 2019

Undersupply of NQF level 3-5 qualifications

Average annual labour market supply gap by qualification (NQF), NI (2018-2028)

Source: UUEPC

Note: The supply gaps in the above chart have been calculated based on 'effective supply'. This takes account of migration patterns amongst qualifiers at NI institutions and NI domiciled qualifiers qualifying from GB institutions, in addition to labour force participation. A supply adjustment is then applied to subtract tertiary qualifiers who require additional skills development to effectively fulfil the requirements of tertiary level employment.

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Key findings - Skills Barometer 2019

Engineering and technology is the most undersupplied degree subject grouping

Annual average effective supply gap by NQF level 6+ subject (JACS, 1-digit), NI (2018-2028)
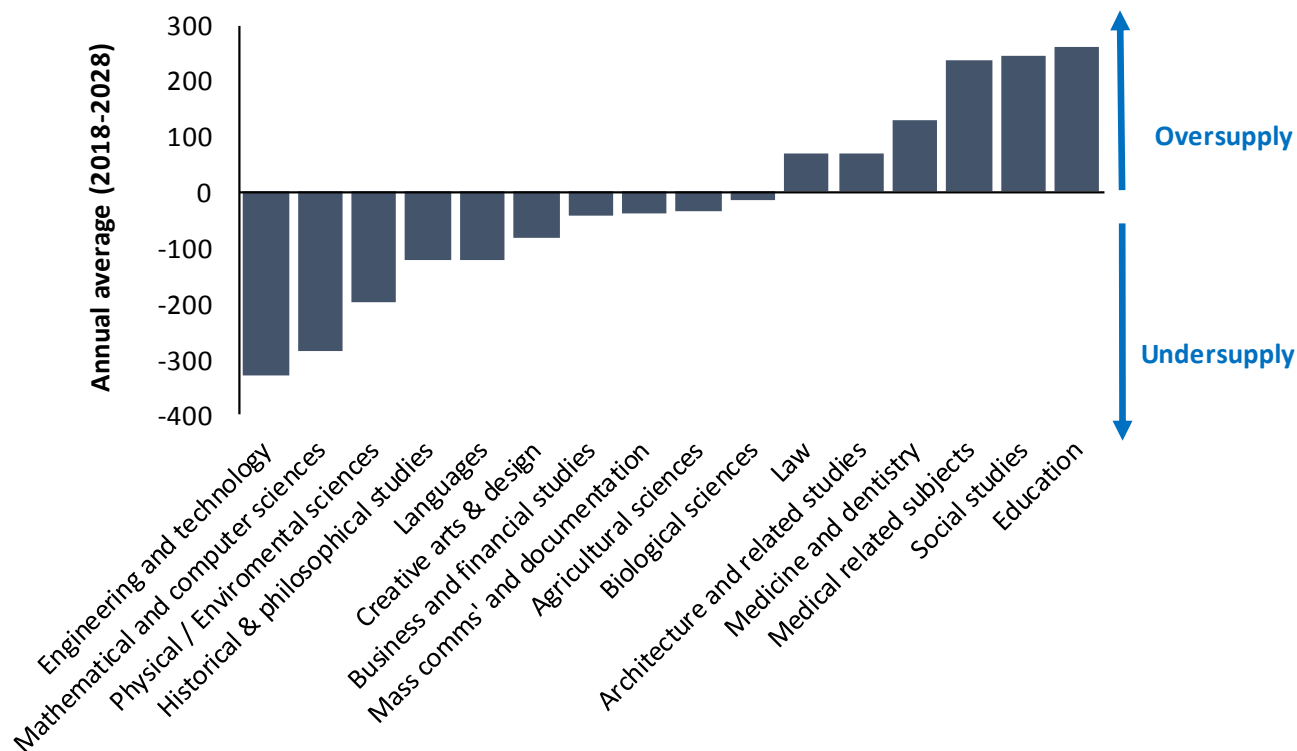
Key findings - Skills Barometer 2019

Engineering and manufacturing is the most undersupplied sub-degree grouping

Annual average effective supply gap by NQF level 4-5 subject (SSAs, 1-digit), NI (2018-2028)

Source: DfE, UUEPC

Demand side

Demand side concepts

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Demand side concepts

Key definitions

Expansion demand is the additional jobs created due to growth in a sector.

Replacement demand refers to the number of positions which become available as a result of staff leaving employment (typically due to retirement, family reasons, ill health or to move to another job).
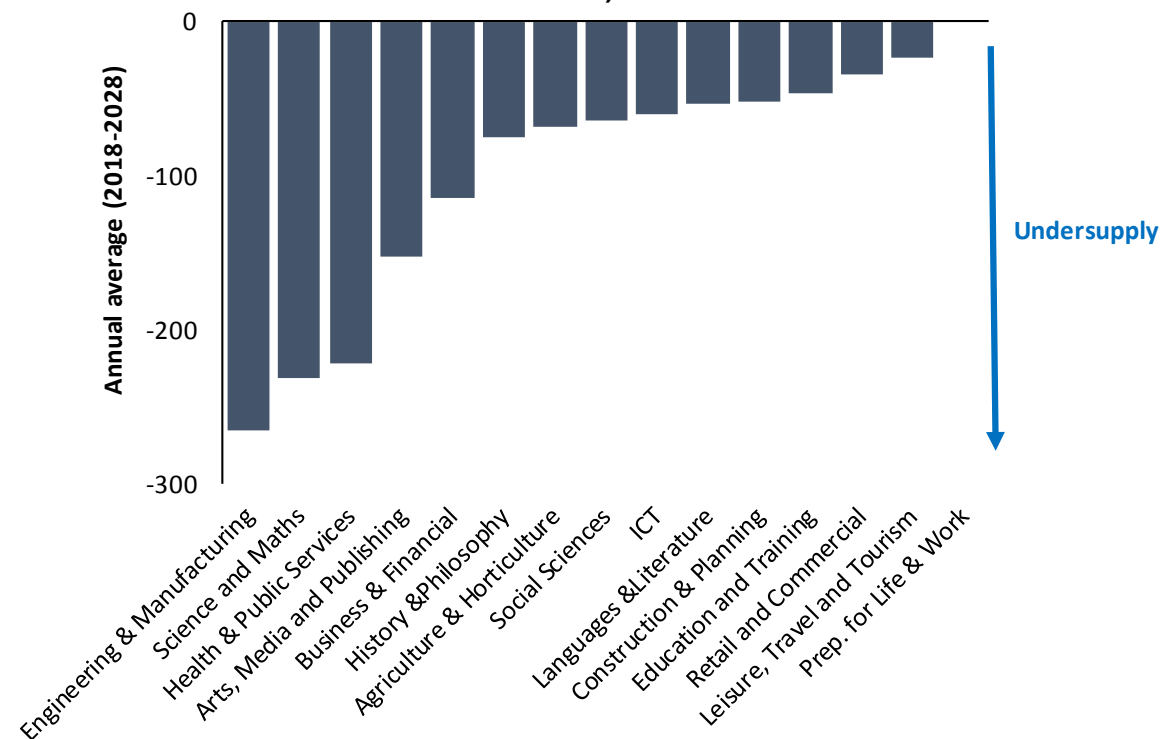
Net replacement demand is the difference between all leavers from employment – to retirement, inactivity, unemployment, other jobs and out migration - and joiners to employment – from unemployment, inactivity (excluding education leavers) and other jobs.

Net requirement from education and migration indicates the number of vacancies that can not be filled from within the existing labour market and therefore must be met from those leaving education and/or from migration. The annual average net requirement does not include the positions to be filled by labour market participants from other sectors, from unemployment or from economic inactivity.

Annual average gross demand in simple terms, refers to all vacancies to be filled in a year. It is the total expansion and replacement demand for staff per annum and the jobs are filled by those currently working in the labour market, those currently out of work and also those from education and migration.

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Demand side concepts

Net requirement from education and migration

The figure of most interest is the **net requirement from education and migration** (net replacement demand plus expansion demand). This measures the quantum of vacancies for education leavers and migrants.

It takes account of 'churn' in the labour market. Skills demand associated with replacement demand is dependent largely on the existing stock and skill needs of current jobs. It can be compared directly to education outputs and the level of migrant inflows and is therefore useful for skills and wider workforce planning.

The focus on vacancies for education leavers and migrants should not be interpreted to mean that job opportunities for those out of work are ignored. Rather it is the case that joiners from unemployment and inactivity are already factored into replacement demand assumptions, and will essentially compete with education leavers and migrants for total arising vacancies.

The expansion demand (net change in the stock of jobs) is often more widely understood as a driver of future demand, it remains the case that, future skills and employability demand will still be significantly determined by net replacement demand.

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Demand side concepts

Labour market flows determine skills demand

| Leavers to death 2,600 | Leavers to retirement 10,600 | Leavers to migration 9,100 | Leavers to unemployment/ training schemes 13,900 | Leavers to inactivity (excl. retirement) 9,500 | Leavers to other occupations 21,900 |

Total leavers 67,600

Joiners from unemployment/ training schemes 16,700

Expansion demand 8,200

Net requirement from education and migration 26,300

Total joiners 49,500

Joiners from inactivity (excl. students 13,500

Joiners from other occupations 19,300

Source: UUEPC
Note: Figures may not sum due to rounding

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Demand side concepts

An overview of the NI labour market

Total employment

841,300 (2018)

923,200 (2028)

Annual average gross demand

75,800 (2018-2028)

Filled from within the existing labour market

49,500 (2018-2028)

Note: Employment is presented in 'people-based' terms. This will differ slightly from 'job-based' numbers presented to illustrate the 'high growth' scenario
Note: Data presented on this slide has been rounded to the nearest hundred.

Net requirement from education & migration

26,300 (2018-2028)

Focus of the Skills Barometer

Replacement demand
18,100

Expansion demand
8,200

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Gross demand for skills

A significant proportion of jobs are filled from those within the labour market, across the qualification spectrum

Average annual gross demand by qualification (NQF), 2018-2028

Qualification	Filled from within existing labour market	Net requirement
NQF Level 6+	7,750	8,780
NQF Level 4-5	6,180	2,910
NQF Level 3	11,430	5,930
NQF Level 2	8,960	5,960
Below NQF 2	15,130	2,710

Number of people
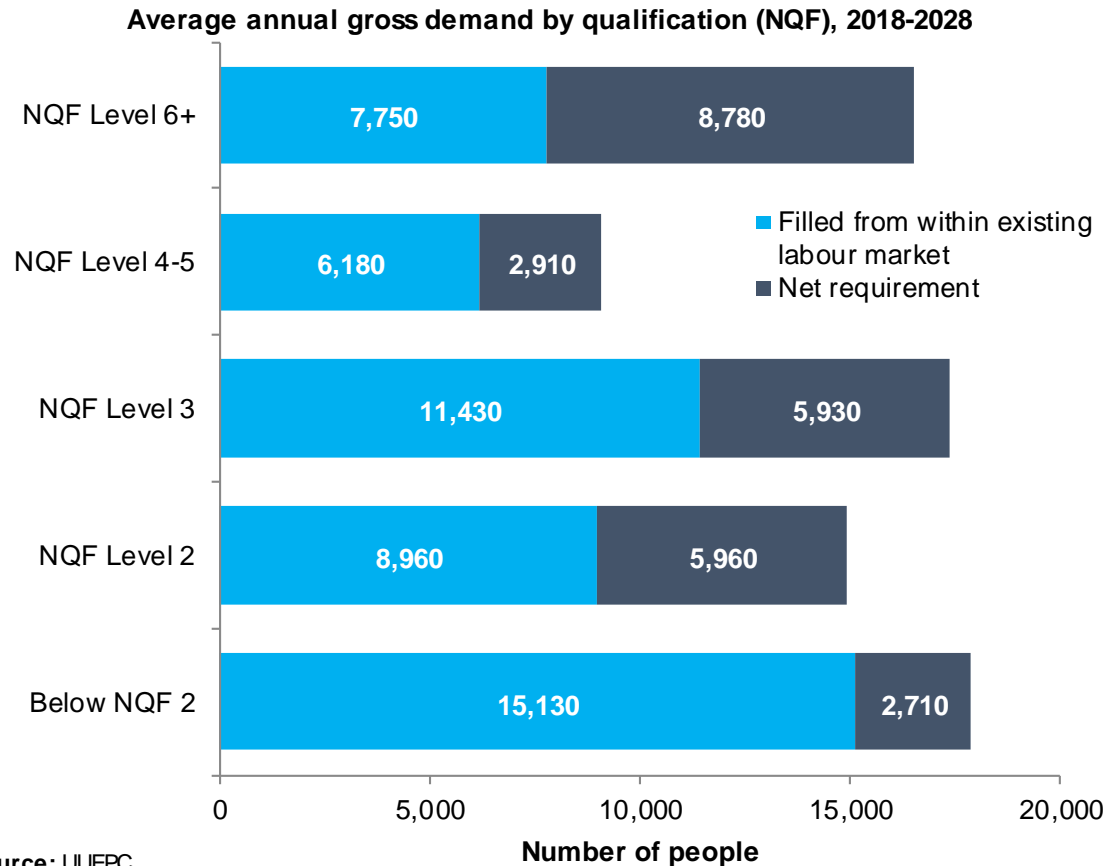
Source: UUEPC

Note: There are still opportunities in the labour market for those with low level qualifications. However, experience is desired and a majority of job openings are filled within the existing labour market.

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Demand side

Sectors and occupations

Sector and occupation demand

Demand side analysis

To determine the (im)balance of qualifications and subjects a detailed analysis of the demand for **labour** at both sector and occupation level has been conducted. The analysis is based on employment forecasts across sectors and occupations from both the high growth scenario and baseline scenario.

This section will present the following:
1. Gross demand for jobs (total recruitment) by sector and occupation.
2. Net requirement from education and migration by sector and occupation.

Recall, **expansion demand** is directly related to the growth (or reduction) in size of the sector and **net replacement demand** refers to the number of positions which cannot be filled within the existing labour market.

The **annual average net requirement from education and migration** does not include the positions to be filled by labour market participants from other sectors, from unemployment or from economic inactivity.

Gross demand by sector

Wholesale and retail requires the largest gross demand

Average annual gross demand by sector (1-digit), NI (2018-2028)
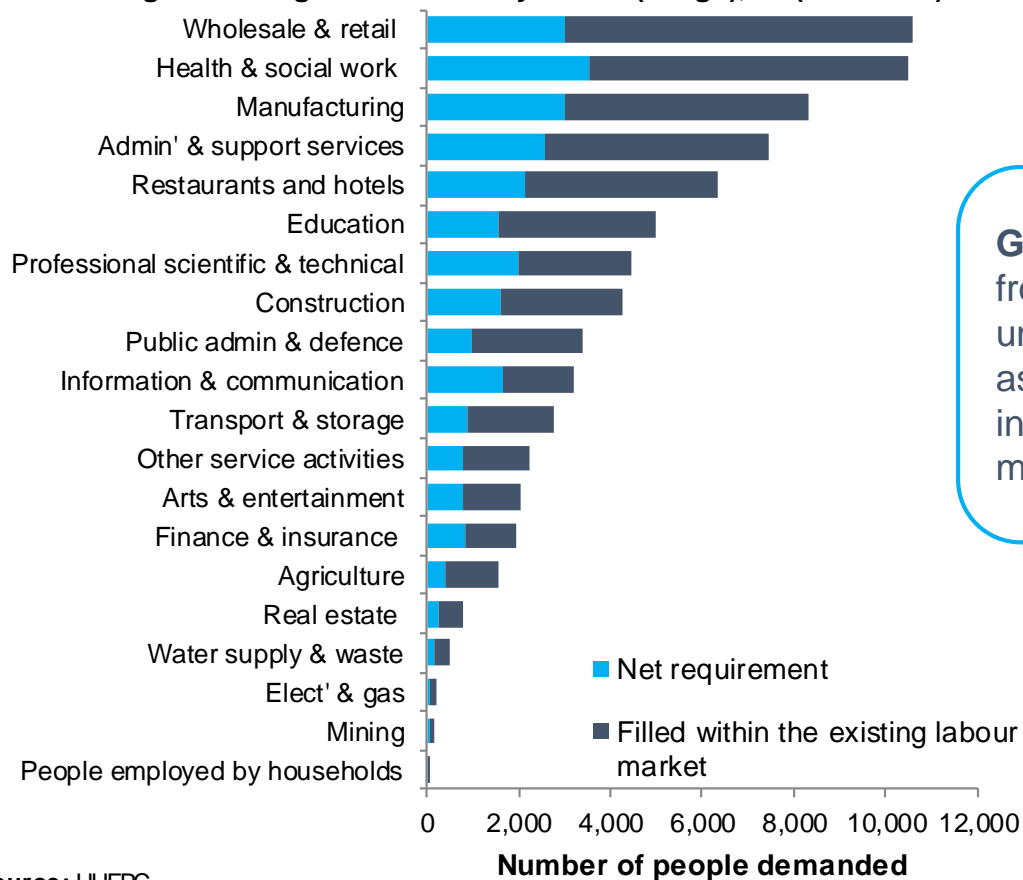
Gross demand includes recruitment from the labour market (other sectors, unemployment and economic inactivity) as well as recruitment from education institutions and migrants. It is a proxy measure for all vacancies.

Source: UUEPC

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Net requirement by sector

Health and social work requires the largest volume of qualifiers and migrants (net requirement)

Average annual net requirement from education and migration by sector (1-digit), NI (2018-2028)

Net requirement from education and migration refers only to the number of people required to meet demand from education institutions and migration flows.

Legend:
- Expansion demand
- Net replacement demand

X-axis: Number of people demanded (-1,000 to 4,000)

Sectors (top to bottom):
Health & social work, Wholesale & retail, Manufacturing, Admin' & support services, Restaurants and hotels, Professional scientific & technical, Information & communication, Construction, Education, Public admin & defence, Transport & storage, Finance & insurance, Other service activities, Arts & entertainment, Agriculture, Real estate, Water supply & waste, Elect' & gas, Mining, People employed by households

Source: UUEPC

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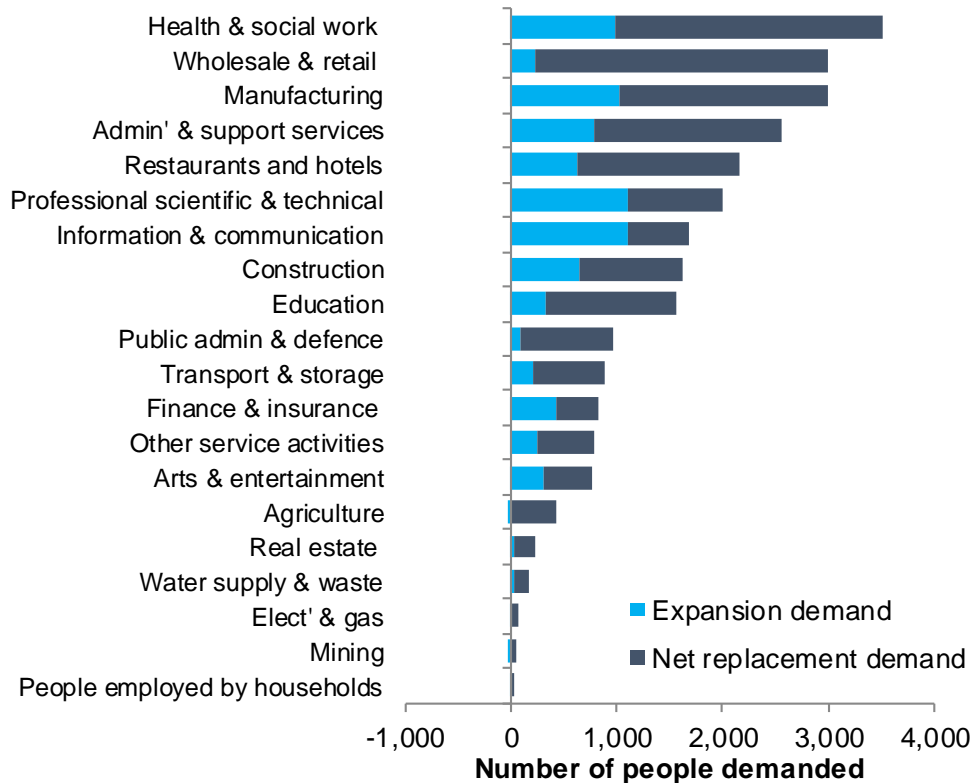
Net requirement by detailed sector

Retail trade accounts for the largest proportion of net requirement

Average annual net requirement from education and migration by sector (top 15, 2-digit), NI (2018-2028)

Sectors (top to bottom):
- Retail trade, except of motor vehicles and motorcycles
- Human health activities
- Food and beverage service activities
- Education
- Computer programming, consultancy and related activities
- Employment activities
- Public admin' and defence; compulsory social security
- Residential care activities
- Manufacture of food products
- Specialised construction activities
- Legal and accounting activities
- Office admin', support and other support activities
- Other personal service activities
- Land transport and transport via pipelines
- Wholesale trade, except of motor vehicles and motorcycles

Legend:
- ■ Expansion demand
- ■ Net replacement demand

X-axis: -500, 0, 500, 1,000, 1,500, 2,000, 2,500 — **Number of people demanded**

The top 15 sectors (2-digit) account for 64% of the overall net requirement.

Source: UUEPC

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Gross demand by occupation

Elementary admin and service occupations require the largest quantum of qualifiers and migrants (net requirement)

Average annual gross demand by occupation (2-digit), NI (2018-2028)

Elementary admin & service occs
Administrative occs
Sales occs
Caring personal service occs
Business & public service assoc profs
Process, plant & machine operatives
Business & public service profs
Corporate managers
Elementary trades, plant & storage occs
Science & technology profs
Transport & mobile machine drivers & operatives
Health profs
Skilled metal & electrical trades
Mgrs & proprietors agric & services
Textiles, printing & other skilled trades
Secretarial & related occs
Teaching & research profs
Leisure & other personal service occs
Skilled construction & building trades
Skilled agricultural trades
Customer service occs
Science & technology assoc profs
Culture, media & sports occs
Health & social welfare assoc profs
Protective service occs

■ Net requirement

■ Filled within the existing labour market

0   2,000   4,000   6,000   8,000   10,000
Number of people demanded

Gross demand includes recruitment from the labour market (other sectors, unemployment and economic inactivity) as well as recruitment from education institutions and migrants. It is a proxy measure for all vacancies.

Source: UUEPC

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Net requirement by occupation

Science and technology professionals require the largest quantum of qualifiers and migrants (net requirement)

Average annual net requirement from education and migration by occupation (2-digit), NI (2018-2028)

Chart legend:
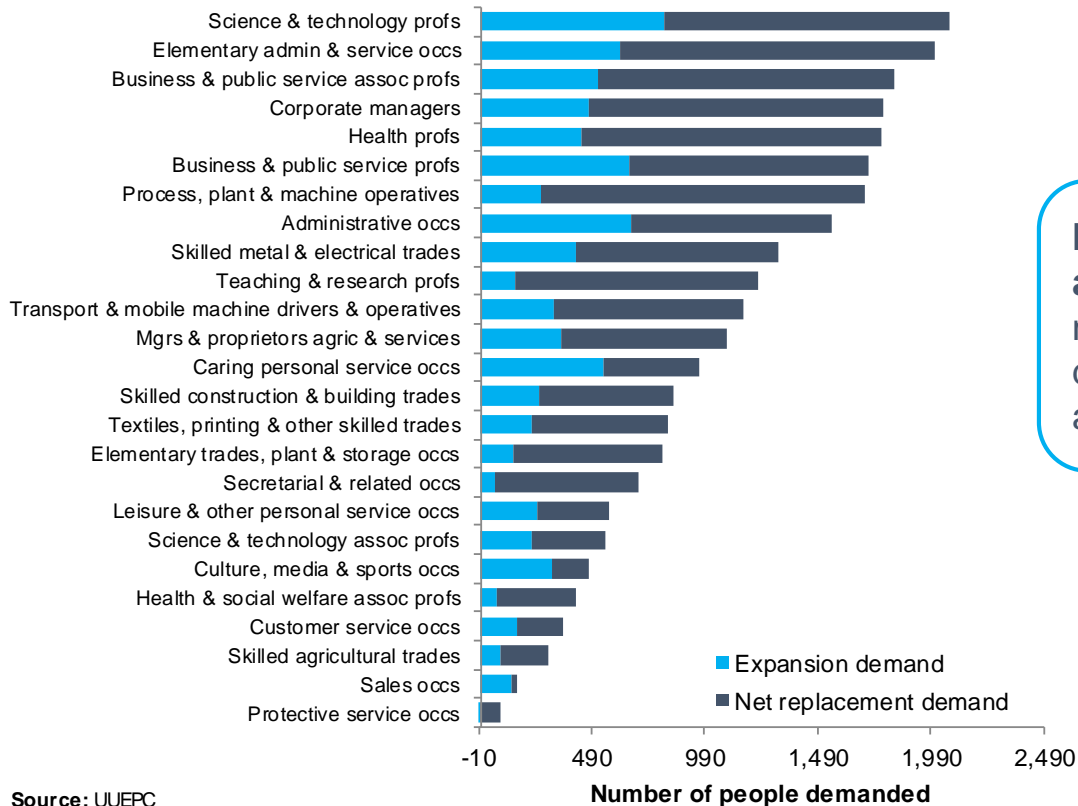- Expansion demand
- Net replacement demand

X-axis: Number of people demanded (-10, 490, 990, 1,490, 1,990, 2,490)

Occupations (top to bottom):
- Science & technology profs
- Elementary admin & service occs
- Business & public service assoc profs
- Corporate managers
- Health profs
- Business & public service profs
- Process, plant & machine operatives
- Administrative occs
- Skilled metal & electrical trades
- Teaching & research profs
- Transport & mobile machine drivers & operatives
- Mgrs & proprietors agric & services
- Caring personal service occs
- Skilled construction & building trades
- Textiles, printing & other skilled trades
- Elementary trades, plant & storage occs
- Secretarial & related occs
- Leisure & other personal service occs
- Science & technology assoc profs
- Culture, media & sports occs
- Health & social welfare assoc profs
- Customer service occs
- Skilled agricultural trades
- Sales occs
- Protective service occs

Source: UUEPC

> **Net requirement from education and migration** refers only to the number of people required to meet demand from education institutions and migration flows.

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Net requirement by detailed occupation

IT and telecommunications professionals requires the largest net requirement

Average annual net requirement from education and migration by occupation (top 15, 3-digit), NI (2018-2028)

The top 15 occupations (3-digit) account for 48% of the overall net requirement.

Legend:
- Expansion demand
- Net replacement demand

X-axis: Number of people demanded (-100, 200, 500, 800, 1,100, 1,400, 1,700)

Occupations (top to bottom):
- IT and Telecommunications Professionals
- Other Elementary Services Occupations
- Teaching and Educational Professionals
- Nursing and Midwifery Professionals
- Process Operatives
- Road Transport Drivers
- Food Preparation and Hospitality Trades
- Caring Personal Services
- Business, Research and Administrative Professionals
- Sales, Marketing and Related Associate Professionals
- Health Professionals
- Secretarial and Related Occupations
- Construction and Building Trades
- Managers and Proprietors in Hsptlty and Leisure Srvcs
- Business, Finance and Related Associate Professionals

Source: UUEPC

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Demand side

Qualifications by sector and occupation

Sector and occupation demand

Net requirement from education and migration by sector and occupation

To determine the (im)balance of qualifications and subjects within the future labour market a detailed analysis of the demand for **qualifications** at both sector and occupation level has been conducted.

The analysis is based current and projected skills mix across sectors and occupations* under both a high growth scenario and baseline scenario. As well as jobs forecasts across sectors and occupations from both the high growth scenario and baseline scenario.

This section will present the following:
1. Net requirement (demand) by qualification (NQF).
2. Net requirement by sector and qualification (NQF level 6+ and NQF level 4-5).
3. Net requirement by occupation and qualification (NQF level 6+ and NQF level 4/5).

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*Annex B1 and Annex B2 provide a detailed list of the current and projected skills mix by sector and occupation.

Net requirement by qualification

Over the next decade 33% of job opportunities will require at least degree level qualifications

Average annual net requirement from education and migration by qualification (NQF), NI (2018-2028)

33% of the net requirement require degree level qualifications

Total = 26,300 p.a.

Only 10% of the net requirement will require qualifications below NQF level 2
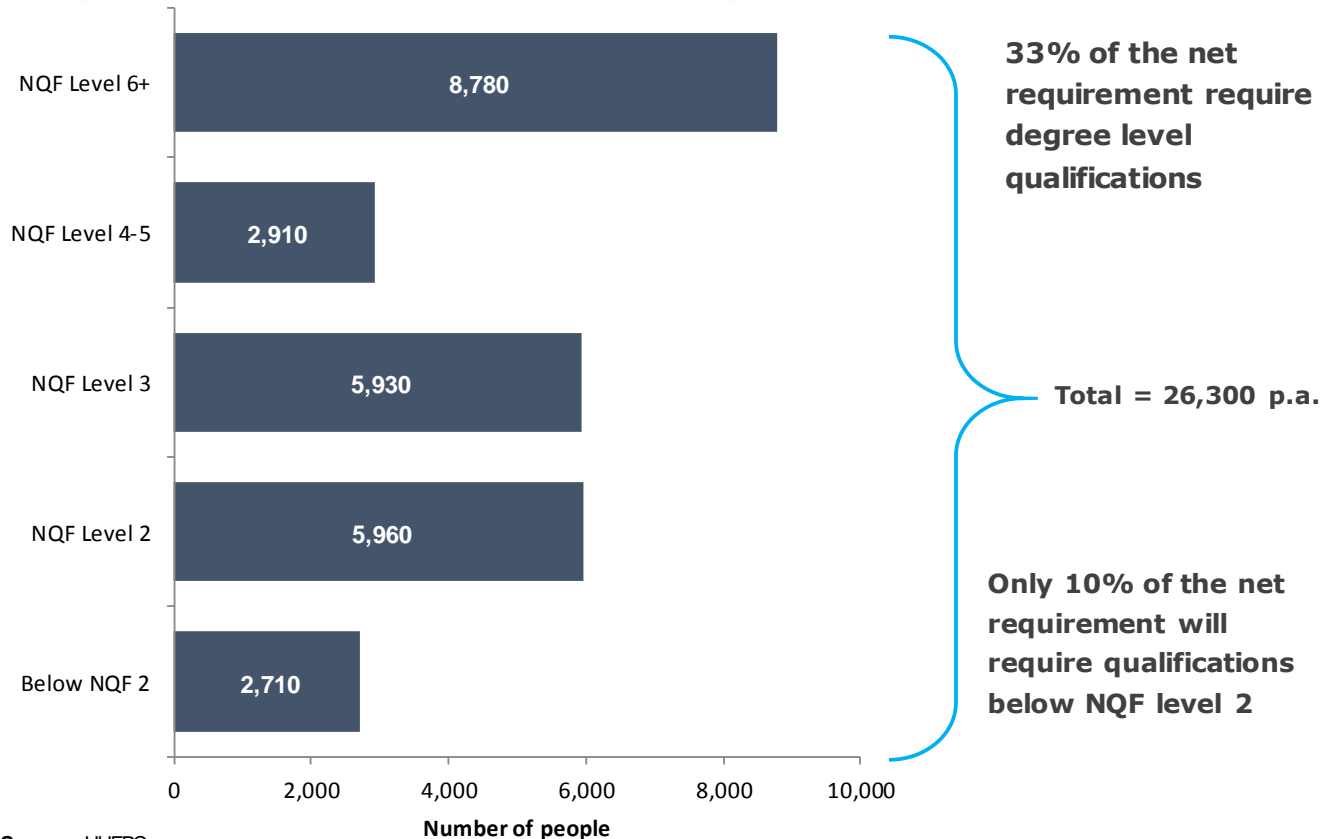
Source: UUEPC

Net requirement by qualification and sector (NQF level 6+)

NQF level 6+ net requirement by sector (1-digit), NI (annual average 2018-2028)
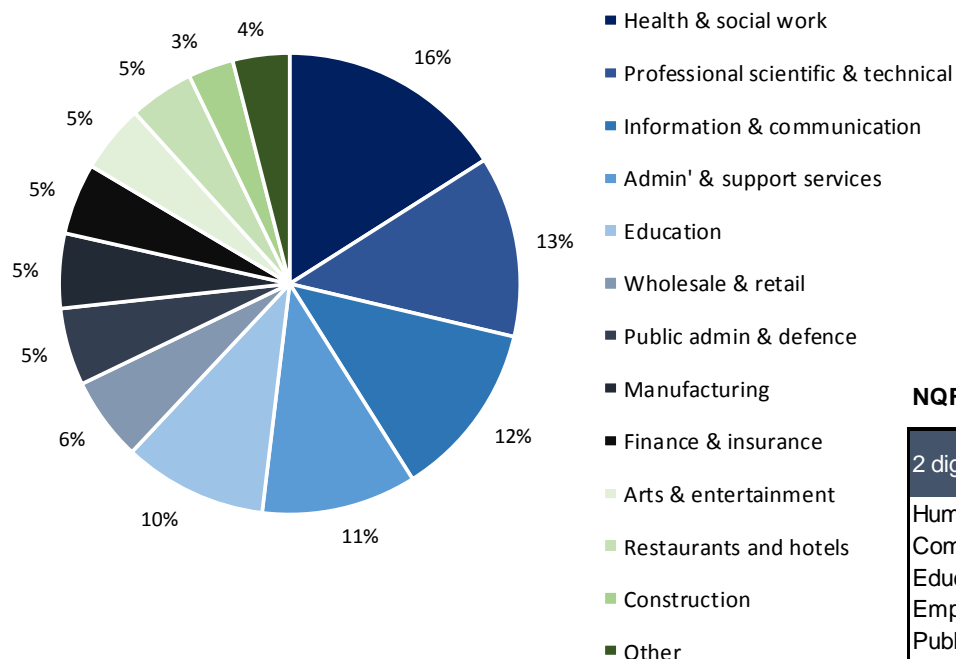
- Health & social work
- Professional scientific & technical
- Information & communication
- Admin' & support services
- Education
- Wholesale & retail
- Public admin & defence
- Manufacturing
- Finance & insurance
- Arts & entertainment
- Restaurants and hotels
- Construction
- Other

Source: UUEPC

The health and social work sector requires the largest quantum of NQF level 6+ qualifiers, accounting for 16% of the net requirement. This is followed by professional services (13%), IT (12%) and admin' and support (11%).

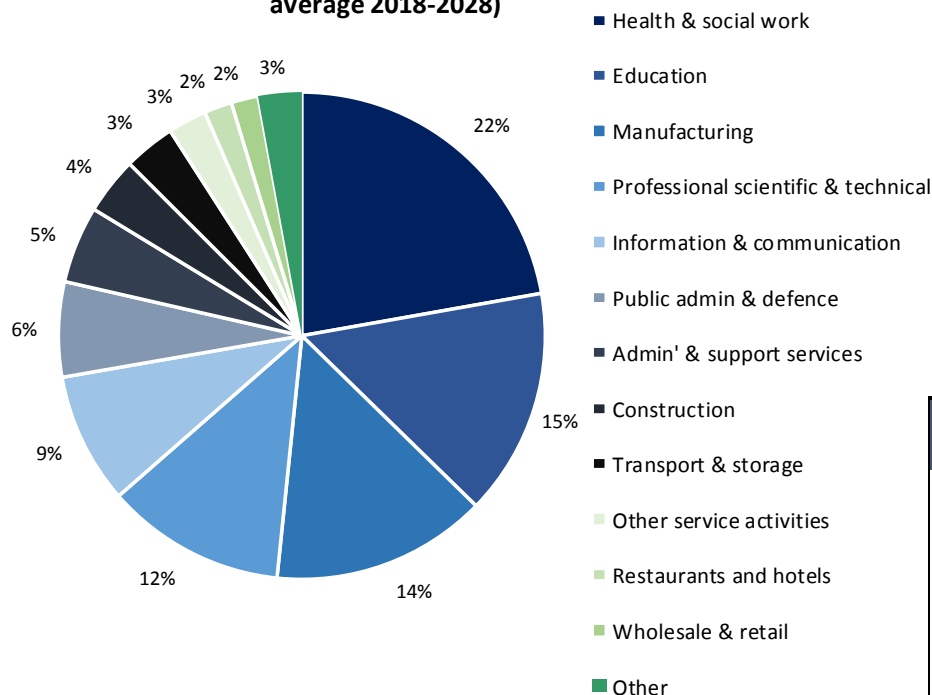**NQF level 6+ net requirement by sector (top 15, 2-digit), NI (annual average 2018-2028)**

2 digit SIC	% of NQF level 6+ net requirement
Human health activities	12.0%
Computer programming, consultancy and related activities	10.8%
Education	10.1%
Employment activities	7.1%
Public administration and defence; compulsory social security	5.4%
Legal and accounting activities	4.7%
Activities auxiliary to financial services and insurance activities	3.9%
Retail trade, except of motor vehicles and motorcycles	3.9%
Food and beverage service activities	3.7%
Sports activities and amusement and recreation activities	2.7%
Activities of head offices; management consultancy activities	2.7%
Architectural and engineering activities; technical testing and analysis	2.6%
Social work activities without accommodation	2.2%
Office administrative, office support and other business support activities	2.2%
Residential care activities	1.8%

Source: UUEPC

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Net requirement by qualification and occupation (NQF level 6+)

NQF level 6+ net requirement by occupation (2-digit), NI (annual average 2018-2028)
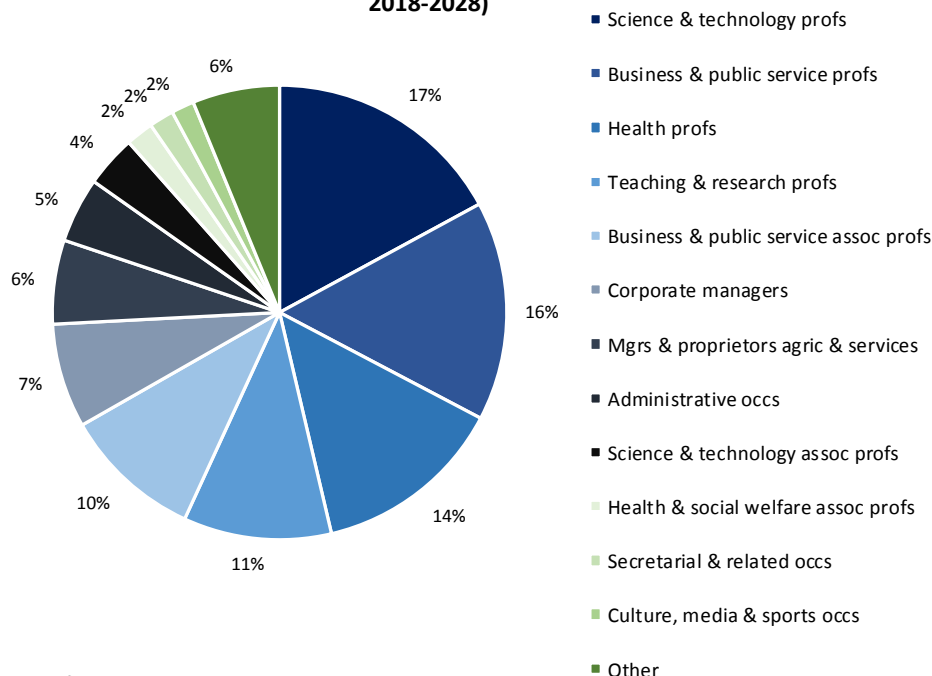
- Science & technology profs
- Business & public service profs
- Health profs
- Teaching & research profs
- Business & public service assoc profs
- Corporate managers
- Mgrs & proprietors agric & services
- Administrative occs
- Science & technology assoc profs
- Health & social welfare assoc profs
- Secretarial & related occs
- Culture, media & sports occs
- Other

Source: UUEPC

Science and technology professionals require the largest quantum of NQF level 6+ qualifiers, accounting for 17% of the total net requirement. This is followed by business and public service professionals (16%) and health professionals (14%).
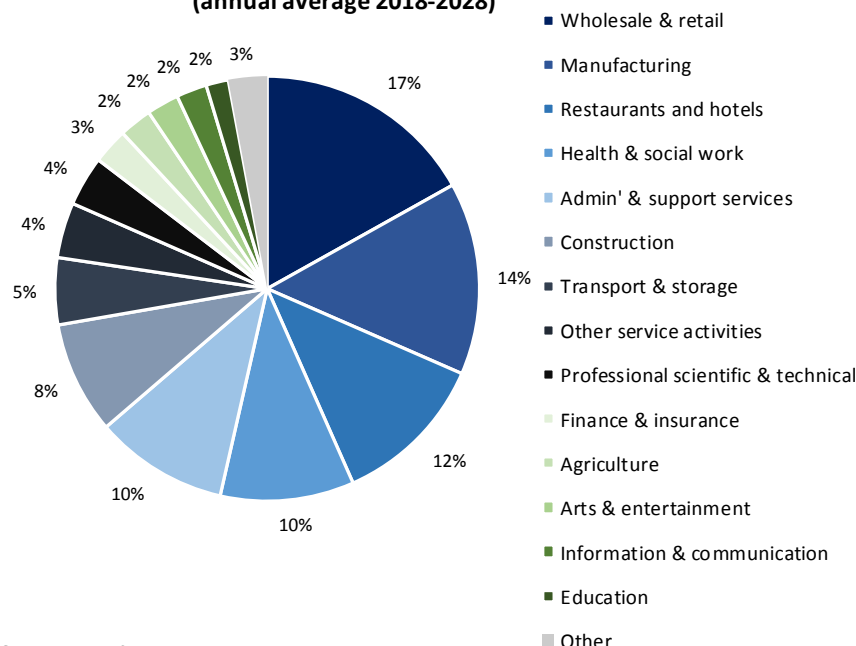
NQF level 6+ net requirement by occupation (top 15, 3-digit), NI (annual average 2018-2028)

3 digit SOC	% of NQF level 6+ net requirement
Information technology and telecommunications professionals	11.4%
Teaching and educational professionals	10.5%
Nursing and midwifery professionals	7.0%
Business, research and administrative professionals	6.6%
Health professionals	5.4%
Sales, marketing and related associate professionals	3.9%
Engineering professionals	3.3%
Managers and proprietors in hospitality and leisure services	3.3%
Business, finance and related associate professionals	3.0%
Public services and other associate professionals	2.5%
Legal professionals	2.3%
Functional managers and directors	2.3%
Managers and proprietors in other services	2.3%
Science, engineering and production technicians	2.1%
Natural and social science professionals	2.1%

Source: UUEPC

Net requirement by qualification and sector (NQF level 4-5)

NQF level 4-5 net requirement by sector (1-digit), NI (annual average 2018-2028)

- Health & social work
- Education
- Manufacturing
- Professional scientific & technical
- Information & communication
- Public admin & defence
- Admin' & support services
- Construction
- Transport & storage
- Other service activities
- Restaurants and hotels
- Wholesale & retail
- Other

Source: UUEPC

The health and social work sector requires the largest quantum of NQF level 4-5 qualifiers, accounting for 22% of the total net requirement. This is followed by education (15%), manufacturing (14%) and professional services (12%).
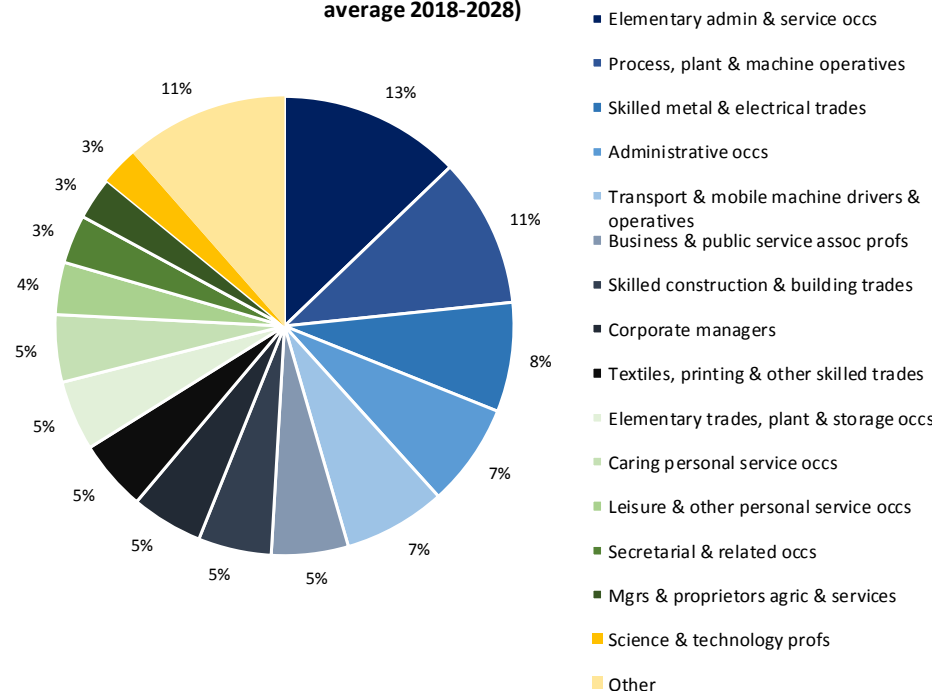
NQF level 4-5 net requirement by sector (top 15, 2-digit), NI (annual average 2018-2028)

2 digit SIC	% of NQF level 4-5 net requirement
Human health activities	17.7%
Education	15.1%
Computer programming, consultancy and related activities	7.4%
Public administration and defence; compulsory social security	6.3%
Employment activities	4.7%
Legal and accounting activities	4.6%
Residential care activities	4.2%
Manufacture of food products	3.8%
Architectural and engineering activities; technical testing and analysis	3.1%
Manufacture of other transport equipment	2.5%
Land transport and transport via pipelines	2.2%
Other personal service activities	2.2%
Construction of buildings	1.9%
Activities of head offices; management consultancy activities	1.6%
Specialised construction activities	1.6%

Source: UUEPC

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Net requirement by qualification and occupation (NQF level 4-5)

NQF level 4-5 net requirement by occupation (2-digit), NI (annual average 2018-2028)

- Health profs
- Corporate managers
- Science & technology profs
- Caring personal service occs
- Business & public service assoc profs
- Skilled metal & electrical trades
- Teaching & research profs
- Health & social welfare assoc profs
- Mgrs & proprietors agric & services
- Science & technology assoc profs
- Process, plant & machine operatives
- Business & public service profs
- Culture, media & sports occs
- Administrative occs
- Skilled agricultural trades
- Skilled construction & building trades
- Other

Source: UUEPC

Health professionals require the largest quantum of NQF level 4-5 qualifiers, accounting for 14% of the total net requirement. This is followed by corporate managers (13%) and science and technology professionals (6%).

NQF level 4-5 net requirement by occupation (top 15, 3-digit), NI (annual average 2018-2028)

3 digit SOC	% of NQF level 4-5 net requirement
Nursing and midwifery professionals	7.1%
Health professionals	5.5%
Caring personal services	4.7%
Teaching and educational professionals	4.6%
Information technology and telecommunications professionals	4.2%
Functional managers and directors	4.2%
Managers and directors in retail and wholesale	3.4%
Welfare and housing associate professionals	2.9%
Agricultural and related trades	2.9%
Production managers and directors	2.7%
Science, engineering and production technicians	2.4%
Managers and proprietors in hospitality and leisure services	2.3%
Sales, marketing and related associate professionals	2.3%
Metal machining, fitting and instrument making trades	2.3%
Construction and building trades	2.0%

Source: UUEPC

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Net requirement by qualification and sector (NQF level 3 and below)

NQF level 3 and below net requirement by sector (1-digit), NI (annual average 2018-2028)

- Wholesale & retail
- Manufacturing
- Restaurants and hotels
- Health & social work
- Admin' & support services
- Construction
- Transport & storage
- Other service activities
- Professional scientific & technical
- Finance & insurance
- Agriculture
- Arts & entertainment
- Information & communication
- Education
- Other

Source: UUEPC

The wholesale and retail sector requires the largest quantum of NQF level 3 and below qualifiers, accounting for 17% of the total net requirement. This is followed by manufacturing (14%), restaurants and hotels (12%) and health and social work (10%).

NQF level 3 and below net requirement by sector (top 15, 2-digit), NI (annual average 2018-2028)

2 digit SIC	% NQF level 3 and below net requirement
Retail trade, except of motor vehicles and motorcycles	11.9%
Food and beverage service activities	9.8%
Specialised construction activities	5.0%
Manufacture of food products	5.0%
Residential care activities	4.4%
Human health activities	3.4%
Employment activities	3.3%
Other personal service activities	3.2%
Land transport and transport via pipelines	3.1%
Office administrative, office support and other business support activities	3.0%
Wholesale trade, except of motor vehicles and motorcycles	2.7%
Construction of buildings	2.5%
Crop and animal production, hunting and related service activities	2.5%
Social work activities without accommodation	2.2%
Wholesale and retail trade and repair of motor vehicles and motorcycles	2.2%

Source: UUEPC

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Net requirement by qualification and occupation (NQF level 3 and below)

NQF level 3 and below net requirement by occupation (2-digit), NI (annual average 2018-2028)

- ■ Elementary admin & service occs
- ■ Process, plant & machine operatives
- ■ Skilled metal & electrical trades
- ■ Administrative occs
- ■ Transport & mobile machine drivers & operatives
- ■ Business & public service assoc profs
- ■ Skilled construction & building trades
- ■ Corporate managers
- ■ Textiles, printing & other skilled trades
- ■ Elementary trades, plant & storage occs
- ■ Caring personal service occs
- ■ Leisure & other personal service occs
- ■ Secretarial & related occs
- ■ Mgrs & proprietors agric & services
- ■ Science & technology profs
- ■ Other

Source: UUEPC

Elementary admin' and service occupations require the largest quantum of below NQF level 3 qualifiers, accounting for 13% of total. This is followed by process, plant and machine operatives (11%) and skilled metal and electrical trades (8%).

NQF level 3 and below net requirement by occupation (top 15, 3-digit), NI (annual average 2018-2028)

3 digit SOC	% NQF level 3 and below net requirement
Other elementary services occupations	8.7%
Process operatives	5.3%
Road transport drivers	5.0%
Food preparation and hospitality trades	4.8%
Construction and building trades	3.9%
Caring personal services	3.5%
Elementary process plant occupations	3.4%
Secretarial and related occupations	3.4%
Metal machining, fitting and instrument making trades	3.1%
Elementary storage occupations	3.1%
Hairdressers and related services	2.5%
Assemblers and routine operatives	2.2%
Plant and machine operatives	2.1%
Sales, marketing and related associate professionals	2.1%
Mobile machine drivers and operatives	1.9%

Source: UUEPC

Demand side

Subjects

Demand for subjects
Net requirement from education and migration by subject

To determine the (im)balance of qualifications and subjects within the future labour market a detailed analysis of the demand for **subjects** has been conducted*.

The analysis is based on employment forecasts, replacement demand and recruitment patterns by subject, sector and occupation from both the high growth scenario and baseline scenario.

Subjects are categorised as the following:

1. **Joint Academic Coding System (JACS)** which refers the coding system used to group Higher Education (HE) subjects (NQF level 6+). The '1-digit' breakdown is the broad grouping of subjects and '2-digit' is a more detailed grouping of subjects.

2. **Sector Subject Areas (SSAs)** which refers to the coding system used to group Further Education (FE) subjects (predominantly NQF level 4-5). The '1-digit' breakdown is the broad grouping of subjects and '2-digit' is a more detailed grouping of subjects.

It should be noted, the annual average requirements for skills at NQF Level 3 and below have not been identified at subject level because students typically study a wide range of subjects at the these NQF levels. As a result demand at NQF level 3 and below has been identified by industry and occupation only**.

*Annex C1 provides a detailed list of the JACS (NQF level 6+) subject mix by sector (1-digit)
**Annex D1 provides a range of demand side outputs for below NQF level 3

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Demand for subjects

Net requirement from education and migration by subject

Estimates of future skill/subject demands are based on historic patterns. Therefore it is possible demand in some sectors has the potential to evolve over time changing the required subject mix within sectors (e.g. artificial intelligence where there are currently zero enrolments in NI).

This section will present the following:
1. Net requirement (demand) by NQF level 6+ subject (JACs, 1-digit).
2. Net requirement (demand) by NQF level 6+ subject (JACs, 2-digit).
3. Net requirement (demand) by NQF level 4-5 subject (SSAs, 1-digit).
4. Net requirement (demand) by NQF level 4-5 subject (SSAs, 2-digit).

It is important to state that although some subject areas may rank amongst the most in-demand in the NI economy, they can still be oversupplied. The demand and supply balances are explained within the '(im)balances' section beginning slide 61 in this report.

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Demand for graduates by subject

Medical and related subjects is the most 'in-demand' degree subject group

Average annual net requirement for NQF level 6+ by subject (JACS, 1-digit), NI (2018-2028)

Legend:
- Net replacement demand
- Expansion demand

Y-axis: Average annual net requirement (2018-2028), scale 0 to 1,200

Categories (left to right):
Medical related subjects, Business and Financial studies, Mathematical Sciences and Computing, Social Studies, Engineering, Education, Biological Sciences, Arts, Physical/Environmental Sciences, Law, Languages, Humanities, Architecture and related studies, Medicine and dentistry, Mass Communications and Documentation, Agricultural Sciences, Technology

Source: UUEPC

Demand for graduates by detailed subject

Nursing is the most 'in-demand' detailed degree subject

Average annual net requirement for NQF level 6+ by subject (JACS, 2-digit), NI (2018-2028)

Source: UUEPC

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Demand for sub-degrees by subject

Health, public services and care is the most 'in-demand' sub-degree subject group

Average annual net requirement for NQF level 4-5 by subject (SSAs, 1-digit), NI (2018-2028)
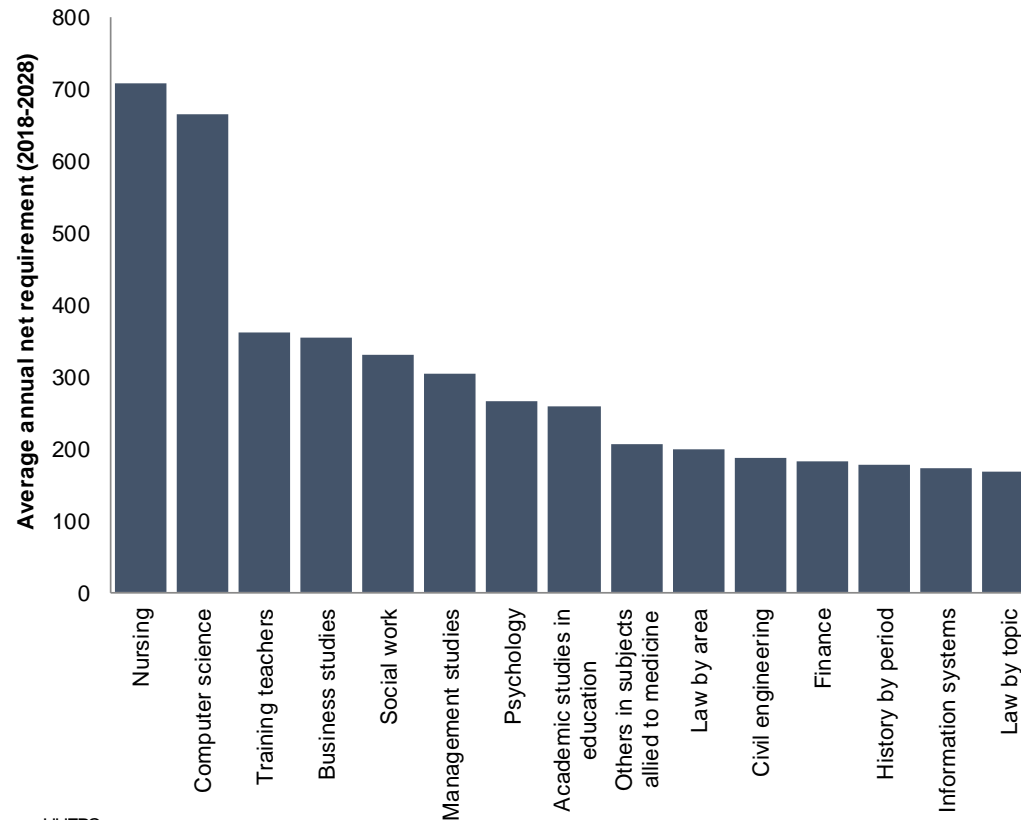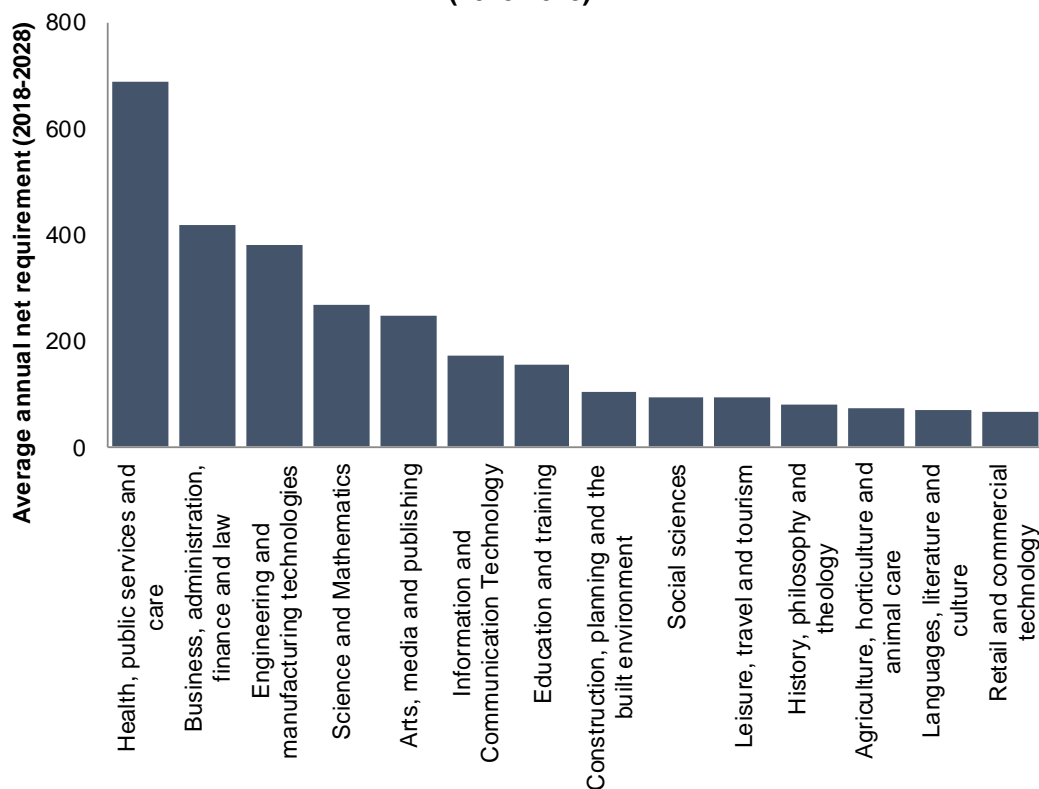
Source: UUEPC

Demand for sub-degrees by detailed subject

Nursing and related subjects is the most 'in-demand' detailed sub-degree subject

Average annual net requirement for NQF level 4-5 by subject (SSAs, 2-digit), NI (2018-2028)
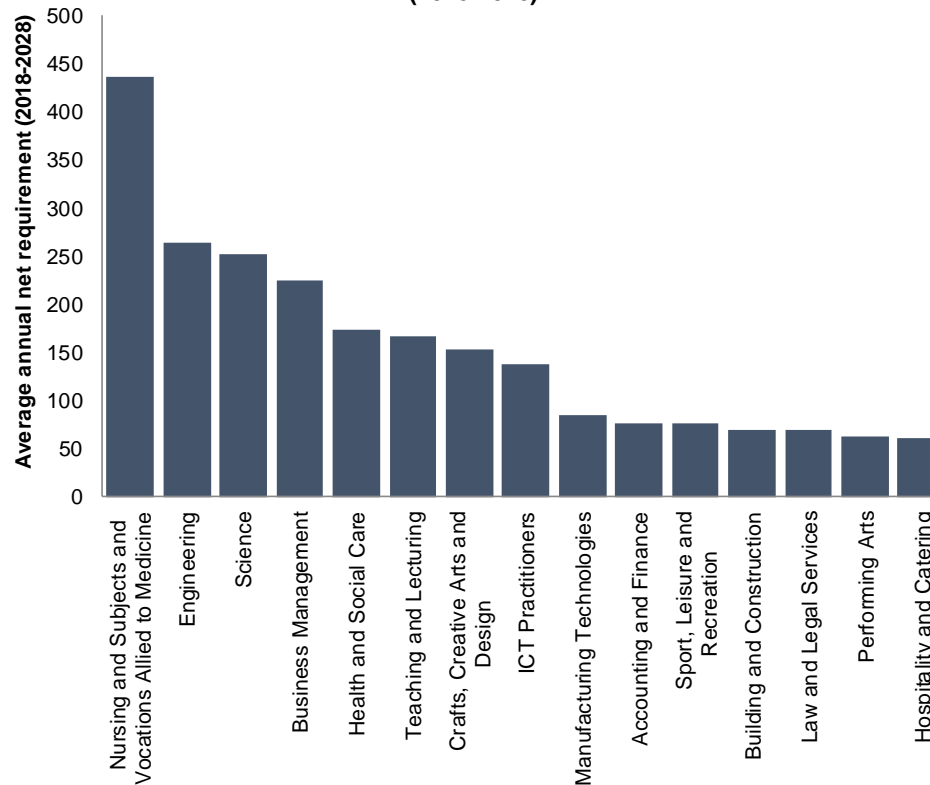
Source: UUEPC

Supply side

Supply side concepts

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Supply side concepts
Gross, net and effective supply

The supply forecast is based on current participation rates in education and NISRA demographic projections. It does not assume a change in policy. Therefore highlighting areas where under or over supply could become an issue.

Supply estimates consider a number of factors (e.g. students leaving NI, students returning to NI etc.) therefore a number of supply estimates are calculated:

1. **Gross Supply** which is the number of qualifiers produced across all NI education institutions.
2. **Net Supply** which includes all students educated in NI institutions *plus* NI domiciled students returning from education at GB HEI's *minus* students educated in NI who then leave *minus* students who proceed to further study.
3. **Effective Supply** which is calculated using the net supply but applies a *'supply adjustment'*. The adjustment factor is applied at NQF level 4+ qualifiers from FE and HE.

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Supply side concepts

Gross supply versus net supply

The difference between gross supply and net supply can be explained by the following concepts.

1. **Migration flows** - a number of students qualifying from NI education institutions will leave NI to live and work elsewhere. This trend has increased in recent years as the number of international students has increased (i.e. international students study in NI then return home). Similarly, there are a number of NI domiciled students qualifying from institutions outside NI who return to NI upon graduating. Net supply accounts for these flows by netting out the qualifiers that leave NI and adding in those who return to NI (and enter the labour market).

2. **Labour market participation** - students are only counted as part of the net supply if they leave an education institution to actively participate in the labour market (i.e. either employed or unemployed after six months). The difference between gross supply and net supply is more significant in FE than HE as greater proportions of FE students continue to further study (as opposed to entering the labour market) compared to HE.

Supply adjustment – effective supply
Applied to both higher education and further education leavers

This adjustment is to recognise that a proportion of graduates and other qualifiers (NQF level 4+) require additional skills development before they would be capable of taking employment opportunities at a grade for which they are qualified.

The supply adjustment is then applied to the net supply to calculate **effective supply**. This concept is an important element in understanding the skills challenges faced by local employers.

Consultations undertaken during the initial NI Skills Barometer research highlighted a requirement for a supply adjustment to reduce the quantum of qualifiers from FE and HE at NQF level 4+, referred to as **effective supply**.

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Supply adjustment – effective supply
Applied to both higher education and further education leavers

These findings have been underpinned by more recent survey evidence:

- The latest CBI/Pearson to skills survey identified that **three-quarters of NI employers lacked confidence that they would be able to find sufficiently skilled people for new vacancies**.
- The 2017 employer skills survey highlighted that **37% of NI firms identified an incidence of skills underutilisation** (employees with qualifications and skills more advanced than required for their current job role). This indicates that there are likely a number of graduates, although employed, have been unable to access graduate level employment.
- Data from the Institute of Student Employers and the Graduate Recruitment Bureau indicated a high proportion of employers use a 2:1 classification as a minimum entry requirement. **In NI 76% of qualifiers from first degrees achieve a 2:1 or above degree classification**. Therefore, there are a number of qualifiers who are unable to access graduate level vacancies.

The impact of the supply adjustment increases the under-supply of skills in some subject areas and reduces the over-supply in other subject areas.

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Supply side

People and qualifications from education institutions

Supply side – school leavers

70,000 pupils are expected to leave school without achieving 5+ GCSEs including English and maths over the next decade
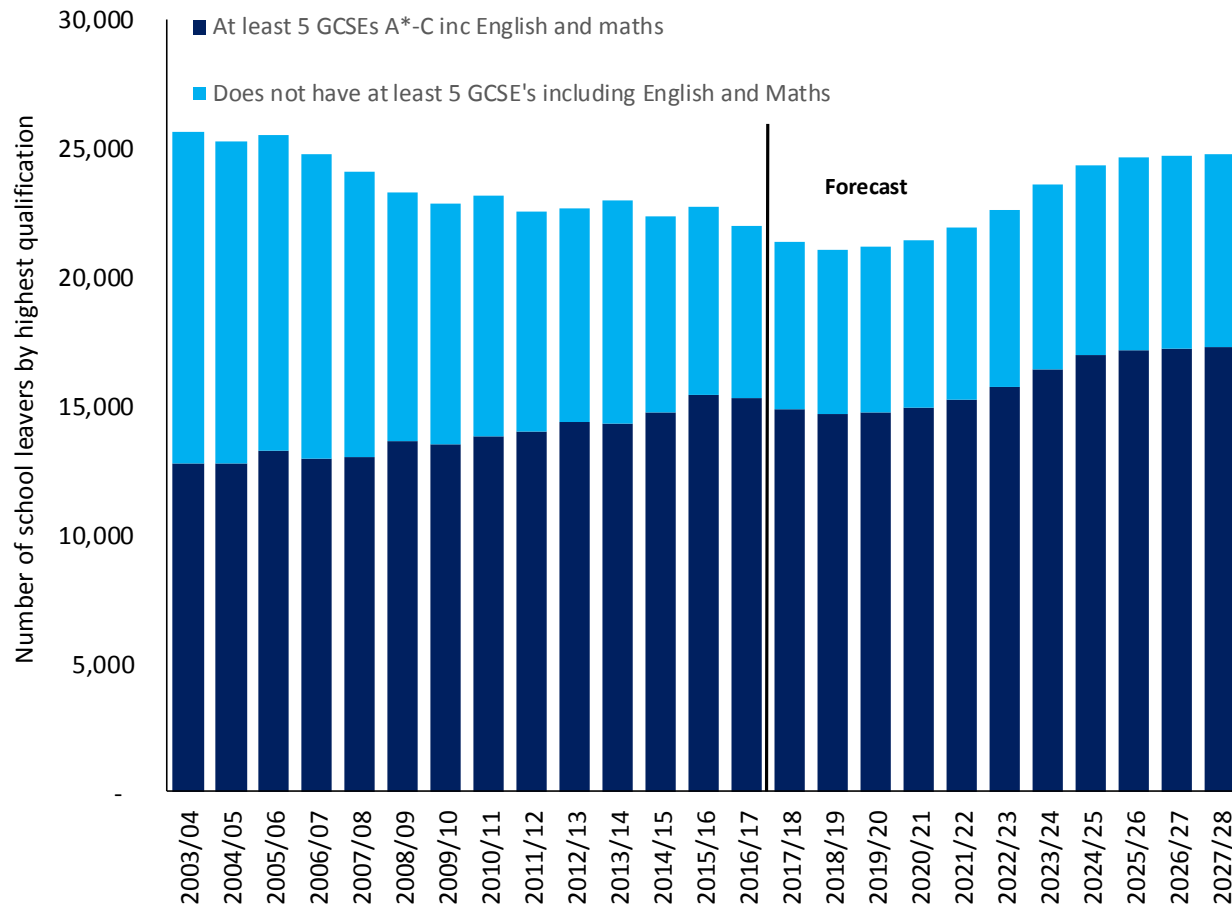
Source: DE, UUEPC forecasts

Supply side – quantum and qualifications of FE leavers

High concentration of NQF level 2 qualifiers from FE

Further Education qualifiers by NQF, NI (2017/18)
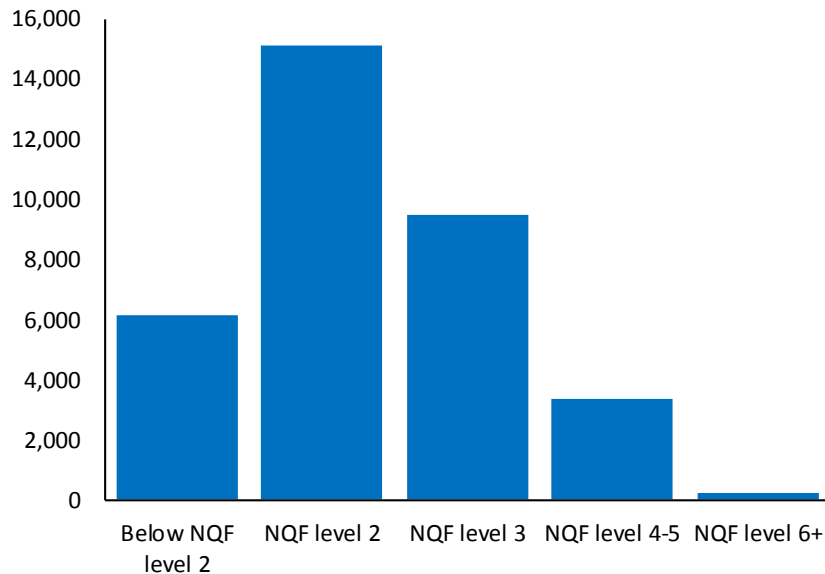

Source: DfE

Further Education qualifiers by NQF, NI (2009/10-2027/28)

Legend: Below NQF level 2 ■ NQF level 2 ■ NQF level 3 ■ NQF level 4-5 ■ NQF level 6+
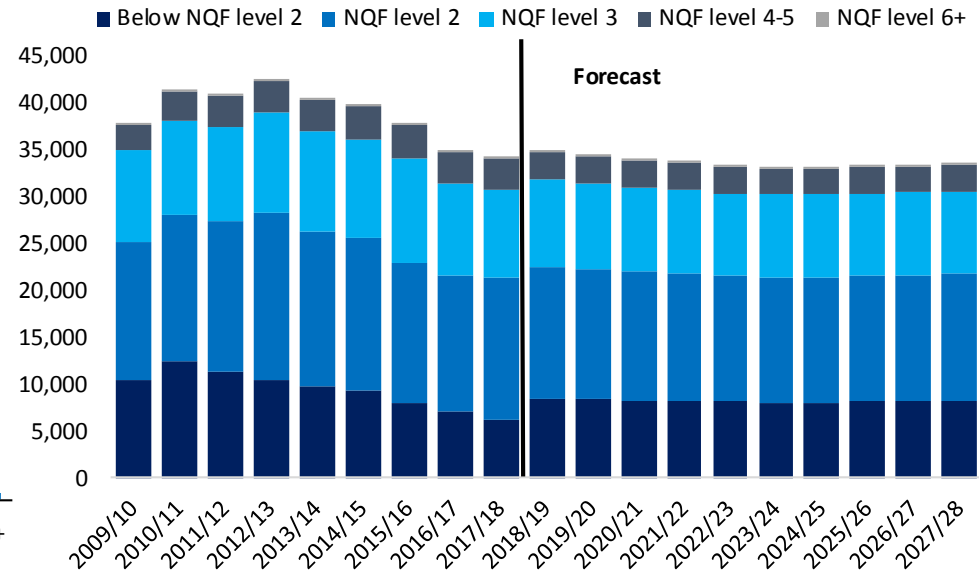
Forecast

Source: DfE, UUEPC forecasts

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Supply side – quantum and qualifications of HE leavers

Undergraduate degrees dominate HE qualifiers

Nett supply from higher education qualifiers by NQF, NI (2017/18)
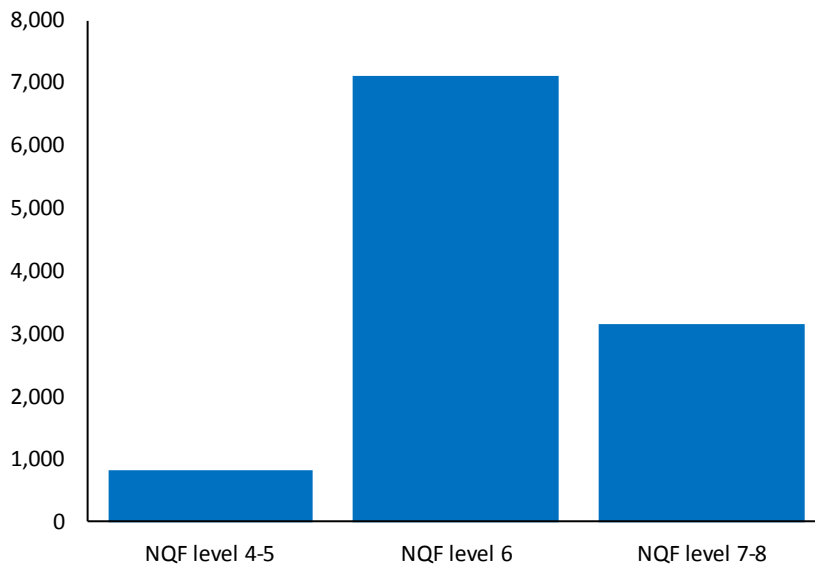
Source: HESA

Net supply from higher education by NQF, NI (2003/04-2027/28)

Legend: ■ NQF level 4-5 ■ NQF level 6 ■ NQF level 7-8

Forecast
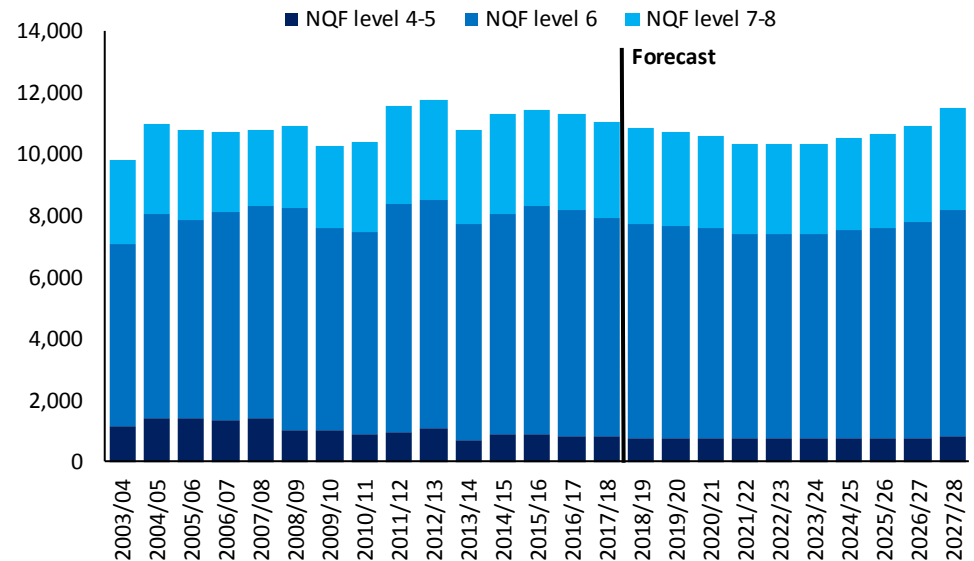
Source: HESA, UUEPC analysis

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Demographic profile by industry

Restaurants and hotels is the most youthful sector

Demographics by sector (1-digit), NI (4 quarter rolling average to Q3 2018)
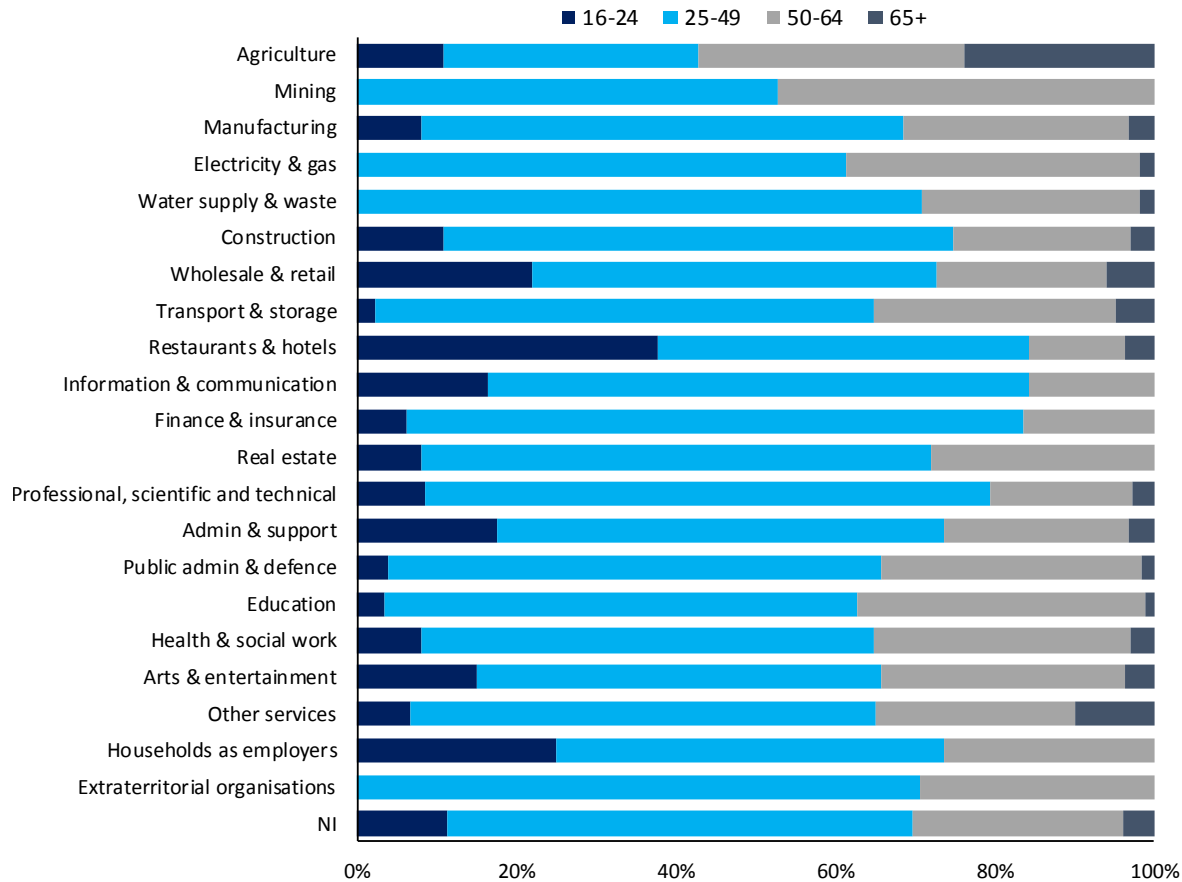
Legend: 16-24, 25-49, 50-64, 65+

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Destination of leavers by NQF level

Almost three quarters of NQF L6+ qualifiers enter the labour market

Annual average destination of leavers by qualification (NQF), NI (2018-2028)

Level	Entering the labour market	Not entering labour market
Level 7-8	3,070	1,520
Level 6	6,950	2,150
Level 4-5	1,930	2,500
Level 3	3,920	17,640
Level 2	5,970	13,070
Less than NQF level 2	3,450	8,630

Total qualifiers at 'graduate' level are only marginally larger than the total number of qualifiers below level 2

■ Entering the labour market
■ Not entering labour market

Includes 7k school leavers per annum not achieving 5 GCSE's including English and maths

Qualifiers

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Gross supply of NQF level 6+

Medical related subjects provide the largest supply of graduates

**Gross supply by NQF level 6+ subject (JACS, 1-digit), NI (2018 versus 2028)**
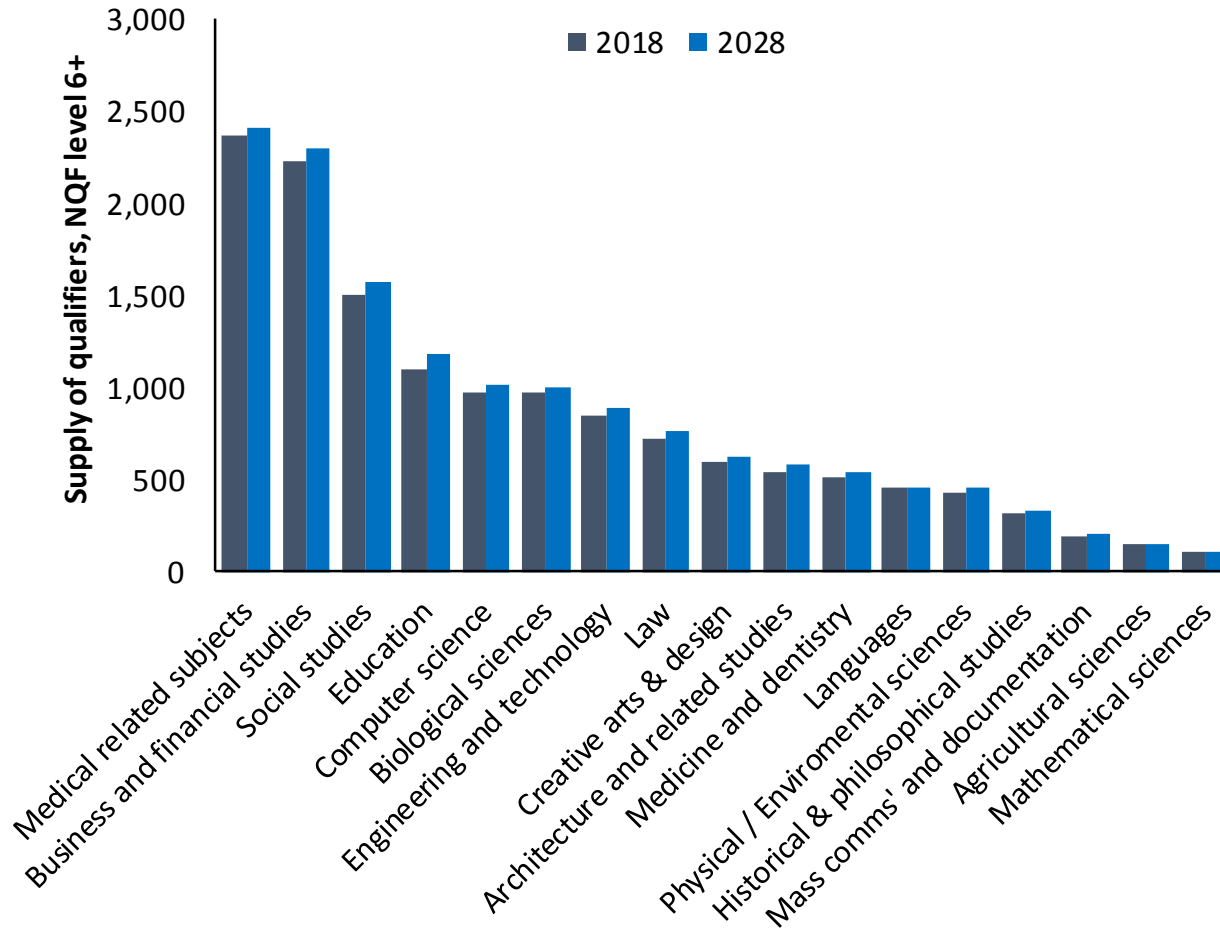
Source: HESA, UUEPC

Gross, net and effective supply of NQF level 6+

Supply adjustment reduces the volume of graduates across subjects

Gross, net and effective supply by NQF level 6+ subject (JACS, 1-digit), NI (2018)
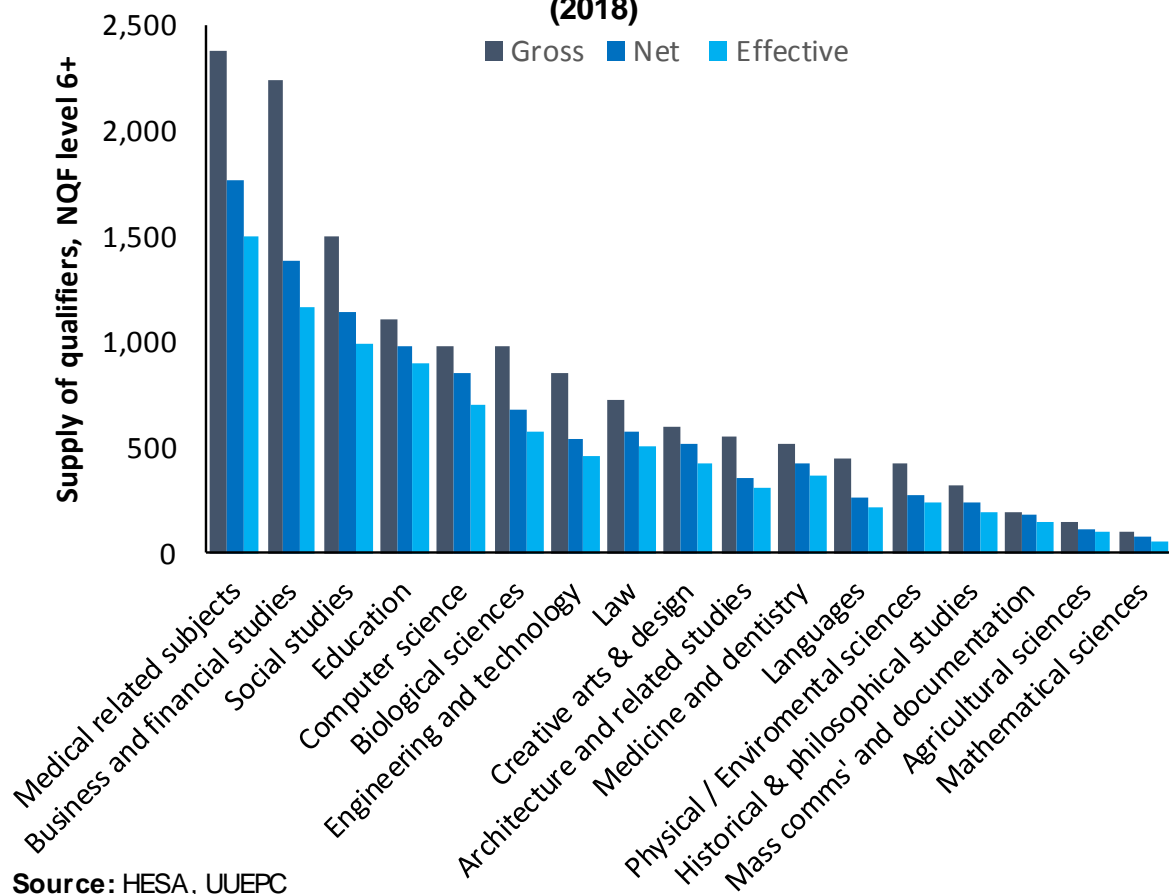
Source: HESA, UUEPC

Gross supply of NQF level 4-5

Health and public services provide the largest supply of NQF level 4-5

Gross supply by NQF level 4-5 subject (SSAs, 1-digit), NI (2018 versus 2028)
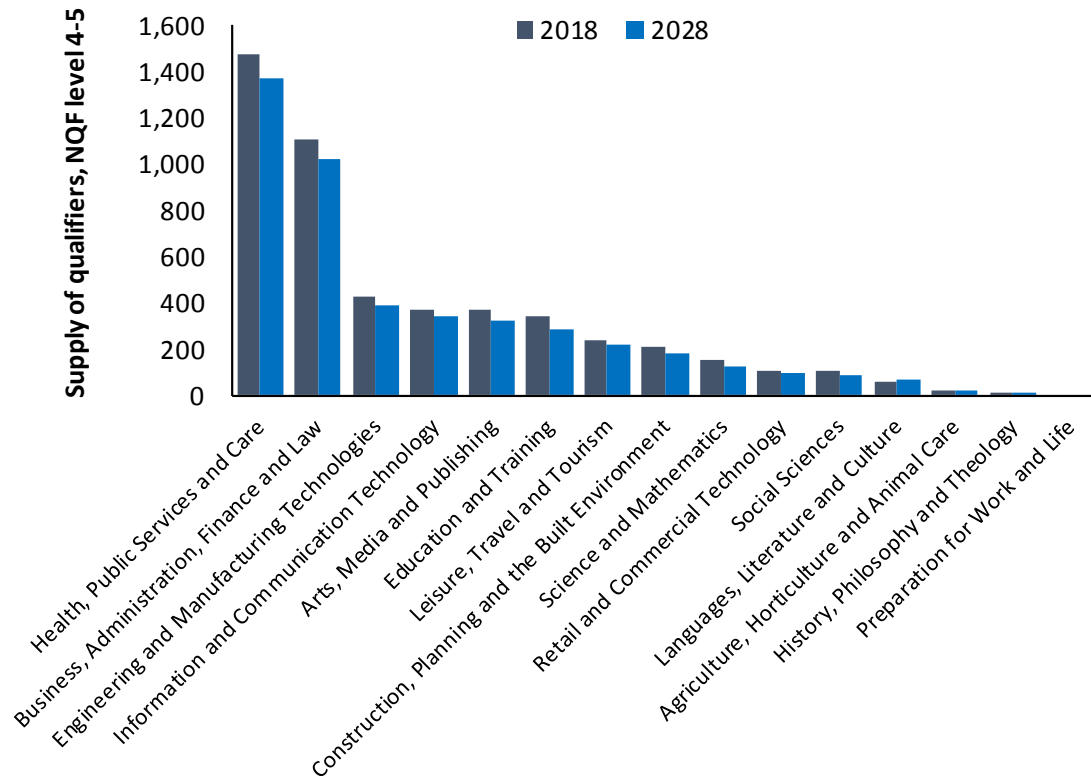
Gross, net and effective supply of NQF level 4-5

Supply adjustment reduces the volume of graduates across subjects

Gross, net and effective supply by NQF level 4-5 subject (SSAs, 1-digit), NI (2018)

Source: DfE, UUEPC
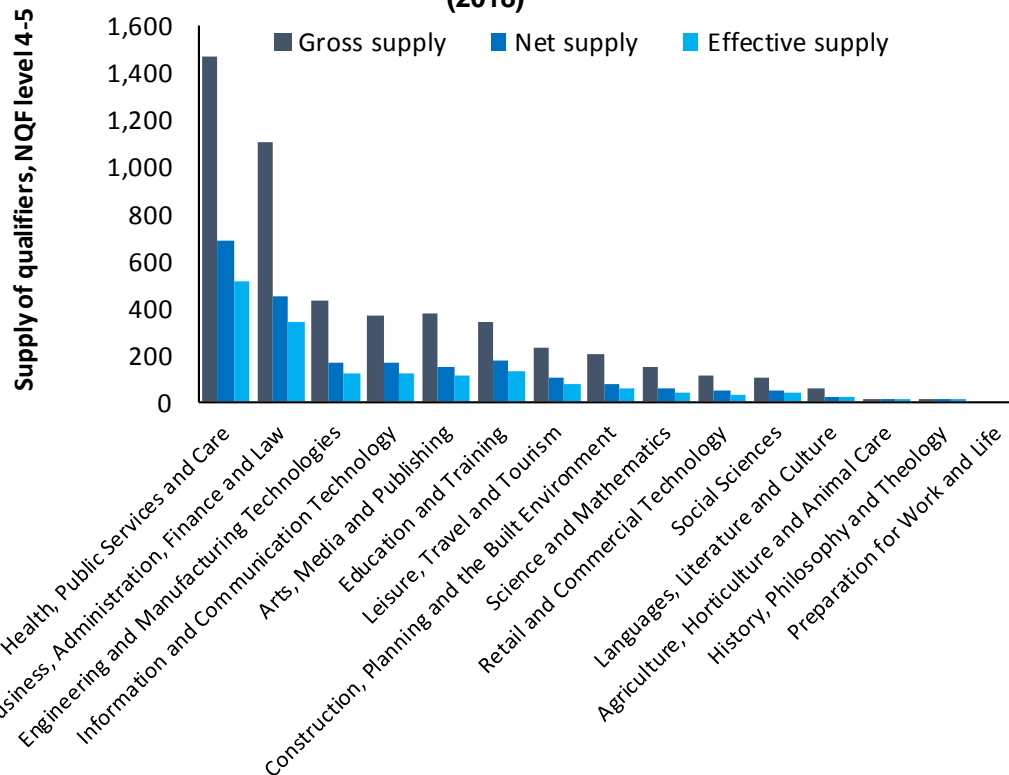
(Im) balance

Demand side versus supply side concepts

The supply/demand (im)balance

Introduction to the *"supply gap"*

The supply/demand (im)balance or *"supply gap"* represents the net requirement of individuals from education and migration (demand) **minus** qualifiers from education institutions entering the labour market at a level on par with their qualifications (supply) i.e. demand net supply.

The information presented within this section is based on an annual average over the 10 year period 2018-2028 under the high growth scenario. For example, if medical related subjects is oversupplied by +200, that represents an average annual oversupply of 200 per annum within that subject group over the ten year period 2018-2028. Similarly if math's and computer science graduates are undersupplied by -150 graduates, that represents an average annual undersupply of 150 graduates within that subject group over the next decade. This concept is referred to as the **average annual supply gap**.

This section identifies the annual average supply gap by qualification level (NQF) and subject studied at NQF level 4 and above (JACS and SSAs). As students tend to study more than one subject area at NQF level 3 and below, demand is only presented at a sector level (and not a subject level). Therefore, subject supply gaps are not produced at NQF level 3 and below.

Supply gap by NQF level
Significant undersupply of NQF level 3-5 qualifications

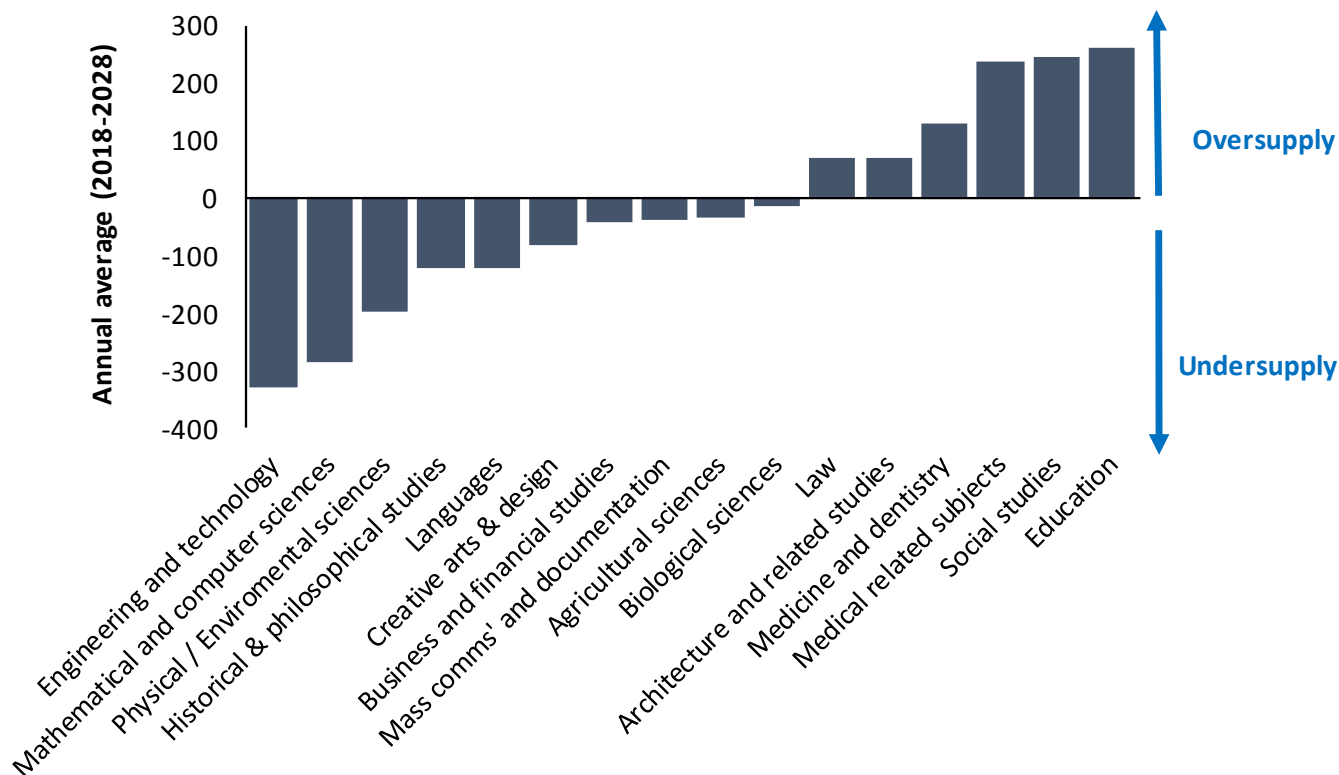**Average annual labour market supply gap by qualification (NQF), NI (2018-2028)**

Undersupply ←	→ **Oversupply**

- -210 — Level 6+ — **Marginal undersupply**
- -1470 — Level 4-5 — **Significant undersupply**
- -2020 — Level 3
- Level 2 — 0 — **Balance**
- Less than NQF level 2 — 740 — **Oversupply**

X-axis: -2,500 -2,000 -1,500 -1,000 -500 0 500 1,000

Average annual supply gap by qualification

Source: UUEPC

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Note: The supply gaps in the above chart have been calculated based on 'effective supply'. This takes account of migration patterns amongst qualifiers at NI institutions and NI domiciled qualifiers qualifying from GB institutions, in addition to labour force participation. A supply adjustment is then applied to subtract tertiary qualifiers who require additional skills development to effectively fulfil the requirements of tertiary level employment.

Supply gap by degree subject

Engineering and technology is the most undersupplied subject grouping

**Annual average effective supply gap by NQF level 6+ subject (JACS, 1-digit), NI (2018-2028)**

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*Annex E1 provides supply gap estimates for each detailed JACS subject (2-digit)

Undersupplied degree subjects (detailed)

Computer science remains the most undersupplied degree subject

Top 15 most undersupplied NQF level 6+ subjects (JACS, 2-digit) (average annual effective supply gap), NI (2018-2028)
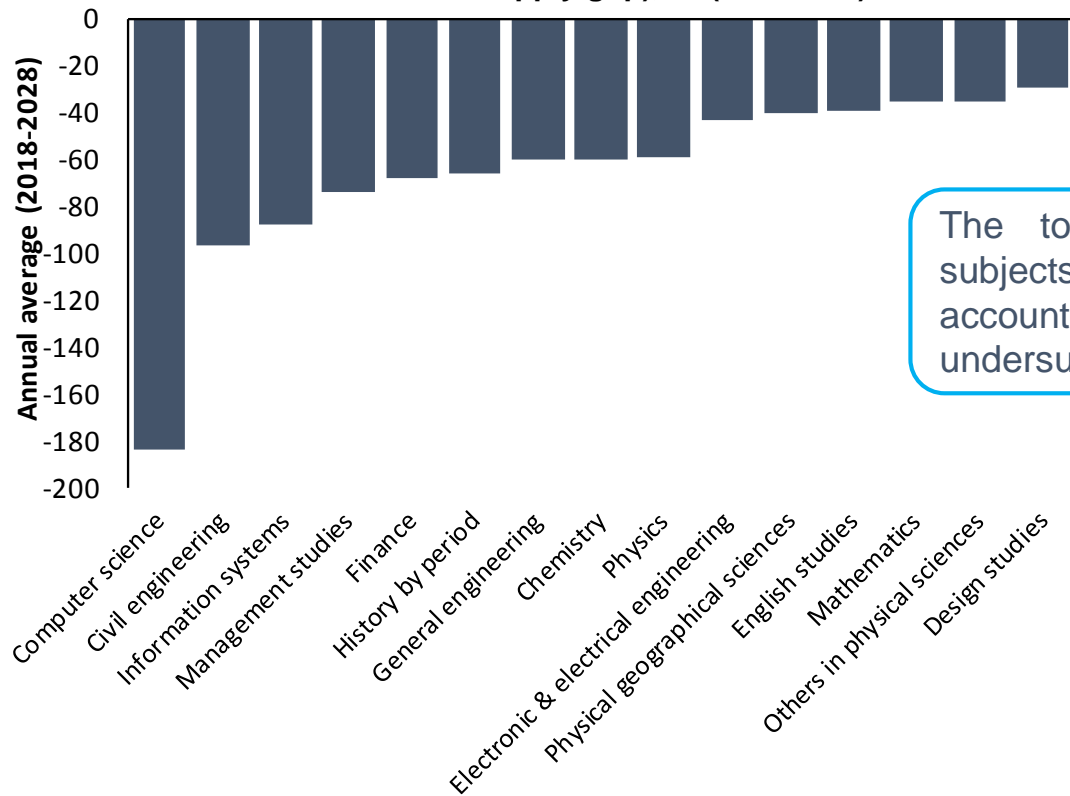
The top 5 undersupplied subjects (JACS, 2-digit) account for 34% of total undersupplied subjects.

Oversupplied degree subjects (detailed)

Training teachers are the most oversupplied degree subject

Top 15 most oversupplied NQF level 6+ subjects (JACSs, 2-digit) (average annual effective supply gap), NI (2018-2028)
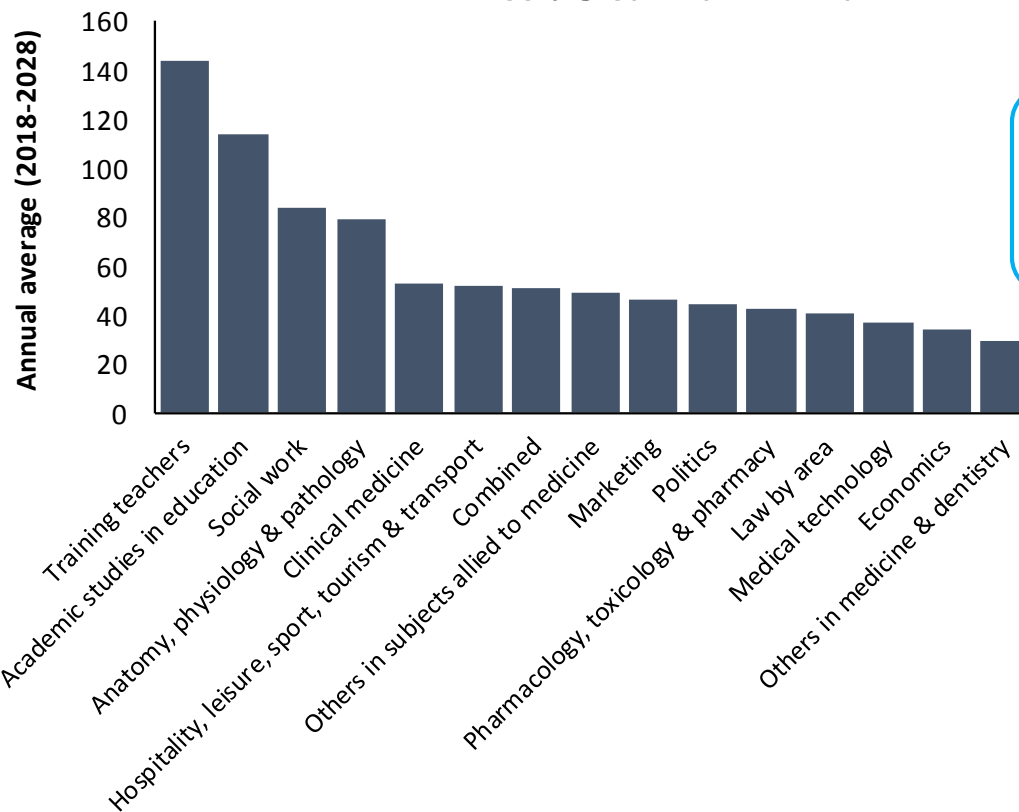

The top 5 oversupplied subjects (JACS, 2-digit) account for 37% of total oversupplied subjects.

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Supply gap by sub-degree subject

Engineering and manufacturing is the most undersupplied sub-degree grouping

Annual average effective supply gap by NQF level 4-5 subject (SSAs, 1-digit), NI (2018-2028)
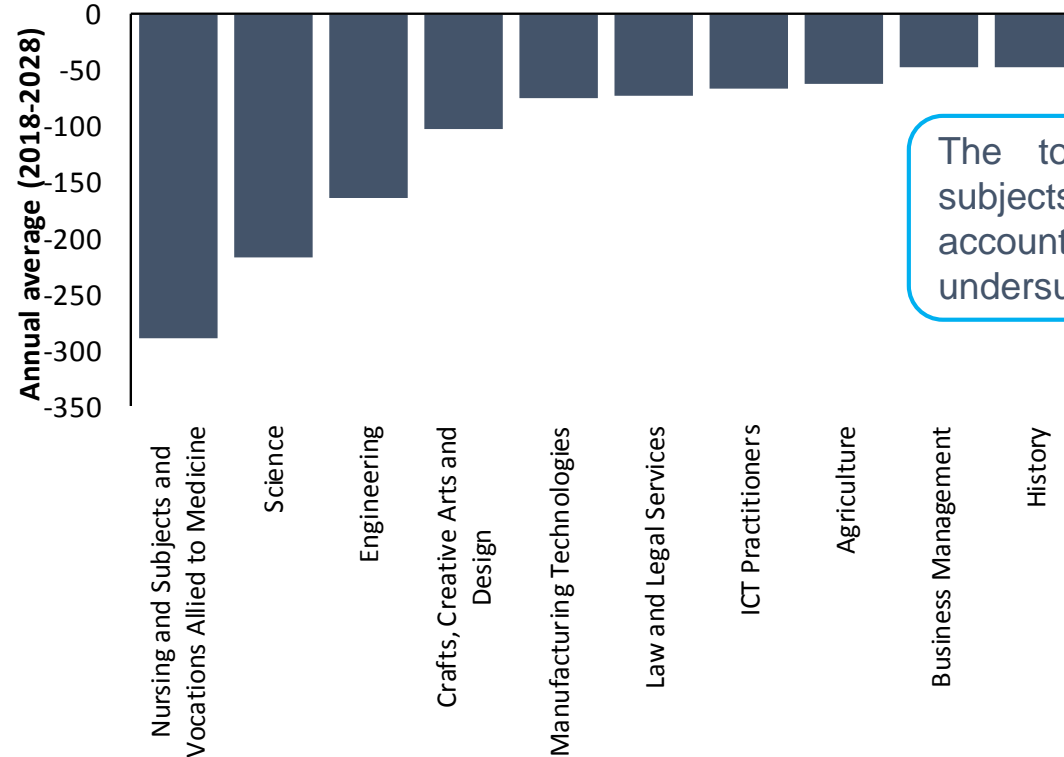

Source: DfE, UUEPC

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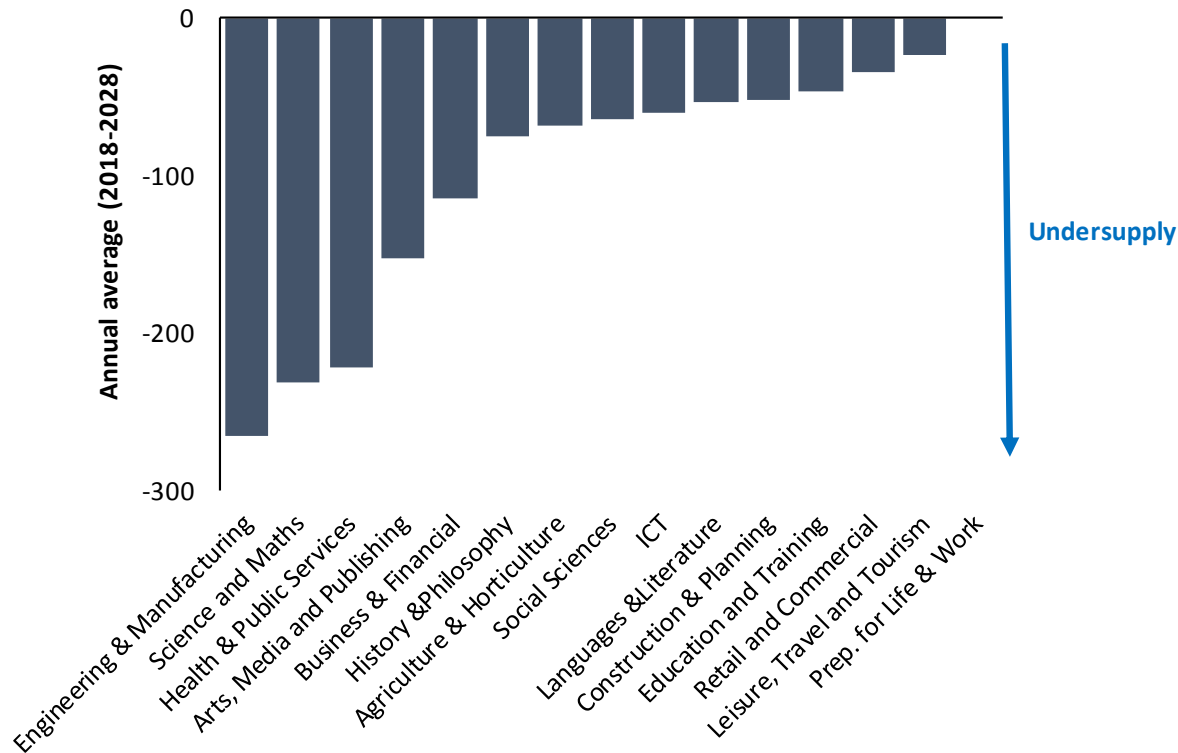
Undersupplied sub-degree subjects (detailed)

Nursing and related subjects is the most under supplied sub-degree subject

Top 10 most undersupplied NQF level 4-5 subjects (SSA, 2-digit) (average annual effective supply gap), NI (2018-2028)
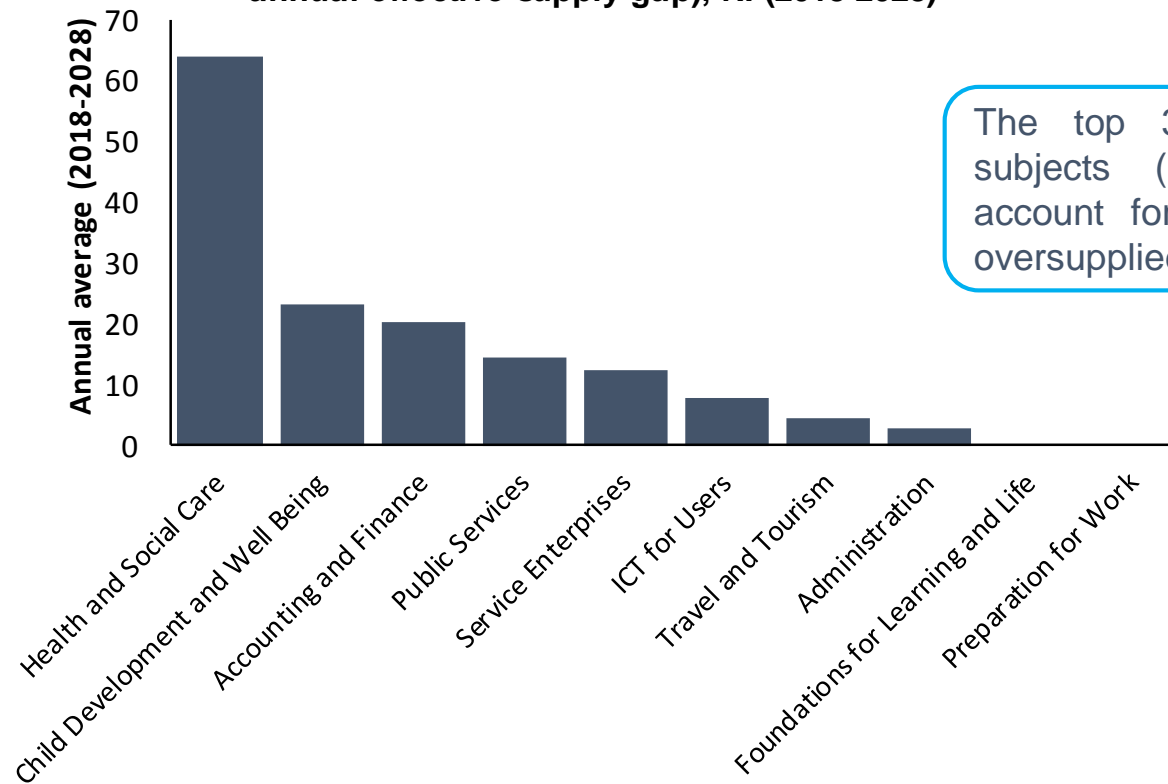

The top 3 undersupplied subjects (SSAs, 2-digit) account for 42% of total undersupplied subjects.

Source: DfE, UUEPC

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Oversupplied sub-degree subjects (detailed)

Health and social care is the most oversupplied sub-degree subject

Top 10 most oversupplied NQF level 4-5 subjects (SSAs, 2-digit) (average annual effective supply gap), NI (2018-2028)

The top 3 oversupplied subjects (SSAs, 2-digit) account for 72% of total oversupplied subjects.

Source: DfE, UUEPC

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Careers information

Earnings and employment prospects

Careers information
Introduction and outline

Decisions and choices made by young people during their journey in education shapes their labour market prospects (e.g. employment and earnings prospects).

For example, the higher a person's qualifications, the higher their earnings and employment prospects are likely to be. With that, employment opportunities and earnings prospects differ by subject area studied. Finally, a persons qualification level and subject studied may impact the sector they are most likely seek an employment opportunity within.

To adequately prepare young people for their future career it is important such careers information is widely accessible.

This section seeks to identify headline careers information including:
1. Earnings prospects by level of education.
2. Employment prospects by level of education.
3. Location (sector) of HEI qualifiers (6 months after graduating).

Earnings progression by age and qualification

Earnings increase as qualification levels increase

Gross weekly earnings progression by NQF qualifications, NI (4 quarter rolling average to Q3 2018)
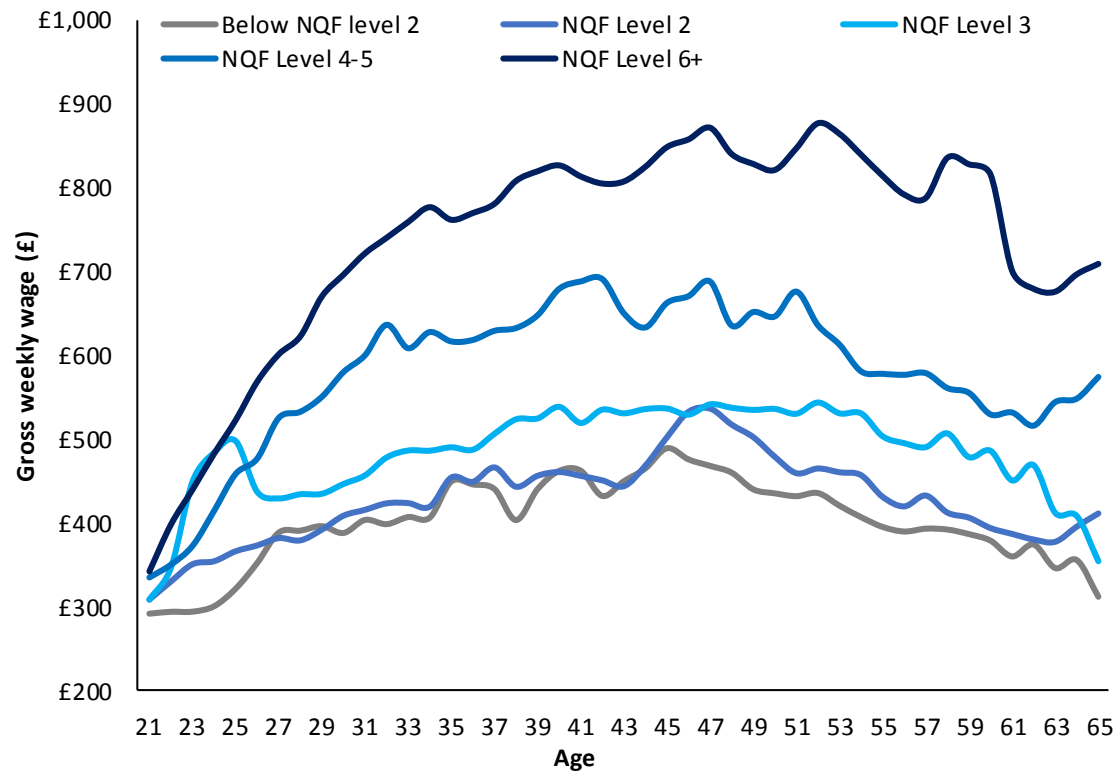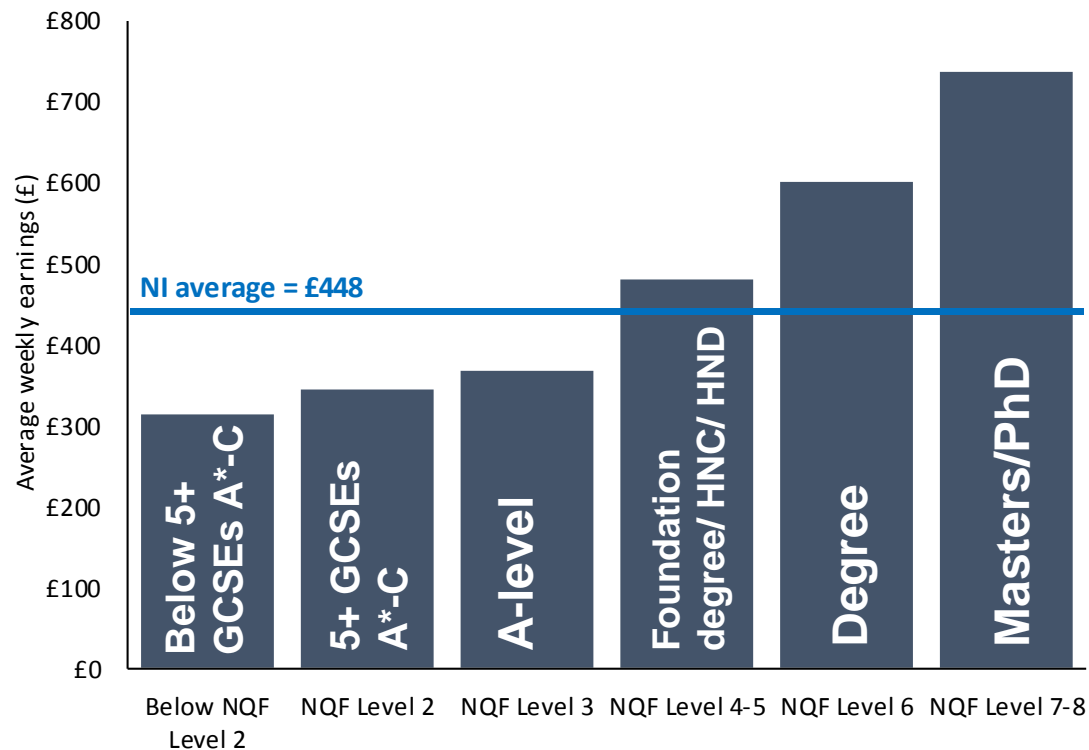

Source: Labour Force Survey

Note: Figures refer to total employment

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Earnings progression by qualification

Undergraduate earnings are 34% above the NI average

Average weekly earnings (gross) by qualification (NQF), NI (4 quarter rolling average to Q3 2018)

NI average = £448

Below 5+ GCSEs A*-C

5+ GCSEs A*-C

A-level

Foundation degree/ HNC/ HND

Degree

Masters/PhD

Average weekly earnings (£)

Below NQF Level 2 — NQF Level 2 — NQF Level 3 — NQF Level 4-5 — NQF Level 6 — NQF Level 7-8

Employment rate by qualification

The undergraduate employment rate is 15 percentage points above the NI average

Employment rate (%) by qualification level, NI (4 quarter rolling average to 2018)

NI average = 77%

Employment rate (%)

- Below 5+ GCSEs A*-C — Below NQF level 2
- 5+ GCSEs A*-C — Level 2 NQF
- A-level — Level 3 NQF
- Foundation degree/HNC/HND — Level 4-5 NQF
- Degree — Level 6 NQF
- Masters/PhD — Level 7-8 NQF

Source: Labour Force Survey

Note: 4 quarter rolling average to Q3 2018

Note: The employment rate is based upon the 16-64 population (excluding full-time students and retirees).

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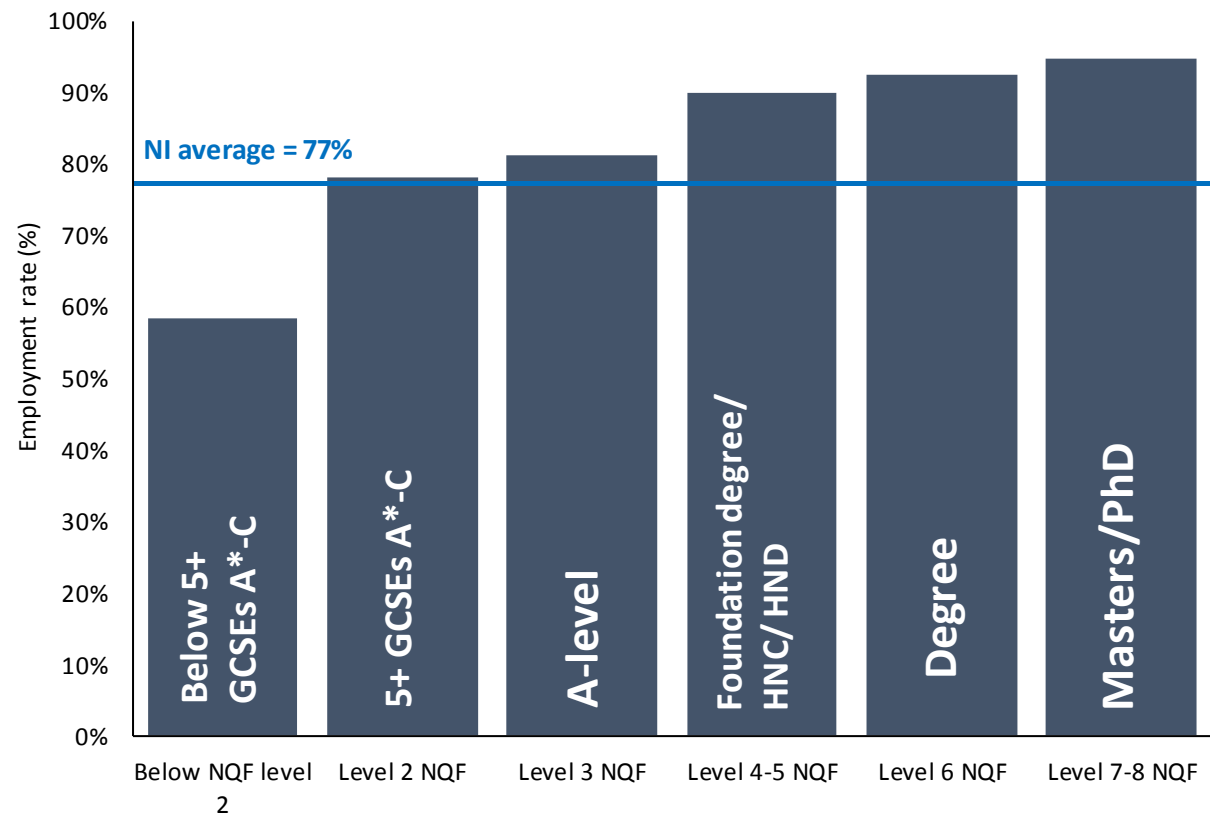
Location of HEI qualifiers (6 months after graduating)

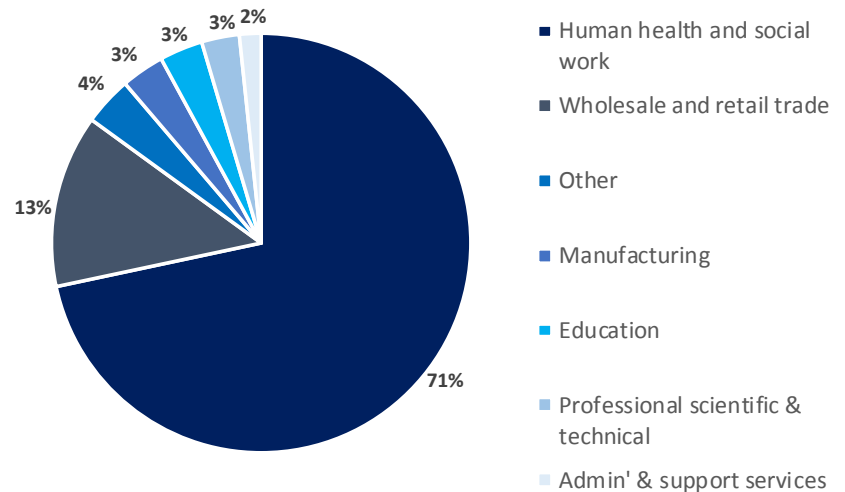## Medicine and dentistry and subjects allied to medicine

Medicine and dentistry - Sector mix (NQF level 6+), NI (2016/17)

- Health & social work
- Education
- Manufacturing

4% 2%

94%
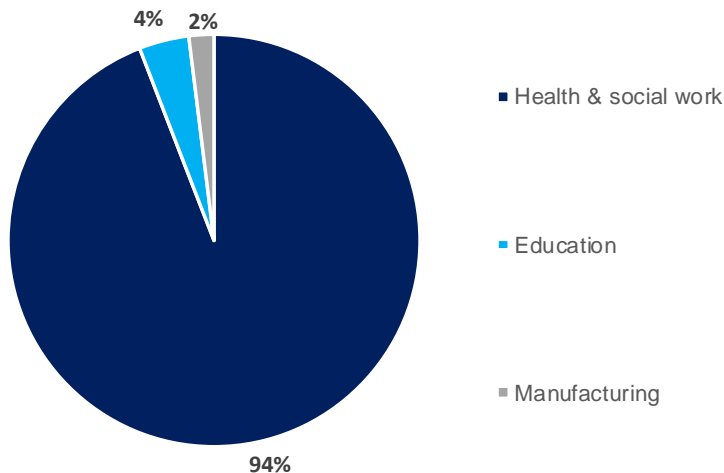
Subjects allied to medicine - Sector mix (NQF level 6+), NI (2016/17)

3% 3% 2%
3%
4%

13%

71%

- Human health and social work
- Wholesale and retail trade
- Other
- Manufacturing
- Education
- Professional scientific & technical
- Admin' & support services

Note: Sectors which have had no Higher Education leavers join within 6 months of graduating have been excluded.

Source: HESA

Note: Other includes; Admin & support services, Public admin & defence, Restaurants & hotels, Agriculture, Construction, Transport & storage and Information & communication.
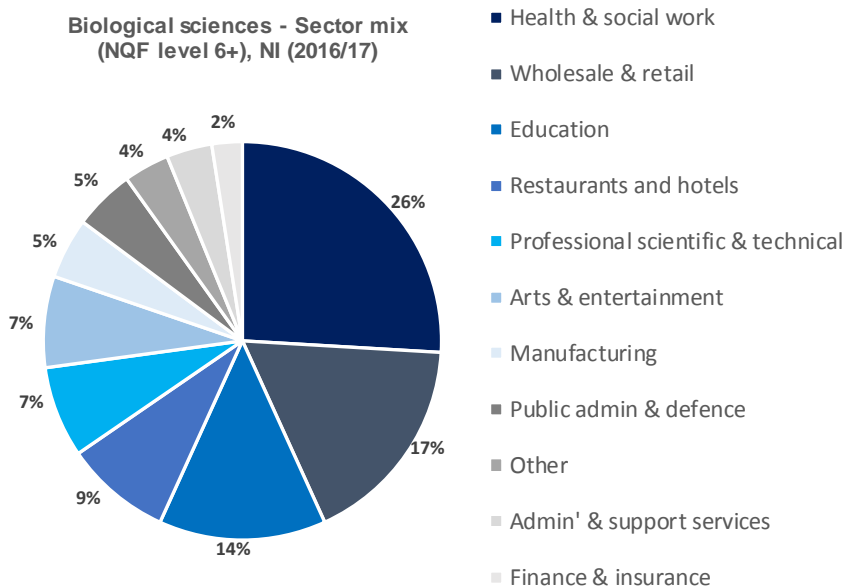
Note: Sectors which have had no Higher Education leavers join within 6 months of graduating have been excluded.
Source: HESA

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Location of HEI qualifiers (6 months after graduating)

Biological sciences and agriculture and related subjects

Biological sciences - Sector mix (NQF level 6+), NI (2016/17)

- ■ Health & social work
- ■ Wholesale & retail
- ■ Education
- ■ Restaurants and hotels
- ■ Professional scientific & technical
- ■ Arts & entertainment
- ■ Manufacturing
- ■ Public admin & defence
- ■ Other
- ■ Admin' & support services
- ■ Finance & insurance

26%
17%
14%
9%
7%
7%
5%
5%
4%
4%
2%

Agriculture and related subjects - Sector mix (NQF level 6+), NI (2016/17)

40%
15%
10%
10%
10%
5%
5%
5%

- ■ Manufacturing
- ■ Wholesale & retail
- ■ Agriculture
- ■ Restaurants and hotels
- ■ Professional scientific & technical
- ■ Construction
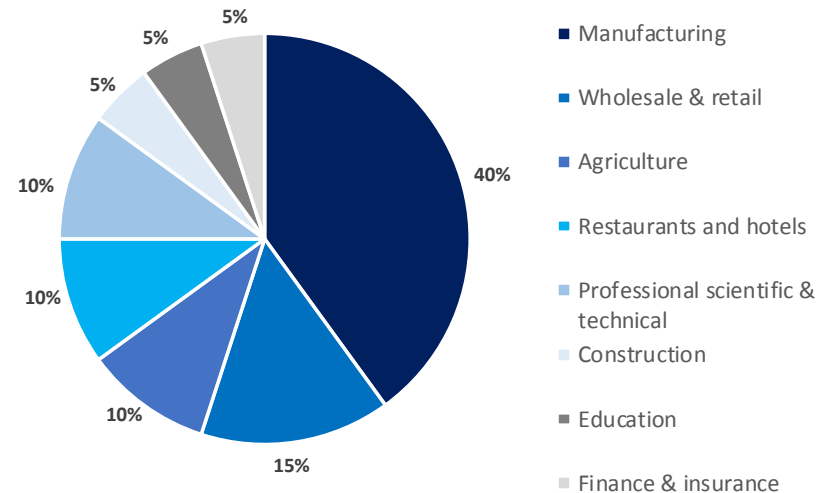- ■ Education
- ■ Finance & insurance

Note: Other includes; Information & communication, Real estate and Other services.
Note: Sectors which have had no Higher Education leavers join within 6 months of graduating have been excluded.
Source: HESA

Note: Sectors which have had no Higher Education leavers join within 6 months of graduating have been excluded.
Source: HESA

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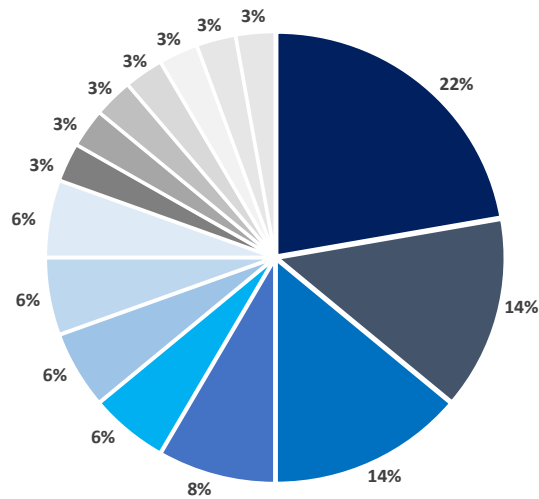
76

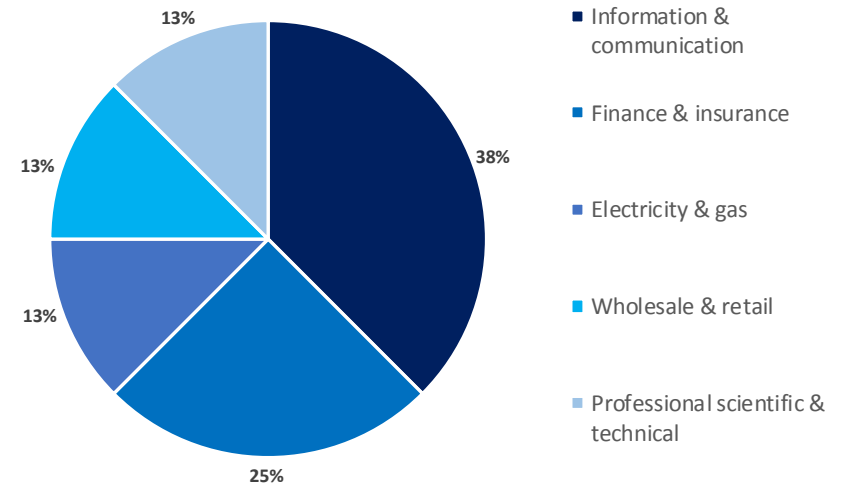# Location of HEI qualifiers (6 months after graduating)

Physical sciences and mathematical sciences subjects

Physical sciences - Sector mix (NQF level 6+), NI (2016/17)

- Professional scientific & technical
- Wholesale & retail
- Education
- Manufacturing
- Restaurants and hotels
- Information & communication
- Public admin & defence
- Health & social work
- Electricity & gas
- Water supply & waste
- Construction
- Finance & insurance
- Real estate
- Admin' & support services
- Other service activities

Pie chart values: 22%, 14%, 14%, 8%, 6%, 6%, 6%, 3%, 3%, 3%, 3%, 3%, 3%, 3%

Mathematical sciences - Sector mix (NQF level 6+), NI (2016/17)

- Information & communication
- Finance & insurance
- Electricity & gas
- Wholesale & retail
- Professional scientific & technical

Pie chart values: 38%, 25%, 13%, 13%, 13%

Note: Sectors which have had no Higher Education leavers join within 6 months of graduating have been excluded.

Source: HESA

Note: Sectors which have had no Higher Education leavers join within 6 months of graduating have been excluded.

Source: HESA

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Location of HEI qualifiers (6 months after graduating)

Computer science and engineering and technology subjects

Computer science - Sector mix (NQF level 6+), NI (2016/17)

- Information & communication: 51%
- Wholesale & retail: 9%
- Professional scientific & technical: 8%
- Manufacturing: 7%
- Finance & insurance: 7%
- Other: 7%
- Admin' & support services: 4%
- Education: 3%
- Restaurants and hotels: 2%
- Health & social work: 2%

Note: Other includes; Public admin' & defence, Arts & entertainment, Electricity & gas, Construction, Transport & storage, Real Estate and Other services

Note: Sectors which have had no Higher Education leavers join within 6 months of graduating have been excluded.
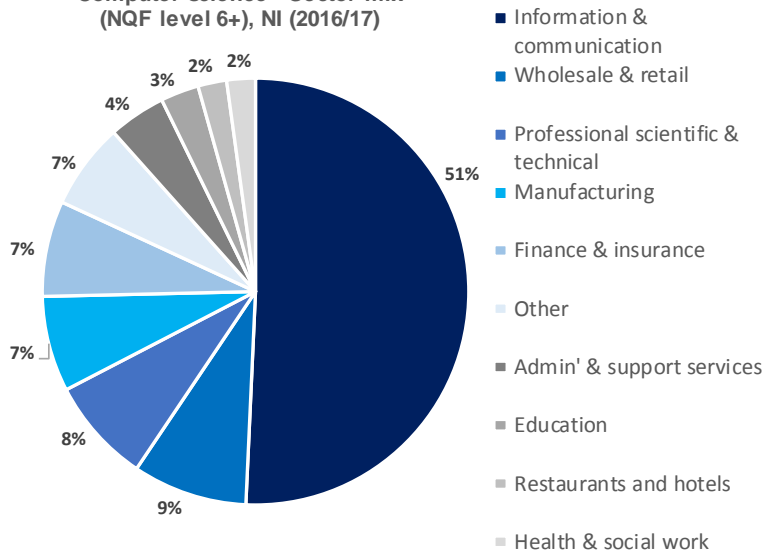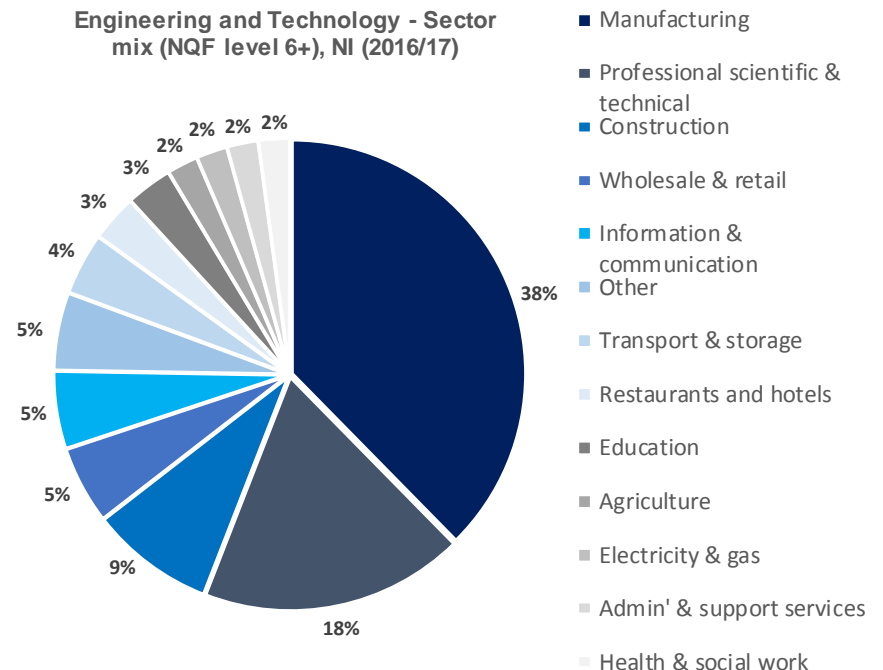
Source: HESA

Engineering and Technology - Sector mix (NQF level 6+), NI (2016/17)

- Manufacturing: 38%
- Professional scientific & technical: 18%
- Construction: 9%
- Wholesale & retail: 5%
- Information & communication: 5%
- Other: 5%
- Transport & storage: 4%
- Restaurants and hotels: 3%
- Education: 3%
- Agriculture: 2%
- Electricity & gas: 2%
- Admin' & support services: 2%
- Health & social work

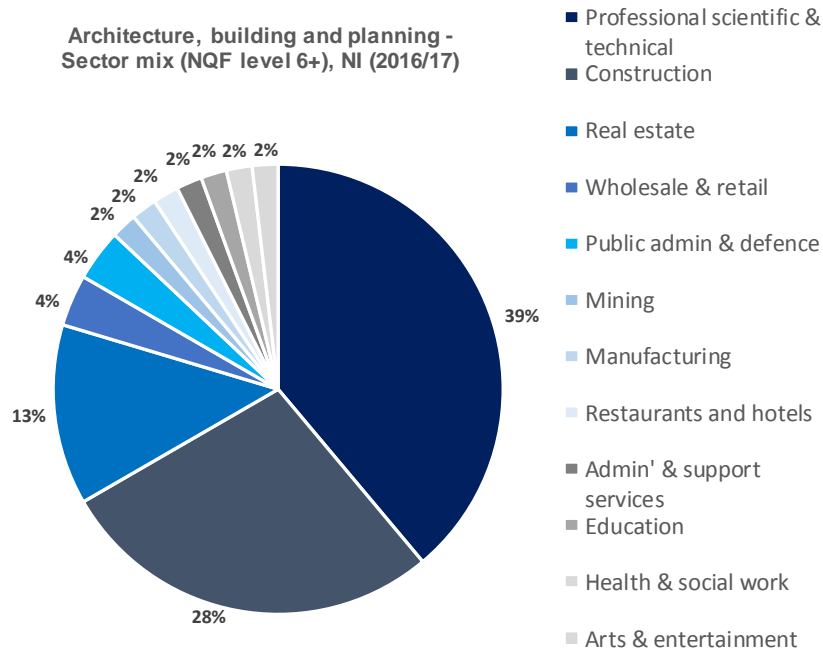**Note:** Other includes; Mining, Water supply & waste,Finance & insurance, Public admin & defence and Arts & entertainment

Note: Sectors which have had no Higher Education leavers join within 6 months of graduating have been excluded.
Source: HESA

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Location of HEI qualifiers (6 months after graduating)

Architecture, building and planning and social studies subjects

**Architecture, building and planning - Sector mix (NQF level 6+), NI (2016/17)**

- Professional scientific & technical
- Construction
- Real estate
- Wholesale & retail
- Public admin & defence
- Mining
- Manufacturing
- Restaurants and hotels
- Admin' & support services
- Education
- Health & social work
- Arts & entertainment

39%
28%
13%
4%
4%
2%
2%
2% 2% 2% 2%

Social studies - Sector mix (NQF level 6+), NI (2016/17)

- Health & social work
- Public admin & defence
- Wholesale & retail
- Education
- Professional scientific & technical
- Other
- Admin' & support services
- Finance & insurance
- Restaurants and hotels
- Information & communication
- Other service activities

50%
10%
8%
6%
6%
5%
4%
3% 3% 3% 2%

Note: Sectors which have had no Higher Education leavers join within 6 months of graduating have been excluded.
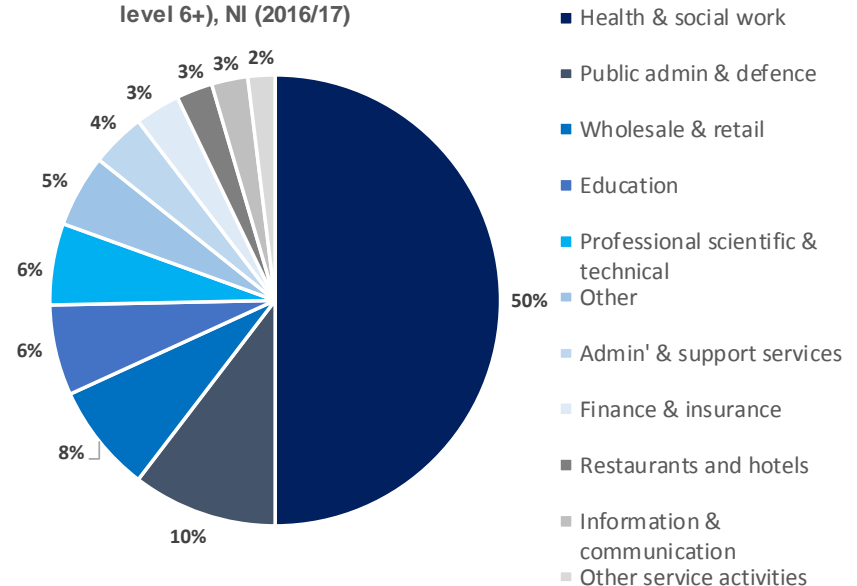
Source: HESA

Note: Other includes; Manufacturing, Real estate, Arts & entertainment, Construction and Transport & storage.
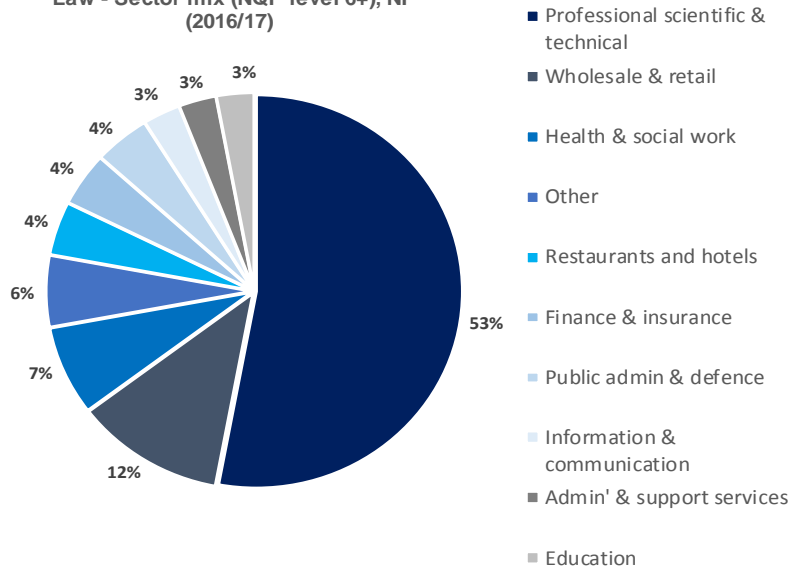
Note: Sectors which have had no Higher Education leavers join within 6 months of graduating have been excluded.

Source: HESA

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Location of HEI qualifiers (6 months after graduating)

Law and business and administrative studies subjects

Law - Sector mix (NQF level 6+), NI (2016/17)

- Professional scientific & technical
- Wholesale & retail
- Health & social work
- Other
- Restaurants and hotels
- Finance & insurance
- Public admin & defence
- Information & communication
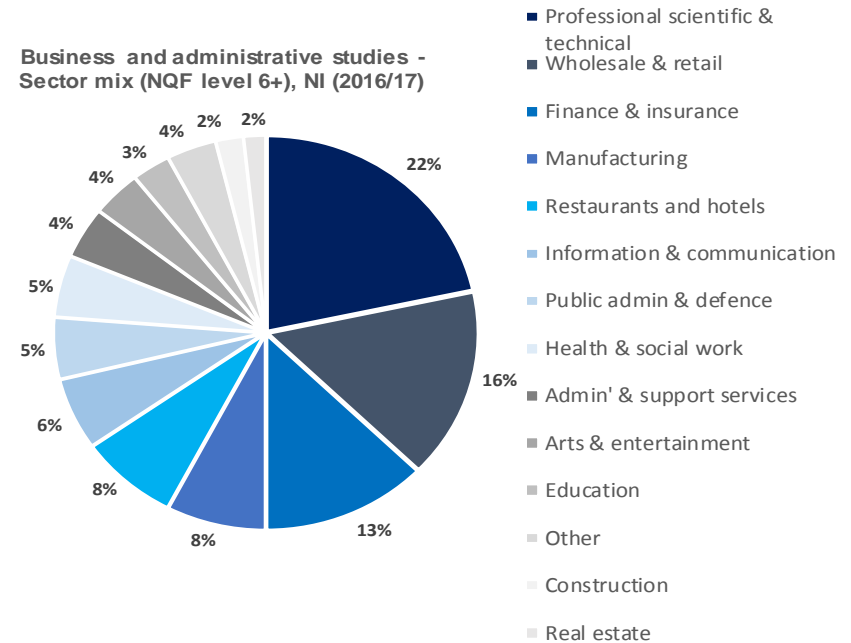- Admin' & support services
- Education

Note: Other includes; Manufacturing, Transport & storage, Arts & entertainment and Other services.
Note: Sectors which have had no Higher Education leavers join within 6 months of graduating have been excluded.
Source: HESA

Business and administrative studies - Sector mix (NQF level 6+), NI (2016/17)

- Professional scientific & technical
- Wholesale & retail
- Finance & insurance
- Manufacturing
- Restaurants and hotels
- Information & communication
- Public admin & defence
- Health & social work
- Admin' & support services
- Arts & entertainment
- Education
- Other
- Construction
- Real estate

Note: Other includes; Transport & storage, Electricty & gas, Water supply & waste and Mining.
Note: Sectors which have had no Higher Education leavers join within 6 months of graduating have been excluded.
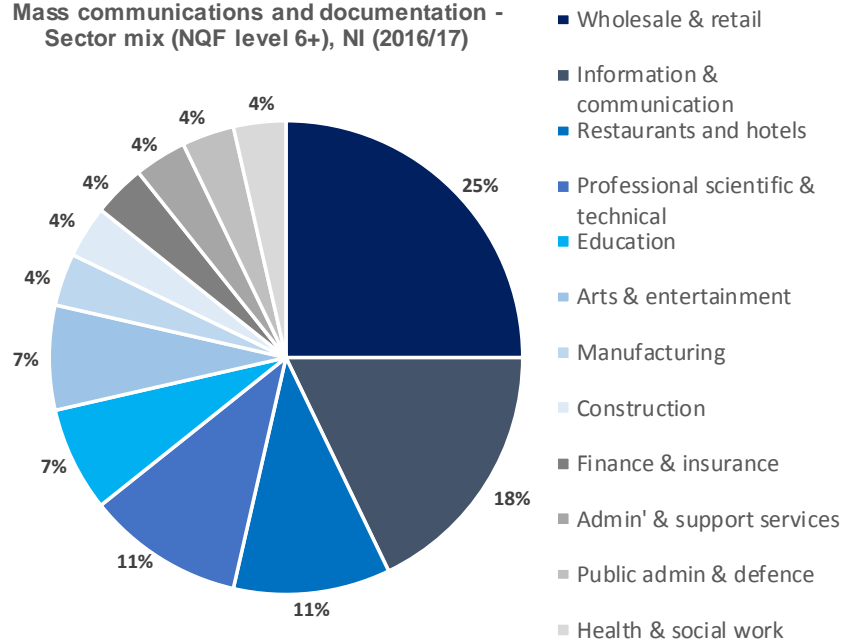**Source:** HESA

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Location of HEI qualifiers (6 months after graduating)

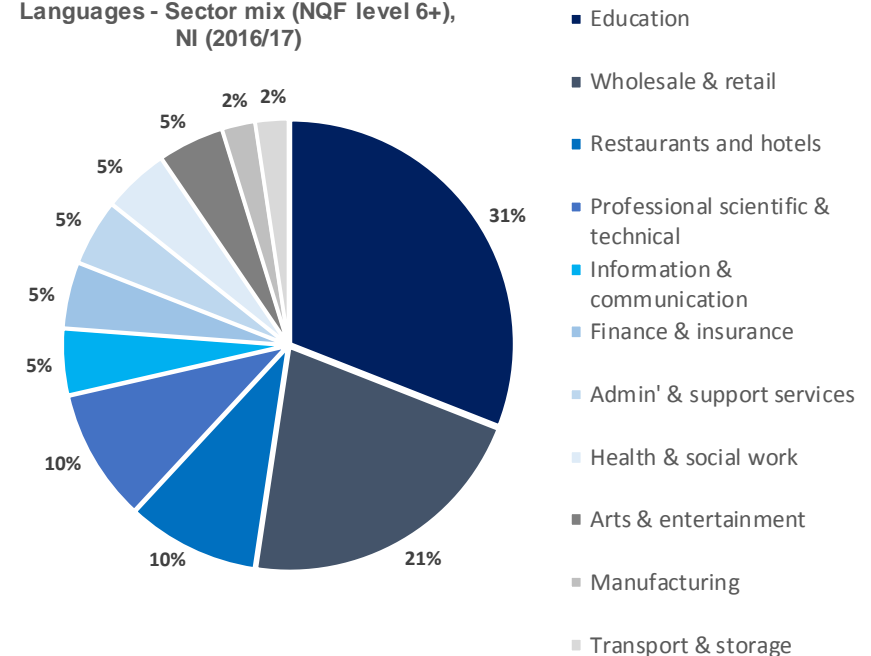## Mass communications and documentation and languages subjects

Mass communications and documentation - Sector mix (NQF level 6+), NI (2016/17)

- Wholesale & retail — 25%
- Information & communication — 18%
- Restaurants and hotels — 11%
- Professional scientific & technical — 11%
- Education — 7%
- Arts & entertainment — 7%
- Manufacturing — 4%
- Construction — 4%
- Finance & insurance — 4%
- Admin' & support services — 4%
- Public admin & defence — 4%
- Health & social work — 4%

Note: Sectors which have had no Higher Education leavers join within 6 months of graduating have been excluded.

Source: HESA
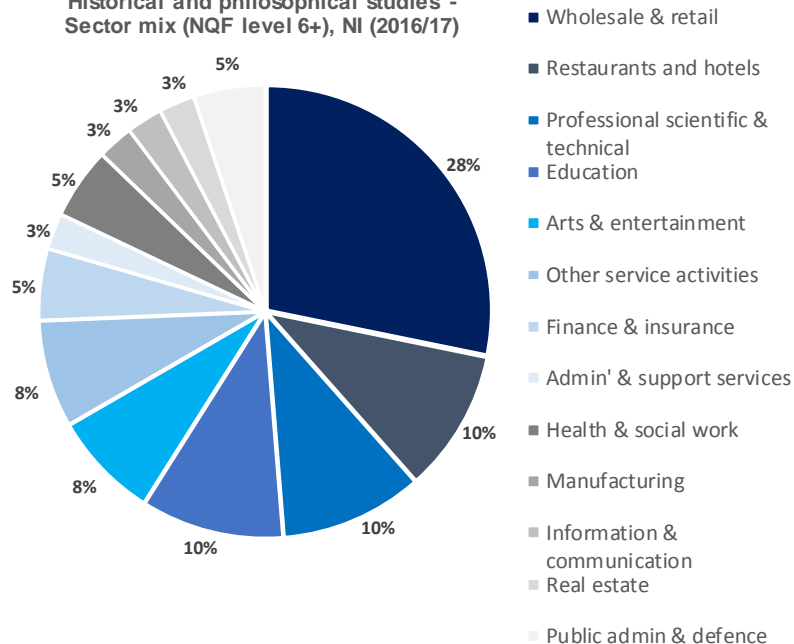
Languages - Sector mix (NQF level 6+), NI (2016/17)

- Education — 31%
- Wholesale & retail — 21%
- Restaurants and hotels — 10%
- Professional scientific & technical — 10%
- Information & communication — 5%
- Finance & insurance — 5%
- Admin' & support services — 5%
- Health & social work — 5%
- Arts & entertainment — 5%
- Manufacturing — 2%
- Transport & storage — 2%

Note: Sectors which have had no Higher Education leavers join within 6 months of graduating have been excluded.

Source: HESA

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Location of HEI qualifiers (6 months after graduating)

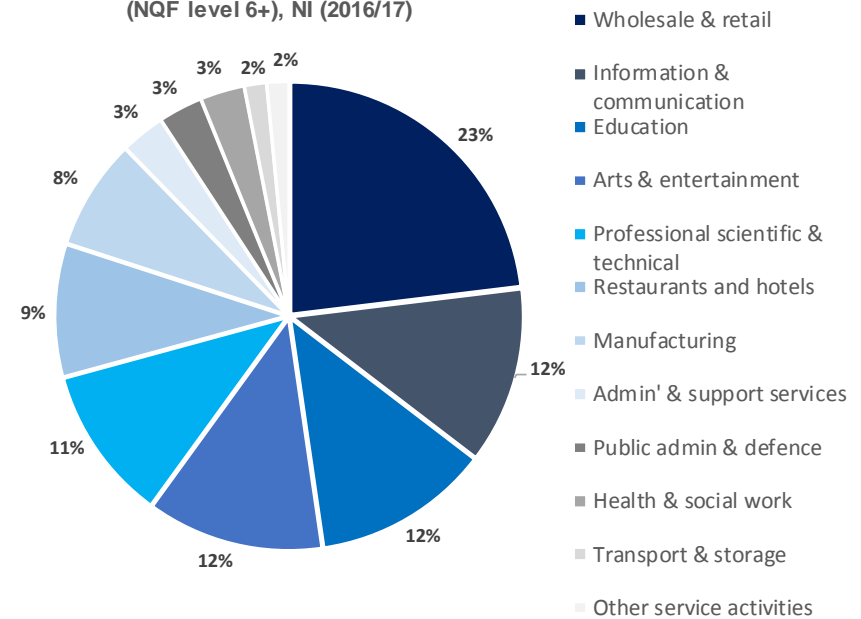## Historical and philosophical and creative arts and design subjects

Historical and philosophical studies - Sector mix (NQF level 6+), NI (2016/17)

- Wholesale & retail — 28%
- Restaurants and hotels — 10%
- Professional scientific & technical — 10%
- Education — 10%
- Arts & entertainment — 8%
- Other service activities — 8%
- Finance & insurance — 5%
- Admin' & support services — 5%
- Health & social work — 3%
- Manufacturing — 5%
- Information & communication — 3%
- Real estate — 3%
- Public admin & defence — 3%, 5%

Note: Sectors which have had no Higher Education leavers join within 6 months of graduating have been excluded.

Source: HESA

**Creative arts and design - Sector mix (NQF level 6+), NI (2016/17)**

- Wholesale & retail — 23%
- Information & communication — 12%
- Education — 12%
- Arts & entertainment — 12%
- Professional scientific & technical — 11%
- Restaurants and hotels — 9%
- Manufacturing — 8%
- Admin' & support services — 3%
- Public admin & defence — 3%
- Health & social work — 3%
- Transport & storage — 2%
- Other service activities — 2%

Note: Sectors which have had no Higher Education leavers join within 6 months of graduating have been excluded.

Source: HESA

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Location of HEI qualifiers (6 months after graduating)

Education subjects

Education - Sector mix (NQF level 6+), NI (2016/17)

- Education
- Health & social work
- Other

6%
9%
85%
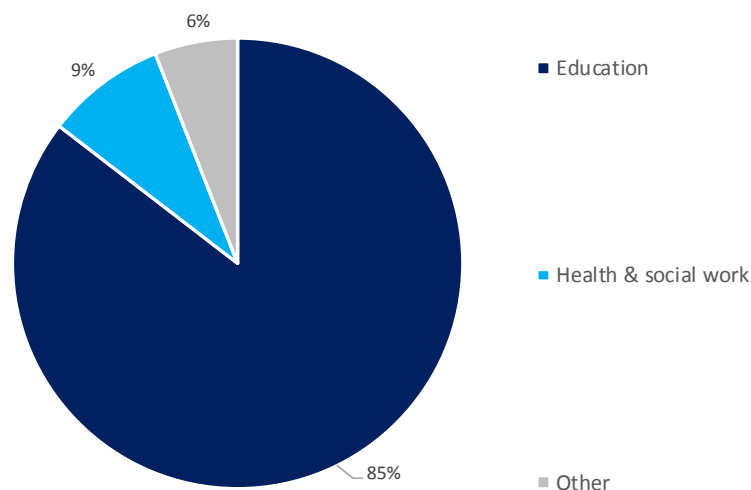
Note: Other includes; Admin & support, Public admin & defence, Other services, Wholesale & retail, Professional scientific and technical and Arts & entertainment.

Note: Sectors which have had no Higher Education leavers join within 6 months of graduating have been excluded.

Source: HESA

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Sector mix by subject studied (NQF level 6+) - stock
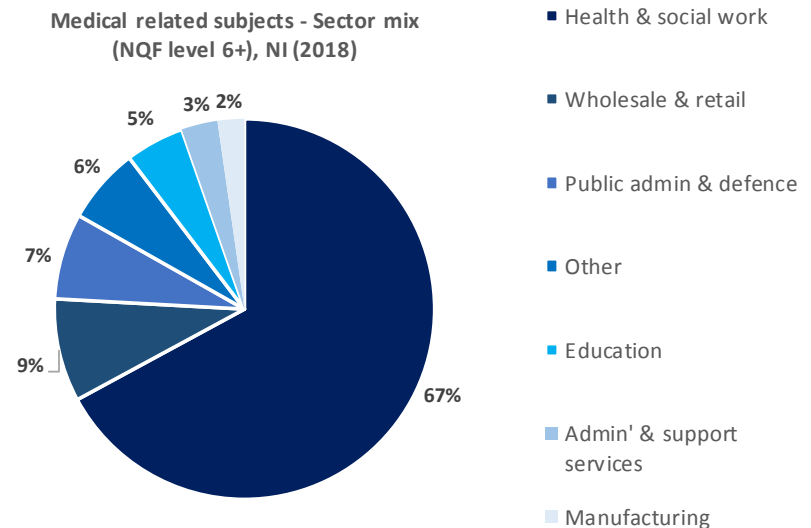
Medicine and dentistry and medical related subjects

Medicine and dentistry - Sector mix (NQF level 6+), NI (2018)

- Health & social work
- Public admin & defence
- Other
- Education
- Wholesale & retail

Pie chart values: 83%, 7%, 6%, 3%, 2%
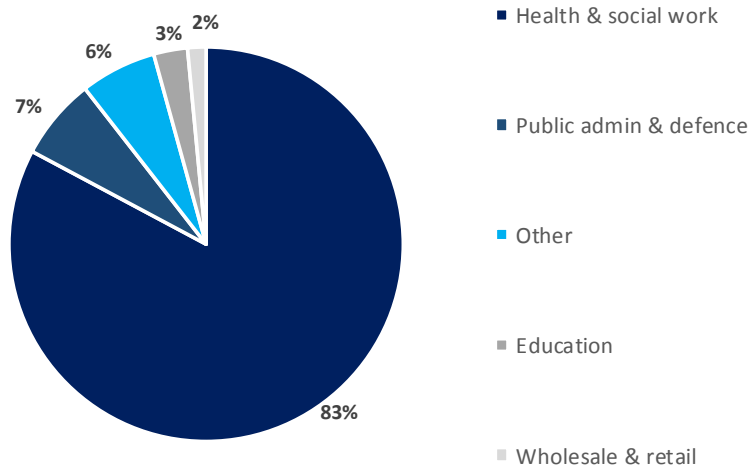
Note: Other includes; Professional scientific & technical, Mining, Other service activities, Manufacturing, Information & communication, Construction, Admin' & support, Restaurants and hotels, Transport & storage, Agriculture, Arts & entertainment, Finance & insurance, Real estate, Electricty & gas, People employed by households and Water supply & waste.
Source: Labour Force Survey, UUEPC Analysis

Medical related subjects - Sector mix (NQF level 6+), NI (2018)

- Health & social work
- Wholesale & retail
- Public admin & defence
- Other
- Education
- Admin' & support services
- Manufacturing
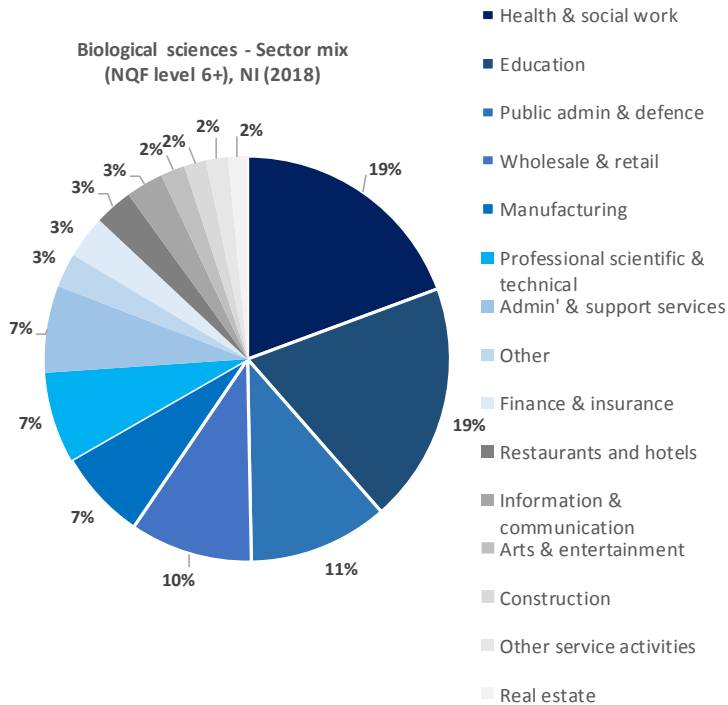
Pie chart values: 67%, 9%, 7%, 6%, 5%, 3%, 2%

Note: Other includes; Professional, scientific & technical, Restaurants & hotels, Other service activities, Real estate, Construction, Information & communication, Finance & insurance, Transport & storage, Agriculture, Arts & entertainment, Water supply & waste, Electricity & gas, People employed by households and Mining.
Source: Labour Force Survey, UUEPC Analysis

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Sector mix by subject studied (NQF level 6+) - stock

Biological sciences and agricultural sciences subjects

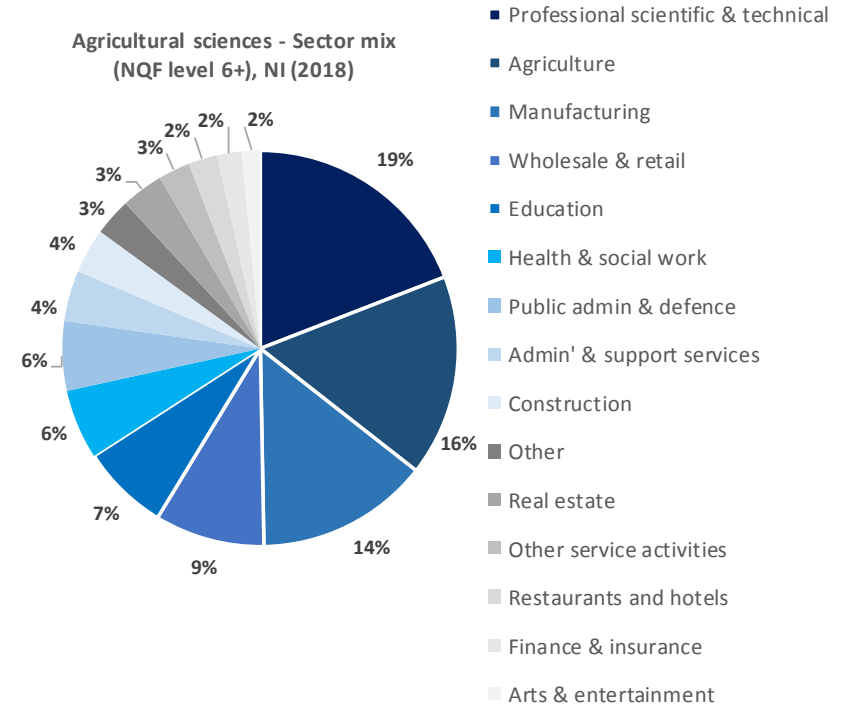**Biological sciences - Sector mix (NQF level 6+), NI (2018)**

Legend:
- Health & social work
- Education
- Public admin & defence
- Wholesale & retail
- Manufacturing
- Professional scientific & technical
- Admin' & support services
- Other
- Finance & insurance
- Restaurants and hotels
- Information & communication
- Arts & entertainment
- Construction
- Other service activities
- Real estate

Pie chart values: 19%, 19%, 11%, 10%, 7%, 7%, 7%, 7%, 3%, 3%, 3%, 3%, 2%, 2%, 2%, 2%

Note: Other includes; Agriculture, Transport & Storage, Water supply & waste, Mining, Electricity & gas and People employed by households.

Source: Labour Force Survey, UUEPC Analysis

Agricultural sciences - Sector mix (NQF level 6+), NI (2018)

Legend:
- Professional scientific & technical
- Agriculture
- Manufacturing
- Wholesale & retail
- Education
- Health & social work
- Public admin & defence
- Admin' & support services
- Construction
- Other
- Real estate
- Other service activities
- Restaurants and hotels
- Finance & insurance
- Arts & entertainment

Pie chart values: 19%, 16%, 14%, 9%, 7%, 6%, 6%, 4%, 4%, 3%, 3%, 3%, 2%, 2%, 2%

Note: Other includes; Transport & storage, Information & communications, Water supply & waste, Electricity & gas, People employed by households and Mining.
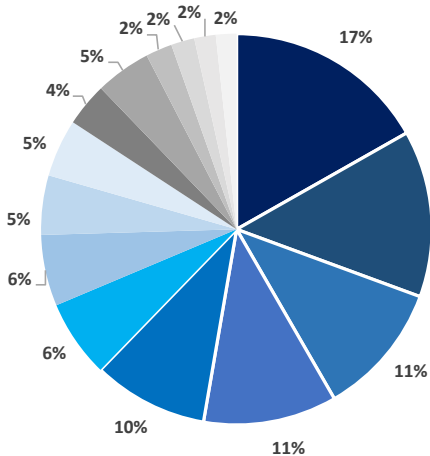
Source: Labour Force Survey, UUEPC Analysis

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Sector mix by subject studied (NQF level 6+) - stock

Physical/environmental sciences and mathematical sciences and computing subjects

Physical/Environmental sciences - Sector mix (NQF level 6+), NI (2018)

- Education
- Manufacturing
- Public admin & defence
- Professional scientific & technical
- Wholesale & retail
- Health & social work
- Information & communication
- Construction
- Admin' & support services
- Finance & insurance
- Other
- Restaurants and hotels
- Real estate
- Other service activities

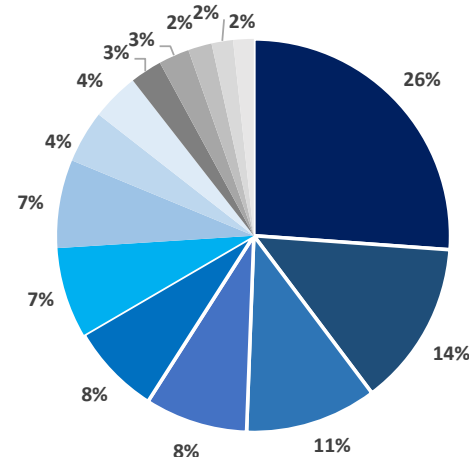17%, 14%, 11%, 11%, 10%, 6%, 6%, 5%, 5%, 5%, 4%, 2%, 2%, 2%, 2%

Note: Other includes; Agriculture, Water supply & waste, Arts & entertainment, Mining, Electricity & gas and People employed by households.
Source: Labour Force Survey, UUEPC Analysis

Mathematical sciences and computing - Sector mix (NQF level 6+), NI (2018)

- Information & communication
- Education
- Finance & insurance
- Wholesale & retail
- Public admin & defence
- Manufacturing
- Professional scientific & technical
- Admin' & support services
- Health & social work
- Other
- Construction
- Transport & storage
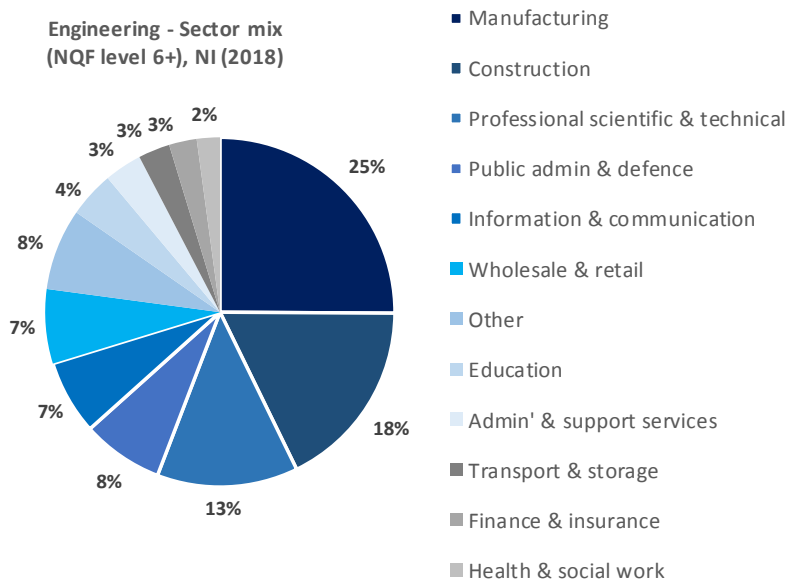- Restaurants and hotels
- Other service activities

26%, 14%, 11%, 8%, 8%, 7%, 7%, 4%, 4%, 3%, 3%, 2%, 2%, 2%

Note: Other includes; Agriculture, Electricty & gas, Water supply & waste, Mining and People employed by households.
Source: Labour Force Survey, UUEPC Analysis

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Sector mix by subject studied (NQF level 6+) - stock
Engineering and technology subjects

Engineering - Sector mix (NQF level 6+), NI (2018)

- Manufacturing
- Construction
- Professional scientific & technical
- Public admin & defence
- Information & communication
- Wholesale & retail
- Other
- Education
- Admin' & support services
- Transport & storage
- Finance & insurance
- Health & social work

Engineering pie chart values: 25%, 18%, 13%, 8%, 7%, 7%, 8%, 4%, 3%, 3%, 3%, 2%

Note: Other includes; Restaurants & hotels, Other services activites, Real estate, Mining, Electricity & gas, Water supply & waste, Agriculture, Arts & entertainment and People employed by households.

Source: Labour Force Survey, UUEPC Analysis

Technology - Sector mix (NQF level 6+), NI (2018)

- Manufacturing
- Wholesale & retail
- Education
- Information & communication
- Public admin & defence
- Mining
- Professional scientific & technical
- Construction
- Health & social work
- Restaurants and hotels
- Finance & insurance
- Admin' & support services
- Other
- Transport & storage
- Other service activities

Technology pie chart values: 18%, 15%, 13%, 7%, 6%, 6%, 5%, 5%, 5%, 5%, 4%, 4%, 2%, 2%, 2%
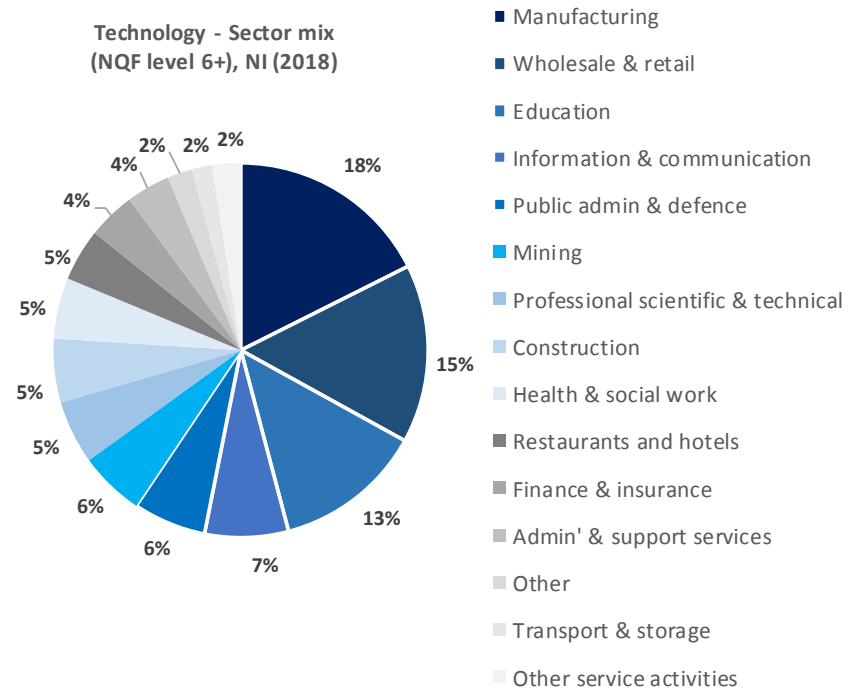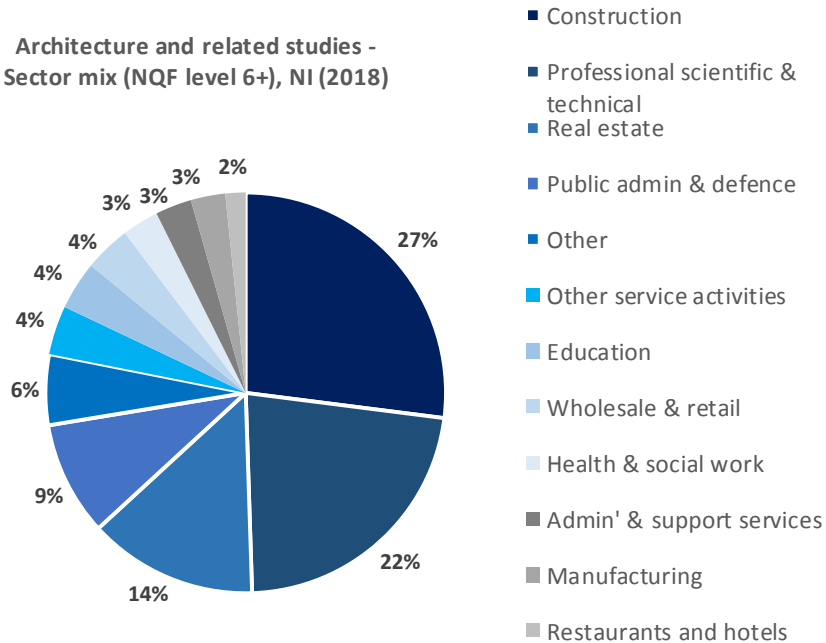
Note: Other includes; Real estate, Arts & entertainment, Electricity & gas, Water supply & waste, Agriculture, and People employed by households

Source: Labour Force Survey, UUEPC Analysis

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Sector mix by subject studied (NQF level 6+) - stock
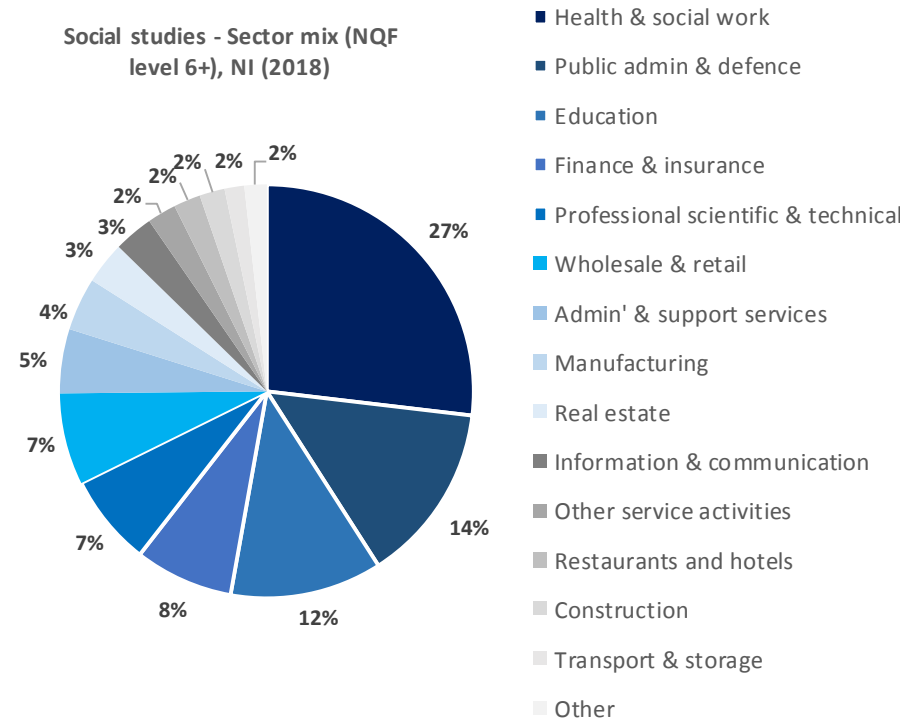## Architecture and related studies and social studies subjects

Architecture and related studies - Sector mix (NQF level 6+), NI (2018)

- Construction
- Professional scientific & technical
- Real estate
- Public admin & defence
- Other
- Other service activities
- Education
- Wholesale & retail
- Health & social work
- Admin' & support services
- Manufacturing
- Restaurants and hotels

Note: Other includes; Transport & storage, Finance & insurance, Information & communication, Arts & entertainment, Agriculture, Electricity & gas, Water supply & waste, Mining and People employed by households.

Source: Labour Force Survey, UUEPC Analysis

Social studies - Sector mix (NQF level 6+), NI (2018)

- Health & social work
- Public admin & defence
- Education
- Finance & insurance
- Professional scientific & technical
- Wholesale & retail
- Admin' & support services
- Manufacturing
- Real estate
- Information & communication
- Other service activities
- Restaurants and hotels
- Construction
- Transport & storage
- Other

Note: Other includes; Arts & entertainment, Agriculture, Water supply & waste, Electricty & gas, People employed by households and Mining.
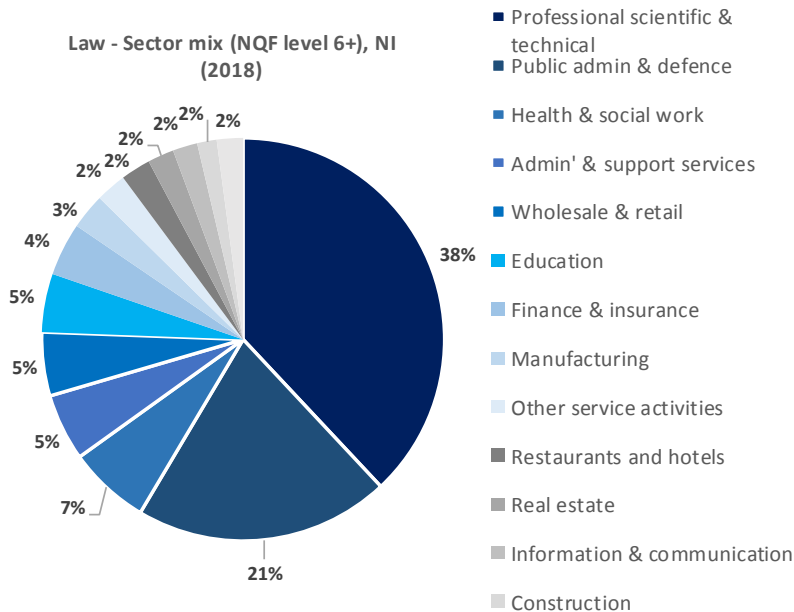
Source: Labour Force Survey, UUEPC Analysis

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Sector mix by subject studied (NQF level 6+) - stock

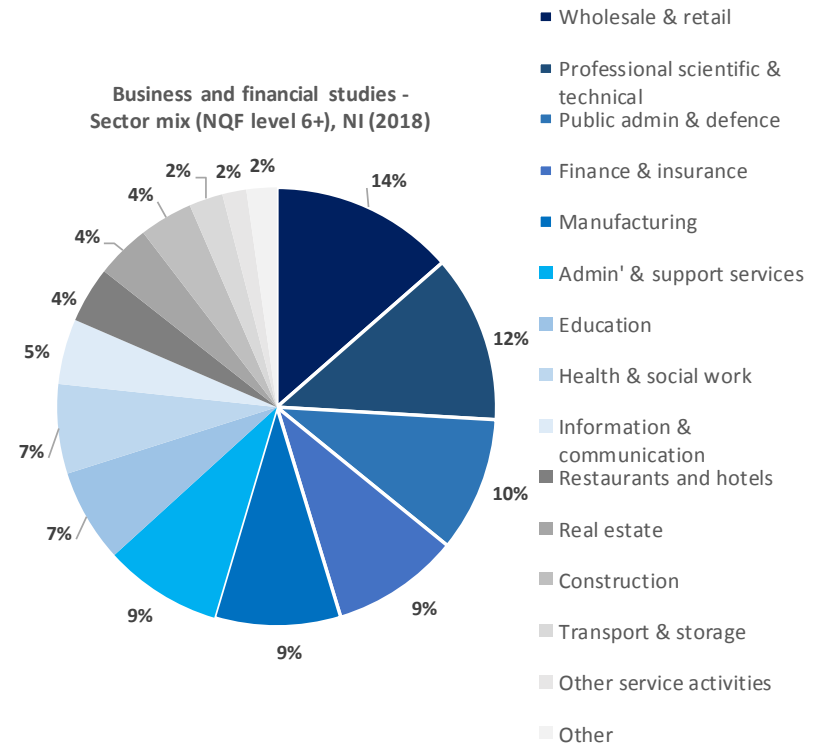## Law and business and financial studies subjects

Law - Sector mix (NQF level 6+), NI (2018)

Legend:
- Professional scientific & technical
- Public admin & defence
- Health & social work
- Admin' & support services
- Wholesale & retail
- Education
- Finance & insurance
- Manufacturing
- Other service activities
- Restaurants and hotels
- Real estate
- Information & communication
- Construction

Values: 38%, 21%, 7%, 5%, 5%, 5%, 4%, 3%, 2%, 2%, 2%, 2%, 2%, 2%

Note: Other includes; Transport & storage, Arts & entertainment, Agriculture, Electricty & gas, Water supply & waste, People employed by households and Mining.

Source: Labour Force Survey, UUEPC Analysis

Business and financial studies - Sector mix (NQF level 6+), NI (2018)

Legend:
- Wholesale & retail
- Professional scientific & technical
- Public admin & defence
- Finance & insurance
- Manufacturing
- Admin' & support services
- Education
- Health & social work
- Information & communication
- Restaurants and hotels
- Real estate
- Construction
- Transport & storage
- Other service activities
- Other

Values: 14%, 12%, 10%, 9%, 9%, 9%, 7%, 7%, 5%, 4%, 4%, 4%, 2%, 2%, 2%
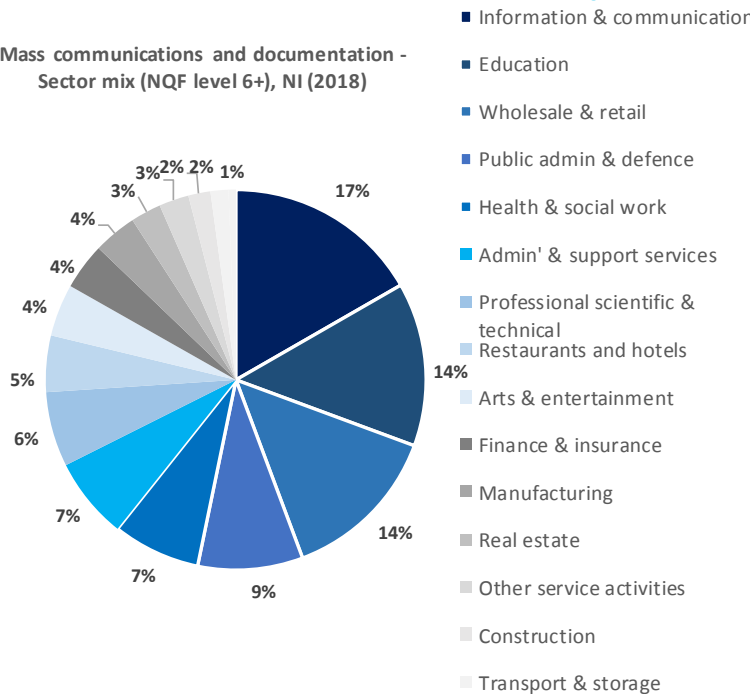
Note: Other includes; Arts & entertainemnt, Agriculture, Electricity & gas, Mining, Water supply & waste and People employed by households.
Source: Labour Force Survey, UUEPC Analysis

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Sector mix by subject studied (NQF level 6+) - stock

Mass communications and documentation and Linguistics, English, Celtic and ancient subjects
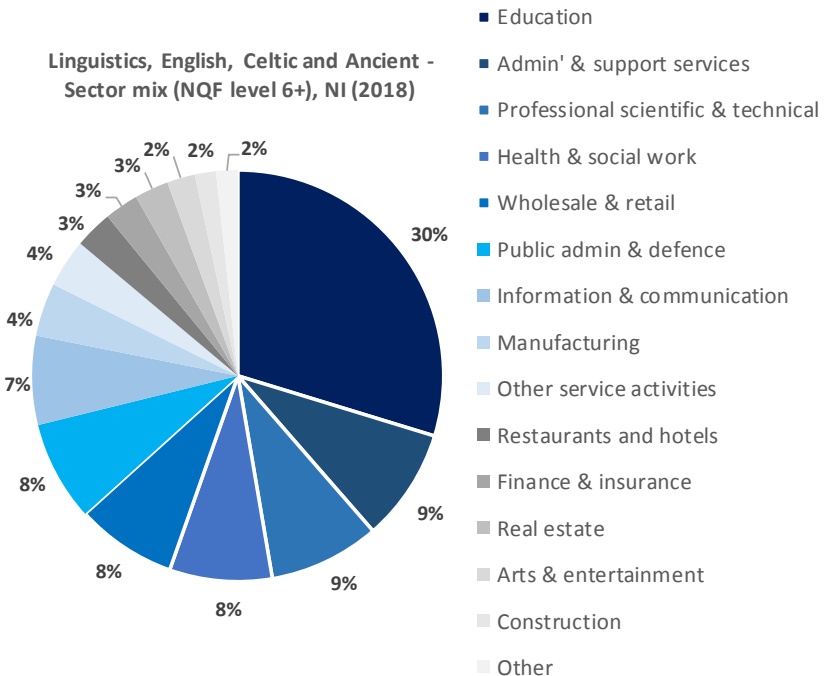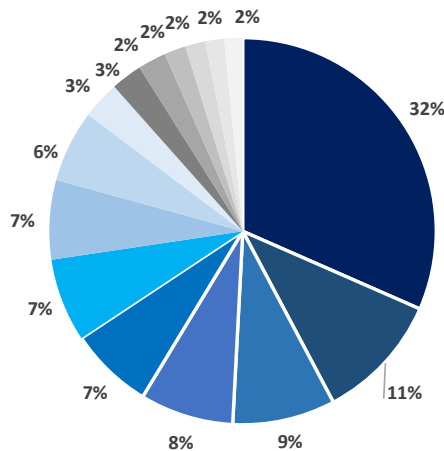
Mass communications and documentation - Sector mix (NQF level 6+), NI (2018)

- Information & communication
- Education
- Wholesale & retail
- Public admin & defence
- Health & social work
- Admin' & support services
- Professional scientific & technical
- Restaurants and hotels
- Arts & entertainment
- Finance & insurance
- Manufacturing
- Real estate
- Other service activities
- Construction
- Transport & storage

Note: Other includes; Agriculture, Electricty & gas, Water supply & waste, People employed by hosueholds and Mining.

Source: Labour Force Survey, UUEPC Analysis

Linguistics, English, Celtic and Ancient - Sector mix (NQF level 6+), NI (2018)

- Education
- Admin' & support services
- Professional scientific & technical
- Health & social work
- Wholesale & retail
- Public admin & defence
- Information & communication
- Manufacturing
- Other service activities
- Restaurants and hotels
- Finance & insurance
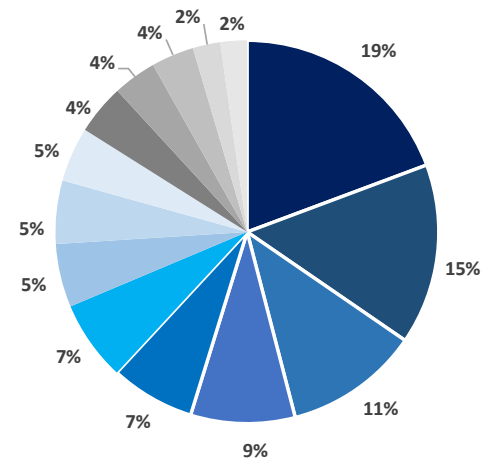- Real estate
- Arts & entertainment
- Construction
- Other

Note: Other includes; Agriculture, Transport & storage, Water supply & waste, Electricity & gas, People employed by Households and Mining.
Source: Labour Force Survey, UUEPC Analysis

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Sector mix by subject studied (NQF level 6+) - stock

European languages and Eastern, Asiatic, African, American and Australasian languages and literature subjects

European Languages - Sector mix (NQF level 6+), NI (2018)

- ■ Education
- ■ Public admin & defence
- ■ Health & social work
- ■ Professional scientific & technical
- ■ Finance & insurance
- ■ Wholesale & retail
- ■ Information & communication
- ■ Admin' & support services
- ■ Manufacturing
- ■ Other
- ■ Restaurants and hotels
- ■ Real estate
- ■ Other service activities
- ■ Construction
- ■ Arts & entertainment

Pie chart percentages: 32%, 11%, 9%, 8%, 7%, 7%, 7%, 6%, 3%, 3%, 2%, 2%, 2%, 2%, 2%

Note: Other includes; Agriculture, Transport & storage, Water supply & waste, Electricity & gas, People employed by Households and Mining.

Source: Labour Force Survey, UUEPC Analysis

Eastern, Asiatic, African, American and Australasian Languages and Literature - Sector mix (NQF level 6+), NI (2018)
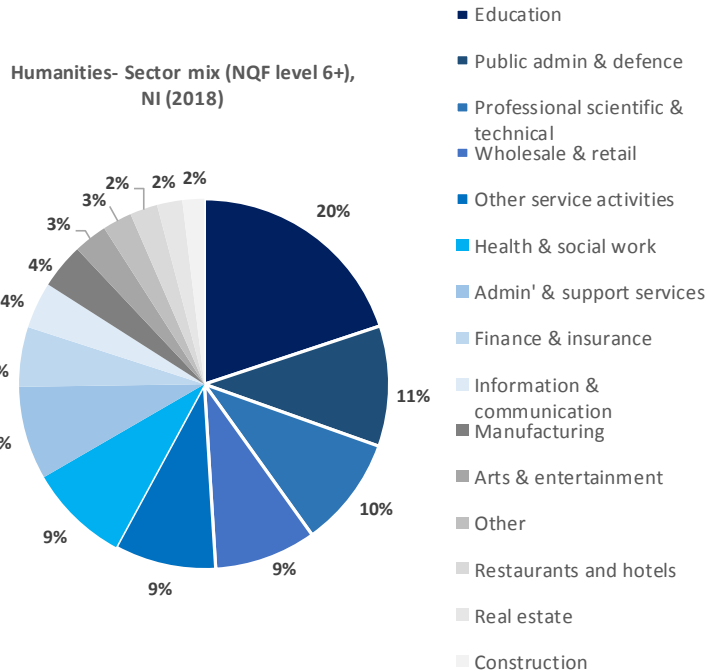

- ■ Education
- ■ Health & social work
- ■ Public admin & defence
- ■ Professional scientific & technical
- ■ Finance & insurance
- ■ Wholesale & retail
- ■ Information & communication
- ■ Restaurants and hotels
- ■ Manufacturing
- ■ Other service activities
- ■ Transport & storage
- ■ Admin' & support services
- ■ Real estate
- ■ Arts & entertainment

Pie chart percentages: 19%, 15%, 11%, 9%, 7%, 7%, 5%, 5%, 5%, 4%, 4%, 4%, 2%, 2%

Source: Labour Force Survey, UUEPC Analysis

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Sector mix by subject studied (NQF level 6+) - stock

Humanities and arts subjects

Humanities- Sector mix (NQF level 6+), NI (2018)

Legend:
- Education
- Public admin & defence
- Professional scientific & technical
- Wholesale & retail
- Other service activities
- Health & social work
- Admin' & support services
- Finance & insurance
- Information & communication
- Manufacturing
- Arts & entertainment
- Other
- Restaurants and hotels
- Real estate
- Construction

Humanities values: 20%, 11%, 10%, 9%, 9%, 9%, 8%, 5%, 4%, 4%, 3%, 3%, 2%, 2%, 2%

Note: Other includes; Transport & storage, Agriculture, Electricity & gas, Water supply & waste, Mining and People employed by households.
Source: Labour Force Survey, UUEPC Analysis

Arts - Sector mix (NQF level 6+), NI (2018)
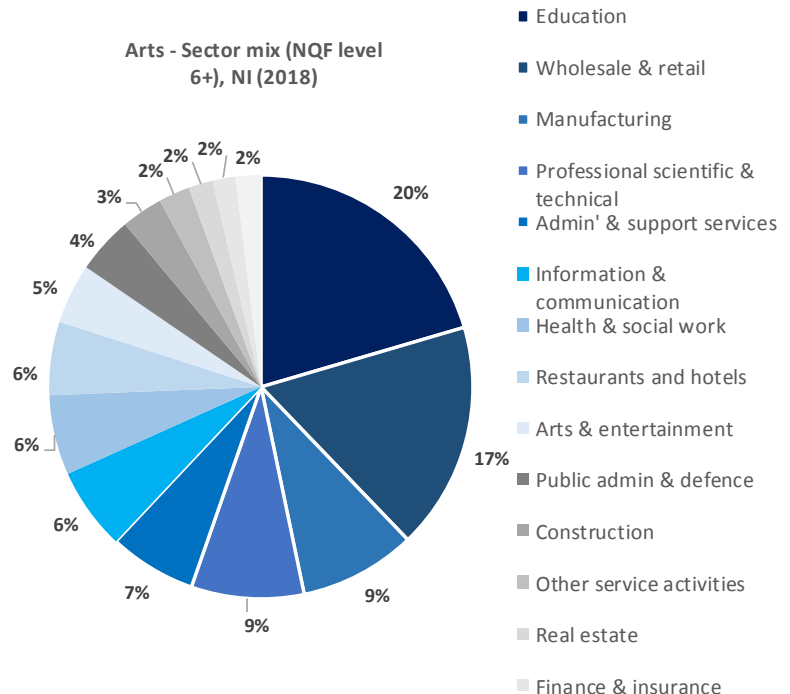
Legend:
- Education
- Wholesale & retail
- Manufacturing
- Professional scientific & technical
- Admin' & support services
- Information & communication
- Health & social work
- Restaurants and hotels
- Arts & entertainment
- Public admin & defence
- Construction
- Other service activities
- Real estate
- Finance & insurance

Arts values: 20%, 17%, 9%, 9%, 7%, 6%, 6%, 6%, 5%, 4%, 3%, 2%, 2%, 2%, 2%

Note: Other includes; Transport & storage, Agriculture, Electricty & gas, Water supply & waste, People employed by households and Mining.
Source: Labour Force Survey, UUEPC Analysis

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Sector mix by subject studied (NQF level 6+) - stock

Education subjects

Education - Sector mix (NQF level 6+), NI (2018)

- Education
- Other
- Health & social work
- Admin' & support services
- Public admin & defence
- Wholesale & retail

73%
10%
7%
4%
4%
3%
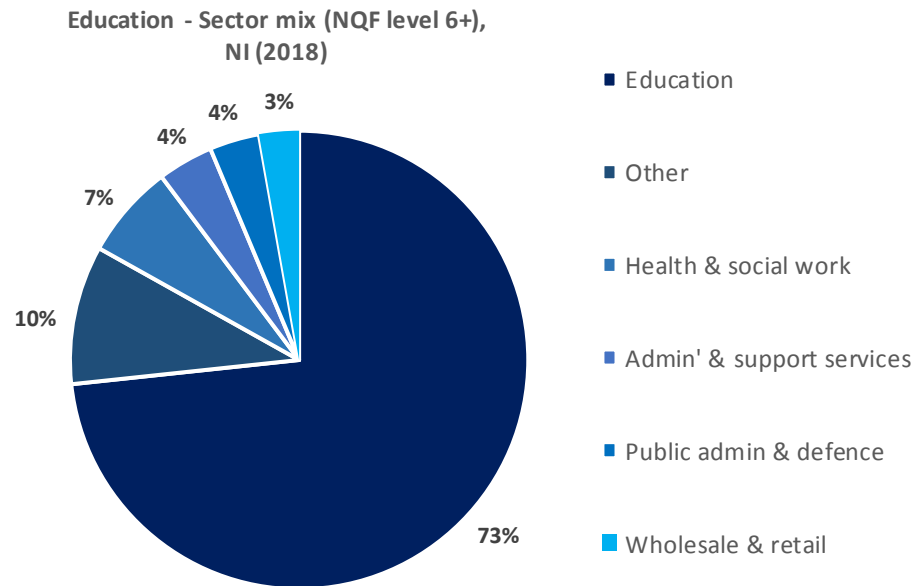
Note: Other includes; Professional scientific and technical, Restaurants and hotels, Other service activites, Manufacturing, Information and Communication, Real estate, Construction, Arts & entertainment, Finance & insurance, Transport & storage, Agriculture, Water supply & waste, People employed by households, Electricity & gas and Mining.

Source: Labour Force Survey, UUEPC Analysis

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Careers information

Work experience and soft skills

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What are "soft skills"?

Soft skills in the 21st century

Employers have always placed value on individuals with "soft skills". However in recent years technological advancements which automate routine tasks have significantly enhanced the requirement for businesses to have employees with strong non-cognitive skills (as they are much less likely to be automated).

According to a study reported on by the OECD* employers reported that a **lack of soft skills** (e.g. having the right attitude, flexibility, communication, punctuality and the ability to make a professional introduction) **can be a reason not to employ young candidates.**

Soft skills are typically described as a mix of interpersonal skills and character traits.

Soft skills include skills such as:
- People skills
- Communication skills
- Teamwork
- Problem solving
- Adaptability
- Time management
- Self-confidence
- Strong work ethic
- Leadership

"57% of business reported soft skills are more important than hard skills"

Soft skills most in need are:
- *Leadership*
- *Communication*
- *Collaboration*
- *Time management*

Source: LinkedIn Learning (survey of 2000+ businesses)

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*OECD (2016) Soft Skills for the Future, Available at: https://oecdskillsandwork.wordpress.com/2016/06/17/soft-skills-for-the-future/

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Soft skills – Areas for improvement

Time management and prioritisation tops the list

Soft skills that employers with skills-shortages found difficult to obtain from applicants, NI, 2016
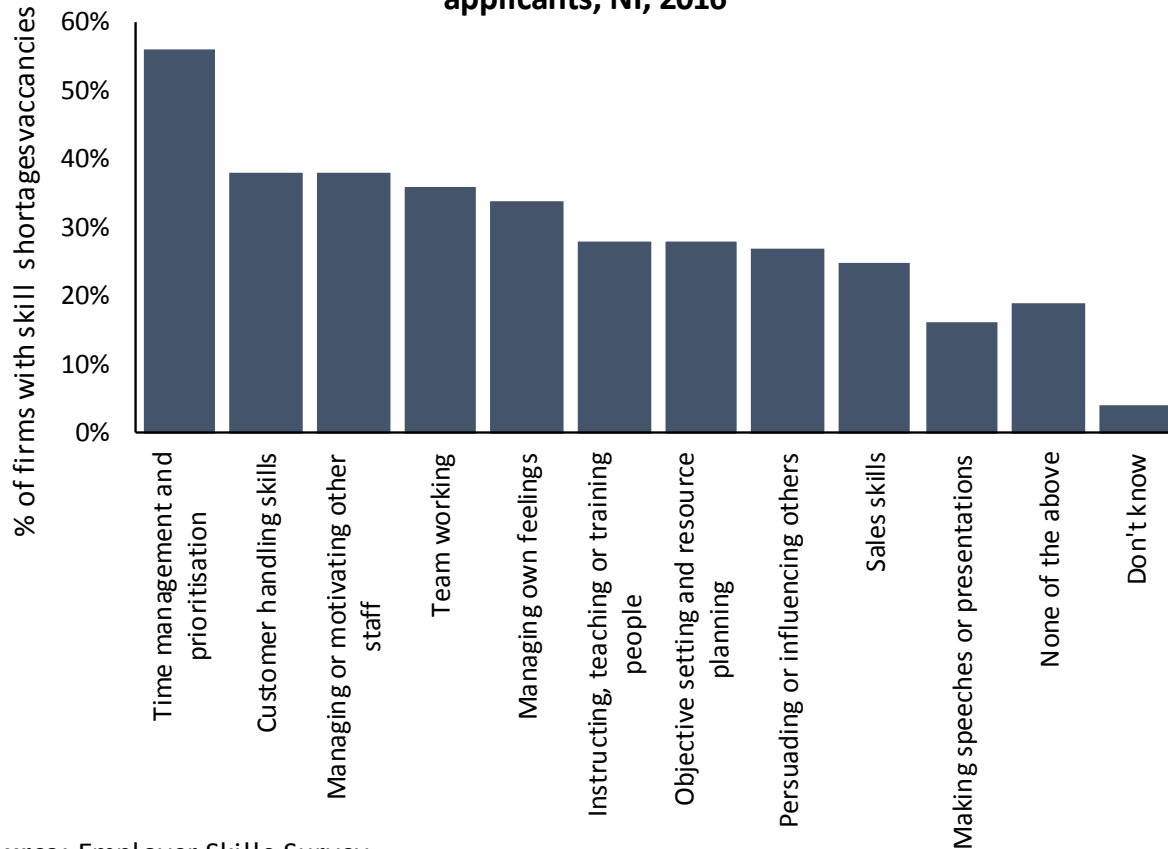
Source: Employer Skills Survey

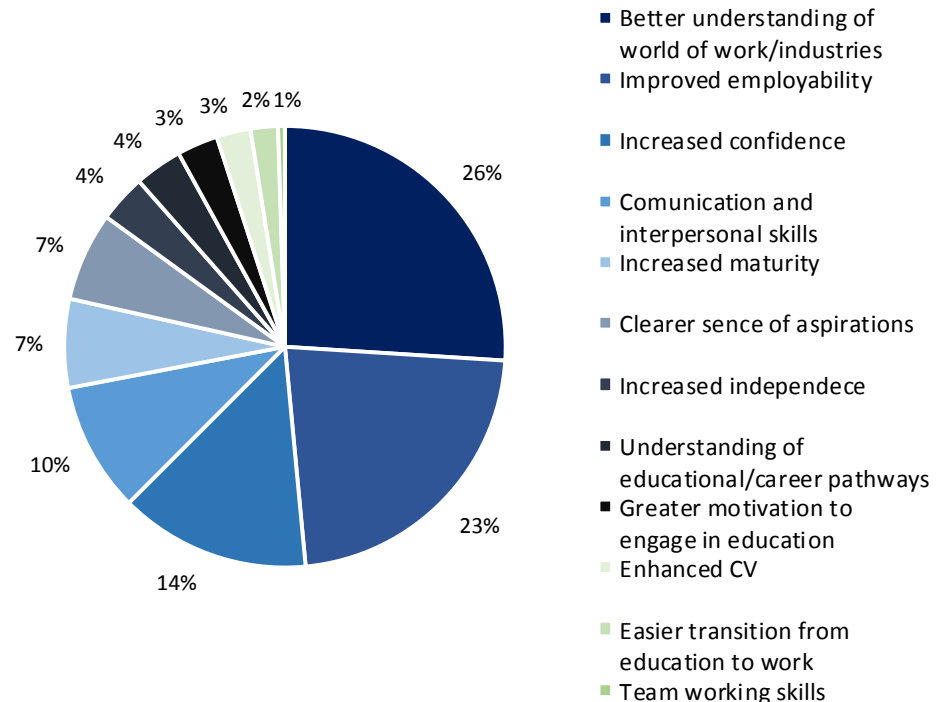# Skills gained from work experience

Work experience provides individuals with sought after soft skills

It is widely recognised work experience or on the job training can be invaluable in providing young people with a range of skills and attributes, specifically soft skills that employers report as hard to obtain in candidates.

Work experience can enhance students skills in the following areas:

- *Interpersonal skills*
- *Problem solving*
- *Commercial awareness*
- *Team work*
- *Self-confidence*
- *Organisation*
- *Time management*

Skills gained by students from work-related activities, England, 2015

Legend:
- Better understanding of world of work/industries
- Improved employability
- Increased confidence
- Comunication and interpersonal skills
- Increased maturity
- Clearer sence of aspirations
- Increased independece
- Understanding of educational/career pathways
- Greater motivation to engage in education
- Enhanced CV
- Easier transition from education to work
- Team working skills

Pie chart values: 26%, 23%, 14%, 10%, 7%, 7%, 4%, 4%, 3%, 3%, 2%, 1%

Source: Department for Education, England

Over one-third of employers stated that a graduate with no previous work experience would not be successful during their selection process, regardless of their academic qualification (The Graduate Market, 2019).

Importance of work experience

Relevant work experience is the most important factor looked for in job applicants

Important factors looked for in candidates, NI, 2016
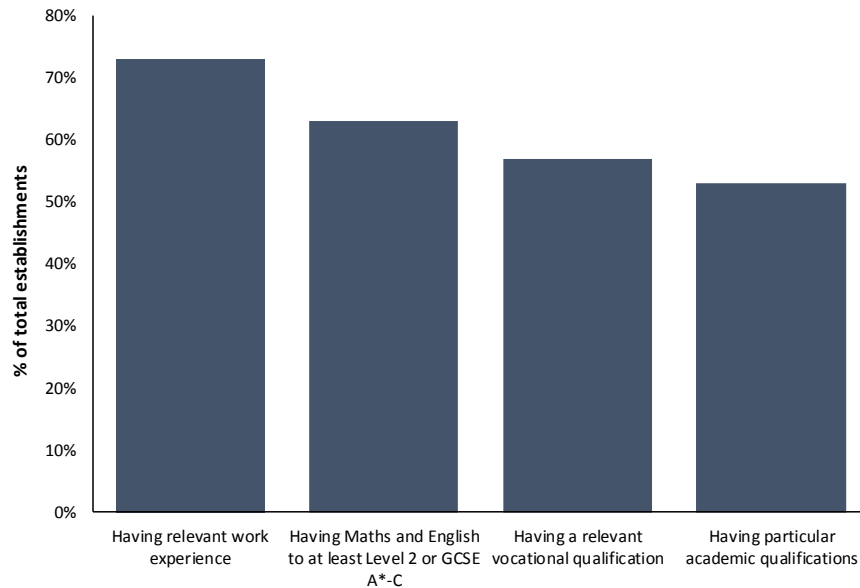
Source: Employer Perspectives Survey

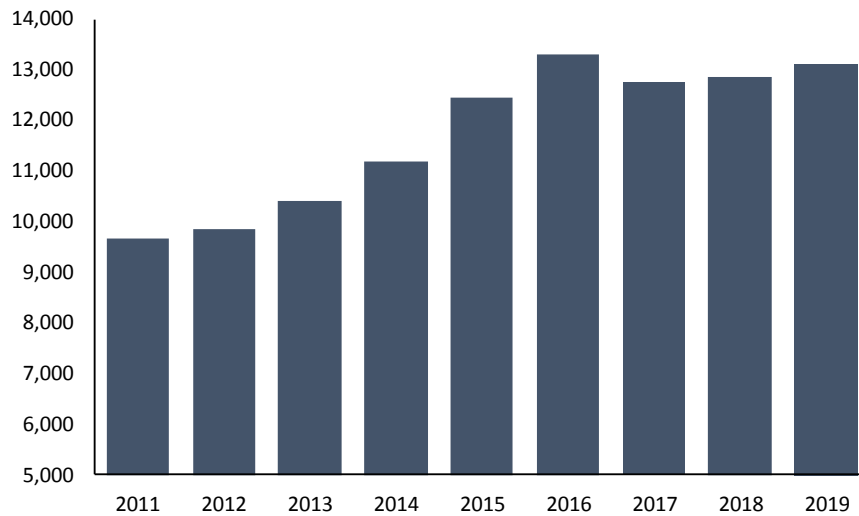**Importance of candidates having relevant work experience, NI, 2016**

Source: Employer Perspectives Survey

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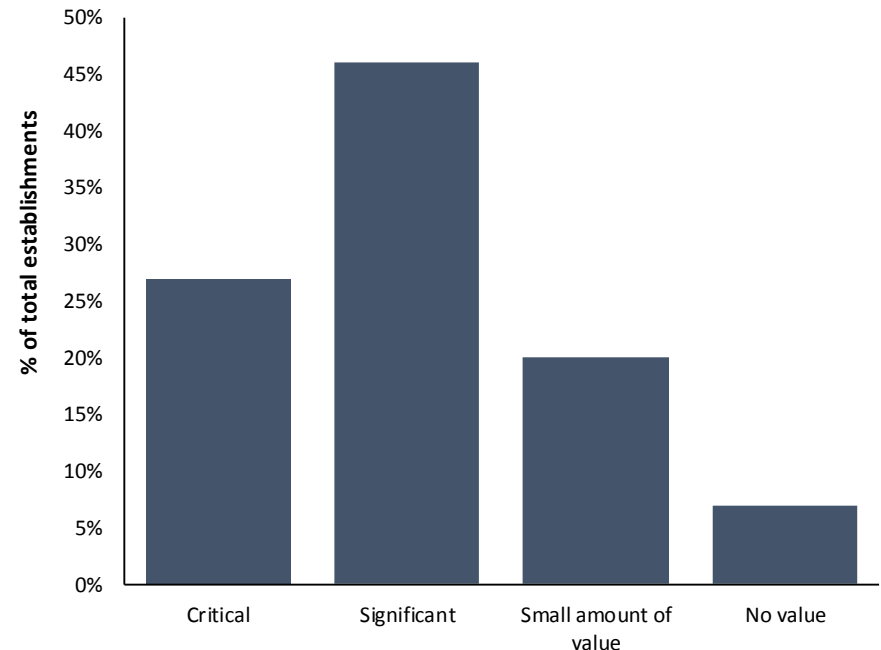
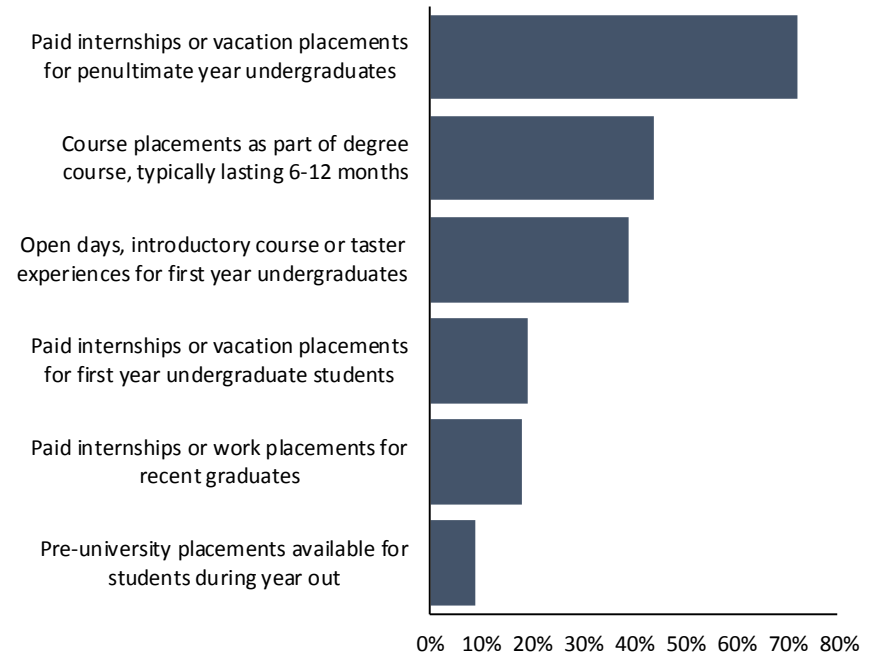# Work experience opportunities are available

Based on leading UK employers

Number of paid university work placements, UK, 2011-2019

Source: The Graduate Market, 2019
Note: Figures refer to results from a survey of UK leading employers and are implied based on annual percentage changes reported

Type of work experience placements available, UK, 2019

Paid internships or vacation placements for penultimate year undergraduates

Course placements as part of degree course, typically lasting 6-12 months

Open days, introductory course or taster experiences for first year undergraduates

Paid internships or vacation placements for first year undergraduate students

Paid internships or work placements for recent graduates

Pre-university placements available for students during year out

0% 10% 20% 30% 40% 50% 60% 70% 80%

Source: The Graduate Market, 2019

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Preparedness for work

FE college leavers are more prepared for work compared to school leavers of the same age

Preparedness for work of education leavers at different ages, NI, 2016

Well/very well prepared

■ Poorly prepared ■ Very poorly prepared ■ Well prepared ■ Very well prepared

Category					Well/very well prepared
16 year old school leavers	11%	36%	43%	10%	**53%**
17-18 year old school leavers	5%	32%	55%	7%	**62%**
17-18 year old FE college leavers	2%	17%	69%	12%	**81%**
University or HE leavers	2%	12%	65%	21%	**86%**
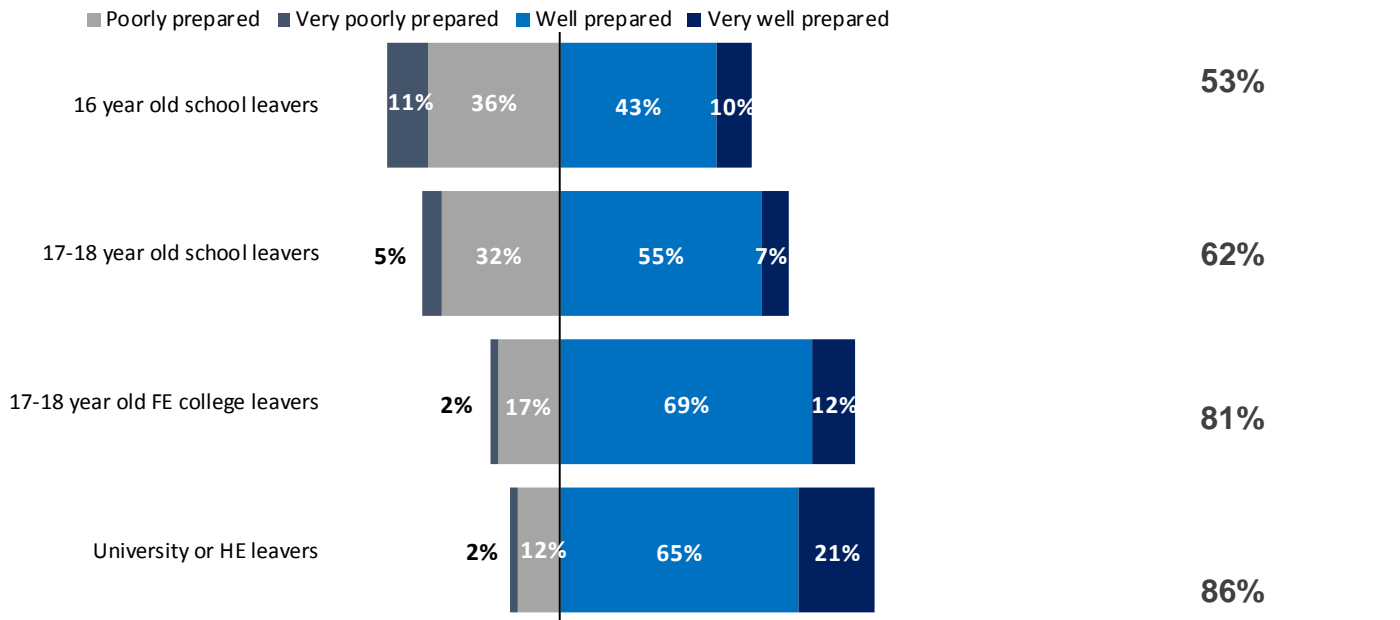
Source: Employer Perspectives Survey

There is often a mismatch between perceived work readiness among employers and students. The OECD* reported on a study which found 48% of employers reported young people lacked written communication skills. However, only 6% of young people recognised lacking these skills. Similar mismatches emerged for being self-critical, knowing one's own strengths and weaknesses, conflict management and knowing when to listen and when to speak.

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*OECD (2016) *Soft Skills for the Future,* Available at: *https://oecdskillsandwork.wordpress.com/2016/06/17/soft-skills-for-the-future/*

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Soft skills compliment hard skills

Provision of soft skills

Employers will need individuals with a combination of both soft skills and hard skills (e.g. specific job related abilities/qualifications). These two categories of skills compliment one another in the workplace.

Whilst hard skills are most typically gained through the education system it is important that students are also able to acquire soft skills throughout their educational journey. Therefore, education institutions should continue to integrate the development of soft skills to the curriculum.

Soft skills are often initially be built through extracurricular activates and part-time employment, however as students move through their education it is important they are provided with opportunities to gain work experience relevant to their career path.

Given employers report soft skills as lacking among education leavers there is a onus on employers to provide opportunities for young people to gain these skill requirements within their organisations through work experience opportunities.

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Annex A1

Baseline scenario

Employment forecast under baseline scenario

Health and social work remains the largest employment sector

Employment (jobs) baseline scenario, NI (2018 versus 2028)

Source: UUEPC

Net requirement by sector

Health and social work sector requires the largest net requirement

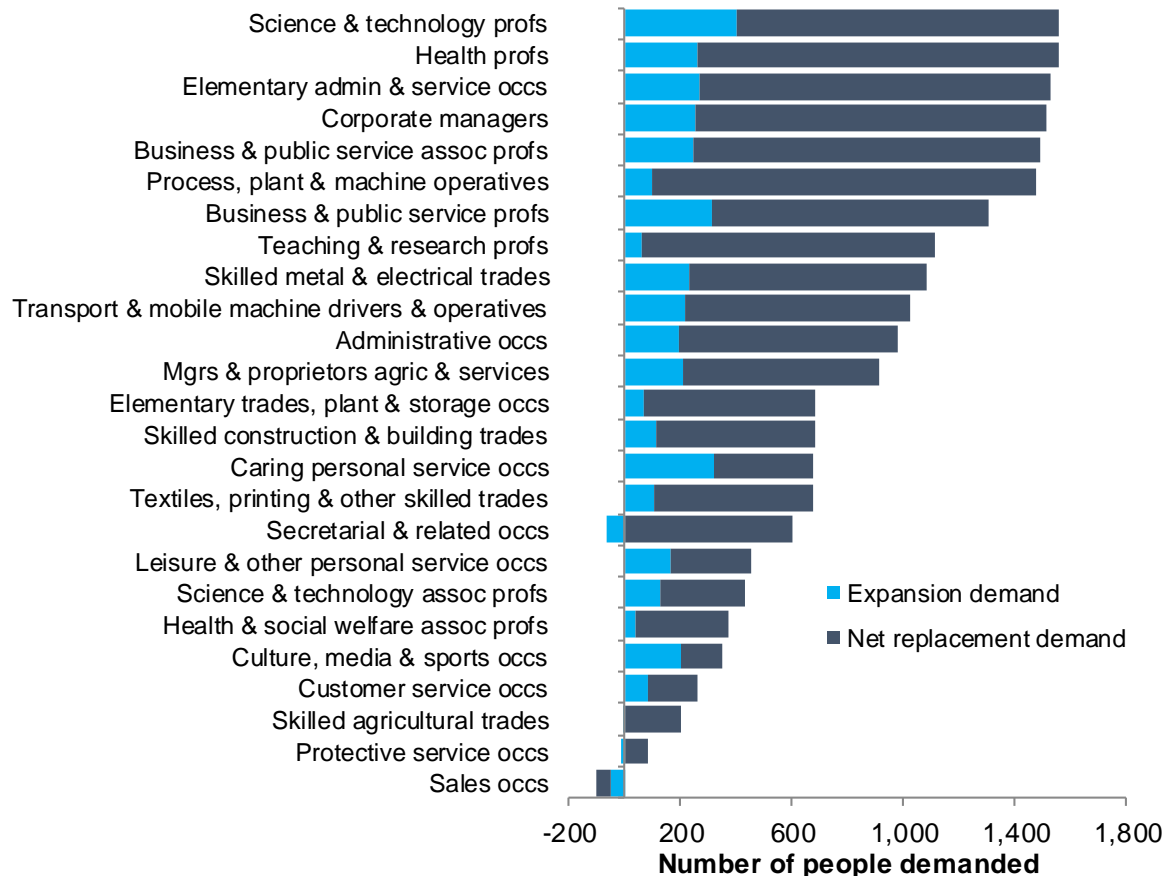**Average annual net requirement from education and migration by sector (1-digit), NI (2018-2028)**

Expansion demand accounts for a higher proportion of the net requirement in high growth sectors.

- Expansion demand
- Net replacement demand

Sectors (top to bottom):
Health & social work, Wholesale & retail, Manufacturing, Admin' & support services, Restaurants and hotels, Education, Professional scientific & technical, Construction, Information & communication, Public admin & defence, Transport & storage, Other service activities, Arts & entertainment, Finance & insurance, Agriculture, Real estate, Water supply & waste, Elect' & gas, Mining, People employed by households

X-axis: -500, 0, 500, 1,000, 1,500, 2,000, 2,500, 3,000

Number of people demanded

Source: UUEPC

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Net requirement by occupation

Science and technology professionals require the largest net requirement

Average annual net requirement from education and migration by occupation (2-digit), NI (2018-2028)

Source: UUEPC

Net requirement by degree subject

Medical related subjects is the most demanded subject at NQF level 6+

Average annual net requirement for NQF level 6+ by subject (JACS, 1-digit), NI (2018-2028)

- Net replacement demand
- Expansion demand
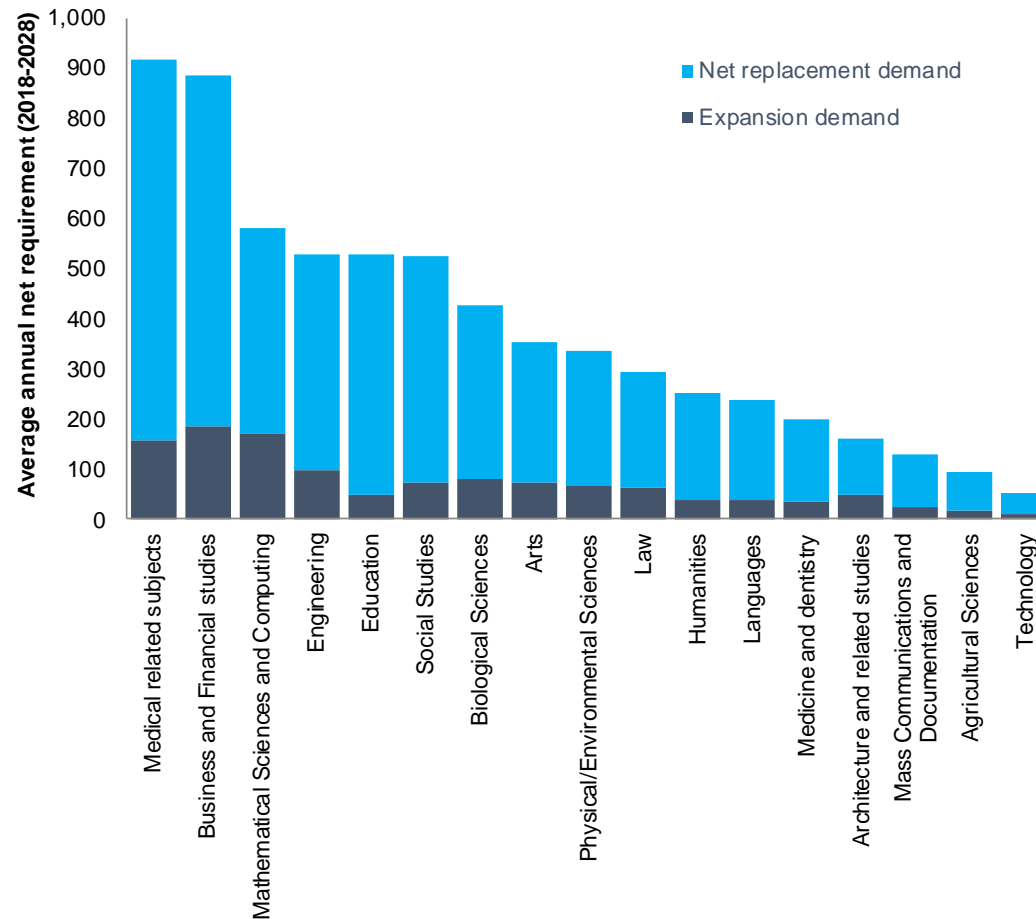
Net requirement by sub-degree subject

Health and public services is the most demanded subject at NQF level 4-5

Average annual net requirement by NQF level 4-5 subject (SSAs, 1-digit), baseline scenario, NI (2018-2028)

Source: UUEPC

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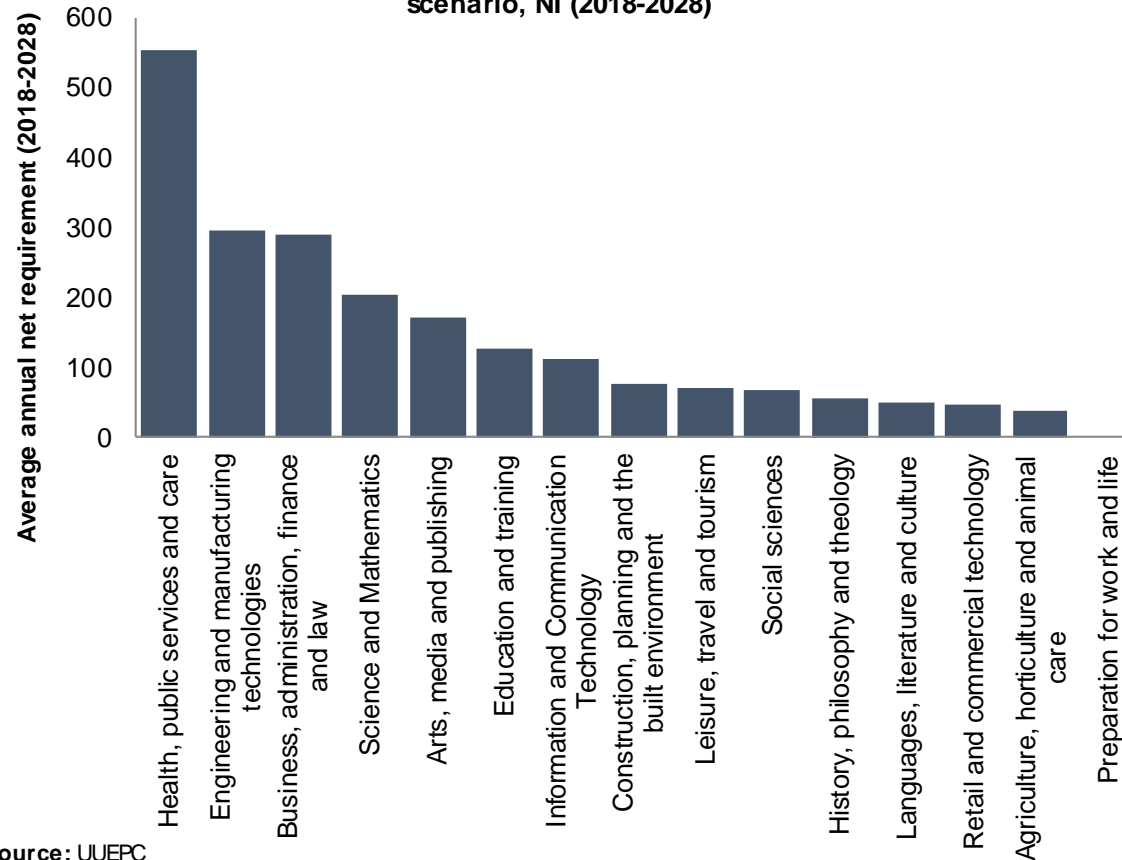
Supply gap by NQF level
Significant oversupply of NQF level 6+

Average annual labour market supply gap by qualification (NQF), NI (2018-2028)

Undersupply ← **Oversupply** →

Level	Value	Category
Level 6+	2080	Significant oversupply
Level 4-5	-710	Significant undersupply
Level 3	-920	Significant undersupply
Level 2	910	Significant oversupply
Less than NQF level 2	1200	Significant oversupply

Average annual Supply gap by qualification

Note: The supply gaps in the above chart have been calculated based on 'effective supply'. This takes account of migration patterns amongst qualifiers at NI institutions and NI domiciled qualifiers qualifying from GB institutions, in addition to labour force participation. A supply adjustment is then applied to subtract tertiary qualifiers who require additional skills development to effectively fulfil the requirements of tertiary level employment.

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Supply gap by degree subject

Engineering and technology is the most undersupplied subject area at NQF level 6+

Annual average effective supply gap by NQF level 6+ subject (JACS, 1-digit), NI (2018-2028)

Source: HESA, UUEPC

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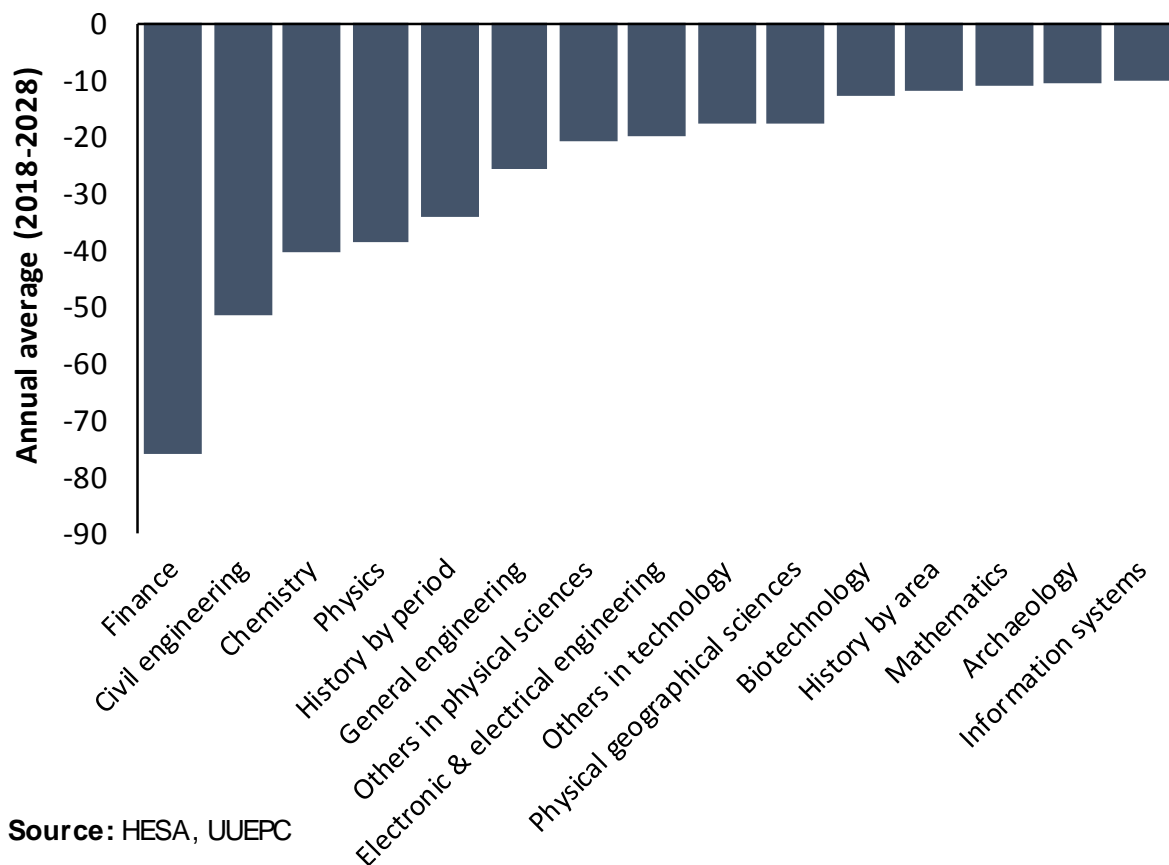# Supply gap by degree subject
Baseline scenario – top 15 oversupplied degree subjects

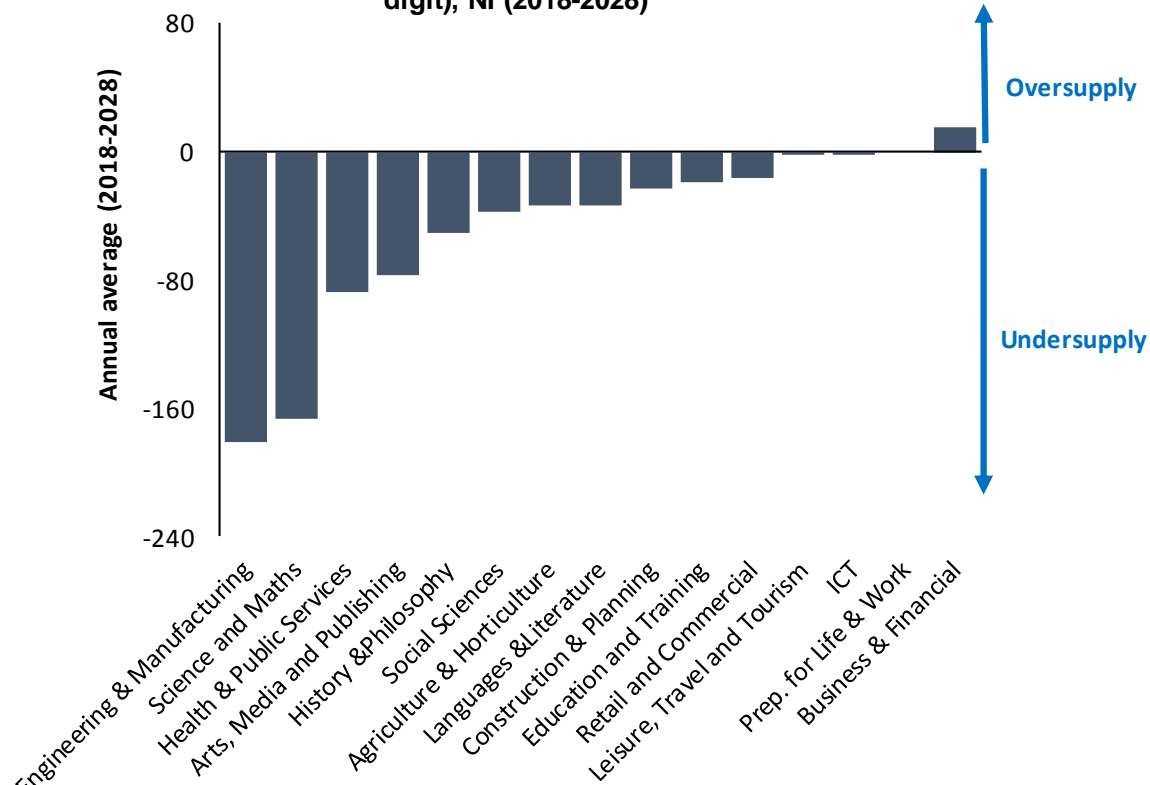**Top 15 most oversupplied NQF level 6+ subjects (JACS, 2-digit) (average annual effective supply gap), NI (2018-2028)**

Source: HESA, UUEPC

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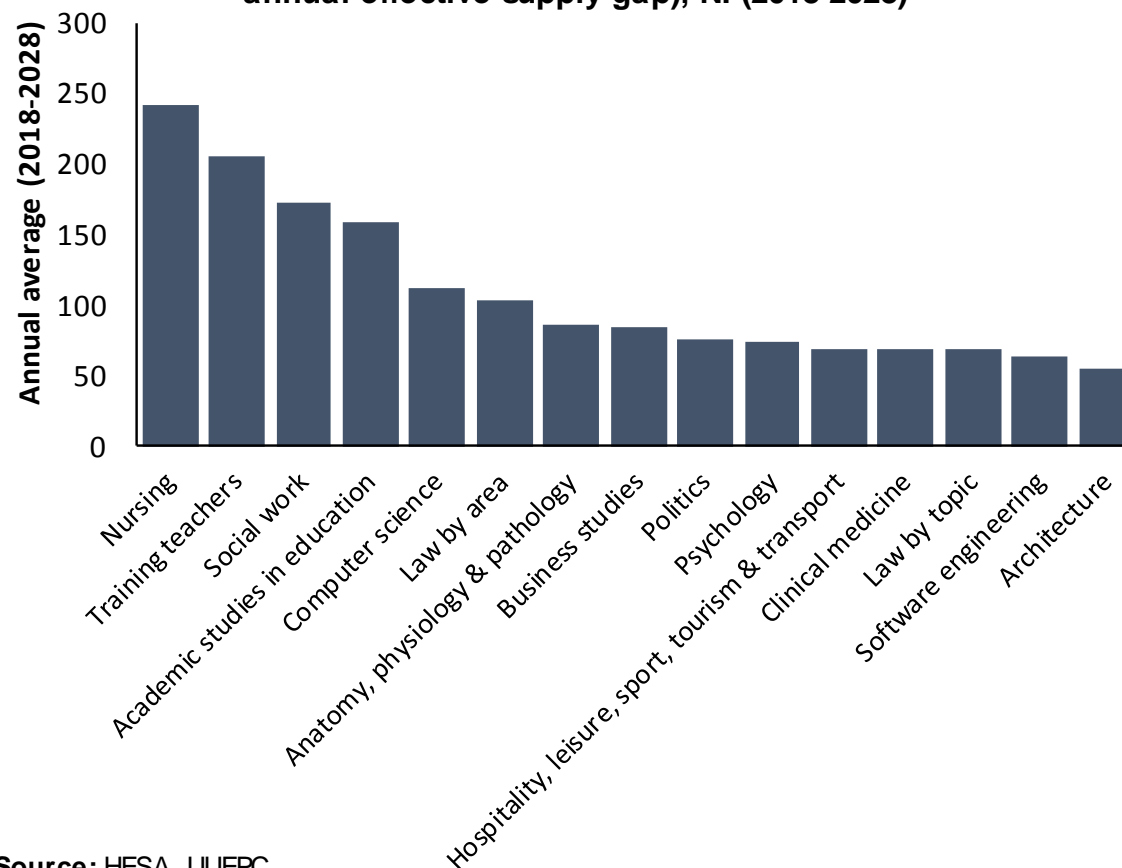
Supply gap by degree subject

Baseline scenario – top 15 undersupplied degree subjects

Top 15 most undersupplied NQF level 6+ subjects (JACS, 2-digit) (average annual effective supply gap), NI (2018-2028)

Source: HESA, UUEPC

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Supply gap by sub-degree subject

Engineering and manufacturing is the most undersupplied subject at NQF level 6+

Annual average effective supply gap by NQF level 4-5 subject (SSAs, 1-digit), NI (2018-2028)

Source: DfE, UUEPC

Supply gap by sub-degree subject

Baseline scenario – top 10 oversupplied sub-degree subjects

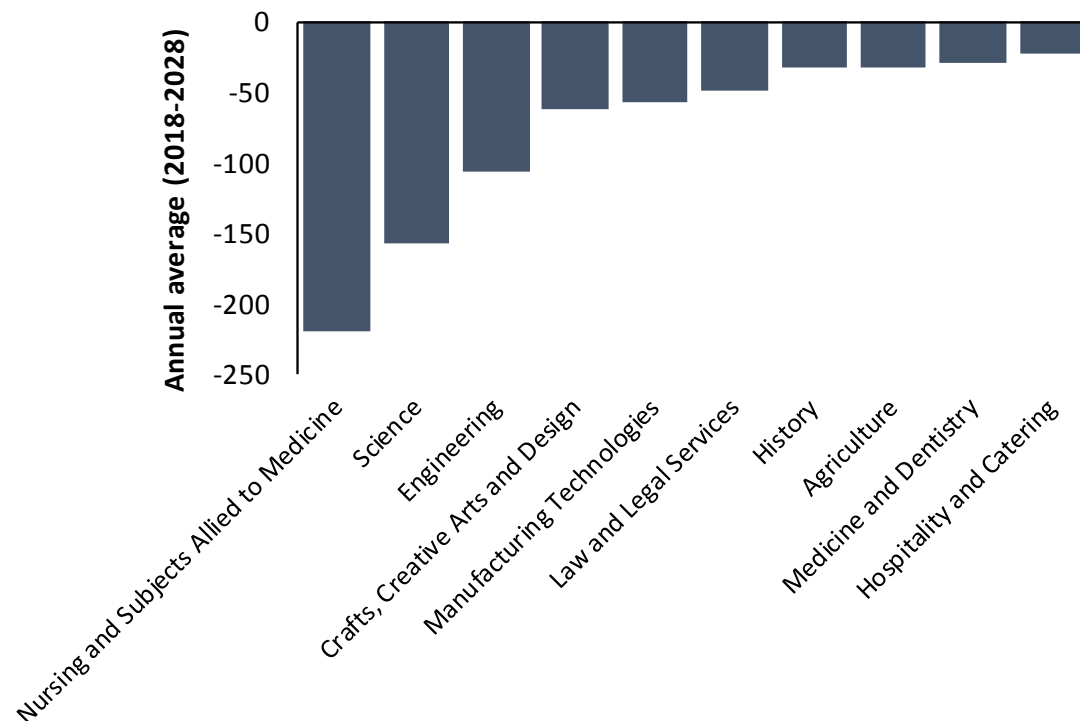**Top 10 most oversupplied NQF level 4-5 subjects (SSAs, 2-digit) (average annual effective supply gap), NI (2018-2028)**
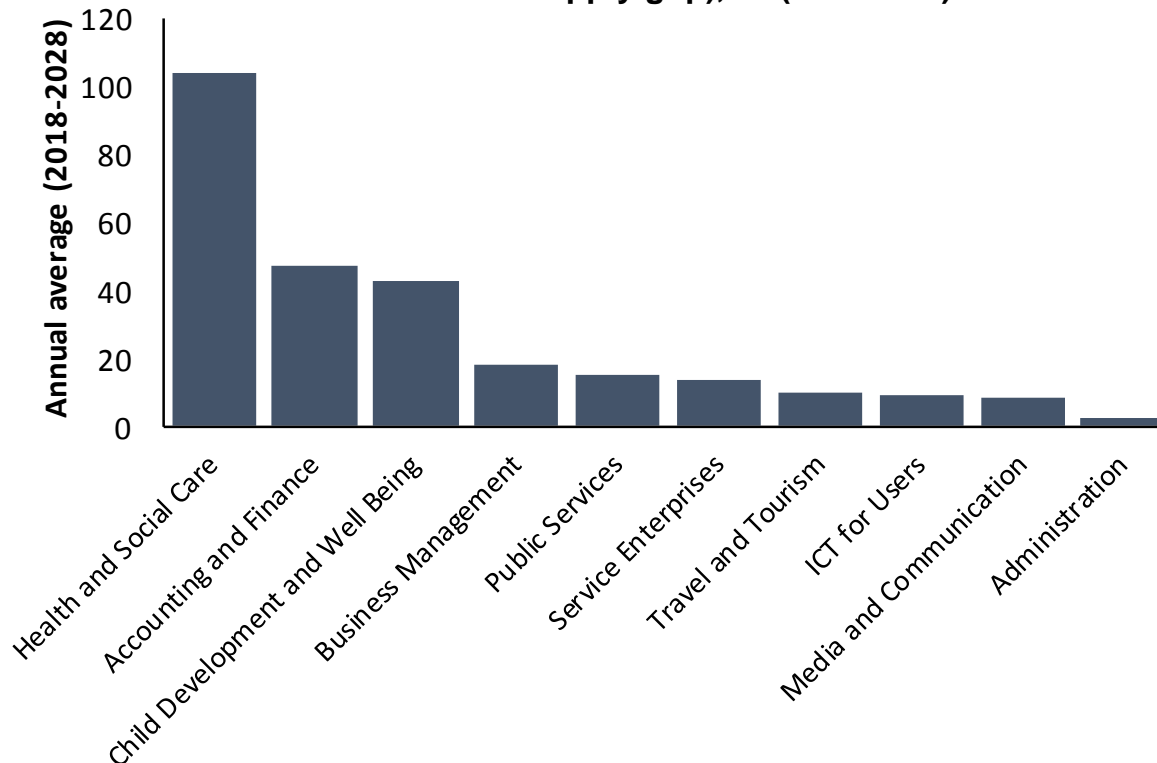
Source: DfE, UUEPC

Supply gap by sub-degree subject

Baseline scenario – top 10 undersupplied sub-degree subjects

Top 10 most undersupplied NQF level 4-5 subjects (SSAs, 2-digit) (average annual effective supply gap), NI (2018-2028)
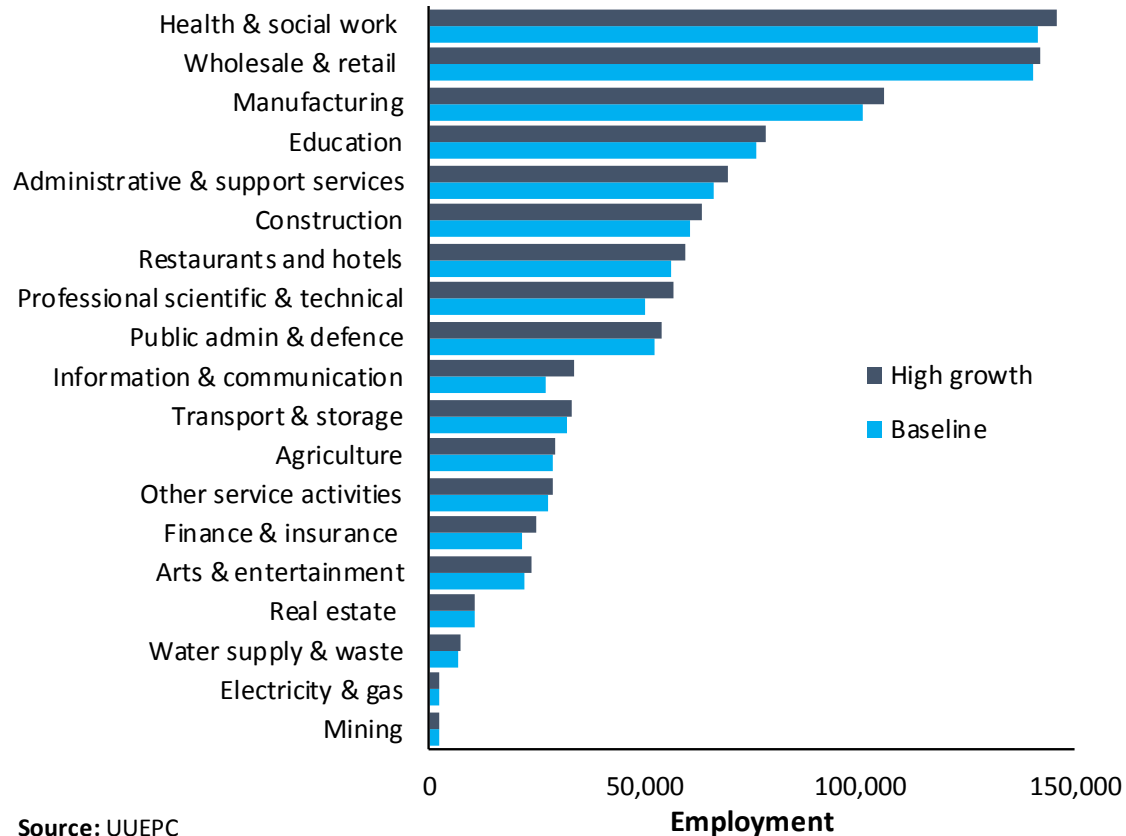

Source: DfE, UUEPC

Annex A2

Baseline scenario versus high growth scenario

High growth versus baseline jobs
Health and social sector to remain largest employer by 2028

Employment (jobs) by sector (1-digit), high growth scenario versus baseline scenario, NI (2028)
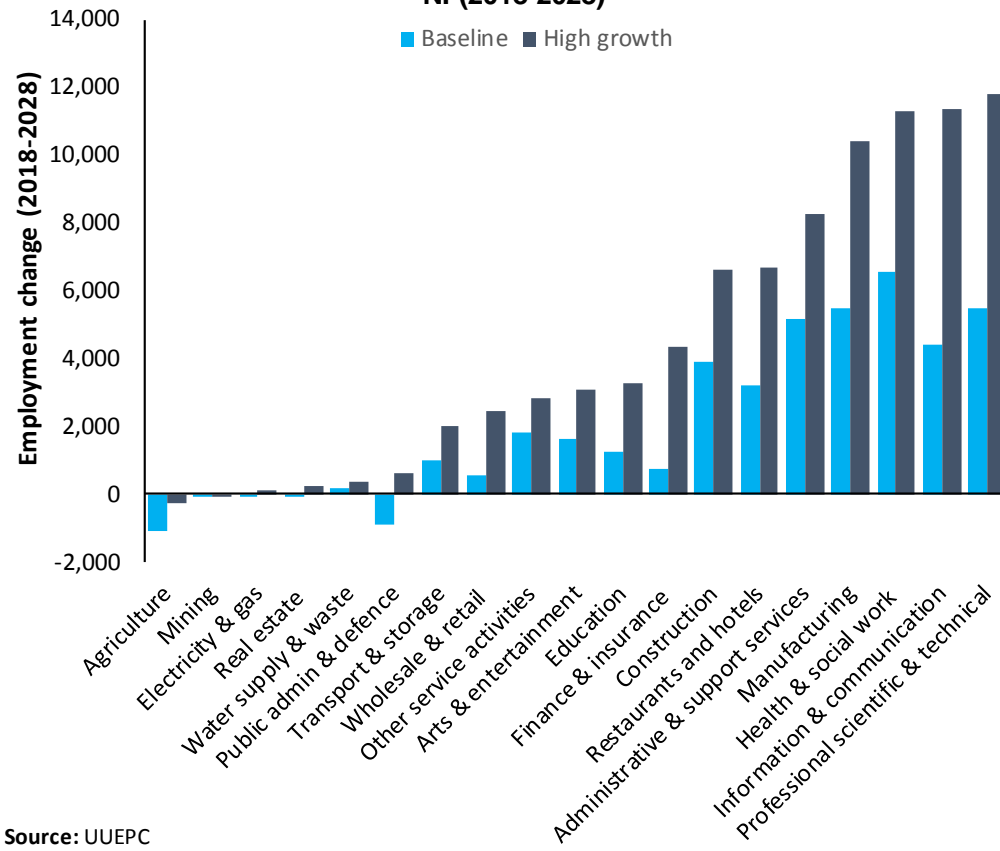

Source: UUEPC

High growth versus baseline jobs

Professional services forecasts contribute 11.8k jobs by 2028 under the high growth scenario

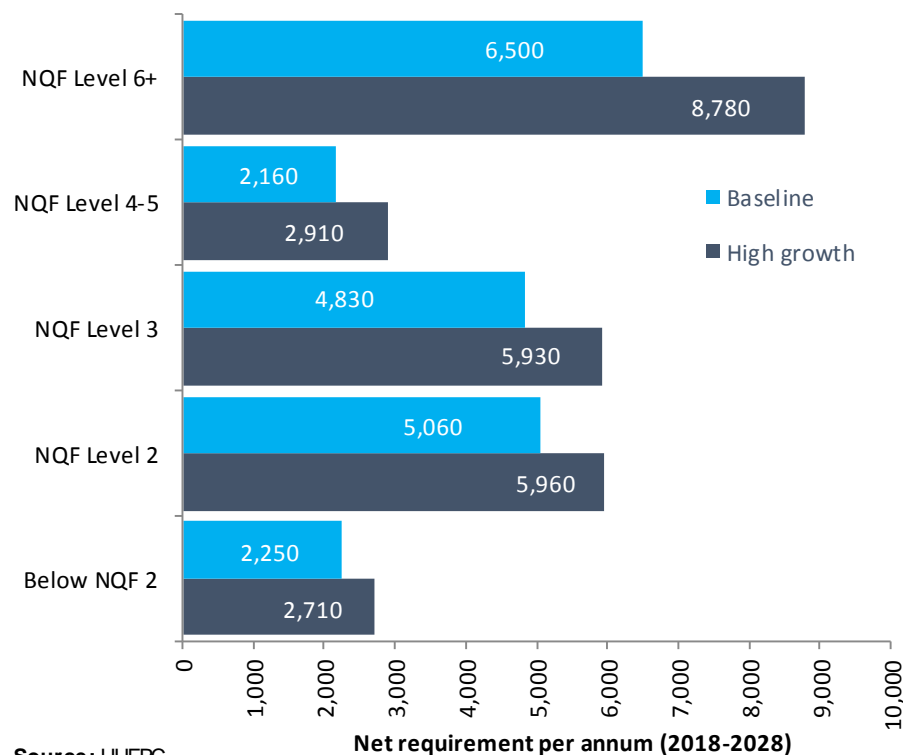**Employment change (jobs) high growth scenario versus baseline scenario, NI (2018-2028)**

Source: UUEPC

Supply gap by NQF level
Baseline scenario versus high growth scenario

Average annual net requirement by qualification, baseline versus high growth scenario's, NI (2018-2028)

31% of the net requirement **in the baseline scenario** require degree level qualifications.

Total **baseline** = 20,800 p.a.

Only 11% of the net requirement **under the baseline scenario** will require qualifications below NQF level 2

Chart data:

NQF Level	Baseline	High growth
NQF Level 6+	6,500	8,780
NQF Level 4-5	2,160	2,910
NQF Level 3	4,830	5,930
NQF Level 2	5,060	5,960
Below NQF 2	2,250	2,710

Net requirement per annum (2018-2028)

Source: UUEPC

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Net requirement by degree subject

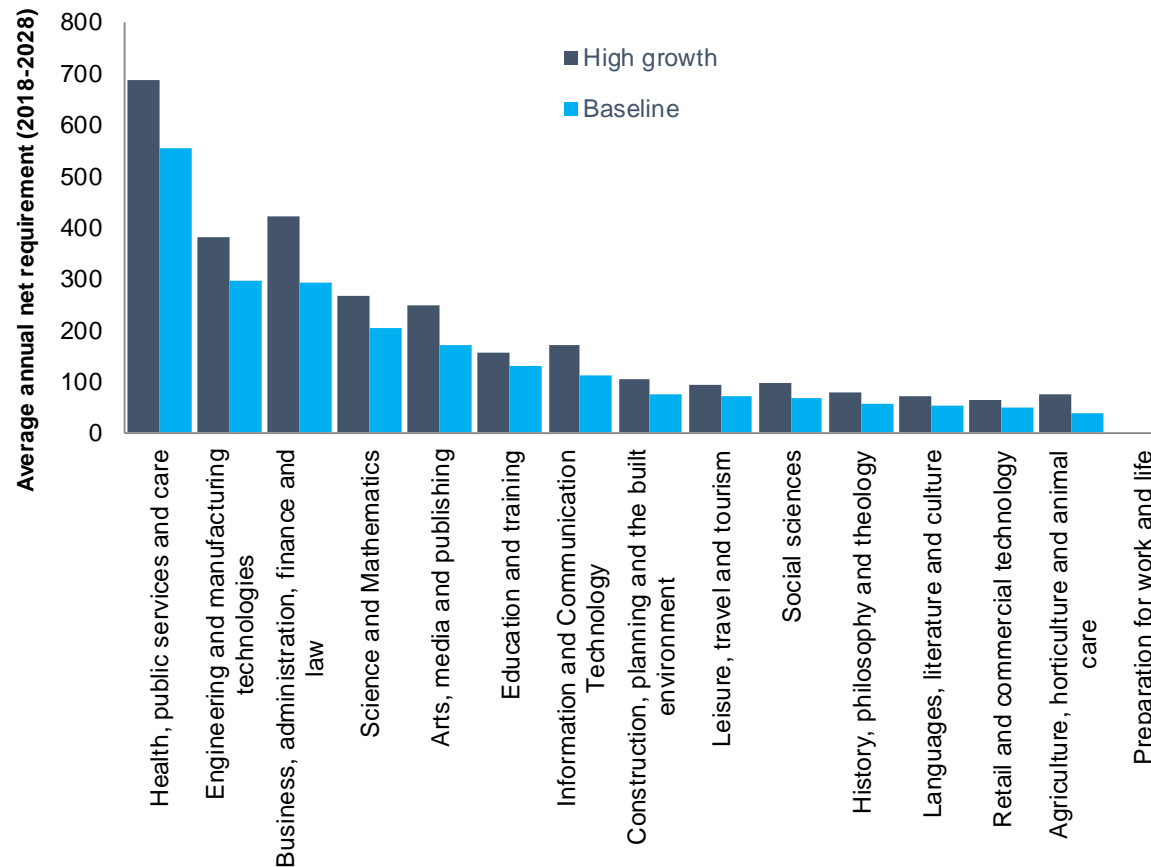Baseline scenario versus high growth scenario

Average annual net requirement by NQF level 6+ subject (JACS, 1-digit), baseline versus high growth scenario's, NI (2018-2028)
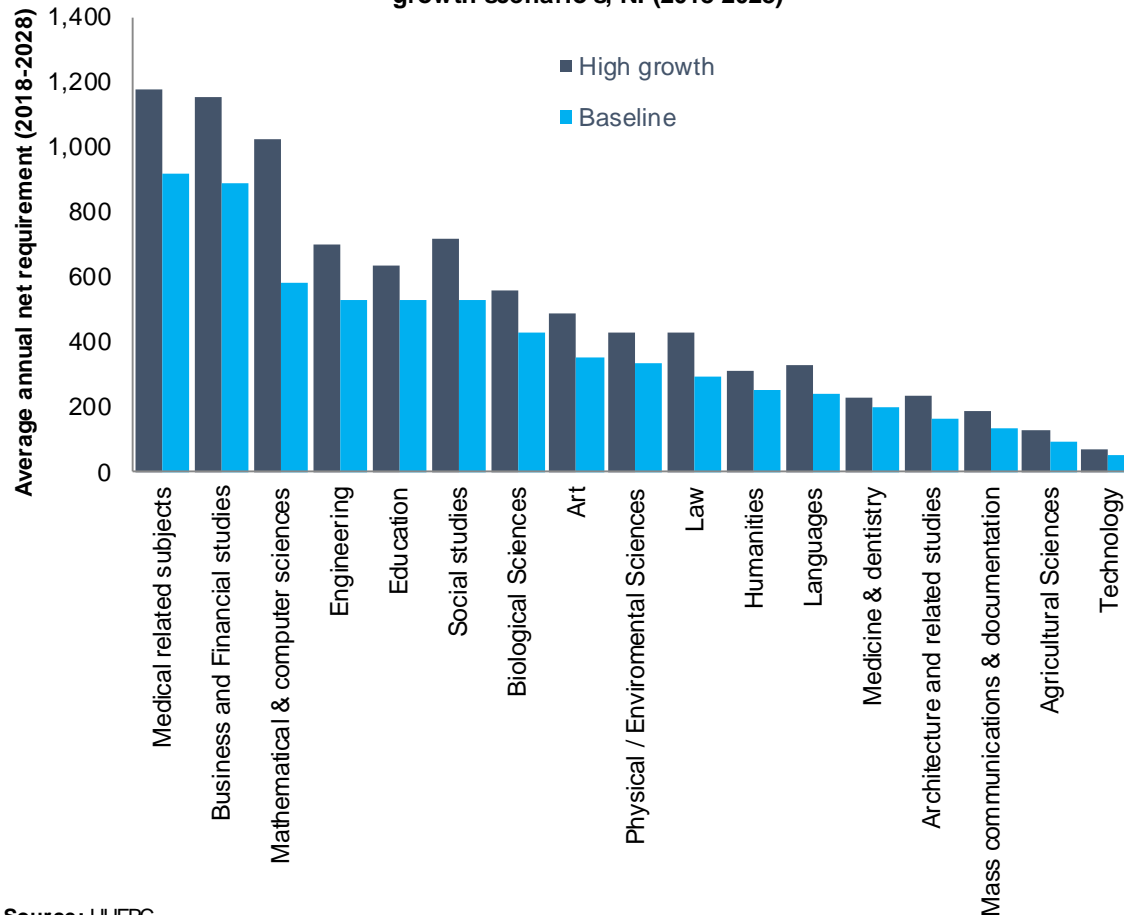
Net requirement by sub-degree subject

Baseline scenario versus high growth scenario

Average annual net requirement by NQF level 4-5 subject (SSA, 1-digit), baseline versus high growth scenario's, NI (2018-2028)
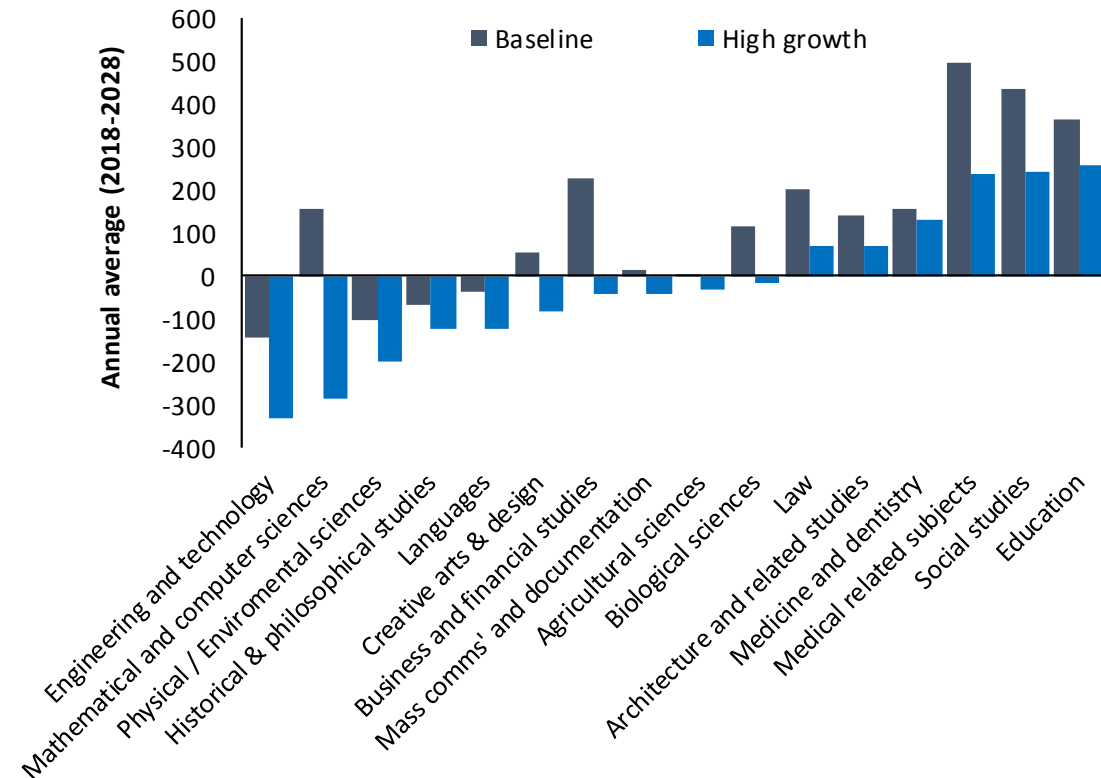

Source: UUEPC

Supply gap by degree subject

Baseline scenario versus high growth scenario

Annual average effective supply gap by NQF level 6+ subject (JACS, 1-digit), baseline versus high growth, NI (2018-2028)

Source: HESA, UUEPC

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Supply gap by sub-degree subject

Baseline scenario versus high growth scenario

Annual average effective supply gap by NQF level 4-5subject (SSAs, 1-digit), baseline versus high growth, NI (2018-2028)
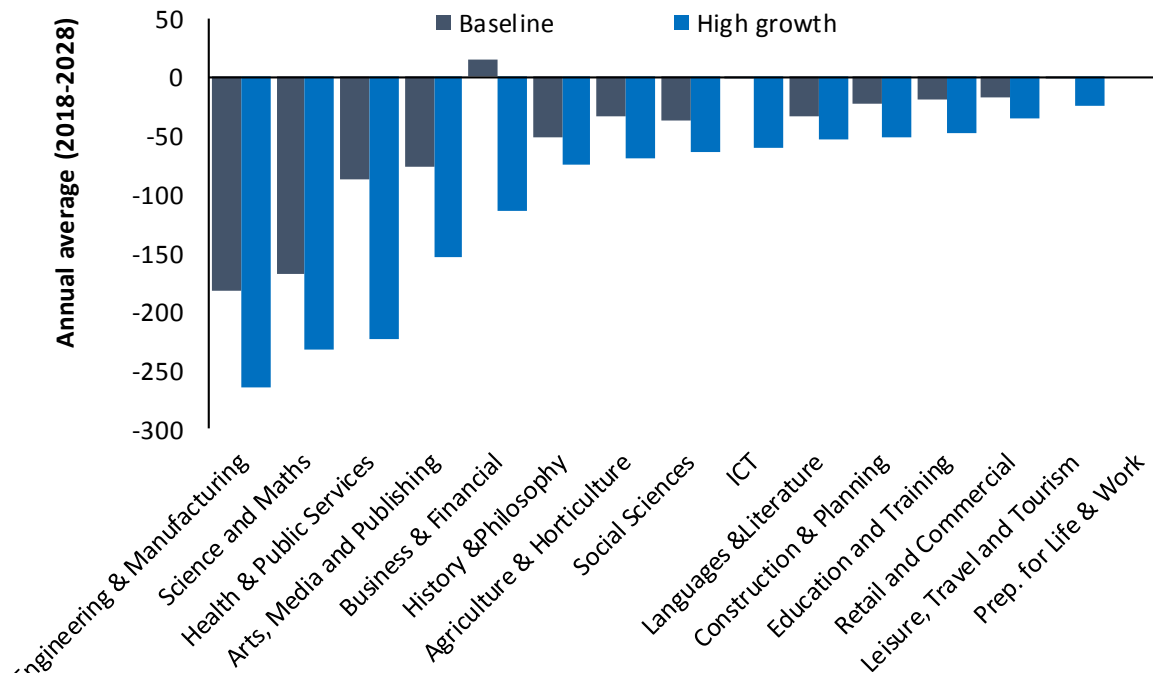

Source: HESA, UUEPC

Annex A3

2017 publication versus 2019 publication

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Differences between publications
NI Skills Barometer 2017 versus NI Skills Barometer 2019

Employment (people based) differences between baseline scenario and high growth scenario, NI Skills Barometer publications 2017 and 2019

| Industry	Baseline			High growth		
	2016-2026	2018-2028	Difference	2016-2026	2018-2028	Difference
Agriculture	-600	-1,110	-510	370	-250	-620
Mining	10	-30	-40	10	-30	-40
Manufacturing	2,620	5,480	2,860	9,260	10,430	1,170
Electricity & gas	-40	-80	-40	160	100	-60
Water supply & waste	0	180	180	200	350	150
Construction	4,100	3,910	-190	6,590	6,630	40
Wholesale & retail	10	560	550	2,780	2,410	-370
Transport & storage	2,140	1,020	-1,120	2,970	2,010	-960
Restaurants and hotels	3,740	3,190	-550	7,620	6,660	-960
Information & communication	3,780	4,430	650	12,280	11,360	-920
Finance & insurance	-400	730	1,130	3,760	4,350	590
Real estate	790	-90	-880	1,180	260	-920
Professional scientific & technical	6,690	5,470	-1,220	16,480	11,780	-4,700
Administrative & support services	6,910	5,130	-1,780	9,740	8,230	-1,510
Public admin & defence	-3,900	-900	3,000	-2,800	590	3,390
Education	-1,450	1,270	2,720	-60	3,290	3,350
Health & social work	3,940	6,550	2,610	9,470	11,320	1,850
Arts & entertainment	2,500	1,600	-900	4,710	3,080	-1,630
Other service activities	1,590	1,830	240	2,170	2,820	650
Total	**32,430**	**39,140**	**6,710**	**86,890**	**85,390**	**-1,500**

Source: UUEPC

Annex B1

Current and projected skills mix by sector

Current and projected skills mix

Skills mix by sector

Stock of qualifications (NQF) by sector (1-digit), current versus projected, NI (2018 versus 2028)

Legend: Below NQF 2, NQF Level 2, NQF Level 3, NQF Level 4-5, NQF Level 6+

Source: Labour Force Survey, UUEPC

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Current and projected skills mix

Skills mix by sector

Stock of qualifications (NQF) by sector (1-digit), current versus projected, NI (2018 versus 2028)

Legend: Below NQF 2 | NQF Level 2 | NQF Level 3 | NQF Level 4-5 | NQF Level 6+
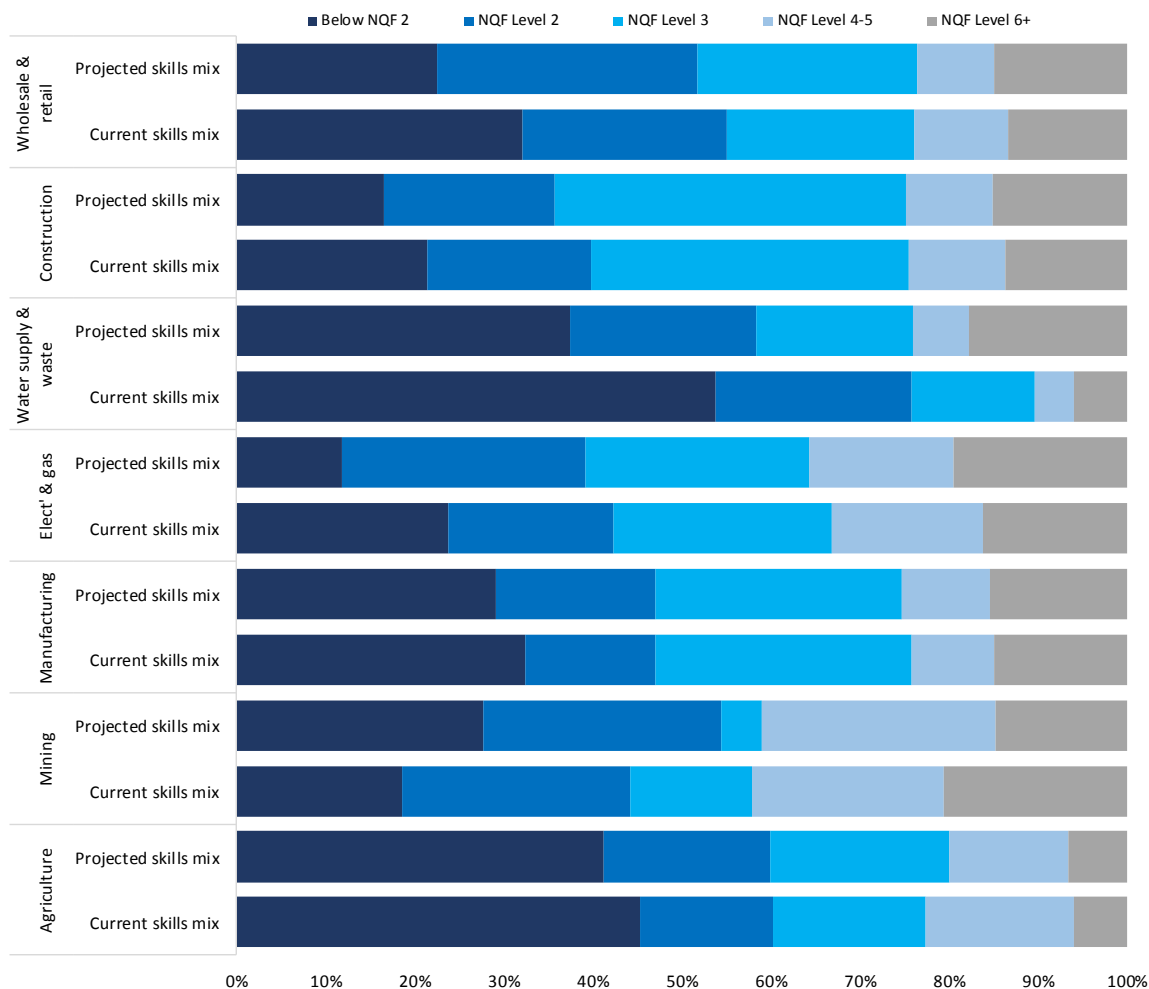
Source: Labour Force Survey, UUEPC

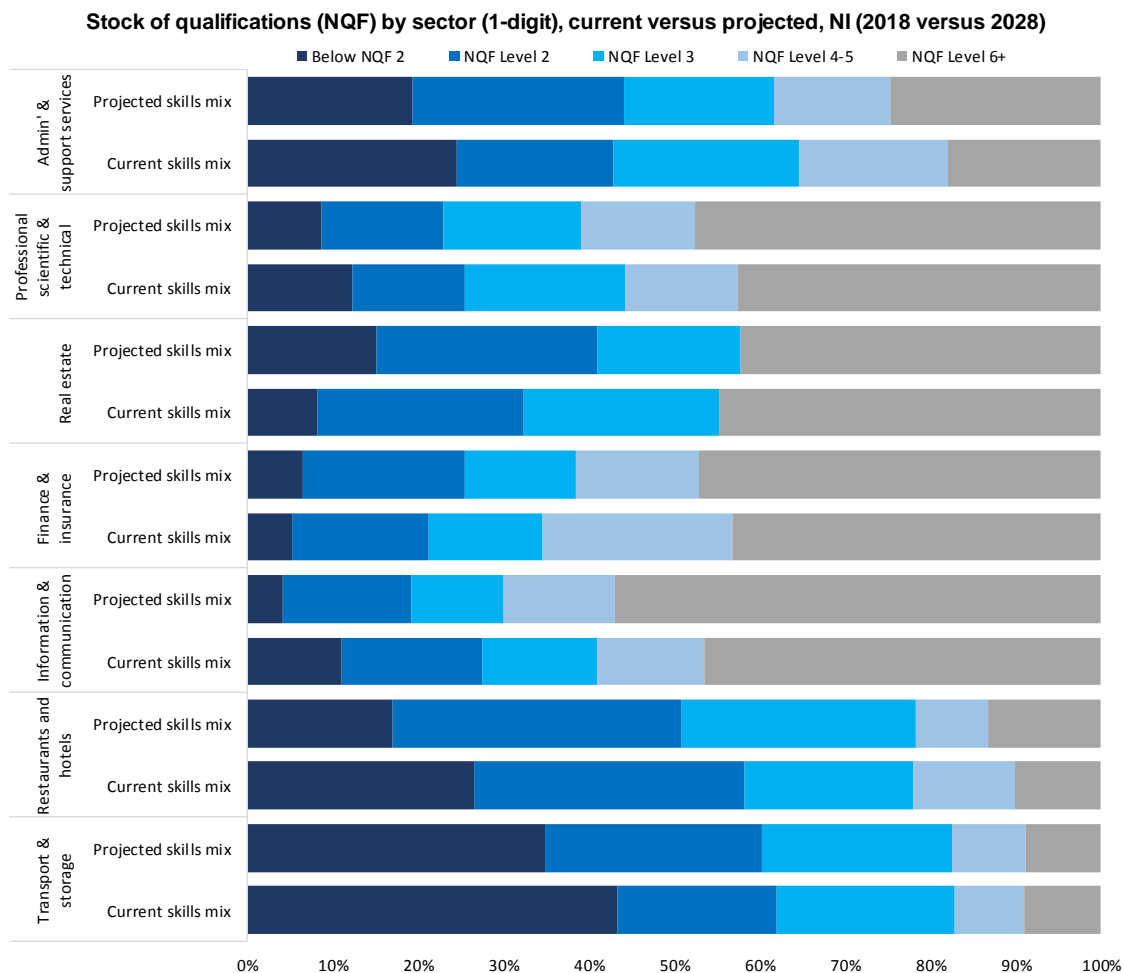# Current and projected skills mix

Skills mix by sector

Stock of qualifications (NQF) by sector (1-digit), current versus projected, NI (2018 versus 2028)

Source: Labour Force Survey, UUEPC

Annex B2

Current and projected skills mix by occupation

Current and projected skills mix

Skills mix by occupation

Stock of qualifications (NQF) by occupation (2-digit), current versus projected, NI (2018 versus 2028)

Legend: Below NQF 2 | NQF Level 2 | NQF Level 3 | NQF Level 4-5 | NQF Level 6+
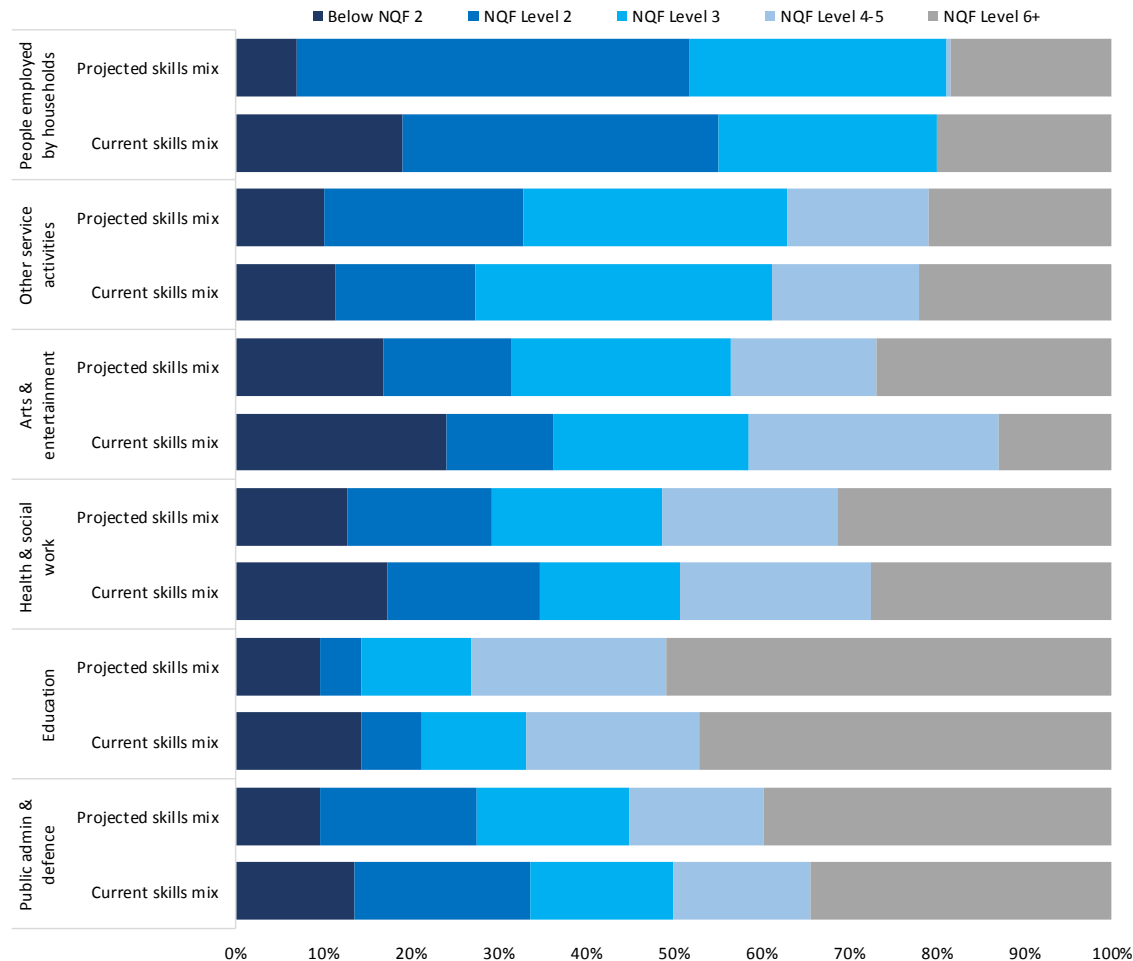
Source: Labour Force Survey

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Current and projected skills mix

Skills mix by occupation

Stock of qualifications (NQF) by occupation (2-digit), current versus projected, NI (2018 versus 2028)

Legend: ■ Below NQF 2 ■ NQF Level 2 ■ NQF Level 3 ■ NQF Level 4-5 ■ NQF Level 6+
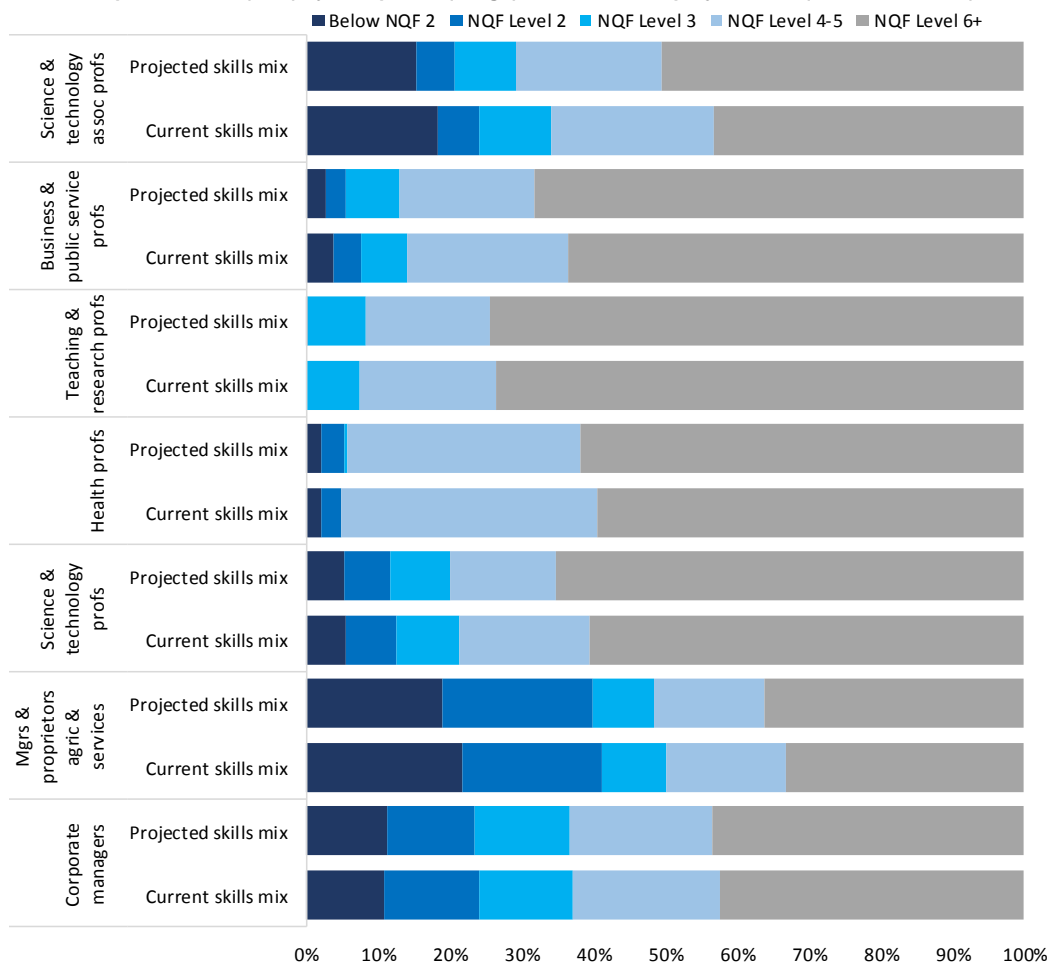
Source: Labour Force Survey

Current and projected skills mix

Skills mix by occupation

Stock of qualifications (NQF) by occupation (2-digit), current versus projected, NI (2018 versus 2028)

Legend: ■ Below NQF 2　■ NQF Level 2　■ NQF Level 3　■ NQF Level 4-5　■ NQF Level 6+

Source: Labour Force Survey

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Current and projected skills mix

Skills mix by occupation

Stock of qualifications (NQF) by occupation (2-digit), current versus projected, NI (2018 versus 2028)

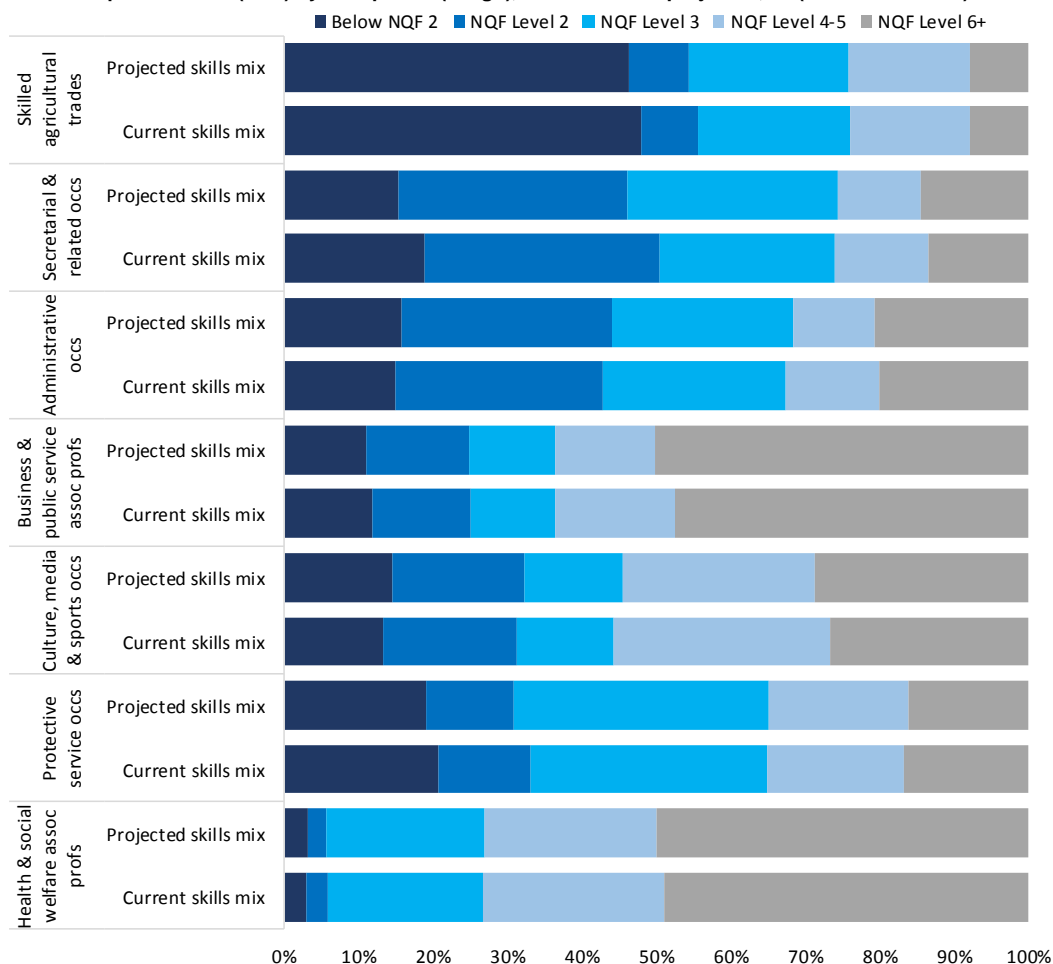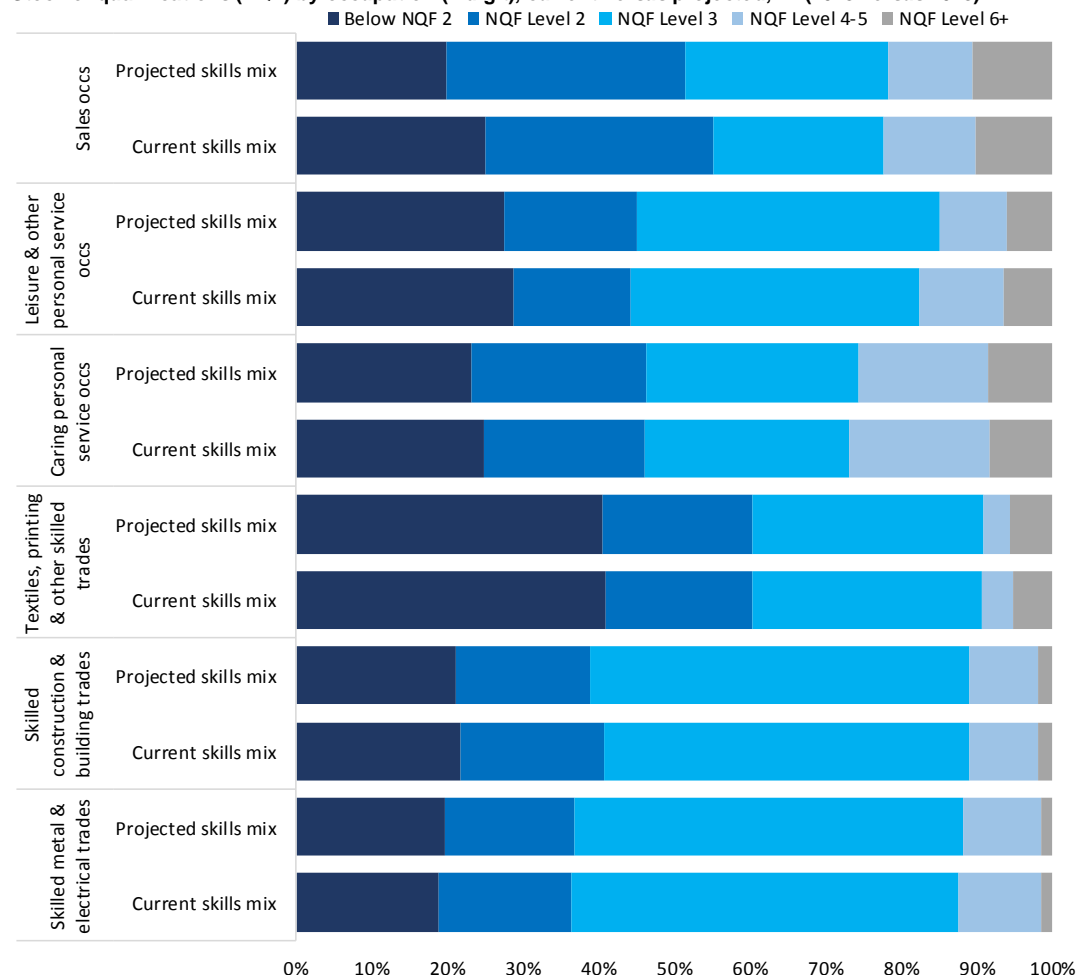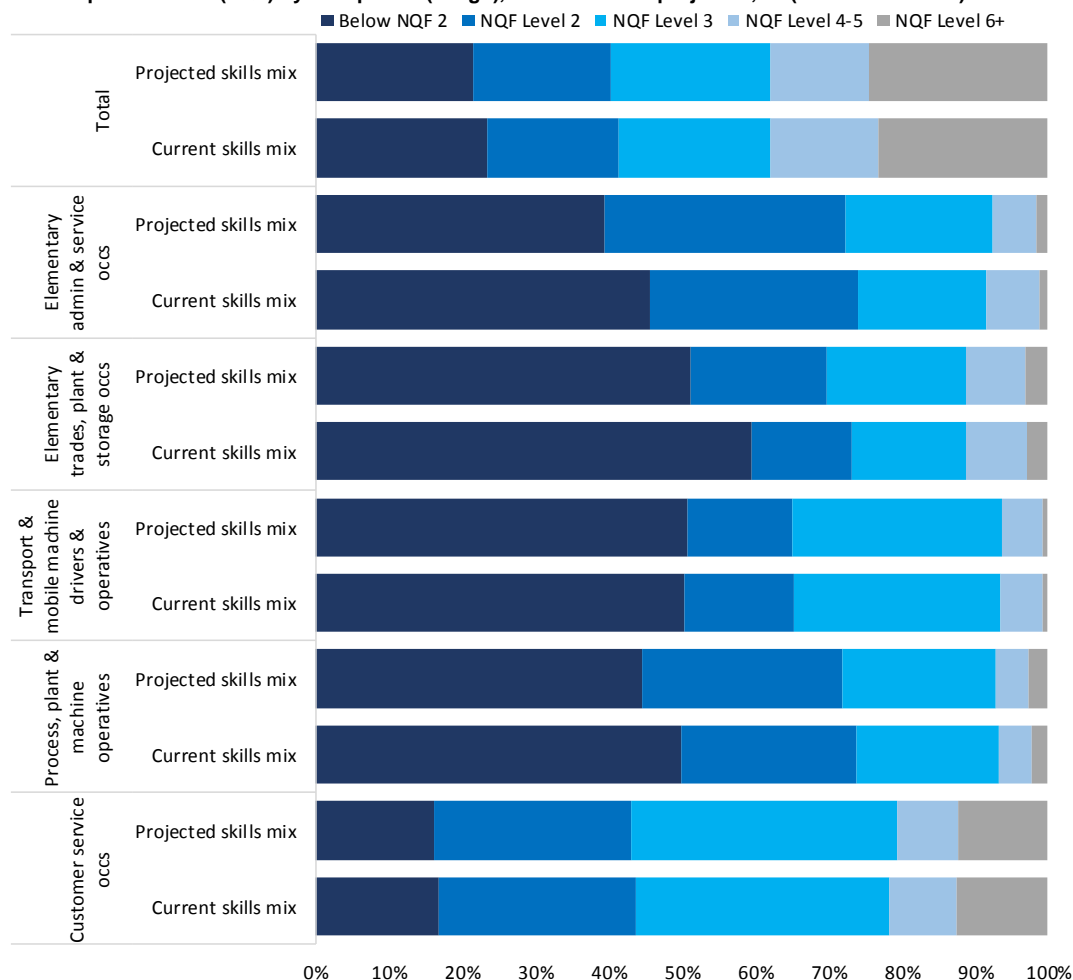Legend: Below NQF 2 | NQF Level 2 | NQF Level 3 | NQF Level 4-5 | NQF Level 6+

Source: Labour Force Survey

Subject mix (stock) by sector

NQF level 6+ - degree level and above

The following charts provide an overview of the mix subjects studied at NQF level 6+ (or equivalent) recruited into each sector (1-digit). This mix is used to inform the demand for NQF level 6+ subjects across the economy.

It is evident there is a strong link between some degree subjects and industry sectors. For example, medical related subjects is the largest degree subject within the health and social work sector, agricultural sciences is the largest degree subject within the agriculture sector and education is the largest degree subject in the education sector etc.

However, there are some degree subjects that are highly represented among a number of sectors. For example, business and finance degrees' accounts for a significant proportion of wholesale and retail, transport and storage, finance and insurance, real estate sector etc. This pattern reflects the a high demand for skills acquired within these degree subjects across the economy.

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Degree subject mix by sector

Agriculture sector and mining sector

Agriculture - subject mix (NQF level 6+), UK (2018)

- Agricultural Sciences
- Biological Sciences
- Business and Financial studies
- Social Studies
- Physical/Environmental Sciences
- Medical related subjects
- Arts
- Education
- Humanities
- Engineering
- Mathematical Sciences and Computing
- Linguistics, English, Celtic and Ancient
- Other
- Architecture and related studies
- Law
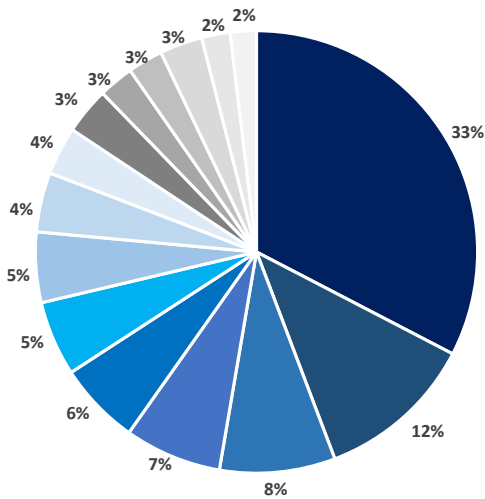
Mining - subject mix (NQF level 6+), UK (2018)

- Engineering
- Technology
- Physical/Environmental Sciences
- Medicine and dentistry
- Business and Financial studies
- Biological Sciences
- Mathematical Sciences and Computing
- Other
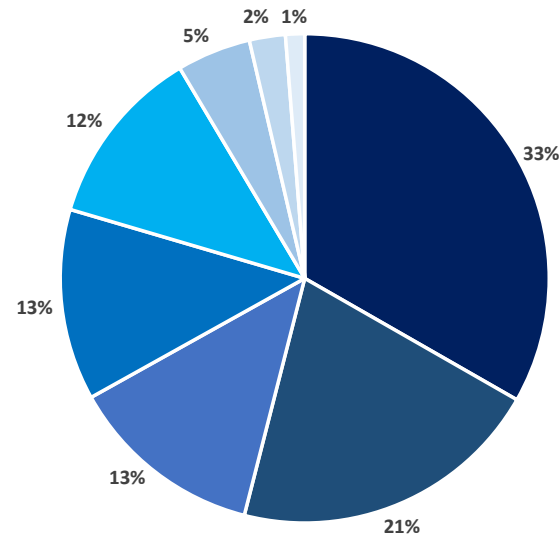
Note: Other includes; European languages, Mass communications and documentation, Medicine and dentistry, Technology and Eastern, Asiatic, African, American and Australasian Languages and Literature.
Source: Labour Force Survey, UUEPC Analysis

Note: Other includes, Humanities, Social Studies, Law, Education, Linguistics, English, Celtic and Ancient, Architecture and related studies, Medical related subjects, Arts, European languages, Agricultural Sciences and Mass communications and documentation.
Source: Labour Force Survey, UUEPC Analysis

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Degree subject mix by sector

Manufacturing sector and electricity and gas sector

Manufacturing - subject mix (NQF level 6+), UK (2018)

- Engineering
- Business and Financial studies
- Physical/Environmental Sciences
- Arts
- Biological Sciences
- Mathematical Sciences and Computing
- Social Studies
- Medical related subjects
- Other
- Agricultural Sciences
- Humanities
- Law
- Technology
- Linguistics, English, Celtic and Ancient
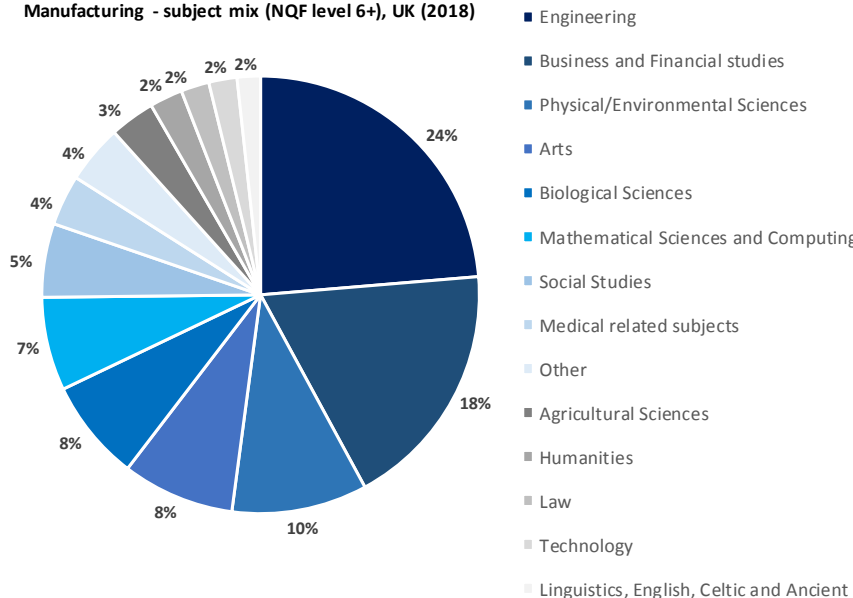
Note: Other includes, Education, Mass communications and documentation, Architecture and related studies, European Languages, Medicine and dentistry and Eastern, Asiatic, African American and Australasian Languages and Literature,
Source: Labour Force Survey, UUEPC Analysis

Electricity and gas - subject mix (NQF level 6+), UK (2018)

- Engineering
- Business and Financial studies
- Physical/Environmental Sciences
- Mathematical Sciences and Computing
- Social Studies
- Humanities
- Biological Sciences
- Arts
- Law
- Architecture and related studies
- Mass Communications and Documentation
- Linguistics, English, Celtic and Ancient
- Medical related subjects
- Technology
- Other
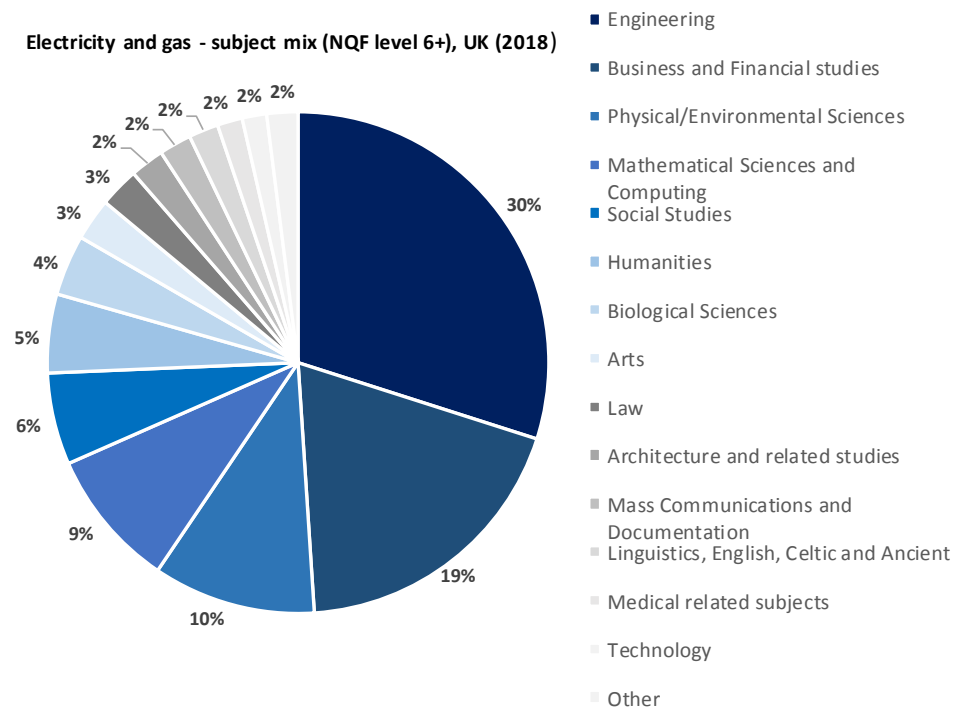
Note: Other includes; Education , Agricultural Sciences, European Languages and Medicine and dentistry
Source: Labour Force Survey, UUEPC Analysis

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Degree subject mix by sector
Water supply and waste sector and construction sector

Water supply and waste- subject mix (NQF level 6+), UK (2018)

- Engineering
- Physical/Environmental Sciences
- Business and Financial studies
- Social Studies
- Biological Sciences
- Humanities
- Education
- Medical related subjects
- Mathematical Sciences and Computing
- Arts
- Linguistics, English, Celtic and Ancient
- Agricultural Sciences
- Law
- Architecture and related studies
- Other

Note: Other includes; Technology, Mass communications and documentation, European languages, Eastern, Asiatic, African, American and Australasian Languages and Literature, Medicine and dentistry
Source: Labour Force Survey, UUEPC Analysis

Construction - subject mix (NQF level 6+), UK (2018)
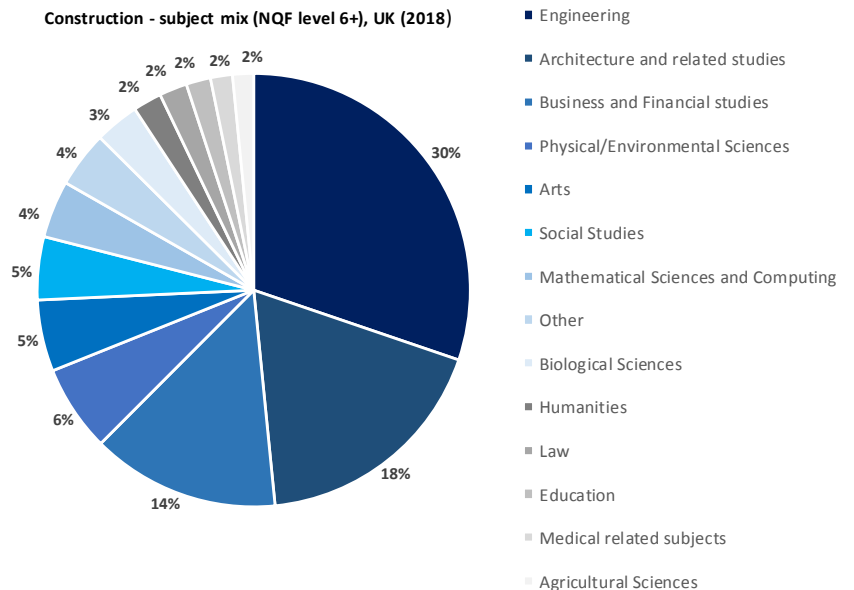
- Engineering
- Architecture and related studies
- Business and Financial studies
- Physical/Environmental Sciences
- Arts
- Social Studies
- Mathematical Sciences and Computing
- Other
- Biological Sciences
- Humanities
- Law
- Education
- Medical related subjects
- Agricultural Sciences

Note: Other includes; Linguistics, English, Celtic and Ancient, Technology, Mass communications and documentation, Medicine and dentistry and Eastern, Asiatic, African, American, and Australasian Languages and Literatre

Source: Labour Force Survey, UUEPC Analysis

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Degree subject mix by sector
Wholesale and retail sector and transport and storage sector

Wholesale and retail - subject mix (NQF level 6+), UK (2018)

- Business and Financial studies
- Arts
- Medical related subjects
- Biological Sciences
- Social Studies
- Mathematical Sciences and Computing
- Physical/Environmental Sciences
- Engineering
- Humanities
- Mass Communications and Documentation
- Other
- Law
- Education
- Linguistics, English, Celtic and Ancient
- Agricultural Sciences

Note: Other includes; Technology, Architecture and related studies, European Languages, Medicine and dentistry and Eastern, Asiatic, African, American and Australasian Languages and Literature.
Source: Labour Force Survey, UUEPC Analysis

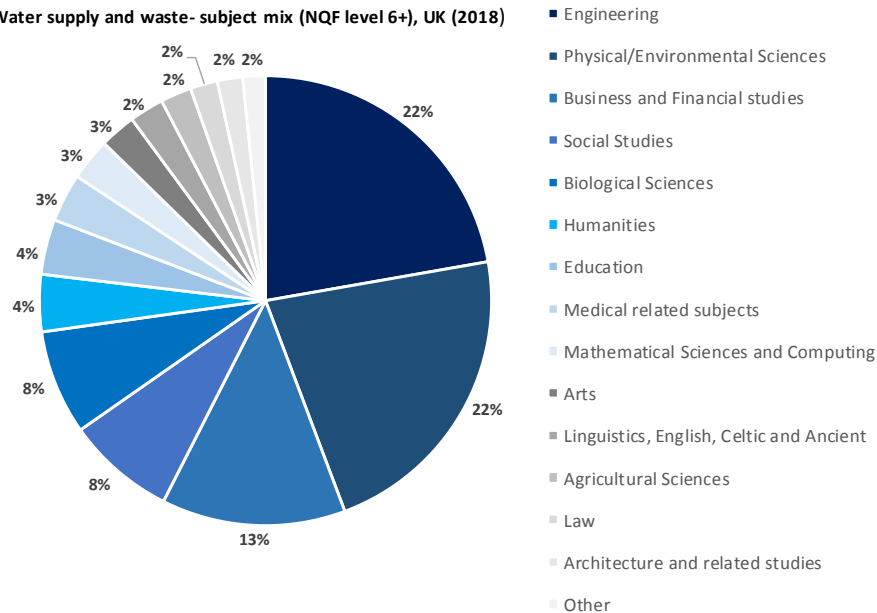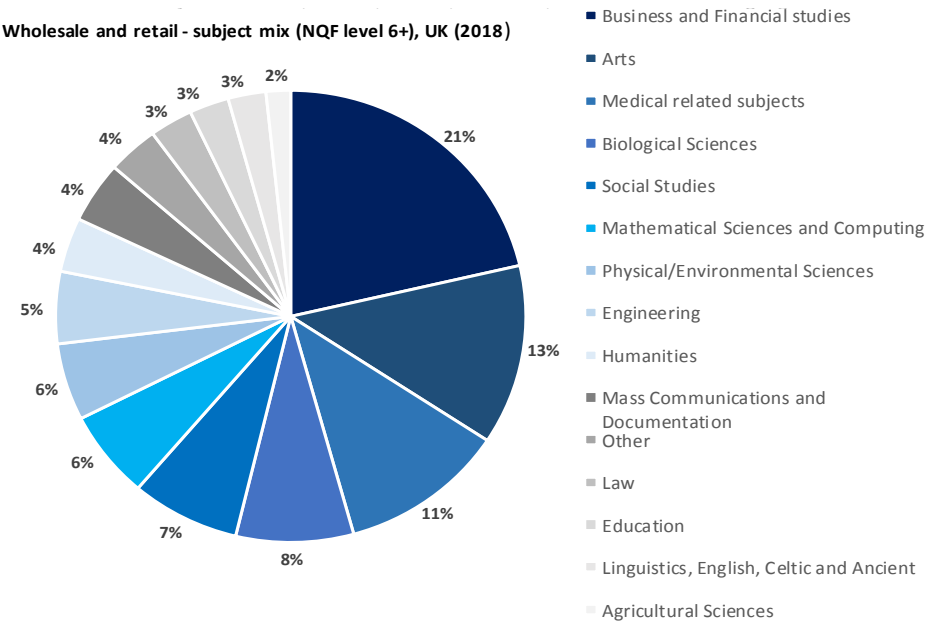**Transport and storage- subject mix (NQF level 6+), UK (2018)**

- Business and Financial studies
- Engineering
- Social Studies
- Mathematical Sciences and Computing
- Physical/Environmental Sciences
- Arts
- Biological Sciences
- Humanities
- Law
- Other
- Medical related subjects
- Education
- Architecture and related studies
- Mass Communications and Documentation
- Agricultural Sciences
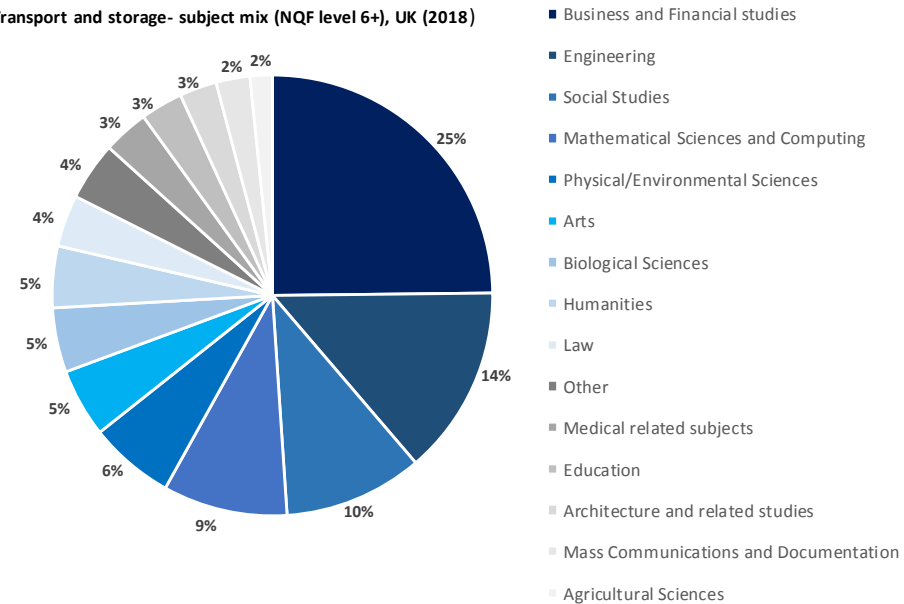
Note: Other, Linguistics, English, Celtic and Ancient, Technology, European Languages, Eastern, Asiatic, African, American, and Australasian Languages and Literature and Medicine and dentistry
Source: Labour Force Survey, UUEPC Analysis

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Degree subject mix by sector
Restaurants and hotels sector and IT sector

Restaurants and hotels - subject mix (NQF level 6+), UK (2018)

- Business and Financial studies
- Arts
- Biological Sciences
- Social Studies
- Medical related subjects
- Law
- Mathematical Sciences and Computing
- Physical/Environmental Sciences
- Education
- Mass Communications and Documentation
- Humanities
- Engineering
- Linguistics, English, Celtic and Ancient
- Architecture and related studies
- Agricultural Sciences

Note: Other includes; European Languages, Eastern, Asiatic, African, American and Australasian Languages and Linguistics and Medicine and dentistry
Source: Labour Force Survey, UUEPC Analysis

Information and communication - subject mix, (NQF level 6+), UK, 2018

- Mathematical Sciences and Computing
- Business and Financial studies
- Engineering
- Arts
- Mass Communications and Documentation
- Physical/Environmental Sciences
- Other
- Social Studies
- Biological Sciences
- Linguistics, English, Celtic and Ancient
- Humanities
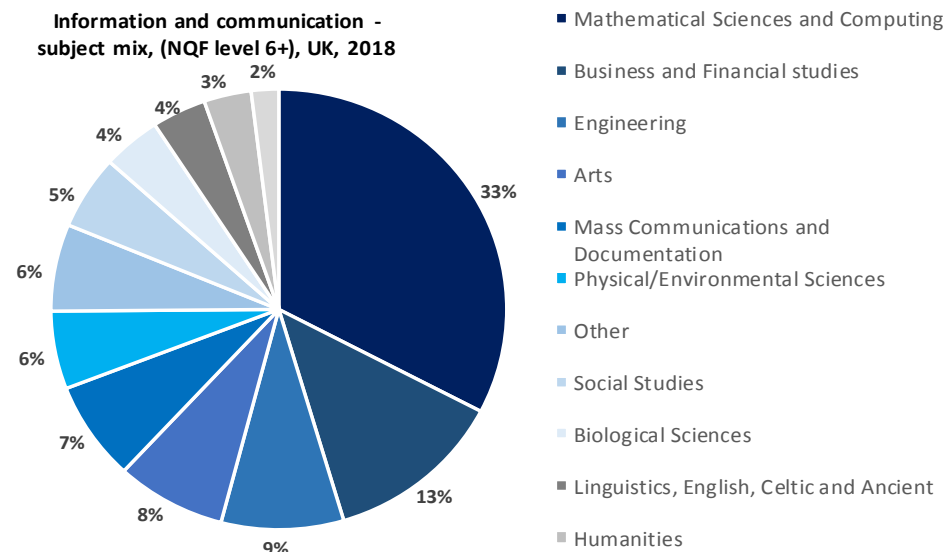
Note: Other includes; Education, Medical related subjects, Technology, European Languages, Architecture and related studies, Agricultural Sciences, Medcine and dentistry and Eastern, Asiatic, African, American and Australasian Languages and Literature
Source: Labour Force Survey, UUEPC Analysis

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Degree subject mix by sector
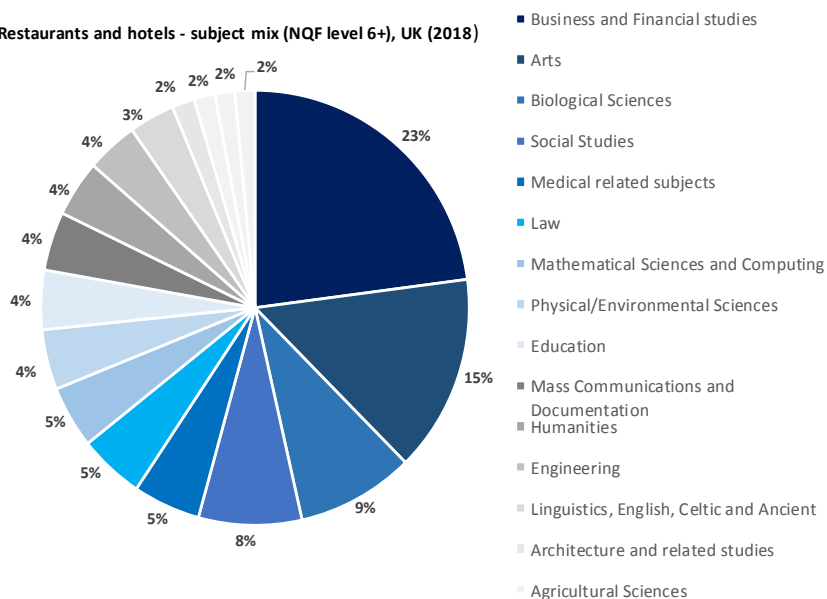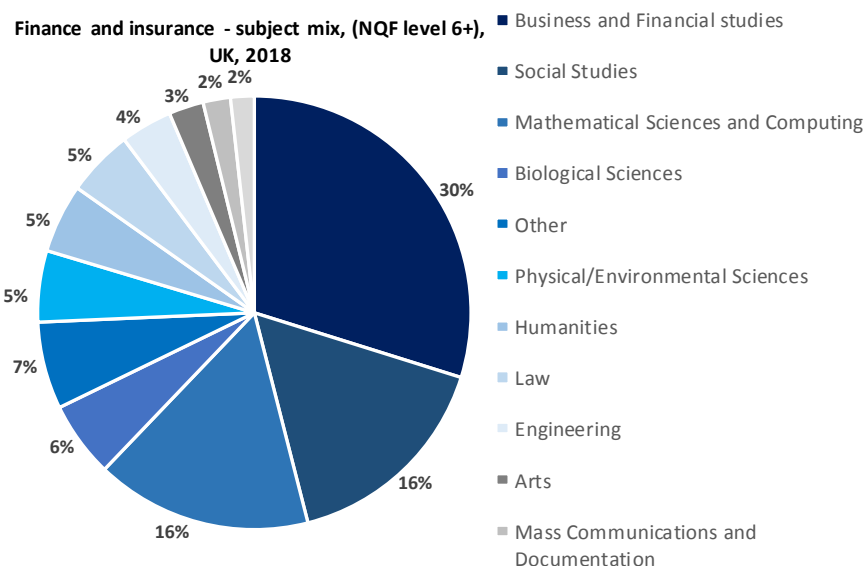## Finance and insurance sector and real estate sector

Finance and insurance - subject mix, (NQF level 6+), UK, 2018

- Business and Financial studies
- Social Studies
- Mathematical Sciences and Computing
- Biological Sciences
- Other
- Physical/Environmental Sciences
- Humanities
- Law
- Engineering
- Arts
- Mass Communications and Documentation

30%, 16%, 16%, 6%, 7%, 5%, 5%, 5%, 4%, 3%, 2%, 2%

Note: Other includes; European Languages, Medical related subjects, Education, Architecture and related studies, Technology, Agricultural Sciences, Eastern, Asiatic, African, American and Australasian Languages and Literature
Source: Labour Force Survey, UUEPC Analysis

Real estate - subject mix, (NQF level 6+), UK, 2018

- Business and Financial studies
- Architecture and related studies
- Social Studies
- Arts
- Biological Sciences
- Law
- Physical/Environmental Sciences
- Humanities
- Engineering
- Linguistics, English, Celtic and Ancient
- Mathematical Sciences and Computing
- Medical related subjects
- Education
- Mass Communications and Documentation
- Agricultural Sciences
- European Languages

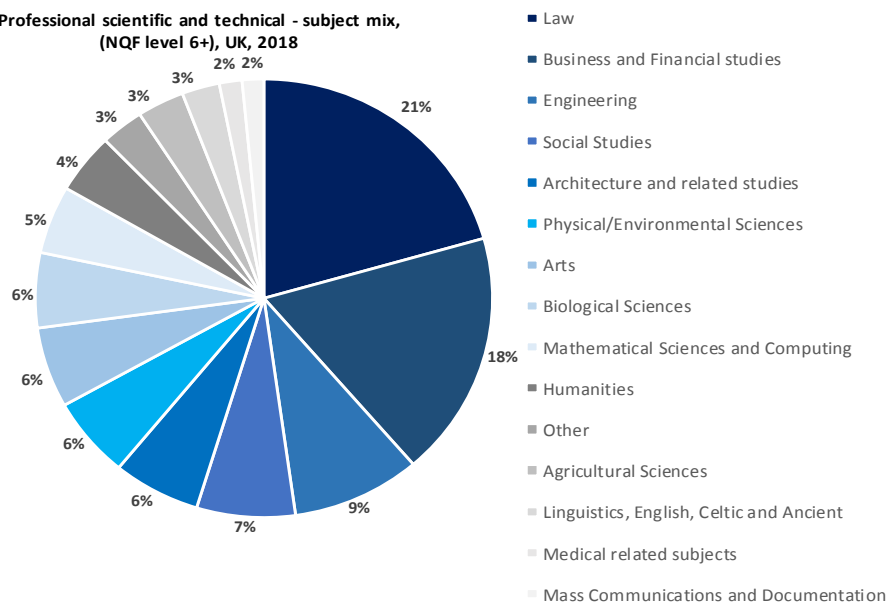24%, 16%, 13%, 5%, 5%, 5%, 4%, 4%, 4%, 3%, 3%, 3%, 3%, 3%, 3%, 1%

Note: Other includes; Eurpoean Languages, Technology, Eastern, Asiatic, African, American and Australasian Languages and Literature and Medicine and dentistry.

Source: Labour Force Survey, UUEPC Analysis

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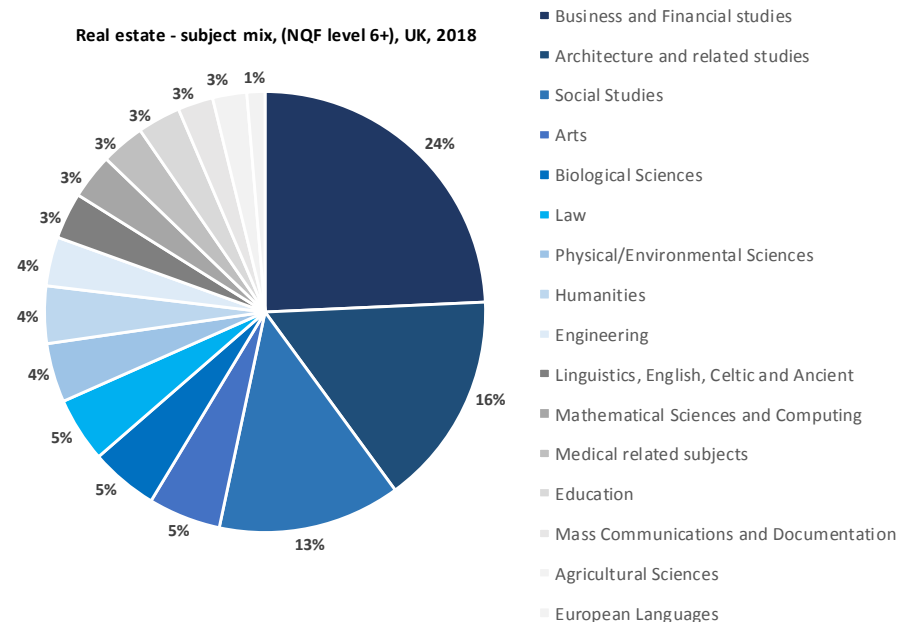
Degree subject mix by sector
Professional services sector and administration sector

Professional scientific and technical - subject mix, (NQF level 6+), UK, 2018

21%
18%
9%
7%
6%
6%
6%
6%
5%
4%
3%
3%
3%
2% 2%

- Law
- Business and Financial studies
- Engineering
- Social Studies
- Architecture and related studies
- Physical/Environmental Sciences
- Arts
- Biological Sciences
- Mathematical Sciences and Computing
- Humanities
- Other
- Agricultural Sciences
- Linguistics, English, Celtic and Ancient
- Medical related subjects
- Mass Communications and Documentation

Note: Other includes; Education, European Languages, Technology, Medicine and Dentistry, Eastern, Asiatic, African, American and Australasian Languages and Literature

Source: Labour Force Survey, UUEPC Analysis

Administration and support- subject mix, (NQF level 6+), UK, 2018

22%
9%
9%
8%
7%
7%
6%
5%
5%
5%
5%
4%
3%
2%

- Business and Financial studies
- Biological Sciences
- Social Studies
- Arts
- Medical related subjects
- Humanities
- Education
- Mathematical Sciences and Computing
- Law
- Linguistics, English, Celtic and Ancient
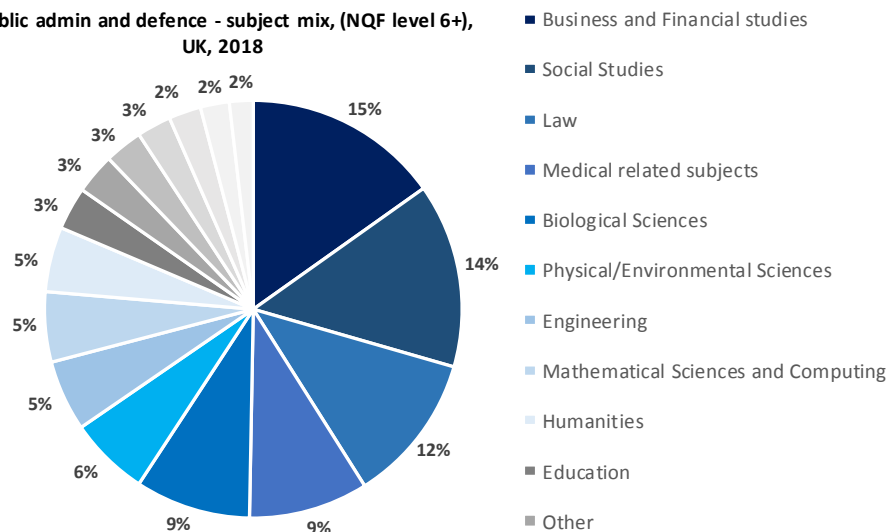- Physical/Environmental Sciences
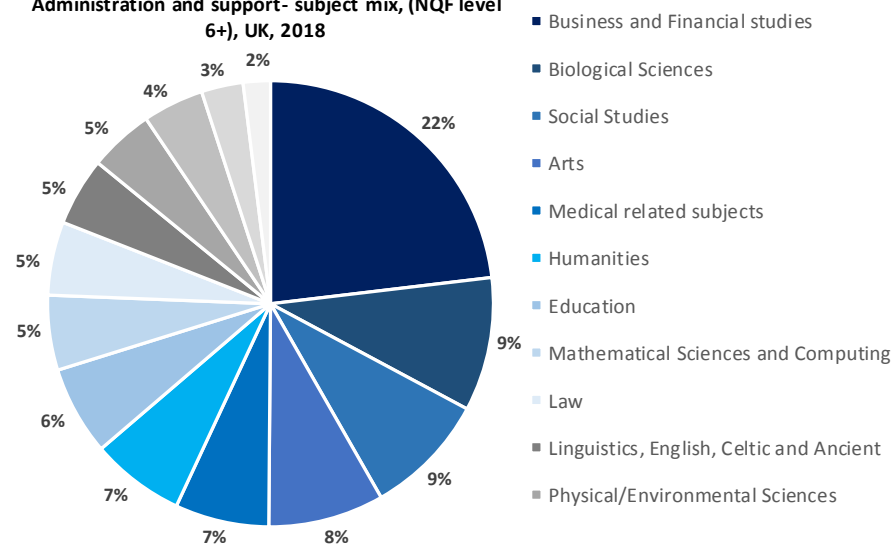
Note: Other includes; Architecture and related studies, Agricultural Sciences, European Languages, Technology, Medicine and dentistry and Eastern, Asiatic, African, American and Australasian Languages and Literature

Source: Labour Force Survey, UUEPC Analysis

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Degree subject mix by sector
Public admin' sector and education sector

Public admin and defence - subject mix, (NQF level 6+), UK, 2018

- Business and Financial studies
- Social Studies
- Law
- Medical related subjects
- Biological Sciences
- Physical/Environmental Sciences
- Engineering
- Mathematical Sciences and Computing
- Humanities
- Education
- Other

Values shown on pie: 15%, 14%, 12%, 9%, 9%, 6%, 5%, 5%, 5%, 5%, 3%, 3%, 3%, 3%, 2%, 2%, 2%

Note: Other includes; European Languages, Agricultural Sciences, Technology, Eastern, Asiatic, African, American, and Australasian Languages and Literature

Source: Labour Force Survey, UUEPC Analysis

Education- subject mix, (NQF level 6+), UK, 2018

- Education
- Biological Sciences
- Arts
- Social Studies
- Business and Financial studies
- Mathematical Sciences and Computing
- Humanities
- Linguistics, English, Celtic and Ancient
- Physical/Environmental Sciences
- Other
- Medical related subjects
- Mass Communications and Documentation
- European Languages
- Engineering

Values shown on pie: 38%, 8%, 8%, 7%, 6%, 5%, 5%, 5%, 5%, 4%, 3%, 2%, 2%, 2%
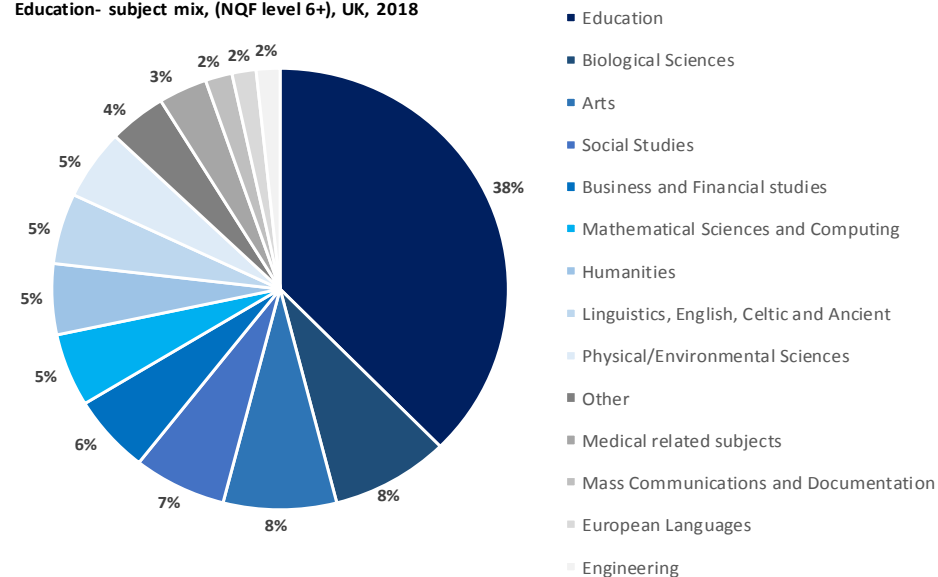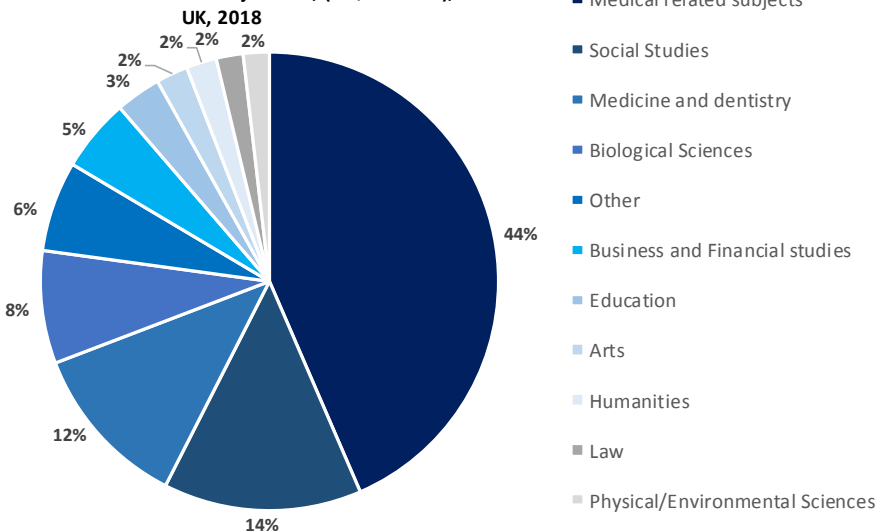
Note: Other includes; Law, Agricultural Sciences, Technology, Architecture and related studies, Medicine and dentistry and Eastern, Asiatic, African, American and Australasian Languages and Literature

Source: Labour Force Survey, UUEPC Analysis

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Degree subject mix by sector
Health and social work sector and arts and entertainment sector

Health and social work - subject mix, (NQF level 6+), UK, 2018

- Medical related subjects
- Social Studies
- Medicine and dentistry
- Biological Sciences
- Other
- Business and Financial studies
- Education
- Arts
- Humanities
- Law
- Physical/Environmental Sciences

44%, 14%, 12%, 8%, 6%, 5%, 3%, 2%, 2%, 2%, 2%

Note: Other includes; Mathematical sciences and computing, Linguistics, English, Celtic, and Ancient, Mass comminucations and documentation, Engineerign, Agricultural Sciences, European Languages, Architecture and related studies, Technology and Eastern, Asiatic, African, American and Australasian Languages and Literature
Source: Labour Force Survey, UUEPC Analysis

Arts and entertainment - subject mix, (NQF level 6+), UK, 2018
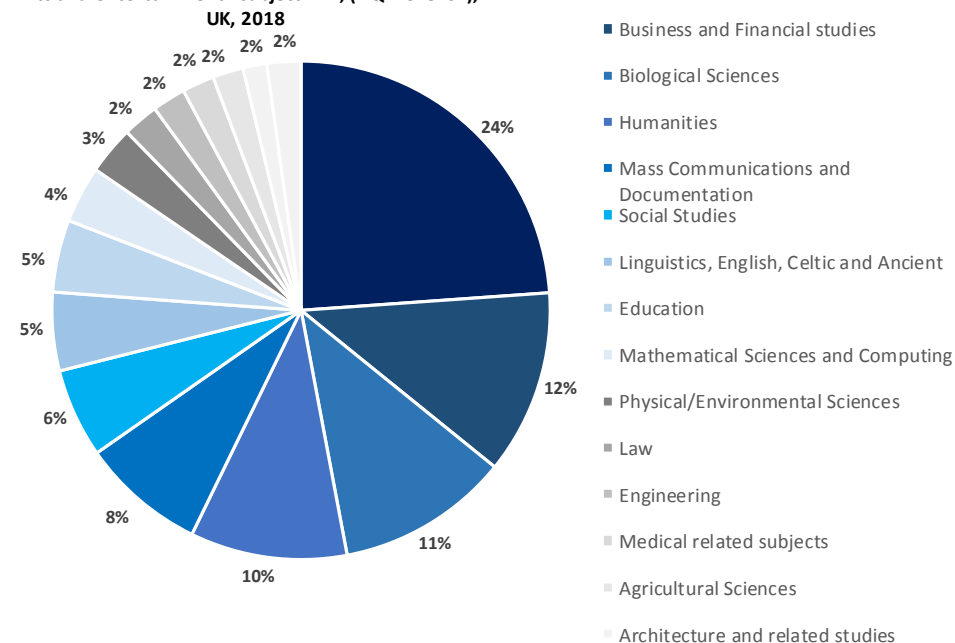
- Arts
- Business and Financial studies
- Biological Sciences
- Humanities
- Mass Communications and Documentation
- Social Studies
- Linguistics, English, Celtic and Ancient
- Education
- Mathematical Sciences and Computing
- Physical/Environmental Sciences
- Law
- Engineering
- Medical related subjects
- Agricultural Sciences
- Architecture and related studies

24%, 12%, 11%, 10%, 8%, 6%, 5%, 5%, 4%, 3%, 2%, 2%, 2%, 2%

Note: Other includes; European Languages, Technology, Eastern, Asiatic, African, American and Australasian Languages and Literature and Medicine and dentistry.
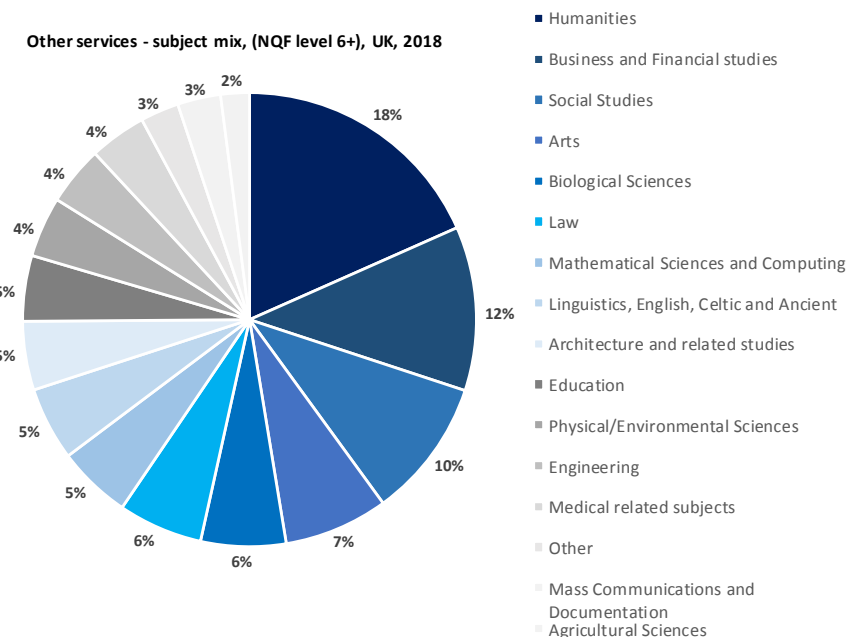**Source:** Labour Force Survey, UUEPC Analysis

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Degree subject mix by sector

Other services sector and people employed by households sector

Other services - subject mix, (NQF level 6+), UK, 2018

Legend:
- Humanities
- Business and Financial studies
- Social Studies
- Arts
- Biological Sciences
- Law
- Mathematical Sciences and Computing
- Linguistics, English, Celtic and Ancient
- Architecture and related studies
- Education
- Physical/Environmental Sciences
- Engineering
- Medical related subjects
- Other
- Mass Communications and Documentation
- Agricultural Sciences

Note: Other includes; Medicine and dentistry, European Languages, Technology, Eastern, Asiatic, African, American and Australasian Languages and Literature

Source: Labour Force Survey, UUEPC Analysis

People employed by households -subject mix, (NQF level 6+), UK, 2018

Legend:
- Arts
- Education
- Biological Sciences
- Social Studies
- Law
- Medical related subjects
- Engineering
- Other
- Business and Financial studies
- Humanities
- Physical/Environmental Sciences
- Eastern, Asiatic, African, American, and Australasian Languages, literature
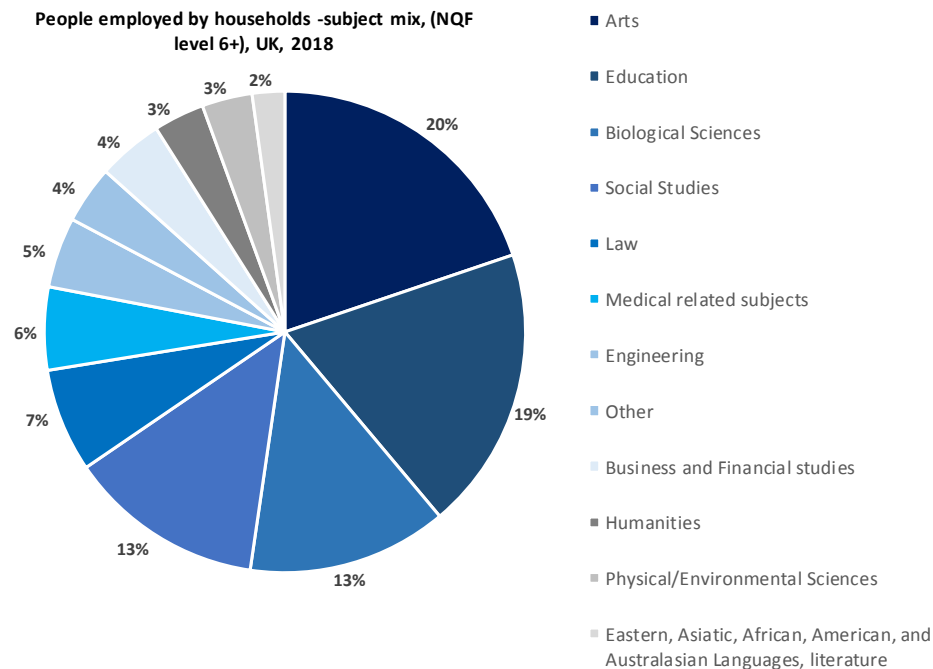
Note: Other includes; Linguistics, English, Celtic and Ancient, Mass communications and documentation, Agricultural Sciences and Technology, Medicine and dentistry
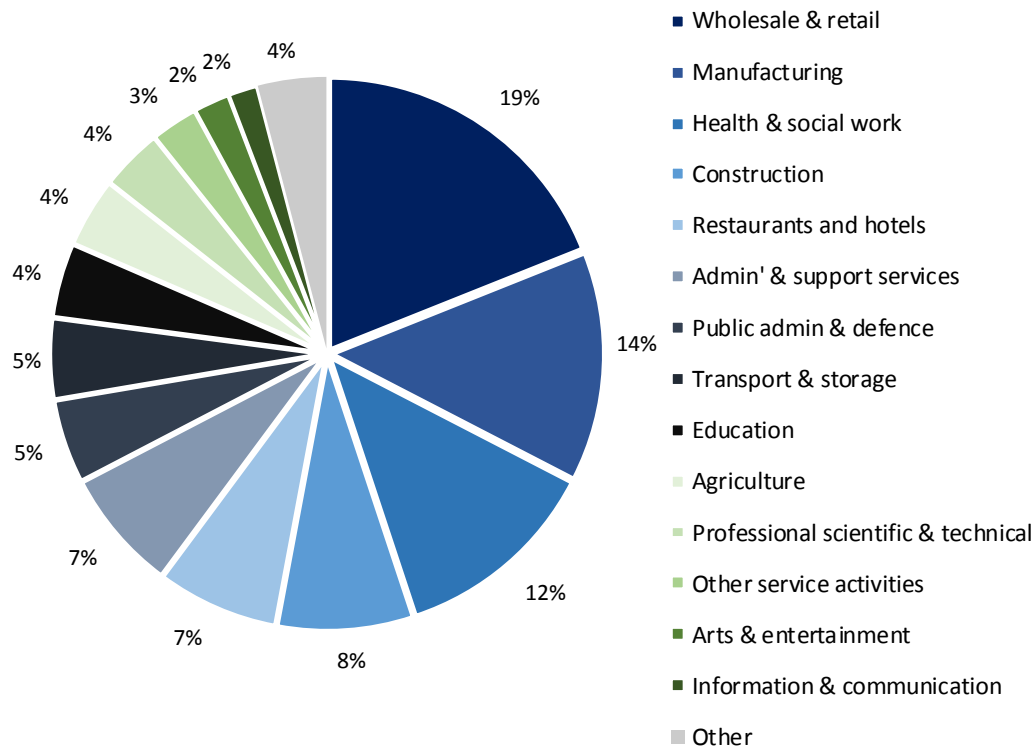
Source: Labour Force Survey, UUEPC Analysis

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Stock of NQF level 3 and below qualifiers within the labour market

Highest qualification NQF level 3 or below by sector (1-digit), NI (2018)

Legend:
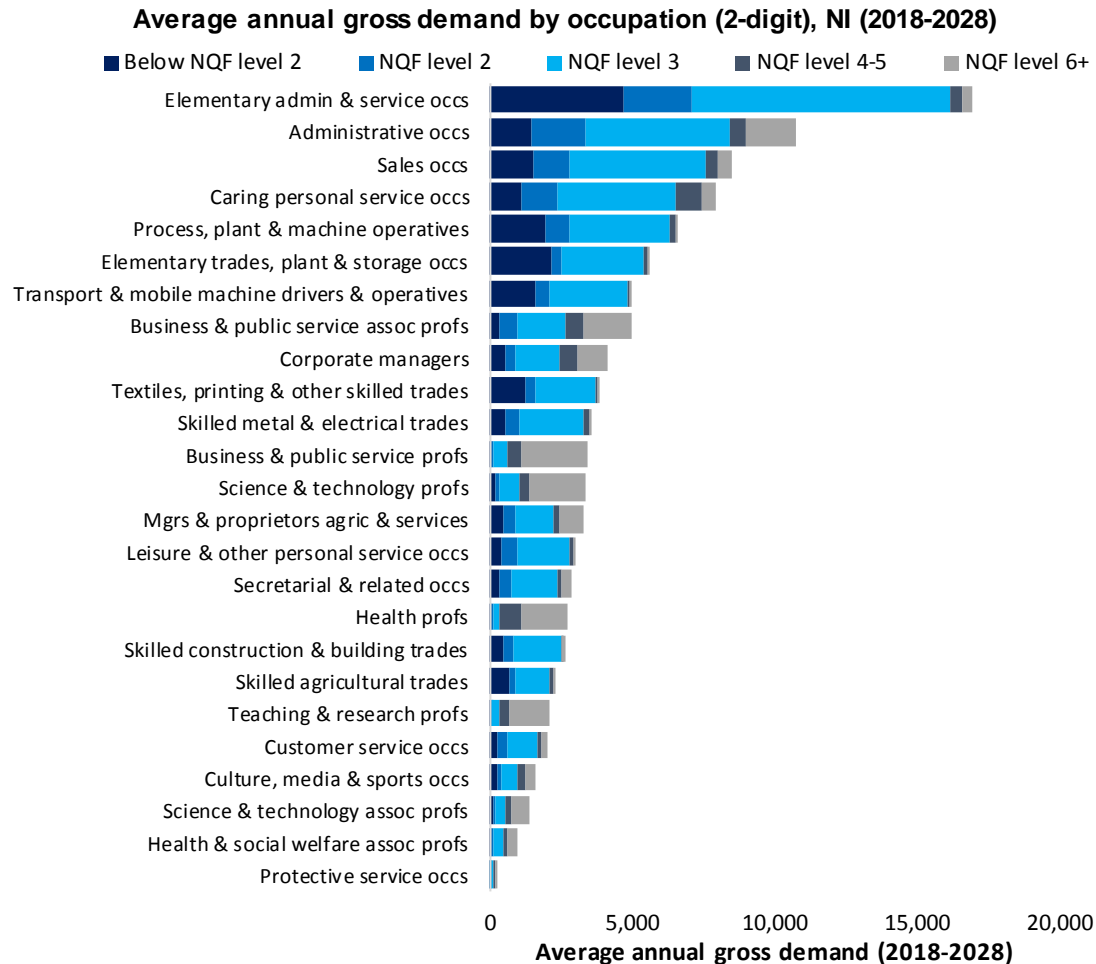- Wholesale & retail — 19%
- Manufacturing — 14%
- Health & social work — 12%
- Construction — 8%
- Restaurants and hotels — 7%
- Admin' & support services — 7%
- Public admin & defence — 5%
- Transport & storage — 5%
- Education — 4%
- Agriculture — 4%
- Professional scientific & technical — 4%
- Other service activities — 3%
- Arts & entertainment — 2%
- Information & communication — 2%
- Other — 4%

Source: Labour Force Survey

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Gross demand by sector and NQF

Average annual gross demand by sector (1-digit) and NQF, NI (2018-2028)

Legend: ■ Below NQF level 2 ■ NQF level 2 ■ NQF level 3 ■ NQF level 4-5 ■ NQF level 6+

Sectors (top to bottom):
- Wholesale & retail
- Health & social work
- Manufacturing
- Admin' & support services
- Restaurants and hotels
- Education
- Professional scientific & technical
- Construction
- Public admin & defence
- Information & communication
- Transport & storage
- Other service activities
- Arts & entertainment
- Finance & insurance
- Agriculture
- Real estate
- Water supply & waste
- Elect' & gas
- Mining
- People employed by households

X-axis: 0, 5,000, 10,000

Average annual gross demand (2018-2028)

Source: UUEPC

Gross demand by occupation and NQF

Average annual gross demand by occupation (2-digit), NI (2018-2028)

Legend: ■ Below NQF level 2   ■ NQF level 2   ■ NQF level 3   ■ NQF level 4-5   ■ NQF level 6+

Categories (top to bottom):
- Elementary admin & service occs
- Administrative occs
- Sales occs
- Caring personal service occs
- Process, plant & machine operatives
- Elementary trades, plant & storage occs
- Transport & mobile machine drivers & operatives
- Business & public service assoc profs
- Corporate managers
- Textiles, printing & other skilled trades
- Skilled metal & electrical trades
- Business & public service profs
- Science & technology profs
- Mgrs & proprietors agric & services
- Leisure & other personal service occs
- Secretarial & related occs
- Health profs
- Skilled construction & building trades
- Skilled agricultural trades
- Teaching & research profs
- Customer service occs
- Culture, media & sports occs
- Science & technology assoc profs
- Health & social welfare assoc profs
- Protective service occs

X-axis: 0, 5,000, 10,000, 15,000, 20,000 — **Average annual gross demand (2018-2028)**

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NQF level 3 and below gross demand by sector

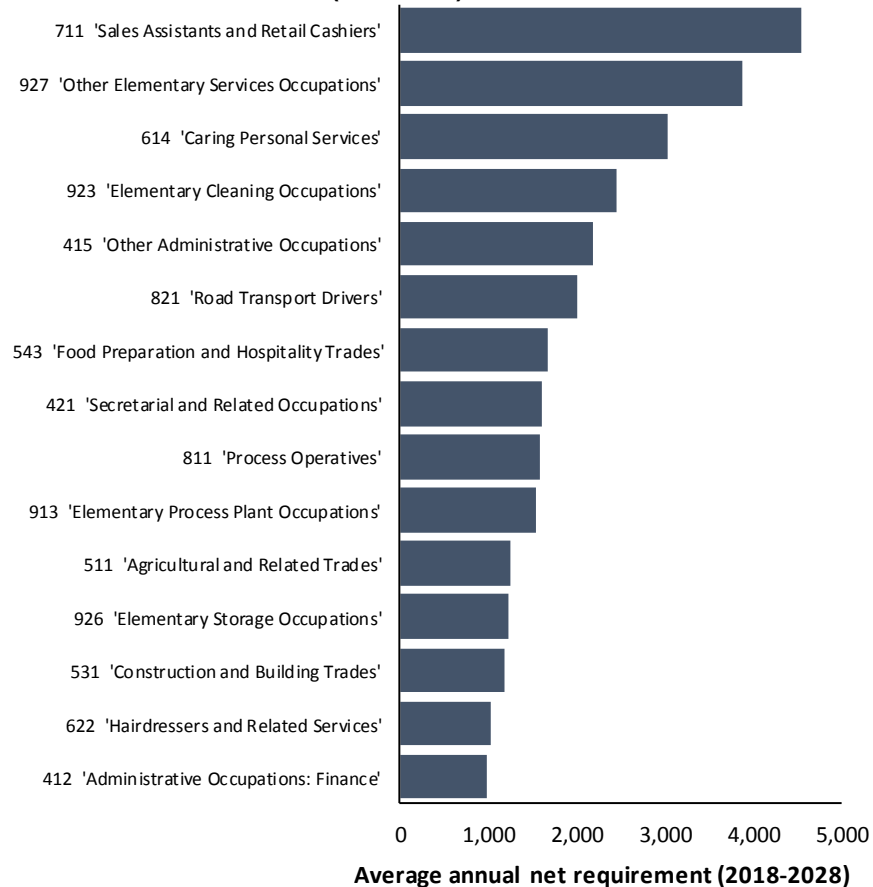**Average annual NQF level 3 and below gross demand by sector (1-digit), NI (2018-2028)**

Source: UUEPC
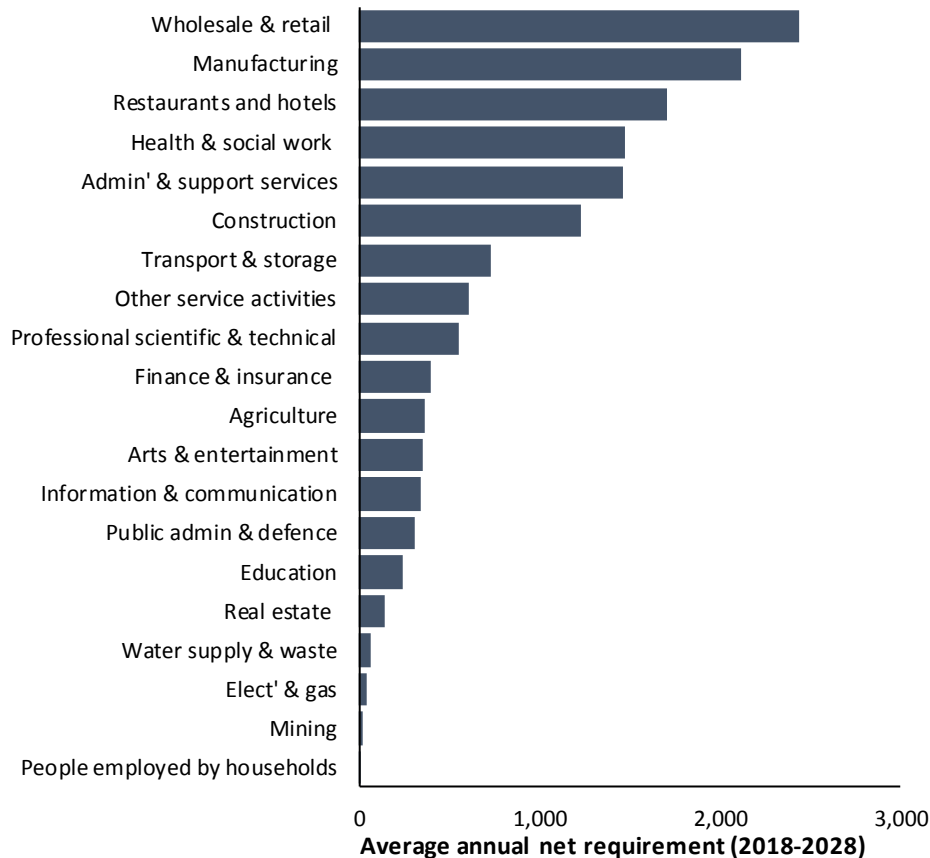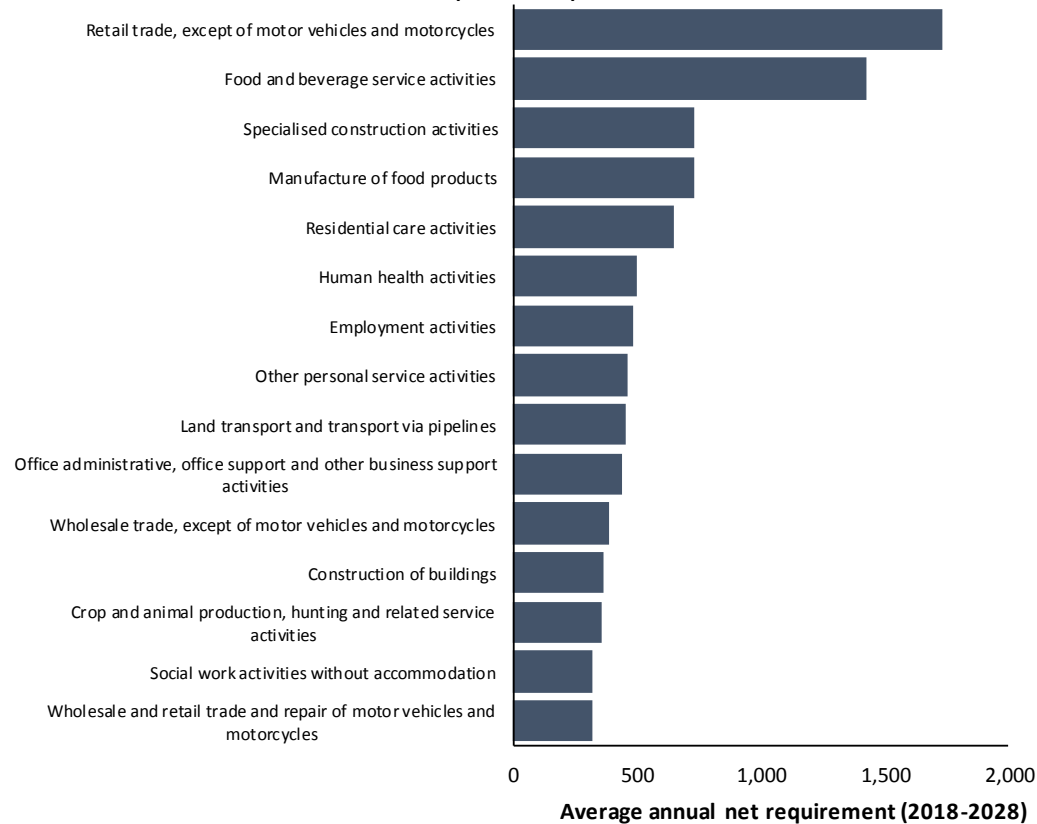
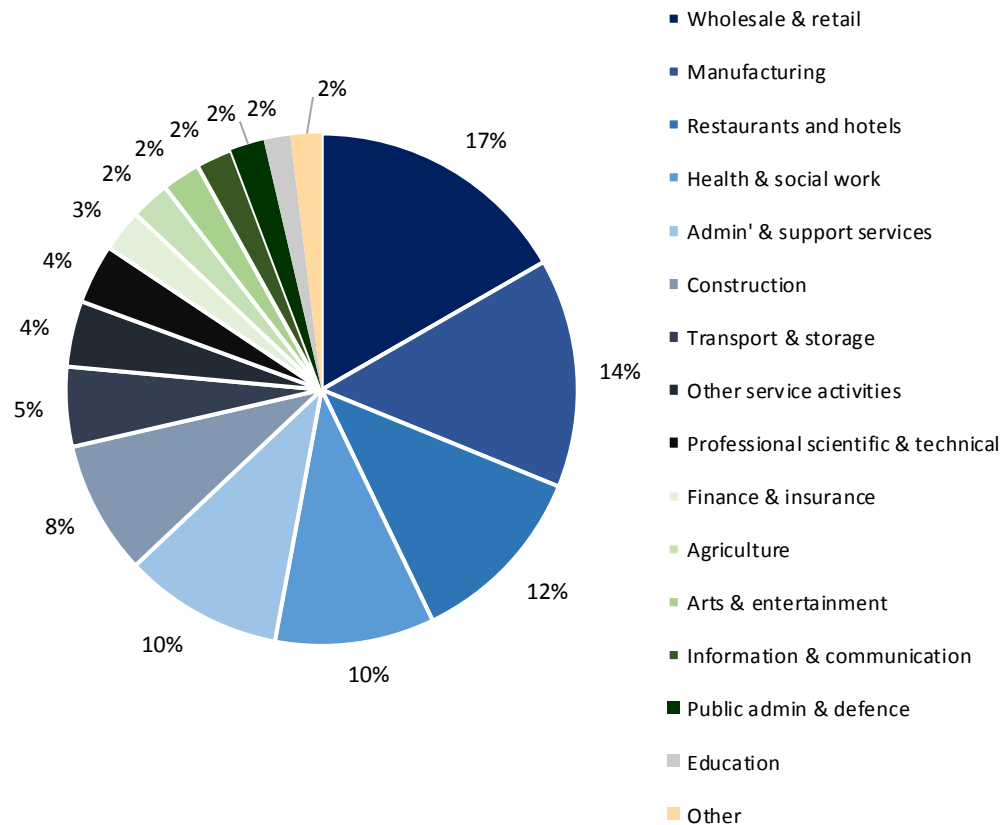# NQF level 3 and below gross demand by detailed sector

Average annual NQF level 3 and below gross demand by sector (top 15, 2-digit), NI (2018-2028)

Sector	
Retail trade, except of motor vehicles and motorcycles	
Food and beverage service activities	
Residential care activities	
Employment activities	
Manufacture of food products	
Specialised construction activities	
Public administration and defence; compulsory social security	
Human health activities	
Social work activities without accommodation	
Education	
Wholesale trade, except of motor vehicles and motorcycles	
Land transport and transport via pipelines	
Crop and animal production, hunting and related service activities	
Other personal service activities	
Office administrative, office support and other business support activities	

- 1,000 2,000 3,000 4,000 5,000 6,000 7,000

Average annual net requirement (2018-2028)

Source: UUEPC

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NQF level 3 and below gross demand by occupation

Average annual NQF level 3 and below gross demand by occupation (2-digit), NI (2018-2028)

Source: UUEPC

NQF level 3 and below gross demand by detailed occupation

Average annual NQF level 3 and below gross demand by occupation (top 15, 3-digit), NI (2018-2028)

Occupation	
711 'Sales Assistants and Retail Cashiers'	
927 'Other Elementary Services Occupations'	
614 'Caring Personal Services'	
923 'Elementary Cleaning Occupations'	
415 'Other Administrative Occupations'	
821 'Road Transport Drivers'	
543 'Food Preparation and Hospitality Trades'	
421 'Secretarial and Related Occupations'	
811 'Process Operatives'	
913 'Elementary Process Plant Occupations'	
511 'Agricultural and Related Trades'	
926 'Elementary Storage Occupations'	
531 'Construction and Building Trades'	
622 'Hairdressers and Related Services'	
412 'Administrative Occupations: Finance'	

0   1,000   2,000   3,000   4,000   5,000

Average annual net requirement (2018-2028)

Source: UUEPC

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NQF level 3 and below net requirement by sector

Average annual NQF level 3 and below net requirement by sector (1-digit), NI (2018-2028)

Sector
Wholesale & retail
Manufacturing
Restaurants and hotels
Health & social work
Admin' & support services
Construction
Transport & storage
Other service activities
Professional scientific & technical
Finance & insurance
Agriculture
Arts & entertainment
Information & communication
Public admin & defence
Education
Real estate
Water supply & waste
Elect' & gas
Mining
People employed by households

Average annual net requirement (2018-2028)

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NQF level 3 and below net requirement by detailed sector

Average annual NQF level 3 and below net requirement by sector (top 15, 2-digit), NI (2018-2028)

Average annual net requirement (2018-2028)

Source: UUEPC

NQF level 3 and below net requirement by sector (%)

Average annual NQF level 3 and below net requirement by sector (1-digit), NI (2018-2028)

- Wholesale & retail
- Manufacturing
- Restaurants and hotels
- Health & social work
- Admin' & support services
- Construction
- Transport & storage
- Other service activities
- Professional scientific & technical
- Finance & insurance
- Agriculture
- Arts & entertainment
- Information & communication
- Public admin & defence
- Education
- Other

Source: UUEPC

Demand side concepts NQF level 3 and below

An overview of the NI labour market
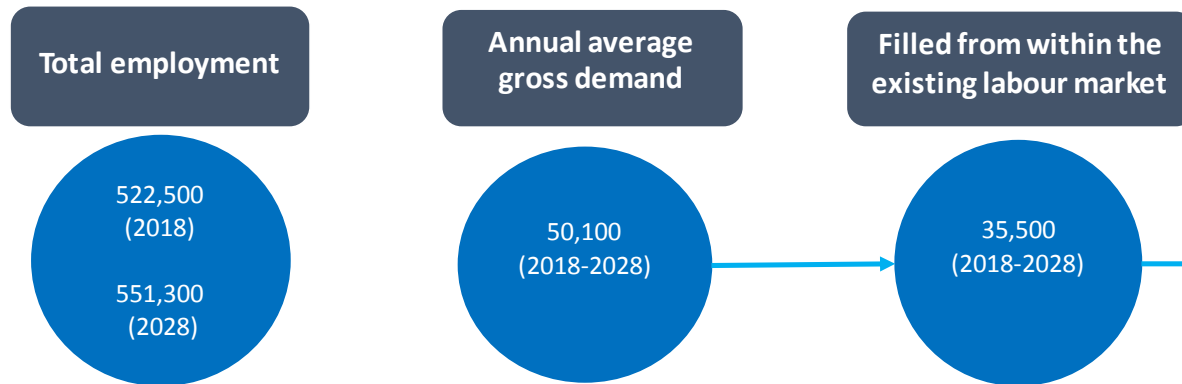
Total employment

522,500
(2018)

551,300
(2028)

Annual average gross demand

50,100
(2018-2028)

Filled from within the existing labour market

35,500
(2018-2028)

Note: Employment is presented in 'people-based' terms. This will differ slightly from 'job-based' numbers presented to illustrate the 'high growth' scenario
Note: Data presented on this slide has been rounded to the nearest hundred.

Net requirement from education & migration

14,600
(2018-2028)

Replacement demand

10,500

Focus of the Skills Barometer

Expansion demand

4,100

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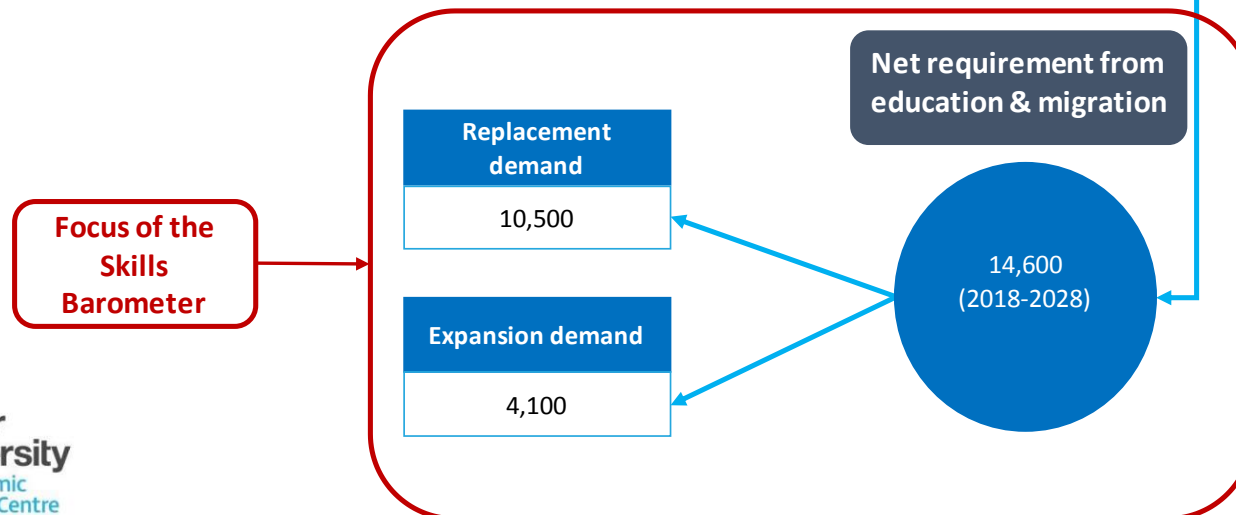
Annex E1

Supply gap by NQF level 6+ - detailed subjects

Ulster University

Supply gap by degree subject
Engineering and physical/environmental sciences

Average annual effective supply gap within NQF level 6+ engineering subjects (JACS, 2-digit), NI (2018-2028)

Undersupply
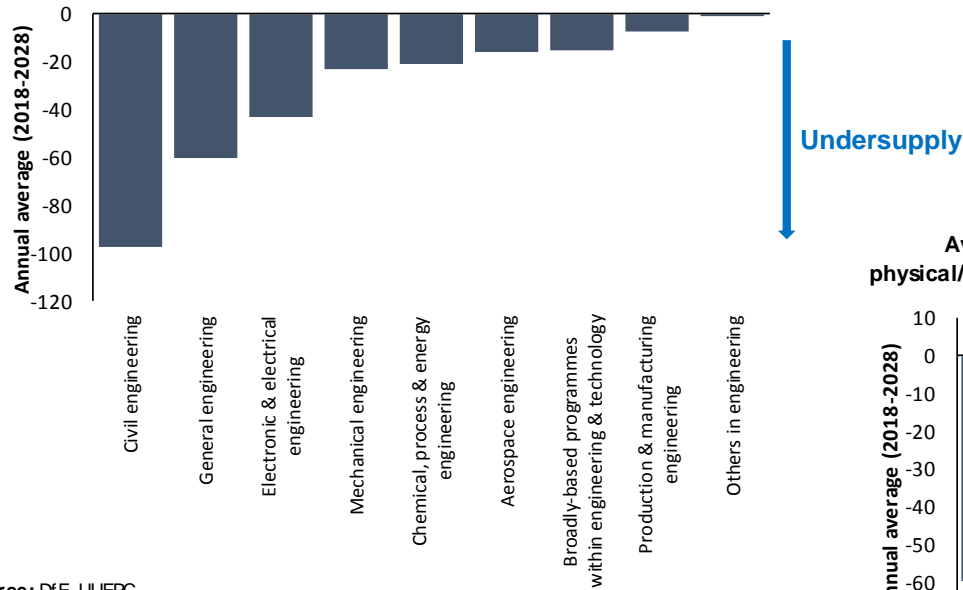
Average annual effective supply gap within NQF level 6+ physical/enviornmental sciences subjects (JACS, 2-digit), NI (2018-2028)

Oversupply

Undersupply

Ulster University Economic Policy Centre
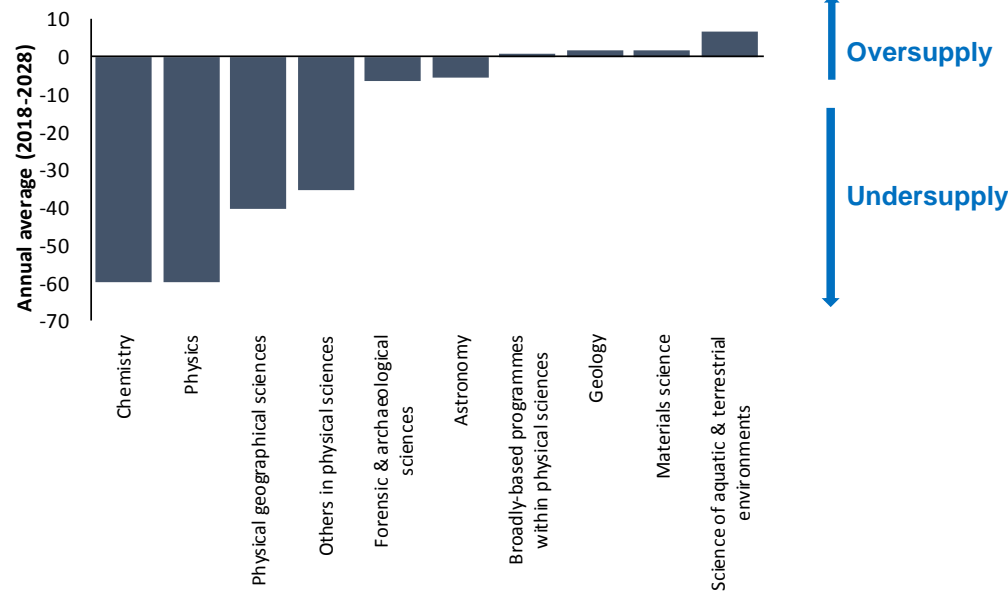
Supply gap by degree subject

Historical and philosophical studies and business and finance

Average annual effective supply gap within NQF level 6+ historical & philosophical studies (JACS, 2-digit), NI (2018-2028)

Oversupply

Undersupply
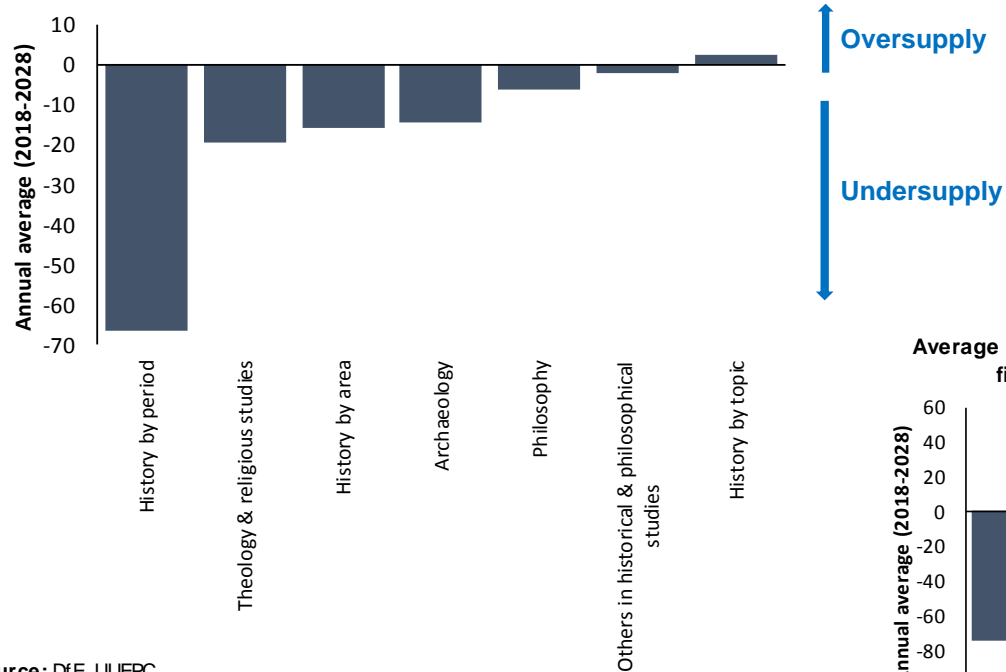
Source: DfE, UUEPC

Average annual effective supply gap within NQF level 6+ business and financial studies subjects (JACS, 2-digit), NI (2018-2028)

Oversupply

Undersupply

Source: DfE, UUEPC

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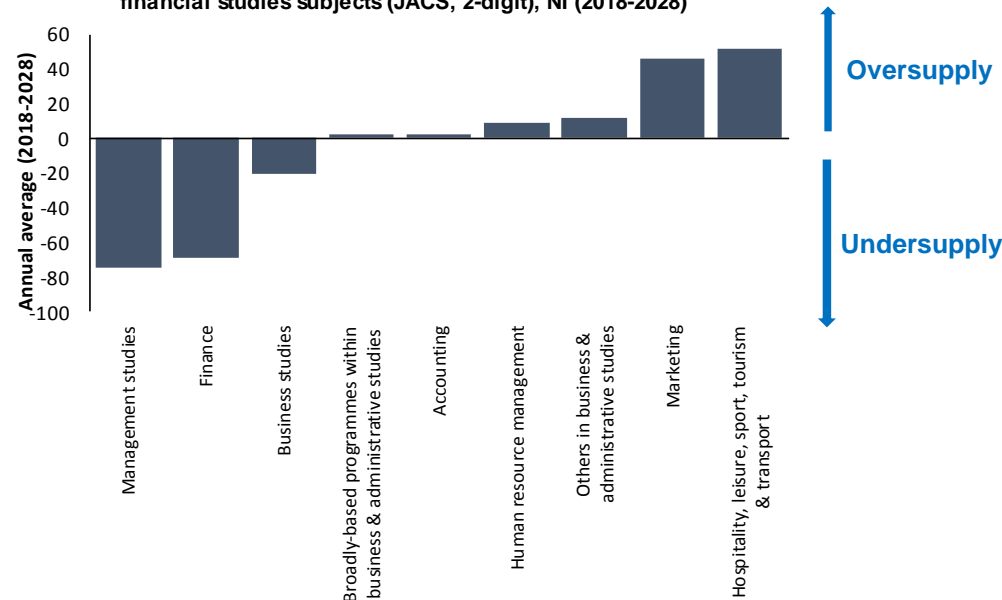
Supply gap by degree subject
Languages and creative arts and design

Average annual effective supply gap NQF level 6+ within languages subjects (JACS, 2-digit), NI (2018-2028)

Oversupply

Undersupply

Annual average (2018-2028)

French studies

Spanish studies

German studies

Others in European languages, literature & related subjects

Russian & East European studies

European studies
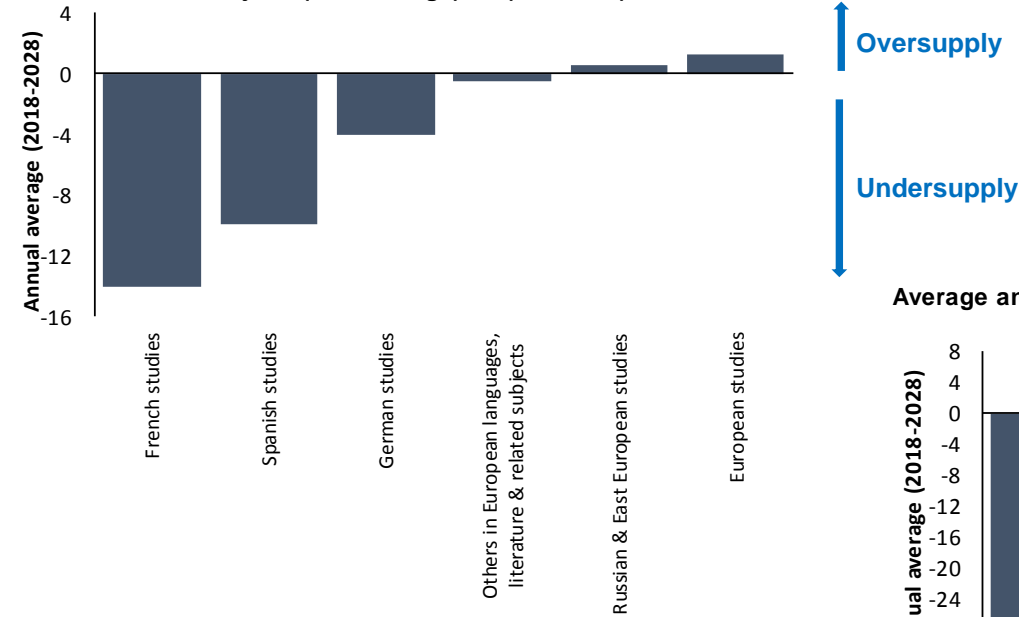
Source: DfE, UUEPC

Average annual effective supply gap within NQF level 6+ creative arts & design subjects (JACS, 2-digit), NI (2018-2028)

Oversupply

Undersupply

Annual average (2018-2028)

Design studies

Music

Fine art

Others in creative arts & design

Drama

Imaginative writing

Dance

Crafts

Cinematics & photography

Source: DfE, UUEPC

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Economic Policy Centre
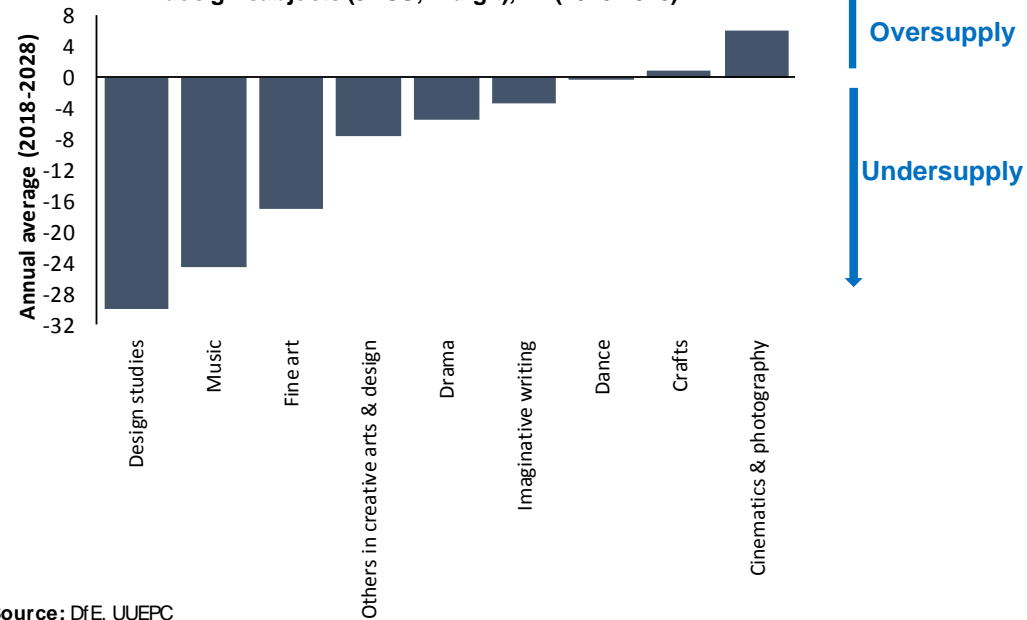
Supply gap by degree subject
Mathematical and computer sciences and agricultural sciences

Average annual effective supply gap within NQF level 6+ mathematical and computer sciences subjects (JACS, 2-digit), NI (2018-2028)

Oversupply

Undersupply
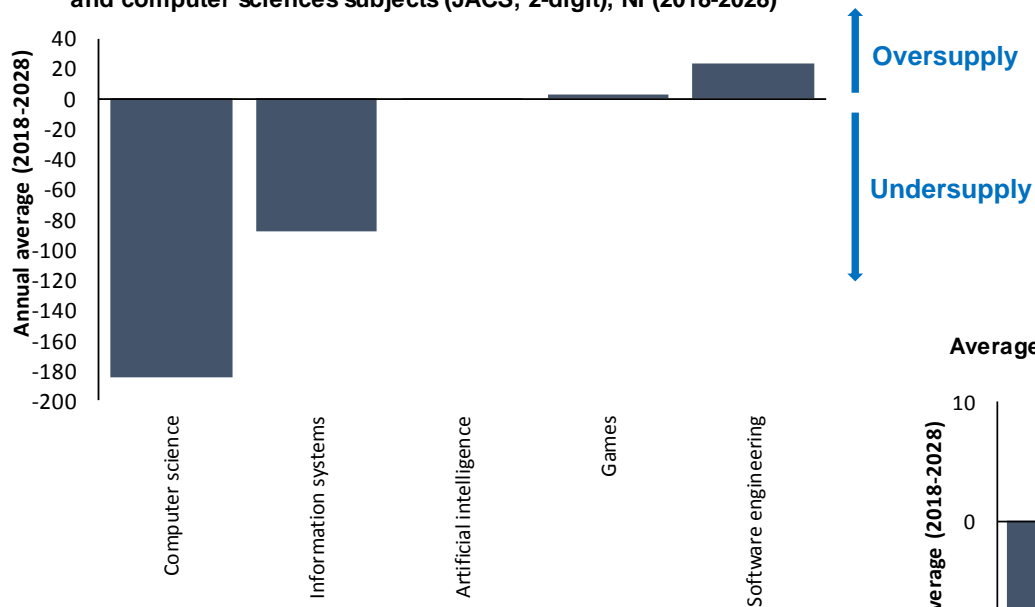
Average annual effective supply gap within NQF level 6+ agricultural sciences subjects (JACS, 2-digit), NI (2018-2028)


Oversupply

Undersupply

Ulster University
Economic Policy Centre
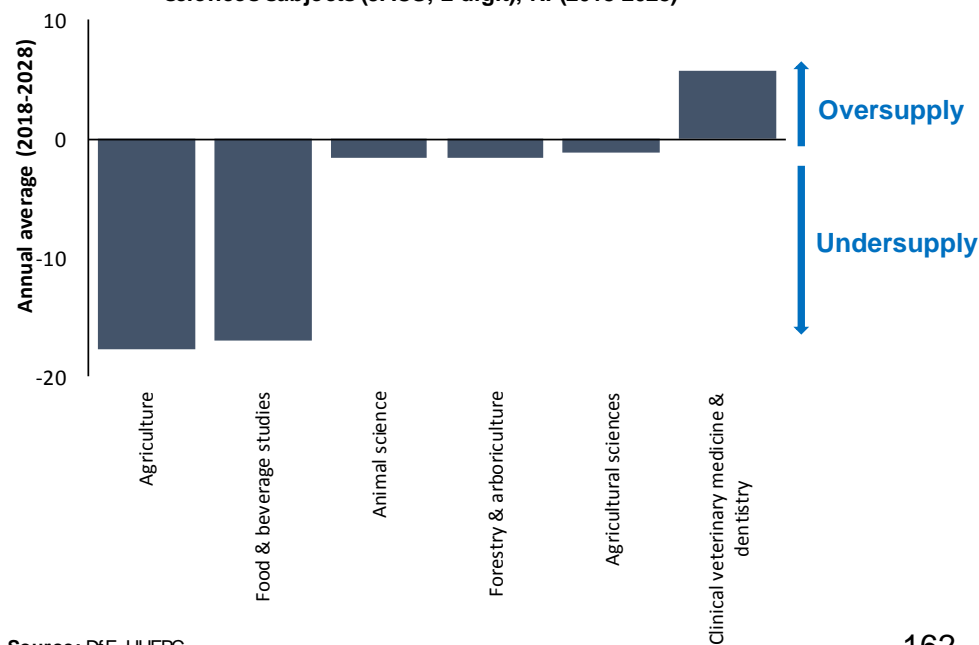
Supply gap by degree subject

Mass comms' and documentation and biological sciences

Average annual effective supply gap within NQF level 6+ mass communications & documentation subjects (JACS, 2-digit), NI (2018-2028)

Oversupply

Undersupply

Annual average (2018-2028)

- Others in mass communications & documentation
- Publicity studies
- Information services
- Media studies
- Journalism
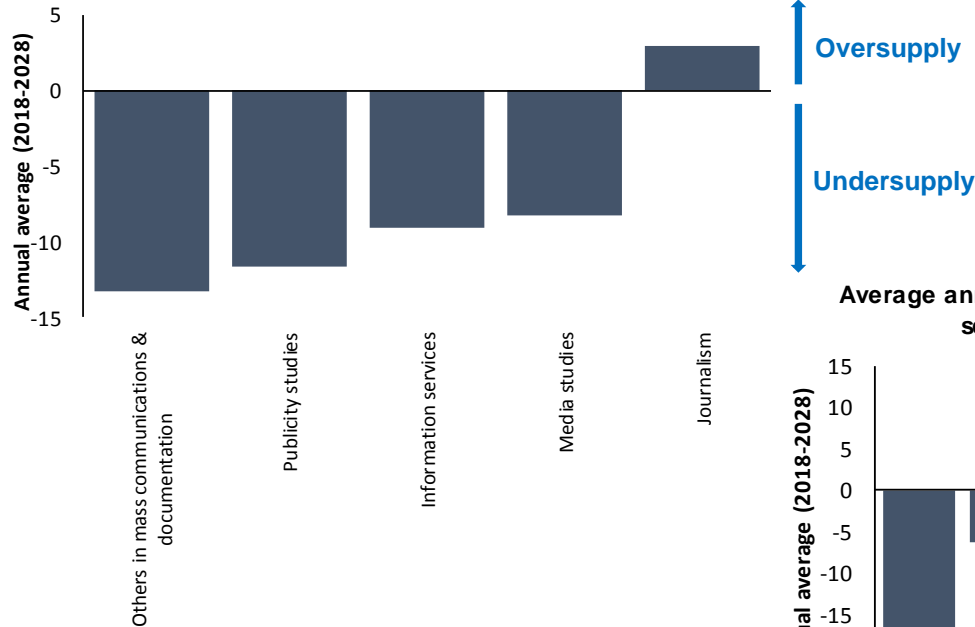
Source: DfE, UUEPC

Average annual effective supply gap within NQF level 6+ biological sciences subjects (JCAS, 2-digit), NI (2018-2028)

Oversupply

Undersupply

Annual average (2018-2028)

- Biology
- Sport & exercise science
- Molecular biology, biophysics & biochemistry
- Genetics
- Broadly-based programmes within biological sciences
- Zoology
- Microbiology
- Others in Biological Sciences
- Psychology

Source: DfE, UUEPC

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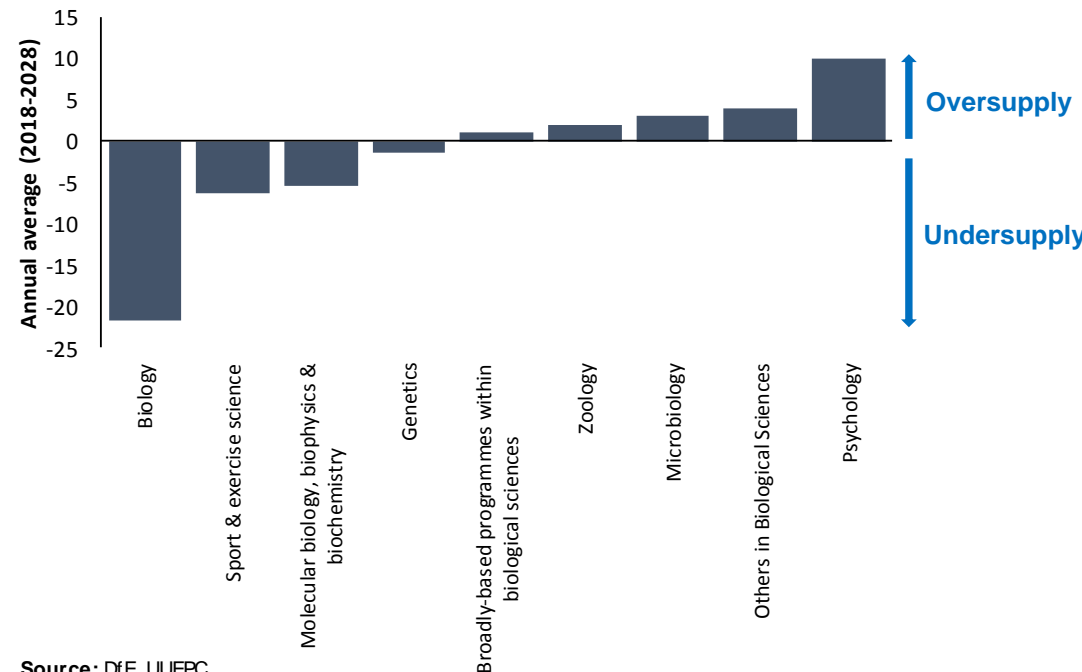
Supply gap by degree subject
Law and architecture and related studies

Average annual effective supply gap within NQF level 6+ law subjects (JACS, 2-digit), NI (2018-2028)

Oversupply
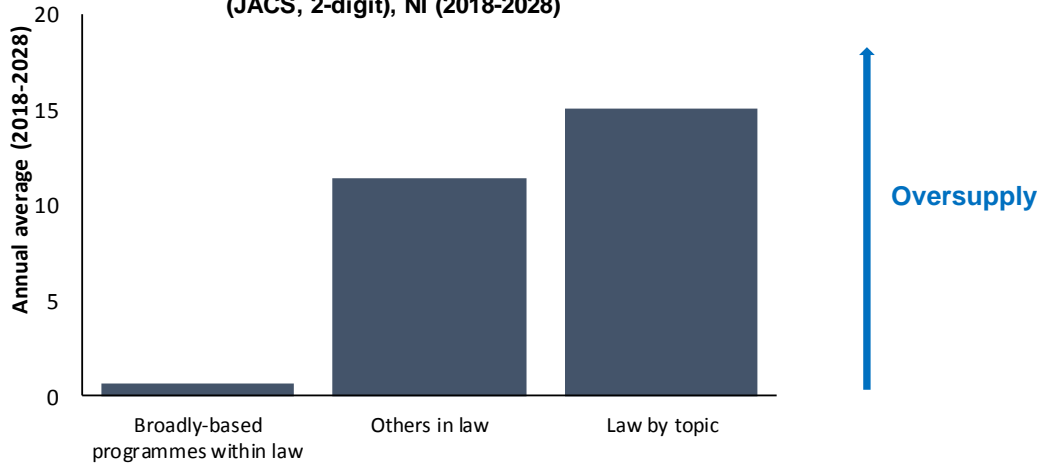
Average annual effective supply gap within NQF level 6+ architecture and related subjects (JACS, 2-digit), NI (2018-2028)

Oversupply

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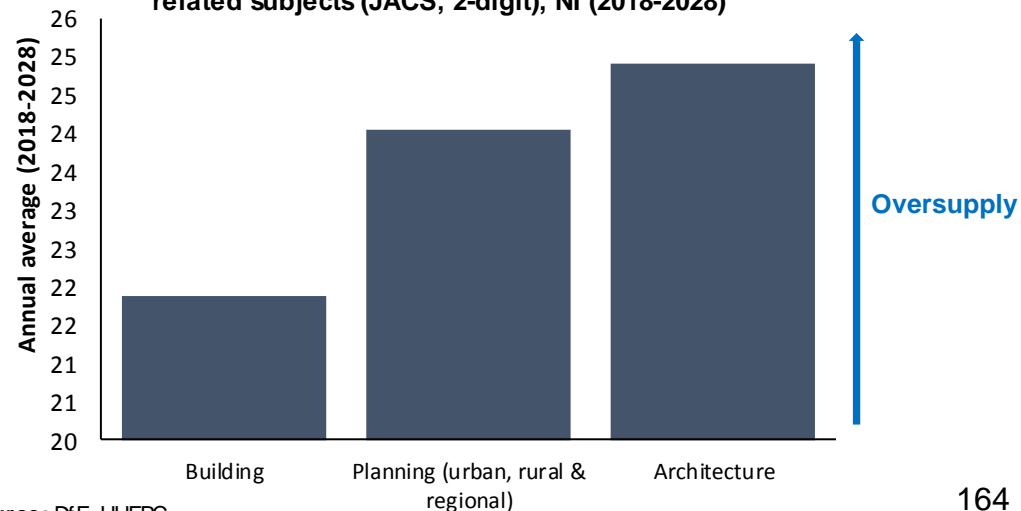
Supply gap by degree subject
Medicine and dentistry and education

Average annual effective supply gap within NQF level 6+ medicine & dentistry subjects (JACS, 2-digit), NI (2018-2028)

Oversupply

Undersupply
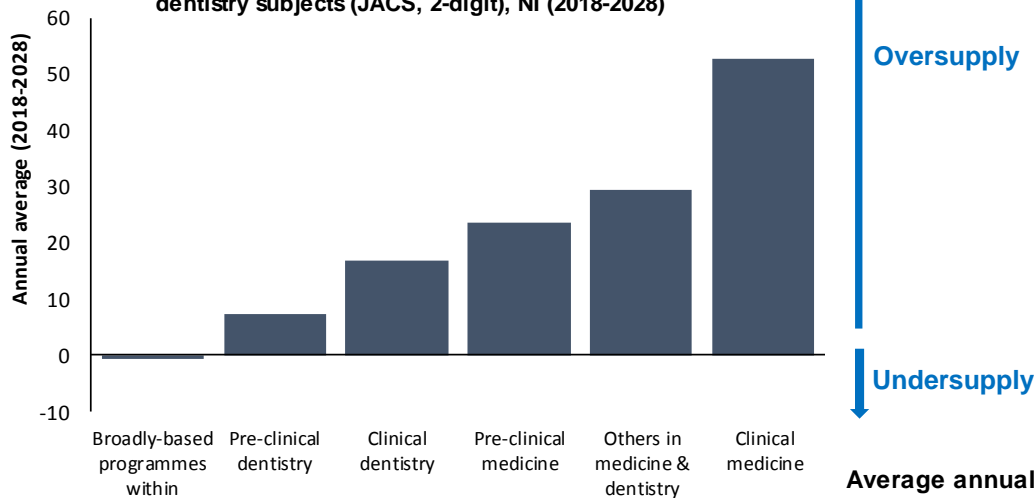
Source: DfE, UUEPC

Average annual effective supply gap within NQF level 6+ education subjects (JACS, 2-digit), NI (2018-2028)

Oversupply

Undersupply

Source: DfE, UUEPC

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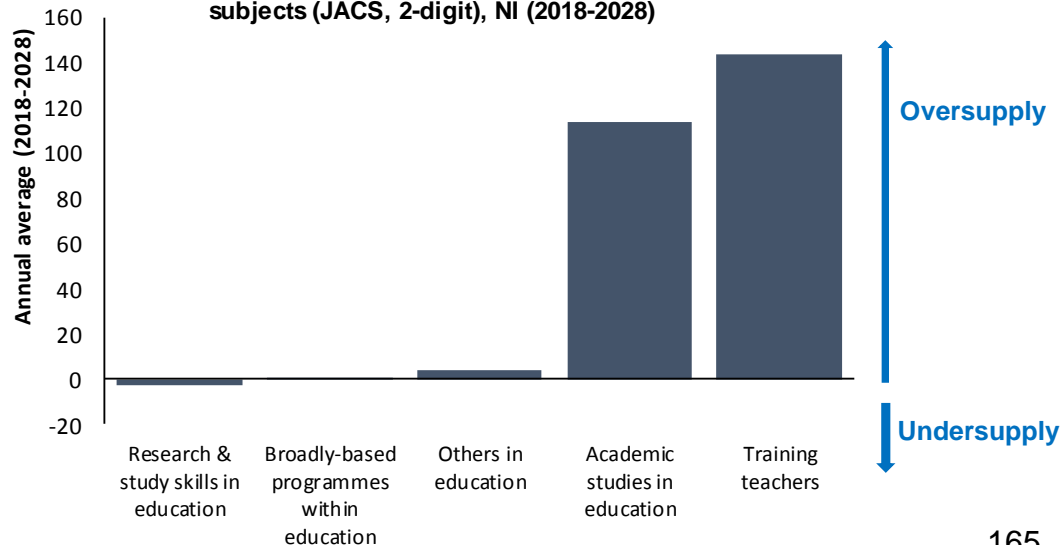
Supply gap by degree subject

Social studies and medical related subjects

Average annual effective supply gap within NQF level 6+ social studies subjects (JACS, 2-digit), NI (2018-2028)

Oversupply

Undersupply

Y-axis: Annual average (2018-2028), scale from -20 to 100

Categories: Development studies; Broadly-based programmes within social studies; Human & social geography; Social policy; Anthropology; Sociology; Others in social studies; Economics; Politics; Social work

Source: DfE, UUEPC

Average annual effective supply gap within NQF level 6+ medical related subjects (JACS, 2-digit), NI (2018-2028)

Oversupply

Undersupply

Y-axis: Annual average (2018-2028), scale from -20 to 100

Categories: Complementary medicines, therapies & well-being; Broadly-based programmes within subjects allied to medicine; Nursing; Ophthalmics; Aural & oral sciences; Nutrition; Medical technology; Pharmacology, toxicology & pharmacy; Others in subjects allied to medicine; Anatomy, physiology & pathology

Source: DfE, UUEPC

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Annex E2

Supply gap by NQF level 4-5 - detailed subjects

Supply gap by sub-degree subject
Engineering and manufacturing and business and financial

Average annual effective supply gap within engineering and manufacturing subjects, NI (2018-2028)

Undersupply

Annual average (2018-2028)

Engineering | Manufacturing Technologies | Transportation Operations and Maintenance
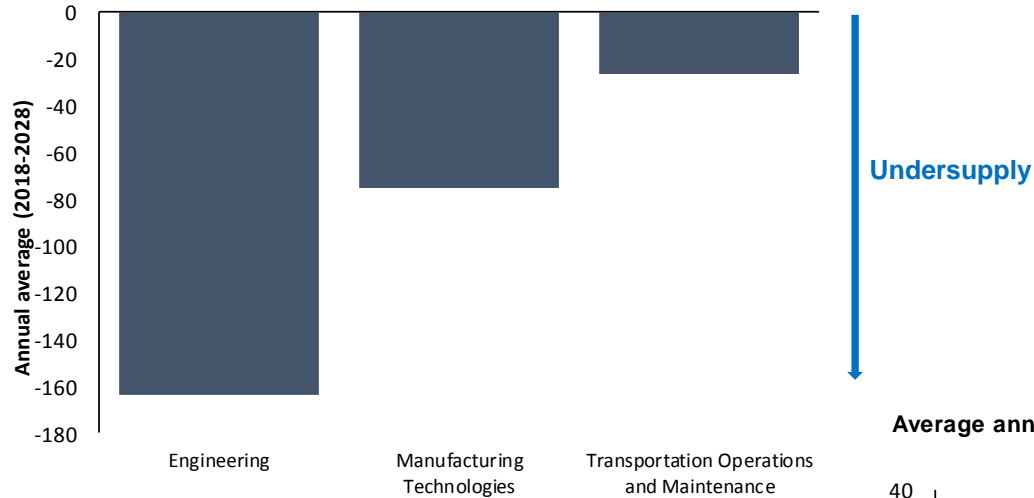
Source: DfE, UUEPC

Average annual effective supply gap within business and financial subjects, NI (2018-2028)

Oversupply

Undersupply

Annual average (2018-2028)

Law and Legal Services | Business Management | Marketing and Sales | Administration | Accounting and Finance

Source: DfE, UUEPC

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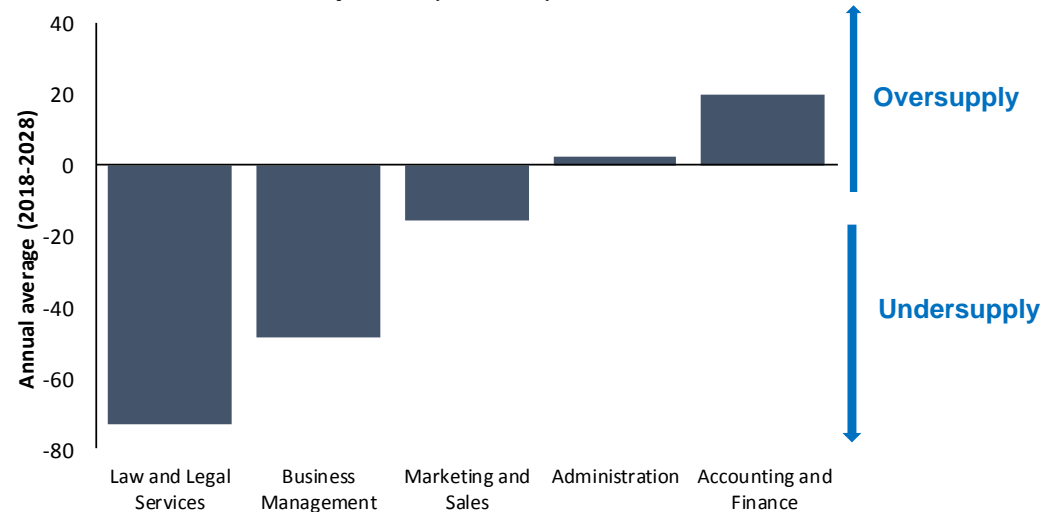
Supply gap by sub-degree subject
Science and maths and health and public services

Average annual effective supply gap within science and maths subjects, NI (2018-2028)

Undersupply
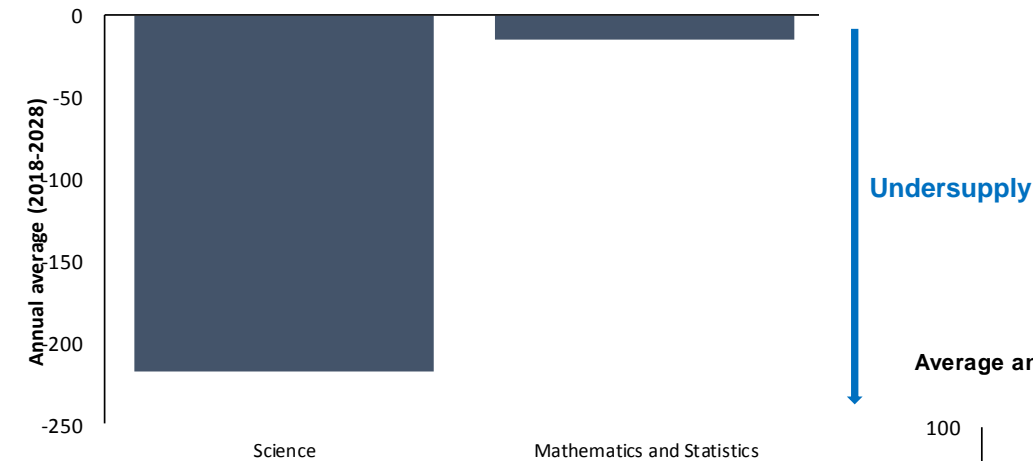
Source: DfE, UUEPC

Average annual effective supply gap within health and public services subjects, NI (2018-2028)

Oversupply
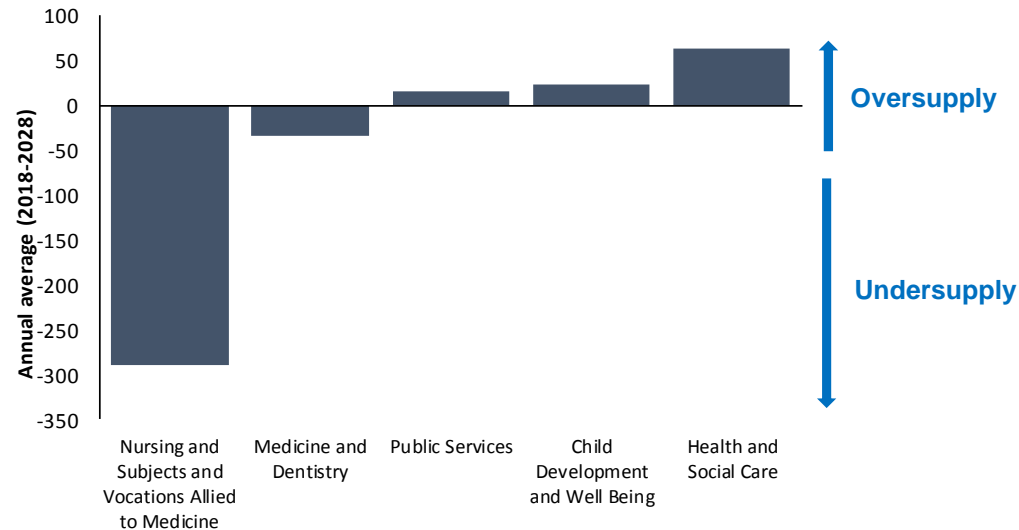
Undersupply

Source: DfE, UUEPC

Supply gap by sub-degree subject
Education and training and arts, media and publishing

Average annual effective supply gap within education and training subjects, NI (2018-2028)
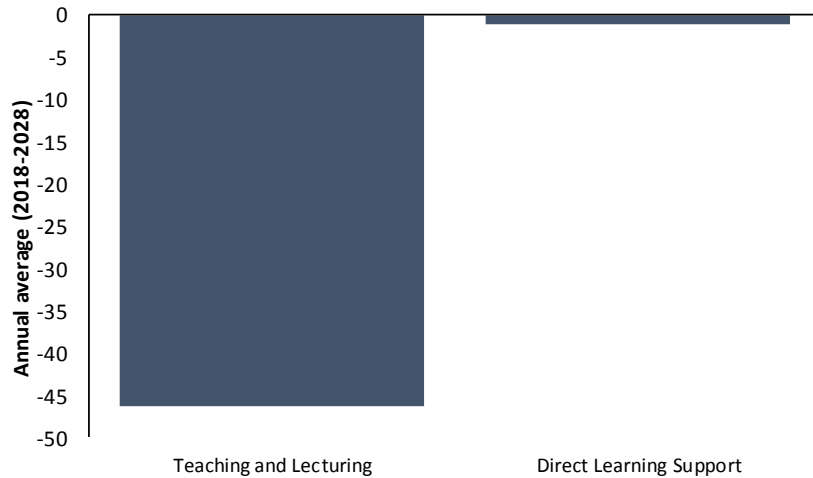
Source: DfE, UUEPC

Undersupply

Average annual effective supply gap within arts, media and publishing, NI (2018-2028)
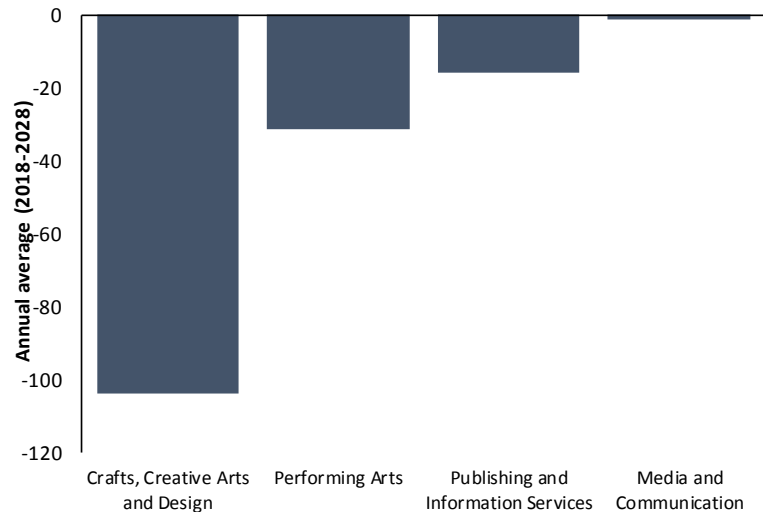
Source: DfE, UUEPC

Undersupply

Supply gap by sub-degree subject
ICT and construction and planning

Average annual effective supply gap within ICT subjects, NI (2018-2028)

Oversupply

Undersupply

ICT Practitioners

ICT for Users
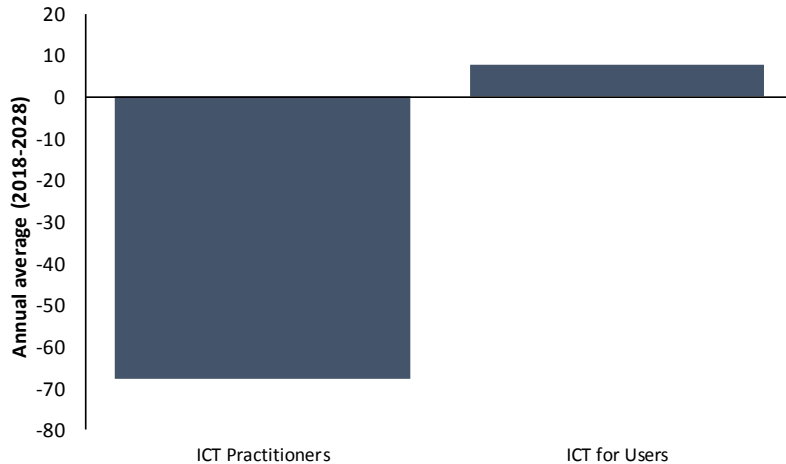
Source: DfE, UUEPC

Average annual effective supply gap within construction and planning subjects, NI (2018-2028)

Undersupply

Building and Construction

Architecture

Urban, Rural and Regional Planning

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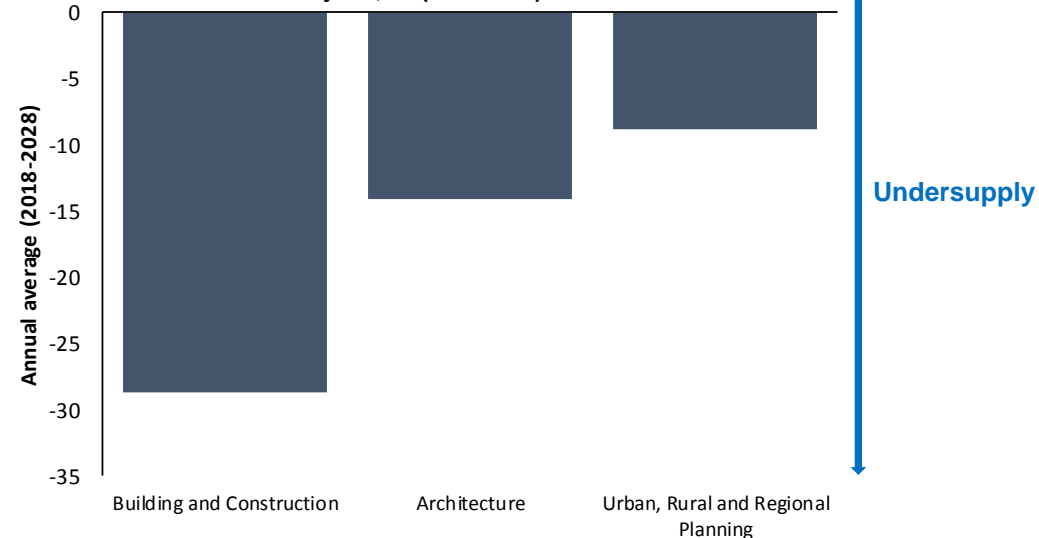
Source: DfE, UUEPC

Supply gap by sub-degree subject
Retail and commercial and social sciences

Average annual effective supply gap within retail and commercial subjects, NI (2018-2028)
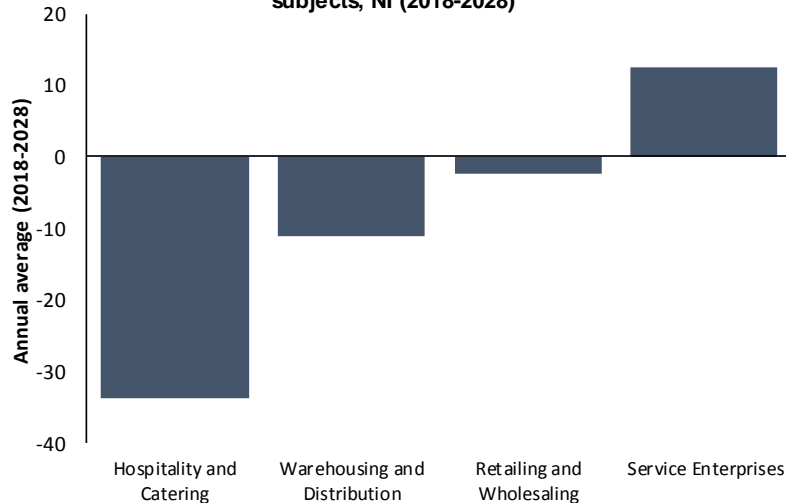
Oversupply

Undersupply

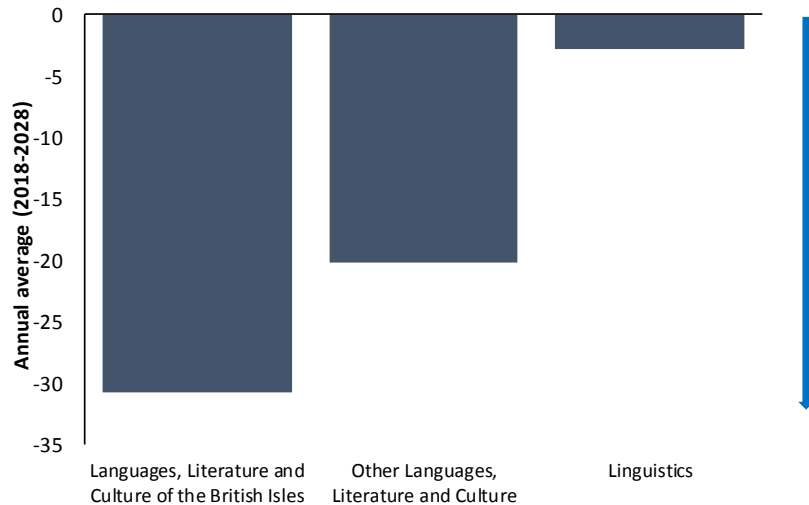**Average annual effective supply gap within social science subjects, NI (2018-2028)**

Undersupply

Ulster University Economic Policy Centre
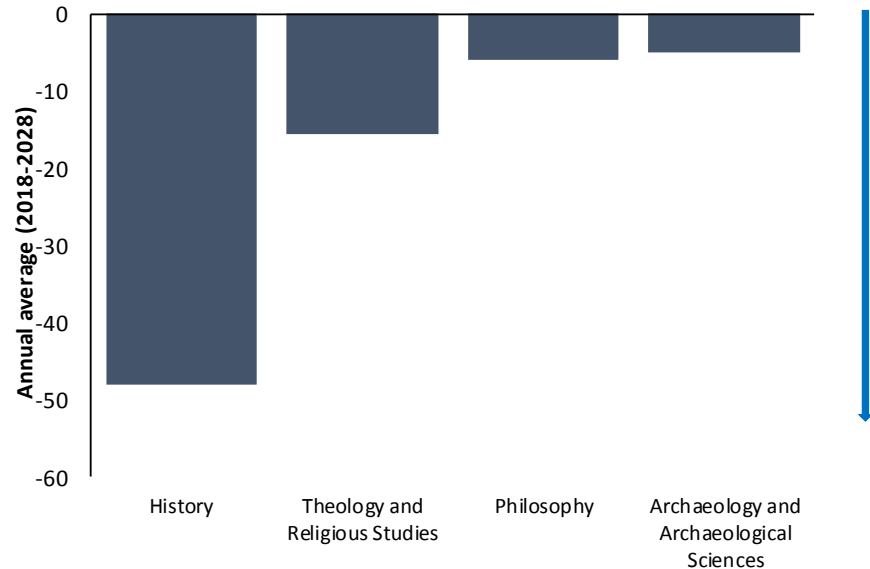
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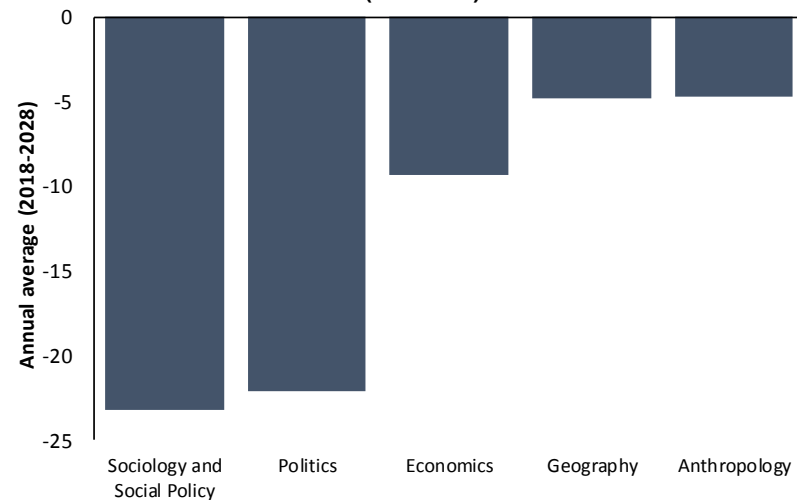
Supply gap by sub-degree subject

Languages and literature and history and philosophy

Average annual effective supply gap within language and literature subjects, NI (2018-2028)

Undersupply

Y-axis: Annual average (2018-2028), 0 to -35

Categories: Languages, Literature and Culture of the British Isles; Other Languages, Literature and Culture; Linguistics

Source: DfE, UUEPC

Average annual effective supply gap within history and philosophy subjects, NI (2018-2028)

Undersupply

Y-axis: Annual average (2018-2028), 0 to -60

Categories: History; Theology and Religious Studies; Philosophy; Archaeology and Archaeological Sciences

Source: DfE, UUEPC

Ulster University Economic Policy Centre
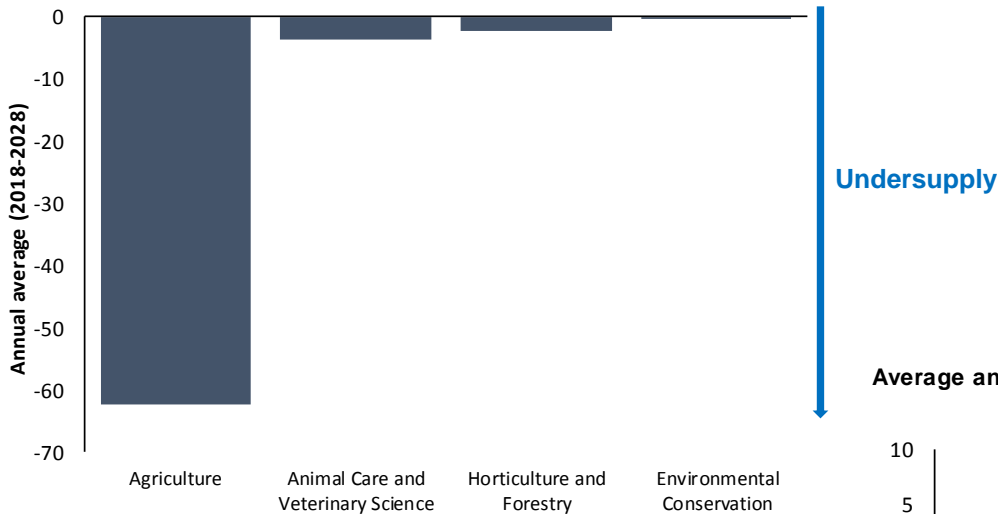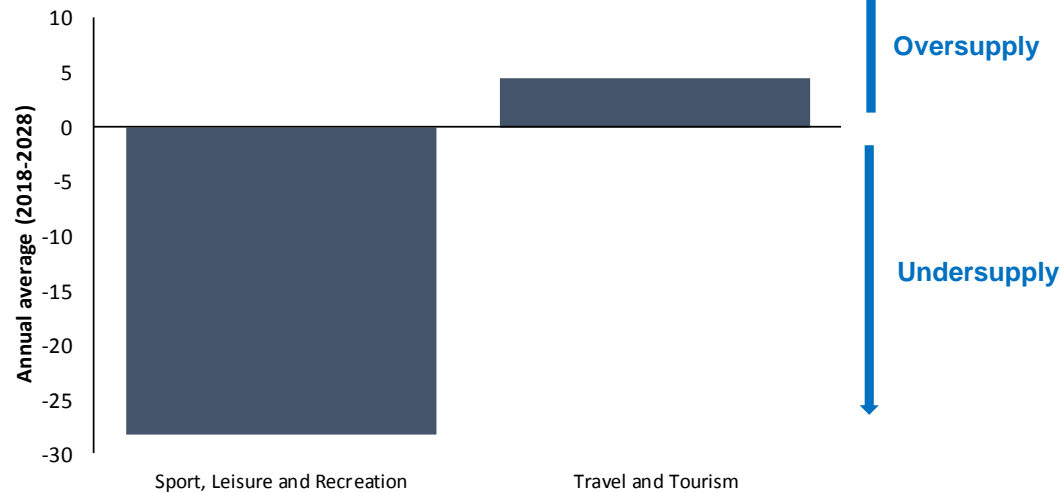
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Supply gap by sub-degree subject

Agriculture and horticulture and leisure, travel and tourism

Average annual effective supply gap within agriculture and horticulture subjects, NI (2018-2028)

Undersupply

Source: DfE, UUEPC

Average annual effective supply gap within leisure, travel and tourism subjects, NI (2018-2028)

Oversupply

Undersupply

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Source: DfE, UUEPC

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