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Fraser of Allander Institute

Skills for Today and Tomorrow

October 2024

UNIVERSITY of STRATHCLYDE
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Table of contents

The Fraser of Allander Institute

Disclaimer

The analysis in this report has been conducted by the Fraser of Allander Institute (FAI) at the University of Strathclyde. The FAI is a leading academic research centre focused on the Scottish economy.

The report was commissioned in February 2024 by CMS Scotland.

The analysis and writing-up of the results was undertaken independently by the FAI. The FAI is committed to providing the highest quality analytical advice and analysis. We are therefore happy to respond to requests for technical advice and analysis. Any technical errors or omissions are those of the FAI.

Summary

This report, "Skills for Today and Tomorrow", commissioned by CMS Scotland and conducted by the Fraser of Allander Institute, provides an analysis of Scotland's current skills landscape and outlines future challenges as the country adapts to economic, demographic, and technological changes.

The analysis identifies key trends in the labour market, including a marked increase in vacancies and a growing mismatch between the skills available and those demanded by employers.

A quarter of employers report vacancies, with 31% of these being classified as skill-shortage vacancies — a sharp rise from 21% in 2020.

Skilled trades, associate professionals, and professionals are particularly affected, with shortages in technical, analytical, and digital skills most prominent. Internal skills gaps also persist, with 5% of employees deemed not fully proficient in their roles, underscoring the urgent need for upskilling and retraining.

A significant demographic challenge highlighted in the report is Scotland's aging population. By mid-2045, the number of people aged 65 and over is expected to rise by almost a third.

With over 22% of the workforce aged 55 or older, key sectors such as construction, health care, and transport face significant risks from retirements. This underscores the need for workforce planning to mitigate these impending shortages.

In terms of education and training, there remains a lack of alignment between the skills taught and those required by rapidly evolving industries. High-growth sectors like technology and energy are particularly affected by this mismatch.

Employers are increasingly emphasising the importance of not just technical skills but also soft skills such as adaptability, creativity, and communication, which are often underdeveloped in the current education system.

We explore the impact of migration and immigration policy on the labour market. Since 2016, migration has been the sole driver of population growth in Scotland, with sectors like food, drink, and tourism being especially reliant on non-UK workers. However, post-Brexit immigration restrictions, including the increase in salary thresholds for Skilled Worker Visas, are making it increasingly difficult for employers to fill critical roles.

Finally, the report includes detailed occupation profiles for key roles in Scotland's labour market, such as civil engineers, chefs, IT quality professionals, and architectural technologists. These profiles highlight the skills required, typical entry routes, wage levels, and projected employment growth. For example, the civil engineering workforce is expected to grow by 17% by 2035, driven by demand for skills related to the green transition and infrastructure projects.

The findings of this report underscore the importance of creating a more agile and responsive skills system. Collaboration between government, industry, and educational institutions will be crucial in addressing current and future skill shortages, ensuring that Scotland's workforce is equipped to meet the challenges of today while seizing the opportunities of tomorrow.

THE SCOTTISH SKILLS LANDSCAPE

One quarter of employers report vacancies

31% of these are skill-shortage vacancies

The Skilled Visa salary threshold increased by **48%** from £26,200 to £38,700 pricing many employers out of the international hiring market

Education and training systems are not keeping pace with evolving industry needs, particularly in tech and energy sectors

The onshore wind workforce needs to grow from 6,900 FTEs in 2024 to 20,500 FTEs by 2027 to meet 2030 climate targets

The number of people aged 65 and over is projected to rise by almost a third by 2045

In 2023, over **91,000** people aged 65 and over were still in employment, more than double the number in 2004

IT project managers, chief executives and electricians are among the most vulnerable occupations to an ageing population

Only **21%** of businesses felt employees were fully equipped in terms of skills to meet the digital technology needs of the business

46% of businesses were not taking action to develop the digital skills of their employees

Less than one in five employers offered formal apprenticeships in 2021

Employers are increasingly emphasising the importance of not just technical skills but also soft skills

Background to the research

Earlier this year, CMS Scotland teamed up with the Fraser of Allander Institute, a leading independent economic research institute focused on the Scottish economy, on a thought leadership campaign, under the theme 'Skills for Today and Tomorrow'.

Throughout the month of August, we undertook a series of non-attributed interviews with 14 CMS partners and of counsel to influence and shape this research. These interviews explored with partners and of counsel the issues related to the topics of 'Skills for Today and Tomorrow' and provided direction for the next steps.

Since then, we have produced a short analytical report setting out the evidence base of Scotland's skills landscape. This report looks at the data and policy surrounding the following sub-sections:

- The Current Skills Landscape
- The Changing Skills Landscape
- Skills for the Future
- Occupational Profiles

In addition to *more* skills, investing in the *right* skills is equally important. Collaboration between government, industry and the education sector will be critical in creating a more agile and responsive skills landscape.

This report explores how Scotland can leverage its world-class education system, burgeoning tech hubs, and leadership in energy to ensure Scotland’s workforce can meet the challenges of today and seize the opportunities of tomorrow.

The Current Skills Landscape

The latest Employer Skills Survey reveals a tightening labour market with growing skills mismatches.

A quarter of employers reported vacancies, more than doubling from 11% in 2020; 31% of these vacancies are classified as skill-shortage vacancies, up from 21% in 2020. These shortages are most acute in Skilled Trades (47%), Associate Professionals (37%) and Professionals (36%).

Internal skills gaps persist with 15% of employers reporting skills gaps in their workforce.

Overall, 5% of employees are deemed not fully proficient in their roles. The most common skills lacking are technical/practical, complex analytical and digital.

Training provision shows a mixed picture. While 64% employers provided training in 2021/22, only 59% of employees received training, down from 71% and 62% in 2017, respectively.

Total training expenditure fell to £4.1 billion in 2022 from £4.8 billion in 2017, raising concerns about future skills development.

Recruitment of young talent presents both opportunities and challenges with 63% of recruiting employers hiring young people (under 25) and 32% recruiting education leavers.

Employer perception of work-readiness varies: 83% for university leavers, 82% for college leavers, but only 65% for school leavers.

Looking ahead, 66% of employers anticipate upskilling needs in the next 12 months, driven primarily by new technologies, legislative changes, and new working practices.

Information and Communications (82%) was the sector most likely to have a need for upskilling, followed by Health and Social Work (78%) and Education (75%).

This underscores the need for a responsive skills system to meet evolving labour market demands.

Box: Planning and Skills

In our research with businesses and business organisations, the two areas that are brought up consistently as currently curtailing growth are the planning system and the availability of workers of particular occupations or with particular skills.

At first glance, these seem like quite separate issues which are likely to have different policy responses from government. However, we found through our research that they can interact in many ways with different sectors of the economy:

- A lack of people who work in the profession of planning was highlighted as a limitation in the system, which is causing delays to planning applications, potentially hindering investment in the UK.
- Building on this, skills of existing planners were highlighted as an issue which may cause delay or even rejection of planning applications, particularly in the case of new technology (such as hydrogen or battery storage) or new regulations (such as biodiversity).
- Planning was even cited as an issue which can impact on rural employment in hospitality venues, where employers have found it difficult to get permission to build accommodation on-site for staff, therefore making it much more difficult to get the staff they require.

The first two of these have been acknowledged as an issue by Government both at Holyrood and Westminster. The UK Government have committed to a planning and infrastructure bill at the heart of their legislative programme, supported by 300 new planning officers across the country. The Scottish Government, in their recent programme for Government, committed to launching a planning apprenticeship programme to invest in new talent to create a pipeline of skilled future planners.

In the last three years, HESA statistics show that Scotland has produced less than 200 planners a year on average, and that half those who achieve planning qualifications in the UK are not UK residents, which means those skills are likely to leave the country.

"Planning policy is hindering growth and exacerbating skills shortages in rural areas. Planners don't want to spoil views, but if they don't have any hotels or people to work in them, they won't have anyone to enjoy the views."
- Of counsel feedback

"Some clients are doing a lot more business in England or actually moving activities down South as it is seen as a much easier environment to do things; there are a lot fewer challenges in terms of the planning policy framework in many areas."
- Of counsel feedback

The Changing Skills Landscape

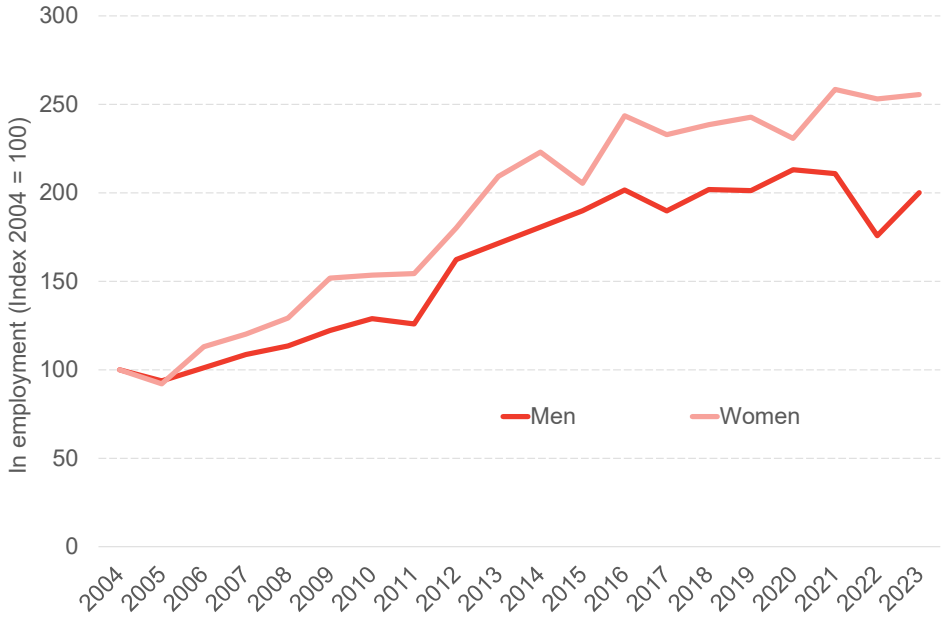
Ageing population

Scotland's population is ageing, and this presents a significant challenge to its workforce and skills landscape. The number of people aged 65 and over is projected to increase by almost a third by mid-2045, while the number of children is projected to fall by nearly a fifth.

This demographic shift not only affects the availability of new workers but also brings about the need for more resources to support an ageing population.

Over the past two decades, the number of people aged 65 and over in employment in Scotland has more than doubled, from 41,100 in 2004 to almost 91,000 in 2023. See Chart 1.

Chart 1: Number of men and women aged 65 and over in employment, Scotland, 2004 to 2023



Source: *ONS*

As people live longer, and the age at which people receive the state pension increases, it is likely that this number will continue to rise. However, this extended working life presents its own set of challenges, particularly for older workers who will need to adapt their skills to new technologies and evolving job requirements.

> "There is an urgent need to retrain which presents a significant challenge for the skills system. It's not a unique problem, it's common throughout history. However, it is a shame that in the modern era, we are still facing these problems of transitioning from one technology to another and not being able to manage what happens to the workforce when you do that."
> *- Partner feedback*

The retirement of experienced workers will also leave a critical gap in the labour market in terms of skills, creating shortages in key industries and occupations.

In 2021, over a fifth (22%) of Scotland's workforce were aged 55 and over. Table 1 highlights key occupations that have an above average share of older workers and are therefore more exposed to an ageing population.

Table 1: Share of workforce aged 55 and over, by occupation, Scotland, 2021

Occupation	55 and over	Total	%
Electrical and electronics technicians	1,000	1,585	63%
IT project and programme managers	2,430	4,570	53%
Chief executives and Senior Officials	2,950	5,810	51%
Conservation professionals	1,455	3,055	48%
Train and tram drivers	1,070	2,360	45%
Road construction operatives	1,170	2,650	44%
Boat and ship builders and repairers	510	1,200	43%
Health associate professionals	1,845	5,150	36%
Social workers	4,545	13,130	35%
Plumbers and heating and ventilating engineers	2,545	7,645	33%
Senior care workers	2,125	6,435	33%
Care workers and home carers	22,610	73,590	31%
Carpenters and joiners	6,510	21,650	30%
Health and safety officers	2,650	9,800	27%
Further education teaching professionals	1,295	4,875	27%
Construction and building trades supervisors	1,580	6,090	26%

Source: *ONS*

The British Chambers of Commerce Business Barometer found less than a quarter of Scottish businesses had any written annual plans to prepare for people exiting the workforce. This lack of formal planning could severely hinder the ability to address skills gaps strategically and prepare for future demands.

> "The question here is about the interaction of the skills system with industry to ensure it is producing the people with the skills that are required not only for now, but also in five- and ten-years' time, as much as we can ever tell that."
> *- Partner feedback*

Migration

Since 2016, migration has been the only source of population growth in Scotland, and this is expected to remain the case. It can therefore help to alleviate some of the challenges associated with not only Scotland's demographic change but also issues related to skills shortages in the labour market.

While skills shortages across Scotland are not new, they have been severely exacerbated by events over the past few years – namely Brexit and the pandemic.

Scotland's seasonal sectors are particularly reliant on migration. In 2019, non-UK workers made up 8.3% of Scotland's overall employment, but this share was considerably higher in key growth sectors, reaching 16% in Food and Drink and 15% in Tourism.

Recent changes to the immigration system have underscored the challenges facing businesses in Scotland. From April 2024, the UK-wide salary threshold for Skilled Visas increased by 48% from £26,200 to £38,700, significantly exceeding the Scottish average wage.

As a result of tighter restrictions, the immigration route is effectively closed for many employers as they are priced out of the international recruitment market.

"Scotland should still be perceived as a great place to live and work, but the visas need to work for Scotland."
- Partner feedback

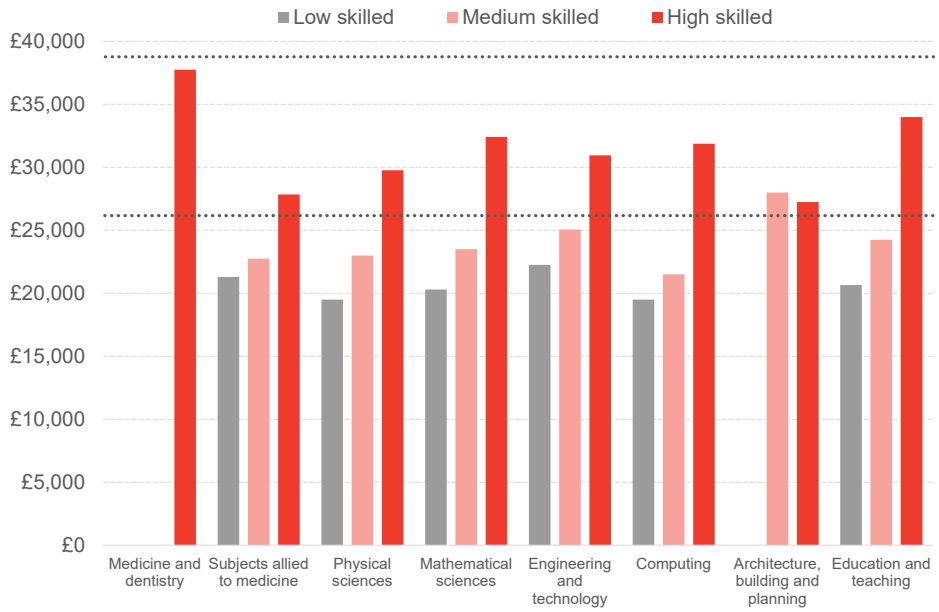
These issues are particularly pressing in terms of graduate employment opportunities.

The composition of non-UK students studying at Scottish universities has changed dramatically over the past five years.

Between 2018-19 and 2022-23, the number of EU students fell 39%, from 21,505 to 13,130. During this period, non-EU students increased by 45%, from 58,075 to 83,975.

Overall, the number of foreign students has not been affected and has actually increased. However, higher earning thresholds will make it considerably more challenging for international students who want to stay and work in Scotland after graduating. See Chart 2.

Chart 2: Median earnings of full-time graduates by subject area of degree and skill level, Scotland, 2021-22



Source: *HESA*

There is a perception that the cap on places for Scottish students means universities are having to turn away many talented homegrown students each year. Whilst this is not borne out by the data in aggregate, it is potentially an issue for particular courses or universities.

"The government continues to cap the number of Scottish people who can go to university, restricting those who are most likely to stay in Scotland and pursue such careers. The irony is, there are not just restrictions on Scottish students, but also international students due to visas. You have people who come to Scotland and our universities spend money and time teaching them, but then upon graduating, they're not making enough to hit visa salary thresholds."
- Partner feedback

"What is the point in training up people who then can't even stay in the country? Never mind we're not training enough of our own, even the ones we do train – we don't then allow them to stay."
- Partner feedback

"There is a risk of brain drain – not only good, capable, qualified people leaving Scotland, but also simultaneously, struggling to attract good skilled labour internationally."
- Partner feedback

Geographic disparities

Rural and island communities are even more exposed to acute skill shortages, particularly in health and social care, hospitality and digital infrastructure.

Over the past decade, the share of high growth private sector businesses fell across all areas of Scotland, dropping significantly between 2018-2021 and 2019-2022. Mainly rural areas experienced the largest drop – a fall of 32% – compared to a fall of 22-23% for other areas in that period.

Chart 3 shows the share of employment by employer type in Social and Care services across Scotland.

Chart 3: Proportion of employment in each local authority area by employer type, Social and Care Services, Scotland, 2023

Source: *Scottish Social Services Council*

"There are more challenges in Scotland than elsewhere in the UK when it comes to the future care service. Big, private companies aren't interested in coming to Scotland as the geography poses a problem in regard to remote and rural areas."
- Partner feedback

In the hospitality sector, there are particular challenges to encourage people to move to remote and rural areas.

Roles in these sectors are also often difficult to fill due to perceptions of low wages and poor conditions. Even when they are skilled jobs, a lack of attractive incentives discourages people from applying or training in the skills such jobs require.

Existing skill shortages in remote areas are also likely to contribute further to population decline among young people as they move to cities in search of better education and employment opportunities. Investment in housing, jobs, critical infrastructure and public services will be critical in encouraging younger working-age people to remain on, move to or return to rural and island communities.

Box: The Skills System in Scotland – in perpetual review?

The needs of the economy in terms of skills are continually evolving and tends to move more quickly than the skills system does to supply these skills and training. One of the issues in our system is that it is not necessarily aligned to the needs of the labour market – both for today and tomorrow.

There have been a number of reviews of the skills system in Scotland, focussing on different aspects of skills and education provision.

The Independent Review of the Skills Delivery Landscape, known as the Withers Review, was initiated by the Scottish Government in 2022, focused on reforming Scotland's skills delivery system. Key findings included the need for a more streamlined structure, with clearer roles for public bodies and reduced overlap. It recommended shifting national skills planning to the government, restructuring Skills Development Scotland to focus on careers and education, and creating a lifelong learning system to better meet the needs of both learners and employers. The review called for a system-wide transformation to ensure future readiness to meet the challenges and opportunities as the economy is changed.

The Hayward Review focused on reforming Scotland's qualifications and assessment system, proposing the introduction of the Scottish Diploma of Achievement (SDA). This diploma would include three key components: traditional subject learning, personal pathways reflecting individual interests, and project-based learning. The review emphasizes reducing reliance on high-stakes exams and aims to create a more holistic, inclusive approach to education.

The Scottish Government has been fairly slow to respond to these reviews, only recently publicly responding to the Hayward Review which was published in June 2023. In response, they have not committed to implementing many of the recommendations immediately, although they have agreed that the balance of assessment methods

Other reviews include the Scottish Funding Council's (SFC) "Purpose and Principles" work, which aims to create a more coherent, sustainable system that better integrates further and higher education. One of the key outcomes includes the development of a National Impact Framework, which will set clear outcomes for colleges and universities – including ensuring long-term strategic alignment with Scotland's economic and social needs.

"The whole system is just not joined up. Many involved in skills training and careers advising have a strategic focus of simply getting people into jobs. There can be a severe lack of differentiation between people and skills; there is often no qualitative analysis."
- Of counsel feedback

"Employers are asking why they are having to teach people soft skills as they think these should be taught at school, but education systems are too stretched; everyone is being asked to do too many things."
- Of counsel feedback

Skills for the Future

Green Transition

Scotland is aiming to become a leader in energy, particularly in wind and hydrogen power. However, as the sector rapidly expands capacity in a race to meet its climate targets, it faces significant skills challenges.

The transition from traditional energy sources presents unique challenges. There is a growing need for decommissioning.

Scotland's centre of expertise on climate change, ClimateXChange, report the onshore wind workforce needs to grow from 6,900 FTE in 2024 to 20,500 FTE by 2027 to meet 2030 targets, while the solar industry must increase from 800 FTE in 2023 to over 11,000 FTE by 2030.

This growth is creating acute shortages in specialised areas, such as high voltage engineers with grid expertise, financial modellers for complex revenue stacks, and decommissioning specialists in oil and gas.

Geographical factors compound recruitment difficulties. Remote areas like the Highlands, Dumfries & Galloway, and Argyll & Bute struggle to attract and retain local workforces for wind projects. This often results in unsustainable work patterns, with workers traveling from outside areas for two-week on, two-week off shifts.

The transition from traditional energy sources presents unique challenges. There is a growing need for decommissioning expertise in oil and gas, but worker hesitancy to enter this perceived "sunset industry is creating potential skills gaps. This reluctance could delay the transition to cleaner energy sources.

> "The green transition is happening everywhere and so every country will be fighting for these types of people and the technology, both of which are in short supply. For example, windfarm projects and specialist pieces of kit are all in high demand, if you place an order today, it won't be until years down the line that you get it."
> *- Partner feedback*

> "The transport sector, most notably maritime and roads, know they need to get cleaner and know they need to transition. However, the sector isn't seeing people coming in who want to support the transition, it's just perceived as a dirty industry and so people don't want to go near it."
> *- Partner feedback*

Innovation and Digital Skills

Digitalisation and automation are changing the nature and conditions of work. While large-scale job loss is unlikely, the tasks and skills needed across occupations will change. As these changes evolve at rapid pace, there is a growing challenge for businesses to keep up with these advancements.

In 2021, the Digital Economy Business Survey found just 21% of businesses in Scotland felt existing staff were fully equipped in terms of skills to meet the digital technology needs of the business.

This has fallen considerably from 26% in 2017 and 37% in 2014, underscoring the widening gap between the increasing demands of digital transformation and the ability of firms to adapt swiftly.

Moreover, almost half (46%) of Scottish businesses were not taking action to develop the digital skills of their employees.

However, it cannot be expected of businesses to address the accelerating skills needs alone. Ambitious targets and strengthened business-government collaboration will be crucial to ensure the digital skills pipeline can effectively meet current and future needs.

Universities are playing a pivotal role as innovation hubs, fostering collaboration between academia and industry. The University of Edinburgh's Bayes Centre – a hub for Artificial Intelligence (AI) and data science has played a significant role in driving innovation in insurance and financial services through AI applications.

Similarly, the University of Strathclyde's Advanced Forming Research Centre collaborates with large multinationals, including Boeing and Rolls-Royce, integrating robotics and AI to advance manufacturing processes.

Meanwhile Scotland's startup ecosystem is flourishing, particularly in high-growth sectors like life sciences, software, and space technology.

The Techscaler program, launched by the Scottish Government, supported over 500 companies in 2023, helping them raise more than £52 million in investment. This initiative is crucial in realising the government's ambition to create one of Europe's leading startup ecosystems.

The impact is clear: Scotland incorporated 1,553 new tech companies in 2023, a 21% increase from the previous year, matching the UK's national growth rate.

AI is emerging as a key driver of innovation across Scotland's high-growth industries. In life sciences, the Precision Medicine Scotland Innovation Centre at the University of Glasgow is leveraging AI for personalised medicine, collaborating with industry partners like Canon Medical Systems. In the space sector, Scottish companies are using AI for satellite data analysis and Earth observation technologies, positioning Scotland at the forefront of the new space economy.

Apprenticeships

Apprenticeships are a key lever for creating a talent pipeline. However, there is a significant gap between the supply of apprenticeships and the demand for them.

The Scottish Employer Perspectives Survey found less than one in five employers offered formal apprenticeships in 2021. Of firms that employed an apprentice, 63% had only one, with a further 22% having between two and four at a time.

Employers in the Construction sector were most likely to offer apprenticeships (43%) while the Business and services sector were less likely to do so (14%).

The current structure focuses on young adults with over a third of apprenticeships offered exclusively to individuals under the age of 25, compared to just 3% for those aged 25 and above. This is likely down to the financial support employers can access for young apprentices, which tends to fall away as apprentices age.

Recognising the potential for apprenticeships to be a key driver of reskilling and upskilling throughout people's careers is crucial.

> "All the eggs are being put in one basket, particularly in the hospitality sector. The state education system is targeted at people under 25, but for quite a lot of people going into hospitality it's their second, third or fourth career strand and they can be in their 40s by the time they decide to enter the sector."
> *- Of counsel feedback*

Box: Provision of apprenticeships in Scotland

Apprenticeship funding in Scotland and England differs significantly in terms of structure and financial contributions which reflects the distinct approaches of each government. In Scotland, apprenticeship funding is managed primarily through Skills Development Scotland (SDS), which oversees initiatives like Modern Apprenticeships (MAs), Foundation Apprenticeships (FAs), and Graduate Apprenticeships (GAs).

Employers across the UK pay the Apprenticeship Levy, which was introduced in 2017. Employers with a payroll exceeding £3 million annually are required to pay 0.5% of their payroll towards the levy, which they can use to fund apprenticeships within their organisation. This system aims to create a more flexible apprenticeship market and encourages employers to use their levy contributions effectively.

In England, employers receive levy funds into a Digital Apprenticeship Service (DAS) account. Employers can access these funds to pay for apprenticeship training and assessment costs, but only for approved apprenticeship standards or frameworks. This funding focuses on priority sectors including construction, engineering and health and employers are eligible for additional financial incentives depending on the apprentice's age and the specific program.

In Scotland, the funds raised through the Apprenticeship Levy go into the Scottish Government's general taxation rather than a dedicated apprenticeship fund. The Scottish Government determines how much of the levy will be allocated to apprenticeship training, and it isn't tied to individual employers' contributions like it is in England.

In England, the system is employer-led with direct control over funds through the DAS, whereas in Scotland, the system is government-led, with levy funds being part of the broader public spending on skills.

England's model focuses on giving employers the power to fund training directly, while Scotland uses a more centralized approach, where the government allocates resources for various skill development programs, including apprenticeships.

There is the opportunity to make much more of apprenticeships, expanding it to many more professions and stages of career. The opportunities for this route to support the skills of today and tomorrow should be embraced and encouraged by policymakers.

Occupation Profiles

In this section, we examine some of the occuaptions that we discussed in the interviews we held, and those that seem particularly pertinent to the changing skills landscape.

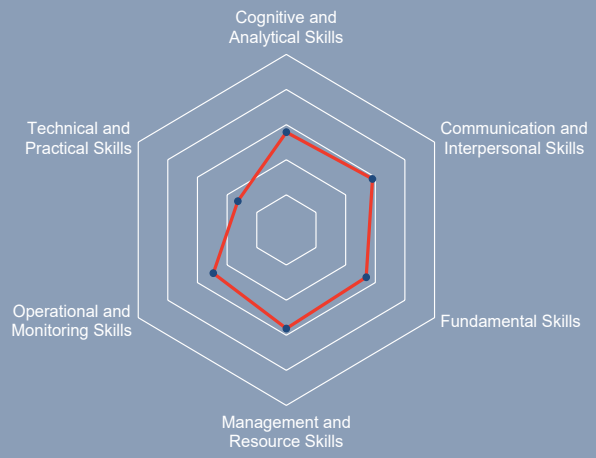
Occupation Profiles – Terminology

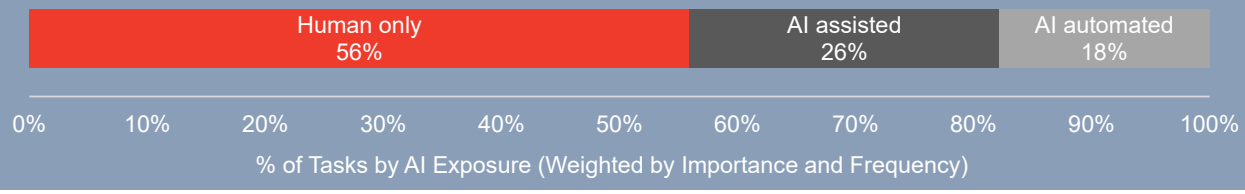
- **Location Quotient (LQ)**: A measure of the concentration of an occupation in Scotland compared to the UK. An LQ greater than 100% indicates a higher concentration in Scotland. *Source: Annual Population Survey and FAI calculations*
- **Wage Data:** Median and mean hourly wages. *Source: Annual Survey of Hours and Earnings*
- **Employment Projections:** Estimated percentage change in employment between 2021-2035. *Source: UK Government*
- **Green Task Share:** The proportion of tasks within an occupation that contribute to the green economy, based on a methodology developed by the ONS.
- **Digital Inputs/Outputs and AI Exposure**: Based on an experimental methodology using Large Language Model analysis of ONET task descriptions (O'Neill, 2024). Proportions are weighted by task importance and frequency to estimate the overall impact of AI on the occupation. Digital input/output is one of 14 criteria used to classify each UK occupation-task pair into three AI exposure categories:
  - Human-only: Tasks unlikely to be affected by AI
  - AI-assisted: Tasks where AI may augment human capabilities
  - AI-automated: Tasks with potential for AI automation
- **Skills Data:** Importance and level scores for various skills required in each occupation. The mapping process uses a Computer Assisted Structured Coding Tool (CASCOT) and expert human coding to create a one-to-many match between UK SOC2020 and ONET-2019 occupations (Day et al., 2023). Limitations of this approach include potential mismatches due to differences in job markets and occupational structures between the UK and US. *Source: ONET*

Chefs

Typical Entry Routes: There are no formal academic requirements. Training is provided off and on the job. NVQs/SVQs, BTEC Certificates and Diplomas and foundation degrees are available. Apprenticeships are also available. Courses are also run by private cookery schools.

LQ: 88%; Male: 101%; Female: 61%
Share of workforce male: 81%
Share of workforce female: 19%
Median hourly wage: £12
Mean hourly wage: £13
Employment growth projection 2021-2035: 1%
Green task share: 0%
Digital inputs and outputs task share: 56%
Eligible for skilled worker visa: Yes

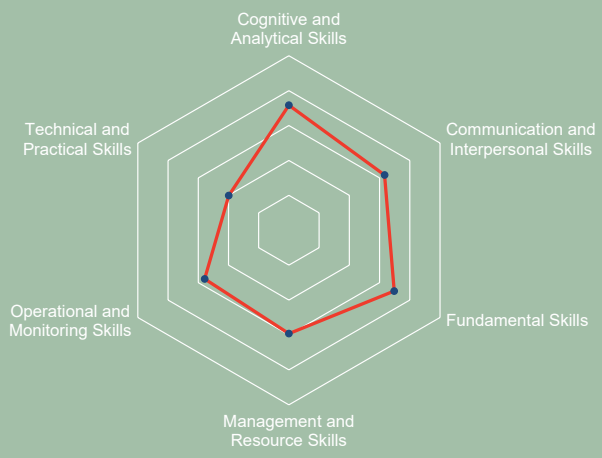


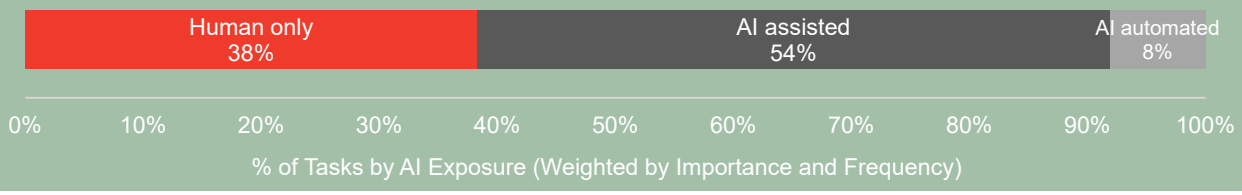


Civil Engineers

Typical Entry Routes: Entrants typically possess an accredited three or four-year degree in civil engineering or engineering science or an accredited Higher National Diploma or Certificate. The status of 'incorporated engineer' is obtained upon the completion of further training at work and associate membership of a chartered engineering institution. The status of 'chartered engineer' is achieved through the completion of postgraduate training and full membership of a chartered engineering institution.

LQ: 154%; Male: 148%; Female: 237%
Share of workforce male: 81%
Share of workforce female: 19%
Median hourly wage: £22
Mean hourly wage: £23
Employment growth projection 2021-2035: 17%
Green task share: 23%
Digital inputs and outputs task share: 90%
Eligible for skilled worker visa: Yes

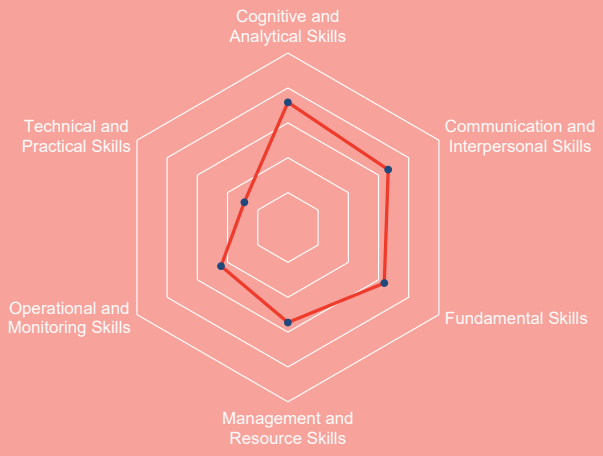


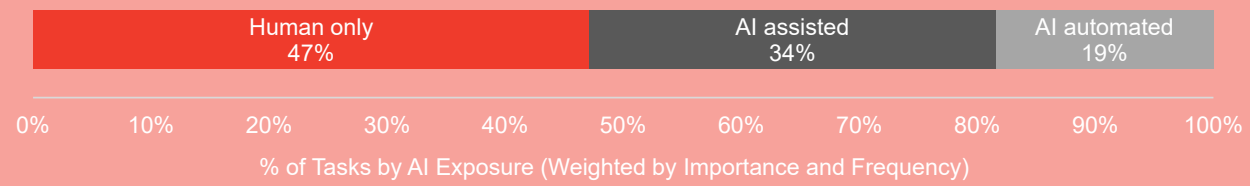


Chartered architectural technologists, planning officers and consultants

Typical Entry Routes: Entrants possess a variety of qualifications including a BTEC or SQA award, an Honours or Masters degree. Membership of professional institutions may be required for some posts. To gain professional status an accredited Honours degree or postgraduate qualification is usually required, as well as continuing professional development. Chartered Architectural Technologists must join the Chartered Institute of Architectural Technologists and satisfy education, practice and professional standards to qualify via an accredited honours degree or equivalent, monitored and assessed practical experience and pass a professional interview. Town planners are also required to complete at least two years of work experience.

LQ: 277%; Male: 264%; Female: 329%
Share of workforce male: 65%
Share of workforce female: 35%
Median hourly wage: £22
Mean hourly wage: £22
Employment growth projection 2021-2035: 17%
Green task share: 43%
Digital inputs and outputs task share: 100%
Eligible for skilled worker visa: Yes

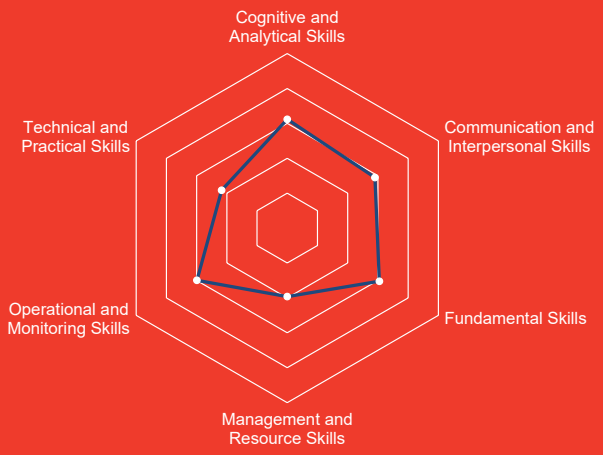


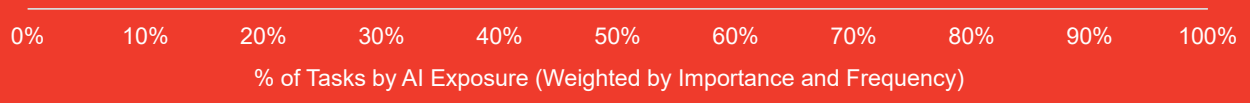


IT quality and testing professionals

Typical Entry Routes: Entrants typically possess a degree or equivalent qualification, although entry with other academic qualifications and/or significant relevant experience is possible. There is a variety of relevant vocational, professional and postgraduate qualifications available.

LQ: 88%; Male: 101%; Female: 61%
Share of workforce male: 81%
Share of workforce female: 19%
Median hourly wage: £12
Mean hourly wage: £13
Employment growth projection 2021-2035: 1%
Green task share: 0%
Digital inputs and outputs task share: 56%
Eligible for skilled worker visa: Yes





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