

Skills Insights Note 2025-2

How AI is transforming the Irish Labour Market



Background on The Insights Series

The Skills Insights Notes are a series of new shorter pieces of work on topical matters affecting the labour market by the Expert Group on Future Skills Needs (EGFSN) Secretariat. These Notes are prepared alongside the longer research studies, that the EGFSN undertakes. The first Skills Insights Note was published in July 2025 with an overview of the key findings and recommendations from recent EGFSN reports. This can be accessed here: Skills Insights Note 2025-1. This Note is the second in the series and focuses on AI and the Irish labour market.

- The Expert Group on Future Skills Needs (EGFSN) advises the Government on future skills requirements and associated labour market issues that impact on the national potential for enterprise and employment growth. The latest EGFSN publications can be found at: www.egfsn.ie.
- This Skills Insights Note has been issued by the Chair, Tony Donohoe, and was prepared by Diarmaid Smyth of the EGFSN Secretariat. For further information, please contact: diarmaid.smyth@enterprise.gov.ie
- The author would like to thank the Members of the EGFSN for their helpful comments and valuable feedback on provisional drafts, which greatly contributed to the improvement of this work.

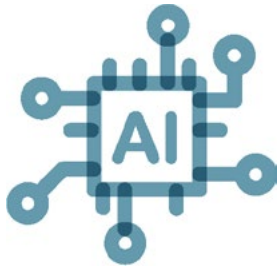
AI is transforming the Irish labour market, some key takeaways:



1st *Ireland leads in terms of the demand for AI related jobs.*

x2 *AI usage and AI related jobs have doubled in Ireland since 2023.*

3rd *Ireland's EU ranking in respect of digital skills.*



Introduction

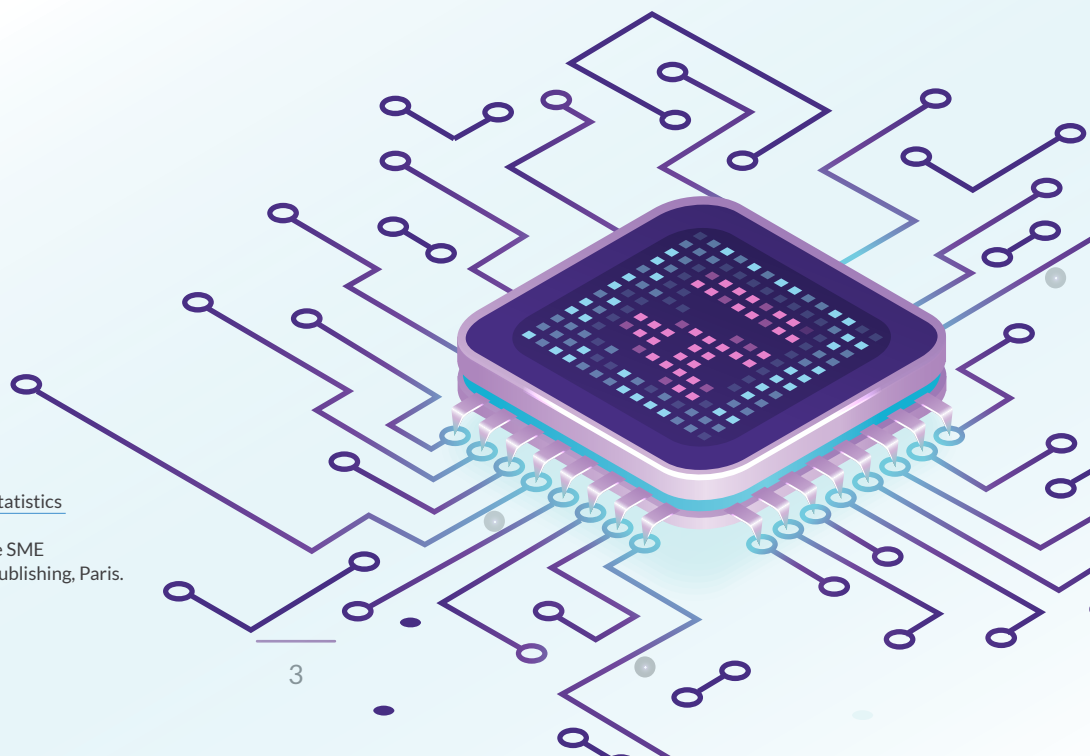
Artificial Intelligence (AI) has become commonplace across the labour market and wider society over the past 5 years. In brief, the term AI describes the ability of machines or technology to simulate human intelligence or cognitive ability. This can enable activities such as text mining, machine learning, deep learning and decision making. In Ireland in 2024, just over 15% of enterprises were using AI in some capacity – an effective doubling since 2023.¹

Furthermore, forthcoming research in relation to Generative AI and SMEs from the OECD reports that a sizable proportion of Irish SMEs are using AI.²

Research published last year noted that Ireland's labour market was more exposed to AI than other advanced economies, in part reflecting the composition and weighting of certain occupations here.³ Specifically, about 63% of employment in Ireland was adjudged to be exposed to AI. Within this, 33% of employment was in occupations to which AI was seen as complementary with the remainder (30%) at risk from substitution by AI. The headline figure of 63% was derived from a detailed look at occupations and their constituent tasks and degree of overlap with AI technologies.

This Insights Note draws on a number of sources to further gauge the impact of AI on the Irish labour market and potential skills needs as well as how Ireland compares with the EU. From the analysis and a wide range of metrics, it appears that AI adoption in Ireland is proceeding well, certainly relative to our European peers. While this poses both risks and opportunities, the initial indications are that there could be considerable upside potential for the Irish economy going forward with AI helping to address productivity gaps and labour market shortages.

1. [Artificial Intelligence Information Society Statistics Enterprises 2024](#) - Central Statistics Office
2. OECD (forthcoming), [Generative AI and the SME Workforce: New Survey Evidence](#), OECD Publishing, Paris.
3. [Artificial Intelligence: Friend or Foe](#)





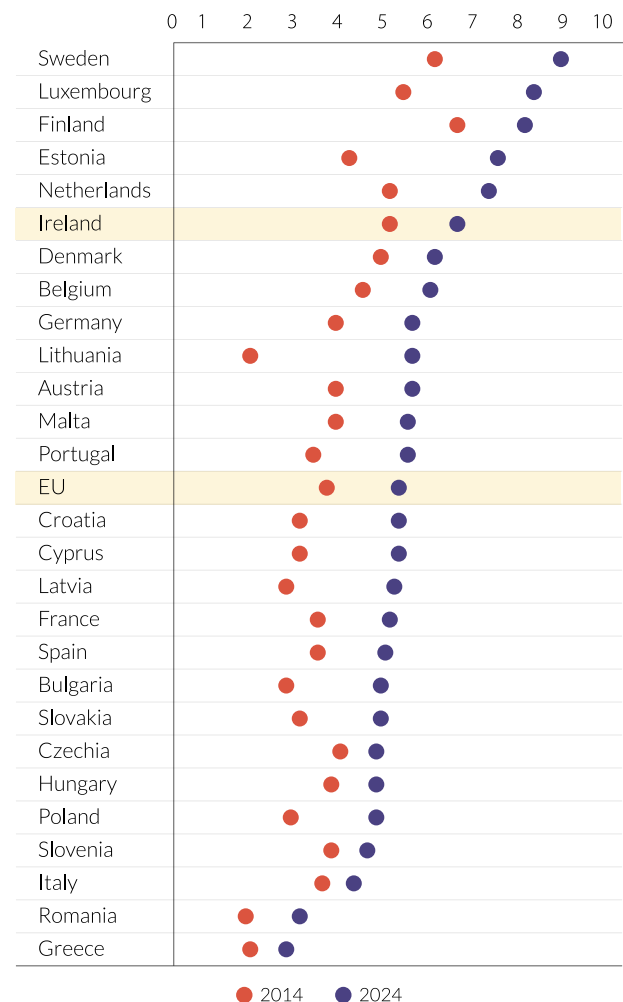
Ireland and ICT Specialists

Before delving into AI statistics, it is useful to get a broad picture of technology skills within the labour market.

In Figure 1, the share of ICT specialists in overall employment is plotted for select years across the EU.⁴ The share in Ireland, at 6.3% in 2024 was the 5th highest and well above the average of 5.0%. In absolute terms, there were 173,400 ICT specialists located here, and this number has increased by more than 50% since the pandemic, well ahead of comparable trends in the EU. It should also be noted that technology or digital skills go well beyond the ICT sector, so the estimates for Ireland understate their importance. Previous research has highlighted that the ICT sector in Ireland is highly exposed to AI but as yet, it is unclear on the extent to which labour may be lost or redeployed.⁵ Finally, it is important to stress that ICT and digital skills are building blocks for, but not the same as, AI.

A similar picture emerges when we look at labour market skills. The percentage of people in Ireland with 'basic or above' levels of digital skills stood at 73% in 2023, relative to 56% in the EU.⁶ This meant that Ireland ranked 3rd in the EU, just behind the Netherlands and Finland (Figure 2).

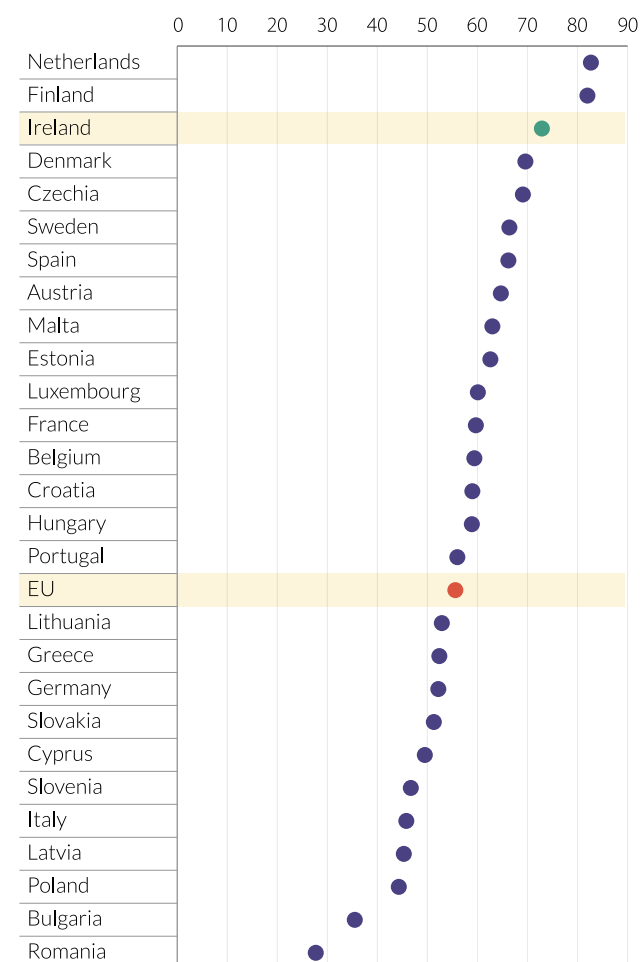
Figure 1: ICT Specialists share of employment (%)



Source: Eurostat

4. The ICT sector is likely to be most exposed sectors to AI. Research by LinkedIn shows that generative AI has the potential to disrupt 75% of workers in the tech sector. Other highly impacted sectors include financial services, accommodation and food and professional services economicgraph.linkedin.com/content/dam/me/economicgraph/en-us/PDF/AI-in-the-EU-Report.pdf
5. Artificial Intelligence: Friend or Foe. The authors noted that 94% of workers in the Information and Communication sector were working in highly exposed occupations, with the majority in low complementarity with AI roles.
6. Eurostat categorise persons according to digital skills levels based on a digital competence framework. This involves calculating digital skills composite indicators based on a range of internet or software related activities. For more details, [Individuals' level of digital skills \(from 2021 onwards\) \(isoc_sk_dskl_i21\)](#)

Figure 2: Individuals with basic or above digital skills (%)



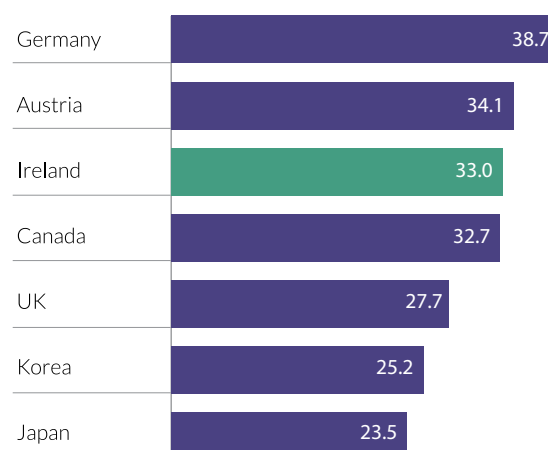
Source: Eurostat

Based on the high level of digital skills already prevalent in Ireland and the fact that Ireland has the highest level of STEM graduates per capita in the EU, the economy would seem to be well positioned for high levels of AI adoption.⁷ This appears to be borne out by data showing an effective doubling in AI usage in recent years across the enterprise sector, with just over 15% of Irish enterprises using AI in 2024, relative to 8% in 2023.⁸ The most common forms of AI activity were for analysis of written or spoken language; data analysis and automating certain workflows.

In general, AI is being used more heavily by larger companies, with the OECD for example reporting that just over 40% of large companies use AI, relative to 20% and 12%, for medium and small enterprises, respectively. Forthcoming research, also from the OECD, looking at AI adoption across SMEs has several interesting findings. This work carried out last year involved a survey of over 5,000 SMEs in Austria, Canada, Germany, Ireland, Japan, Korea and the UK. For Ireland, the survey noted a favourable outlook from SMEs in relation to AI with overall usage of generative AI at 33%, which was the 3rd highest in the survey behind Germany (38.7%) and Austria (34.1%) but ahead of Canada (32.7%), the UK (27.7%), Korea (25.2%) and Japan (23.5%) – see Figure 3. Given that Ireland has smaller SMEs relative to a country like Germany, these figures are encouraging as AI usage is closely correlated to a company's size.

So, in brief, survey evidence points to a sharp pick-up in AI usage across the enterprise sector over the past year or so. This is also confirmed by other sources, when we look at the demand for, and the supply of AI talent within the Irish labour market, which will be the focus of the remainder of this Insights Note.

Figure 3: SMEs usage of Generative AI (%)



Source: OECD (forthcoming)

7. Labour Market Pulse Edition 10 | IDA Ireland

8. Artificial Intelligence Information Society Statistics - Enterprises 2024 - Central Statistics Office



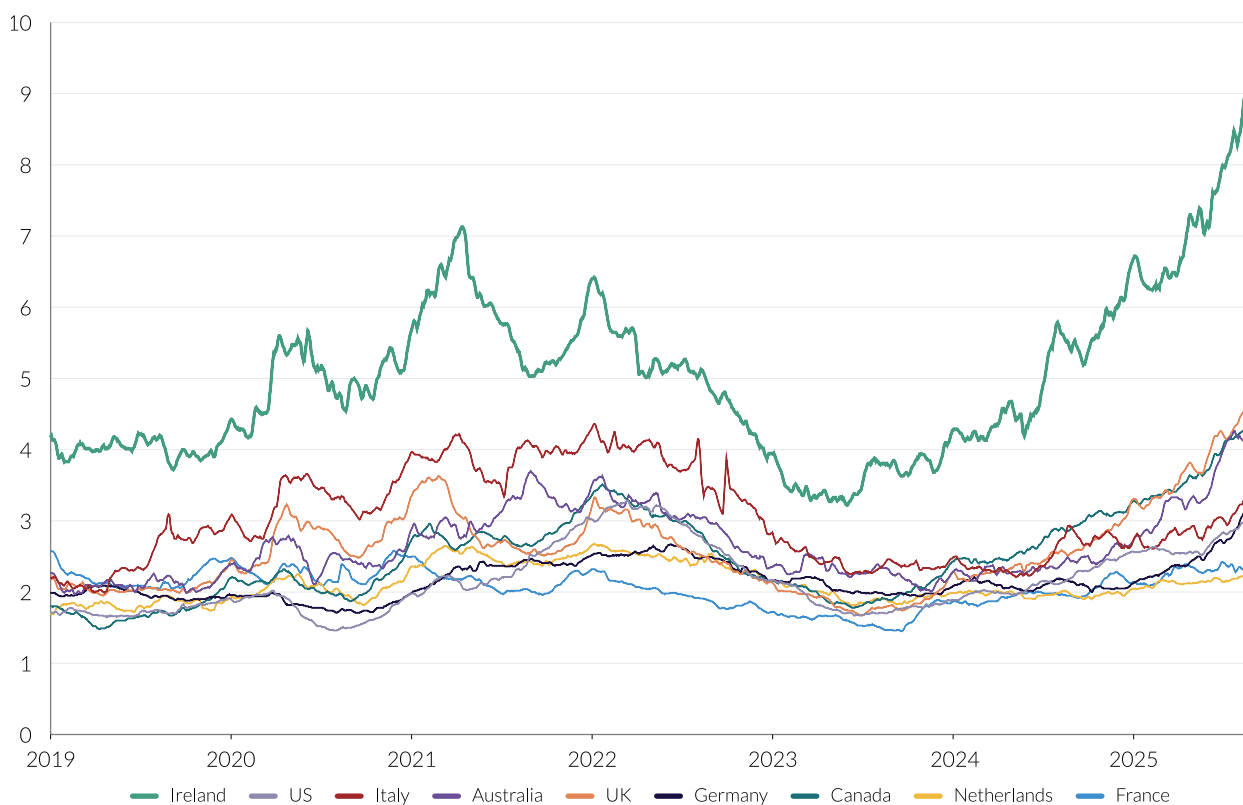
The Demand for AI Skills in Ireland

Turning to the demand for AI skills, these are broad and range from an understanding of AI (AI literacy) to an ability to use core AI tools, such as Generative AI, machine and deep learning, large language models, as well as programming and modeling.⁹ It can also range from people employed in specific AI related roles (e.g. AI engineers) to those using AI related skills.

Looking at the demand for AI skills, data from Indeed's job postings 'AI tracker' confirms a substantial uptick in Ireland. This series maps the share of job postings containing AI and Generative AI terms. From Figure 4, we can see how prevalent AI jobs in Ireland are relative to international peers. While the frequency of AI related jobs has increased across the board, the rise in Ireland is particularly steep with a doubling in AI related posts since 2023.

This reflects a range of factors not least Ireland's sectoral and occupational make-up – with relatively high proportions in ICT, fintech and pharma sectors, but also demographics – a young and highly skilled population. Anecdotal evidence suggests that many of the AI positions in Ireland require prior work experience, specifically occupations such as software engineering, business analytics and data specialists.¹⁰

Figure 4: **Share of Job Postings referencing AI (%)**



Source: Indeed

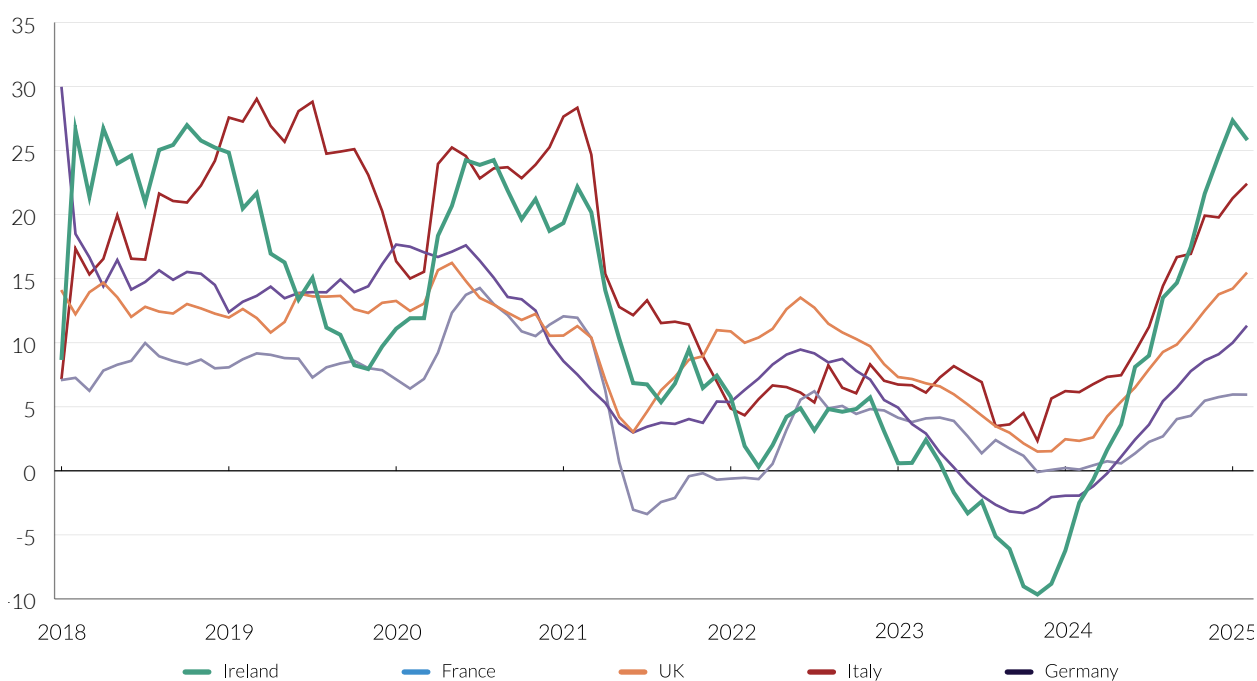
9. Machine learning is a subset of AI that enables systems to learn from data without explicit programming. Deep learning in turn is a subset of machine learning for more complex decision-making processes.



Other data sources also substantiate these findings. A review of LinkedIn data on demand for AI workers highlights significant growth within Ireland over the past year, both in an absolute sense but also again relative to peer countries. In Figure 5, the ratio of

AI hiring to overall hiring on a 12-month moving average basis is plotted. The trends across countries are similar with a clear cyclical element around the Covid-19 pandemic. However, the strength in the Irish figures over the past year is noteworthy.

Figure 5: AI hiring over time (%)



Source: LinkedIn



The Supply of AI Skills in Ireland

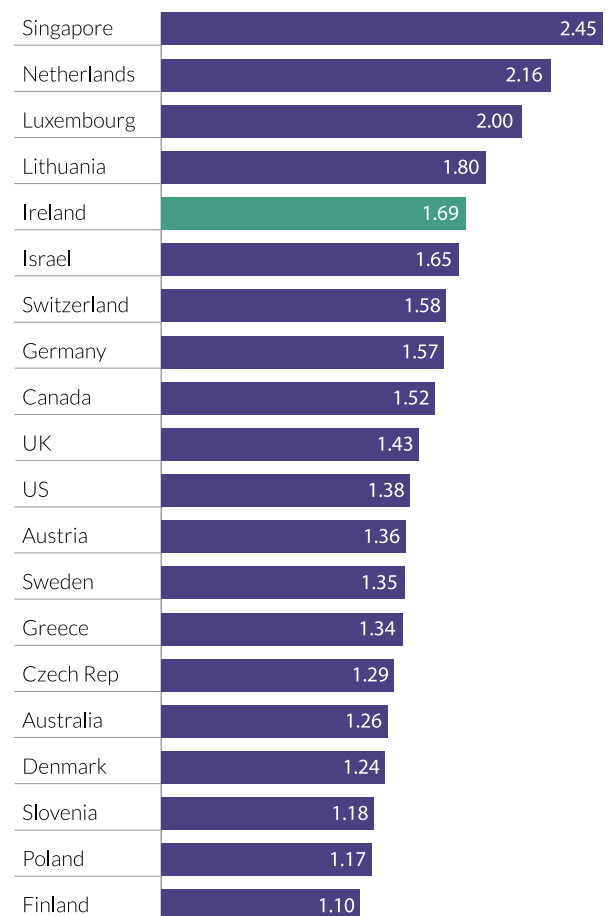
The availability, or supply of persons with expertise in AI within Ireland is potentially a key enabler for the adoption of AI going forward. Ireland's education system has for many decades provided a strong outflow of highly skilled graduates.

In relation to the education system, data shows Ireland is producing about 1,500 Masters graduates per year across all disciplines, with between 600 and 700 PhD graduates over a 4-year period.¹¹ At the same time, many of our universities are offering AI related courses in a wide range of fields. This is already impacting the AI talent pipeline within Ireland, which we can gauge from LinkedIn data on AI jobs and AI concentration levels across countries.¹² This dataset measures the extent to which AI related skills have been added to members' profiles and/or the extent to which persons are employed in AI jobs.

Looking first at LinkedIn's 'AI Talent Index', Ireland performs strongly across the board (Figure 6). In a European context, Ireland ranks 4th highest in relation to AI talent and 5th in the world, at 1.69 times the global average.

At a sectoral level, Ireland also scores well relative to peers – 4th best for financial services, 7th for technology and media, 9th for both manufacturing and professional services and 11th for education. The data confirms that Ireland (as of 2023) had a rich pool of AI talent both across the economy and in specific sectors. Similarly, looking at the prevalence of self-reported AI skills amongst Irish workers, AI ranked highest for those working in the tech sector.¹³ Also it is worth noting that, Irish women outperformed their male counterparts, ranking 7th globally with males ranked 8th.¹⁴

Figure 6: AI Talent Index: supply side



Source: LinkedIn

11. Ireland's Artificial Intelligence hub | IDA Ireland

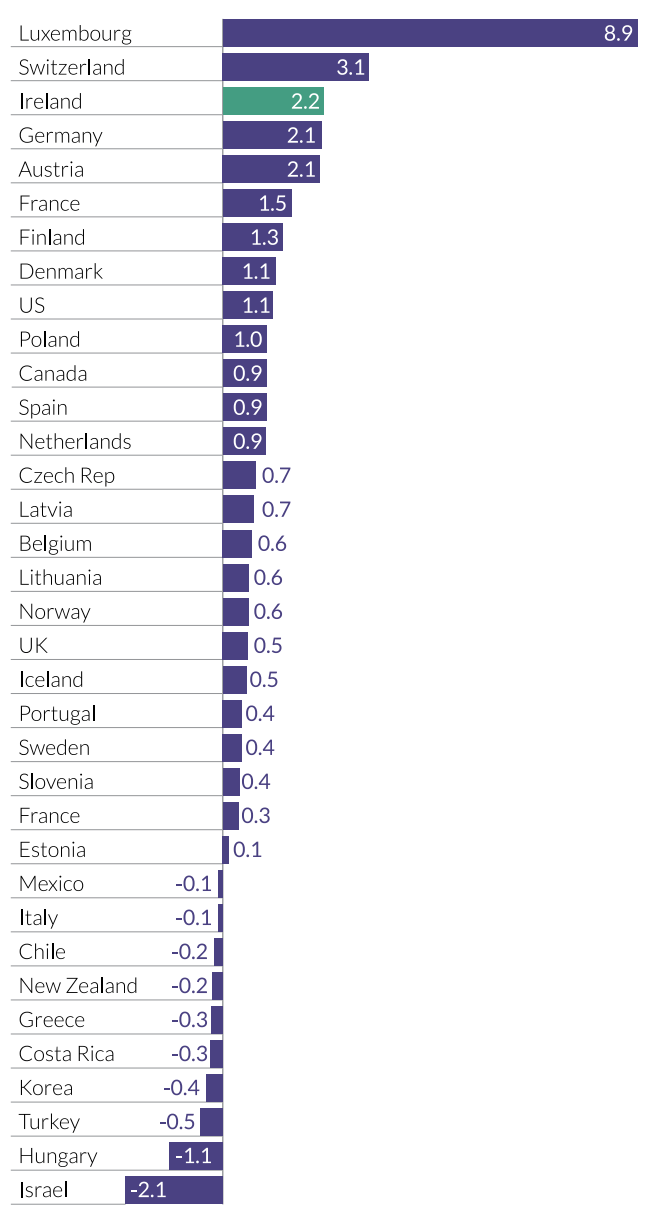
12. LinkedIn's Economic Graph -- A digital representation of the global economy

13. Live data from OECD.AI - OECD.AI

14. li-ai-talent-index.pdf

In terms of specific AI skills, we can subdivide these into 2 broad categories – AI engineering skills and AI literacy skills.¹⁵ In respect of engineering, the top 5 most prevalent skills on LinkedIn in 2024 were: AI, machine learning, generative AI, Large Language Models (LLM), and deep learning. In respect of literacy, the top 5 skills were: Prompt Engineering, ChatGPT, Generative AI tools, Microsoft Copilot, and GPT-4.

Figure 7: Net migration flows of LinkedIn members with AI skills (per 10,000)



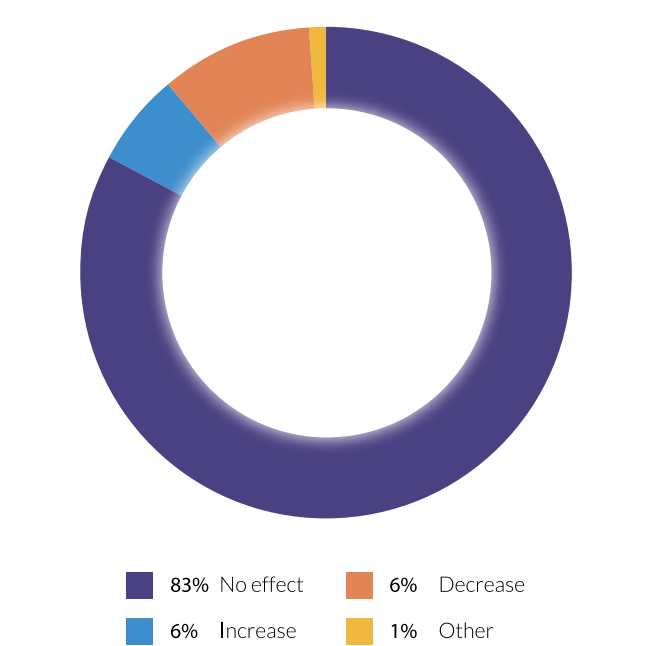
Source: LinkedIn

15. <https://economicgraph.linkedin.com/content/dam/me/economicgraph/en-us/PDF/ai-data-partnerships-methodology.pdf>
 16. Live data from OECD.AI - OECD.AI
 17. Working paper - Recent Trends in Migration Flows Impacting the Irish Labour Market

One other interesting aspect for Ireland is the importance of inward migration flows and AI. Using data from the OECD and LinkedIn we can plot net migration of individuals with AI skills over a 5-year period.¹⁶ On this metric, Ireland ranks 3rd globally, which is not too surprising given the significant inward migration flows of recent years (Figure 7). This also aligns with employment permits data from the Department of Enterprise, Tourism and Employment. The latter shows a very significant rise in issued permits in Ireland to just under 40,000 last year, a two-fold increase since the pandemic, with the ICT sector accounting for a fifth of all permits.¹⁷ Other key sectors include healthcare and engineering, which are known to be highly exposed to AI.

One other interesting finding from the aforementioned OECD report, is the fact that surveyed Irish SMEs reported little impact on staffing needs as a result of generative AI (Figure 8) although economy wide, the evidence does point to robust demand for AI related skills in what is a fast changing and unpredictable landscape.

Figure 8: Impact of Generative AI on Staffing Needs in Ireland across SMEs



Source: OECD (forthcoming)

Conclusion

AI adoption is continuing at a rapid pace across the Irish labour market and enterprise sector. However, it appears that Ireland is amongst the leading European countries when it comes to AI related talent. Over the next number of years, we are likely to see an increasingly large impact from AI on the labour market and skills needs. In relation to skills specifically, LinkedIn estimates that 70% of the skills needs used in most jobs will change by 2030, with AI the catalyst.

There are significant potential upsides for productivity growth, given the likelihood that AI will augment many current jobs and occupations. At the same time, workers and employers will have to reskill and upskill to adopt new technologies so as to fully reap the benefits. The impact on overall employment levels is less clear cut. There are also several implications for the education sector and the pace of change within AI poses a particular challenge given the need to provide up to date courses from instructors with the skills needed to deliver cutting edge instruction in AI related skills. More generally, the increasing reliance on AI assistance could have potentially negative impacts on basic cognitive skills, which needs to be nurtured and developed across the education system.

It will be important to keep a close eye on AI developments across the labour market. Aside from the occupations and skills inherent in the Irish labour market, the growth in AI is likely to reflect a wide range of measures and supports that have been put in place to encourage AI adoption across the enterprise sector. This includes the National Artificial Intelligence Strategy – AI – Here for Good¹⁸ and a new AI Advisory Council in Ireland. Enterprise Agencies are also actively supporting clients in Ireland in this space, including on talent development. Furthermore, supports ranging from digital skills programmes to critical infrastructure will be integral to the future success of AI across the economy.

Partly for these reasons, the Expert Group of Future Skills Needs (EGFSN) is either funding or co-funding a number of very important pieces of work.

These include:

- ‘Generative AI and the SME Workforce: New Survey Evidence’, OECD (forthcoming). This report examines SMEs usage of AI to address labour and skills needs across a range of countries and the need for structured policy support in key areas.
- ‘Working in Ireland Survey’ on the Irish labour market being conducted by UCD, which will be available later this year. This survey will include a deep dive into the Irish labour market north and south of the border and will include a series of AI related findings, including impacts on job quality and productivity.
- ‘Digital Skills needs in Ireland to 2030’, EGFSN, (early 2026). This report will identify skills needs and skills gaps for ICT/digital specialists, including AI, within ICT and across other sectors of the Irish economy.

All of these bodies of work will shed further timely information on AI adoption and skills needs across the Irish labour market and will be of huge value.

18. National Artificial Intelligence Strategy – AI – Here for Good

Annex

Data Sources

All of the data in this Note is available publicly with the exception of the (as yet) unpublished OECD paper on “Generative AI and the SME Workforce: New Survey Evidence (forthcoming). Both CSO and Eurostat have data sets on AI, specifically in relation to enterprise usage.

Other data sources in the paper are drawn from job sites – specifically, Indeed and LinkedIn. The former publish data on a daily basis noting the share of job postings on their platform containing AI terms. Data is available for the following 9 countries: Australia, Canada, France, Germany, Ireland, Italy, the Netherlands, the UK and the United States. The data can be accessed here: [Hiring Lab](#) | [Data Portal](#) | [Indeed.com](#). LinkedIn have been reporting on the labour market (demand and supply) through their Economic Graph network, which is a digital representation of the global economy with over 1.2 billion members.

This be accessed here: [LinkedIn’s Economic Graph -- A digital representation of the global economy](#). The OECD.AI policy observatory is also used in the is paper. This is a global partnership in AI, with 44 member countries, including Ireland. This can be accessed here: [About the Global Partnership on Artificial Intelligence \(GPAI\) - OECD.AI](#). As part of this, data is used in conjunction with LinkedIn to highlight demand and supply of AI talent across countries and sectors. This can be accessed here: [Live data from OECD.AI - OECD.AI](#). This data set uses job postings published on Adzuna, a platform indexing millions of job postings worldwide, to estimate the demand of AI skills in 16 countries. For more see: [Adzuna data - OECD.AI](#) In addition, the data set also draws from LinkedIn data on profiles and information on the jobs network across the world. For more see: [LinkedIn data - OECD.AI](#)



