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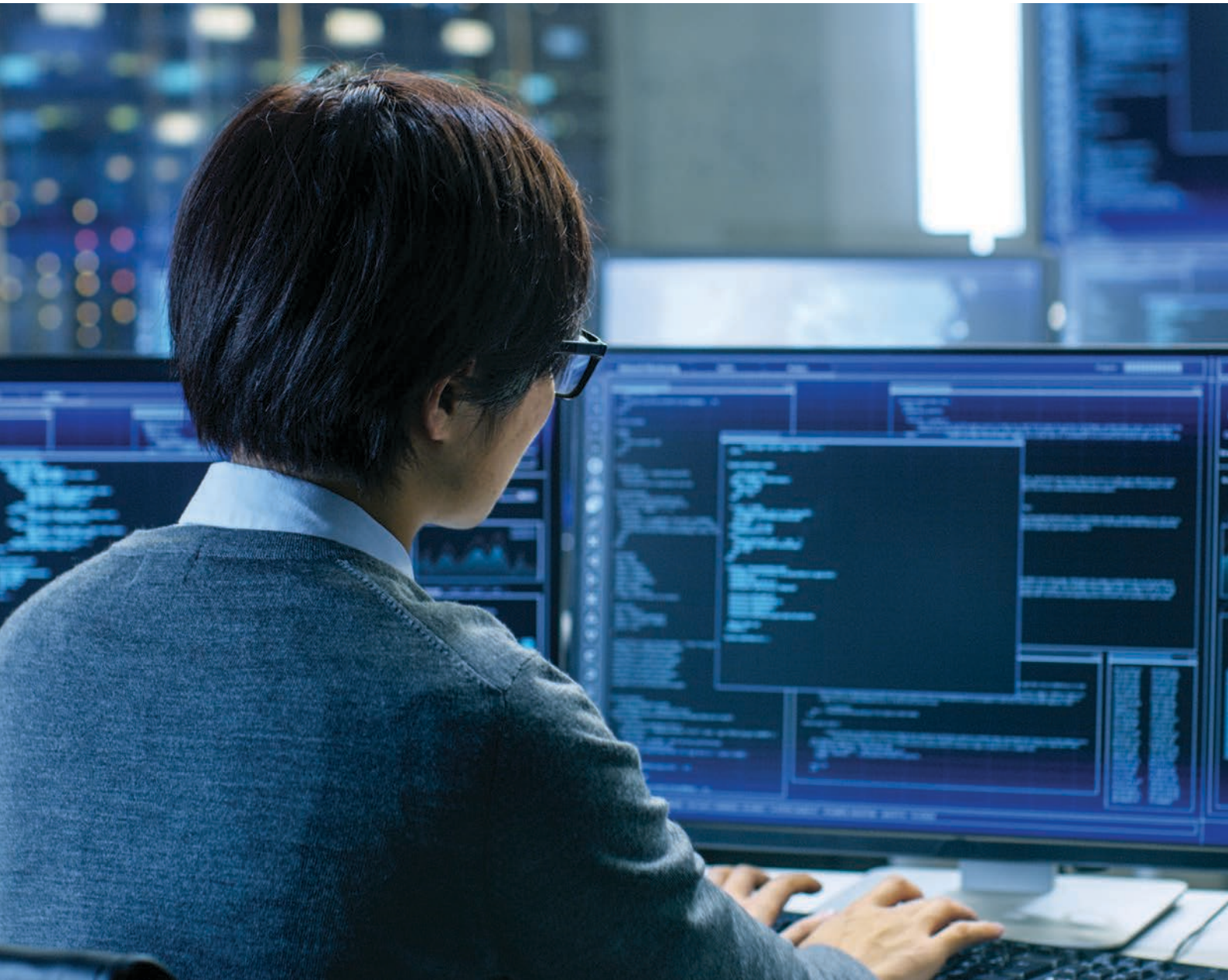
Artificial Intelligence and the Labour Market in Korea



Artificial Intelligence and the Labour Market in Korea

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Foreword

As the general purpose technology of our time, Artificial Intelligence (AI) is expected to profoundly change all aspects of our life, including work. The technology is rapidly evolving and is increasingly making its way into the workplace, bringing promises of increased productivity and improvements in job quality, amongst others. The question is not so much whether AI should be used at work, but rather how, so that its benefits can be maximised, while managing some of the risks such as: job automation, invasions of privacy, bias and discrimination, and increased work pressure and stress, to name just a few. The evidence suggests that policies and institutions matter to making a success of AI, including: training and social dialogue, but also clear and proportionate regulation.

In this series of country reviews, the OECD analyses the impact AI is having on a country's labour market from an internationally comparative perspective, and also takes stock of that country's policies and institutions, against the backdrop of the OECD AI Principles for trustworthy AI. These country reviews aim to help policymakers better understand the risks and opportunities, and offer them a menu of options to help workers and employers make a success of AI, drawing on examples and best practice from across the OECD. In addition, by providing an in-depth analysis of a particular country, these reviews allow policymakers from across the OECD to draw lessons from the experience of a specific country to inform their own policies and institutions.

Acknowledgements

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Abbreviations and acronyms

ADS	Automated Decision System
AEDT	Automated Employment Decision Tool
AI	Artificial Intelligence
AIDA	Artificial Intelligence and Data Act (Canada)
AIOE	AI Occupational Exposure
EAPS	Economically Active Population Survey
EU	European Union
FTA	Free Trade Agreement
GDPR	General Data Protection Regulation
GPT	General Purpose Technology
HR	Human Resources
ICT	Information and Communications Technologies
KLI	Korea Labor Institute
KSIC	Korean Standard Industrial Classification
LLM	Large Language Model
NTC	National Training Card
OECD	Organisation for Economic Co-operation and Development
PES	Public Employment Service
PIAAC	Programme for International Assessment of Adult Competencies
PIPA	Personal Information Protection Act

R&D	Research and Development
SME	Small and Medium-sized Enterprise
STEM	Science, Technology, Engineering and Mathematics
TFP	Total Factor Productivity
UK	United Kingdom
US	United States

Executive summary

The Korean fertility rate has fallen to the lowest in the world and the population is set to halve over the next six decades. The old-age dependency ratio is projected to surge, putting considerable strain on the labour supply which, in turn, could threaten long-term productivity and economic growth.

While AI will not solve this challenge by itself, it may help boost productivity and address skills shortages resulting from an ageing workforce. By automating tasks that humans do, AI could help address skills shortages. Labour productivity could be improved if workers are augmented by these new technologies, allowing companies to do more with less. However, adoption of AI in Korea remains low by international standards: only 31% of SMEs in Korea are using AI, compared to over 50% in Germany – yet the share of employment in SMEs in Korea is particularly high (over 80%).

A lack of skills is cited by Korean SMEs as the most important barrier to AI adoption. Indeed, 30% of adults in Korea have no or limited experience with computers or lack confidence in their ability to use them. In addition, the use of AI in the workplace is increasing demand for high-level skills (including data analysis and interpretation) and social skills.

Korea already has a range of programmes in place to promote AI-related education and training, however the brain drain of AI talent continues to be a major challenge. To successfully address skills issues related to AI, it will be important that Korea: promotes more on-the-job learning; ensures that training programmes are tailored to the needs of SMEs; and co-ordinates effectively between ministries. To achieve the latter, Korea may want to consider setting up a specialised, overarching AI agency to align AI education and training policies with industrial policies.

In order to promote adoption and use, AI will also need to be safe and trustworthy. Korea is only the second country in the world, after the EU, to adopt comprehensive AI legislation, which aims to simultaneously boost innovation and trust in AI.

However, specific guidance on the use of AI in the workplace is currently lacking in Korea and there may be a need to develop more specific guidance for employers on issues such as: data protection and privacy in the workplace; bias and discrimination; automated decision making and algorithmic management practices; transparency; explainability; and accountability. In some cases, regulatory changes may need to be considered too.

While automation through AI could help address skills and labour shortage, it could also result in job losses for some workers. Across the OECD, there is little evidence so far of a negative impact of AI on aggregate employment. However, this report presents some new analysis, first-of-its-kind in that it distinguishes between types of AI, and which shows that in Korea some forms of more “traditional” AI appear to be associated with lower employment growth in full-time, permanent jobs for youth, low- and medium-educated workers, as well as in the manufacturing sector. This suggests that the benefits and risks of AI may not be equally distributed, and Korean policymakers will need to make sure that no groups are left behind.

Social dialogue, social protection and re-employment services can play an important role in supporting workers through the transition. In particular, access to social protection for workers in non-standard forms of work in Korea could be strengthened. With regards to social dialogue, worker consultation appears less common in Korea than in other OECD countries. While the Korean Labour Standard Act stipulates that employers need to consult workers when they intend to alter the rules of employment in a way that is unfavourable to employees (i.e. leads to a deterioration in working conditions), it is not clear in practice whether this law would apply in the case of AI adoption in the workplace. Finally, Korea already uses AI in the provision of employment services and counselling to job seekers (Work24), thereby improving labour market matching, but services could further tailored to the specific needs of SMEs and job seekers.

1 Overview

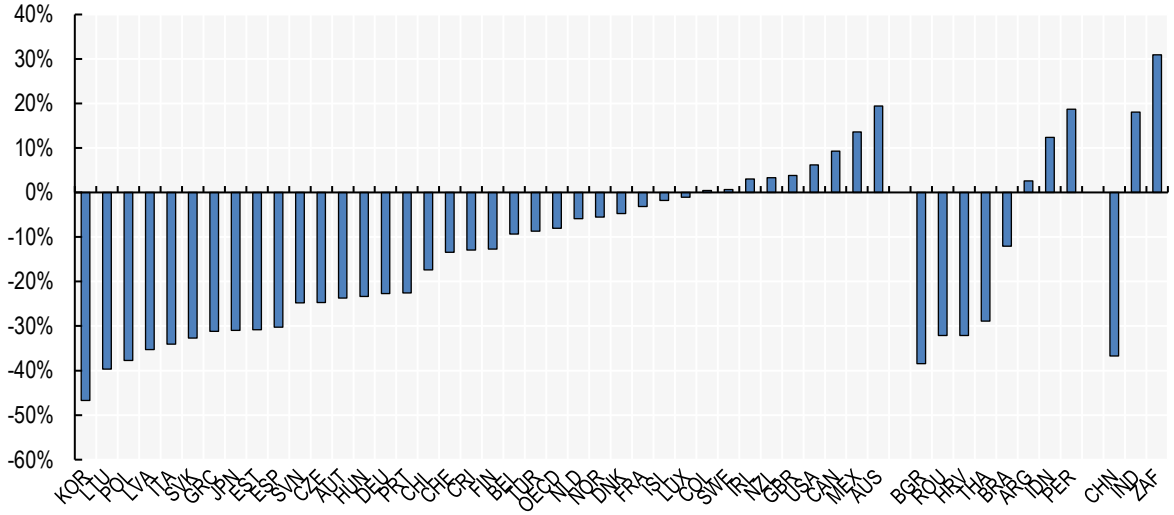
Korea's population is ageing, threatening economic growth

Fertility has been declining in OECD countries, including in Korea which now has the lowest fertility rate in the world (OECD, 2024[1]). At the same time, people are living longer: life expectancy at birth exceeds 80 years in more than two-thirds of OECD countries, with Korea once again towards the top of the ranking (83.6 years).

These opposing trends in fertility and longevity mean people are getting older. Across the OECD, the old-age dependency ratio, defined as the ratio of seniors to the working-age population, has increased from 19% in 1980 to 31% in 2023, and it is projected to increase further to 52% by 2060 (above 75% in Korea). At the same time, the working-age population in the OECD is projected to decline by 8% between 2023 and 2060–and by up to 46% in Korea (Figure 1.1) ((OECD, 2025[2])).

Figure 1.1. Korea is projected to have the largest decline in working age population in the OECD by 2060

Projected percentage change in the working age population (aged 20-64 years), 2023-2060



Note: The medium scenario of the population projections is used. OECD: Weighted average of OECD countries.
Source: Secretariat's calculations based on United Nations (2024), World Population Prospects 2024, https://population.un.org/wpp/.

Without further policy action or changes in behaviour these trends will weigh significantly on economic growth and the capacity of OECD countries to maintain their living standards. In most countries, a combination of boosting migration, closing the gender gap in employment, and raising the employment rates of old-age people, would be sufficient to avoid a fall in the employment-to-population ratio (OECD, 2025[2]). Additional interventions will be needed if Korea wants to maintain living standards.

Artificial Intelligence could be part of the solution, but adoption in Korea is still low

Artificial Intelligence (AI) (see Box 1.1) could help reverse at least part of the drop in GDP growth resulting from population ageing. AI is a new General Purpose Technology (GPT), comparable to earlier digital technologies such as the internet and personal computers, or previous breakthrough innovations like the steam engine and electricity. These past inventions have led to periods of accelerated economic growth. Similarly, it has been estimated that AI could result in growth in total-factor productivity of between 0.25-0.6 percentage points (p.p.) per year (0.4-0.9 p.p. for labour productivity) (Filippucci, Gal and Schief, 2024[3]). In addition, through its impact on automation, AI could help address skills and labour shortages (OECD, 2025[2]), and it could help extend working lives by improving the quality of jobs (OECD, 2023[4]).

Box 1.1. What is Artificial Intelligence?

The OECD defines an AI system as “a machine-based system that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments. Different AI systems vary in their levels of autonomy and adaptiveness after deployment” (OECD, 2024[5]).

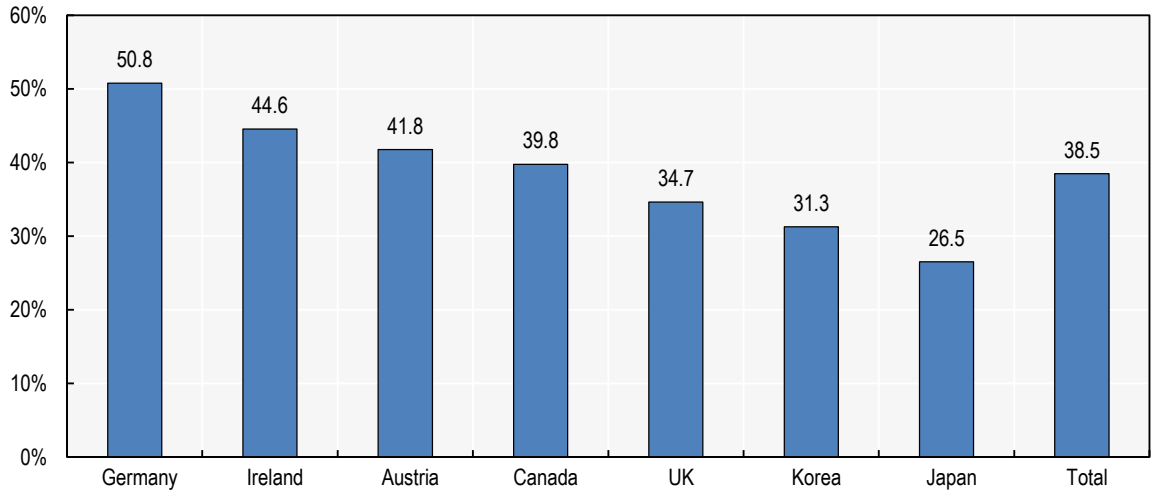
AI can be seen as a General-Purpose Technology (GPT) (Brynjolfsson, Rock and Syverson, 2017[6]). GPTs are characterised by their pervasiveness, inherent potential for technical improvements and innovational complementarities (Bresnahan and Trajtenberg, 1992[7]). AI has the potential to be pervasive, impacting a broad variety of sectors and occupations. Not only does it improve over time through the expertise of inventors or developers, but also by learning on its own from data and its past predictions. Furthermore, it has the capability to spawn complementary innovations.

The applications of AI are wide-ranging. Wherever large amounts of data are available, AI has the potential to improve decision making and reduce costs. AI is used in workplaces for various tasks, including coding, drafting emails, improving written text, generating summaries, and translating content. In human resources, AI streamlines recruitment by screening resumes and matching candidates. In marketing and advertising, AI enables personalised content creation and optimises ad targeting. In finance, AI enhances fraud detection and improves financial forecasting. In manufacturing, AI-powered robotics assist production, while predictive maintenance helps prevent equipment failures.

However, adoption of AI in Korea remains low, with estimates ranging from 6.4% to 30.3% (Han, 2023[8]; NIA, 2025[9]; KOSIS, 2025[10]). Evidence from a new OECD survey shows that adoption of AI by SMEs (<250 employees) in Korea (31%) is higher than in Japan (27%), but considerably lower than in some other OECD countries, such as Austria (42%), Ireland (45%) and Germany (51%) (Figure 1.2). Yet the share of employment in SMEs in Korea is particularly high (over 80%).

Figure 1.2. AI adoption in SMEs is lower in Korea than in other countries

Percentage of SMEs reporting usage of generative AI or other forms of AI



Source: OECD (2025[11]), Microdata from the OECD SME Survey on Generative AI.

To encourage adoption, AI should be safe and trustworthy

While AI has the potential to bring many benefits, including to the workplace, employers will be hesitant to adopt AI, and workers reluctant to use it, if the risks are not adequately addressed, including risks to: worker safety and health, data protection and privacy, as well as bias and discrimination.

Korea is only the second country in the world, after the EU, to adopt comprehensive AI legislation. The Basic Act on the Development of Artificial Intelligence and the Establishment of Trust ("AI Basic Act" henceforth) was approved in January 2025 and will be enforced from January 2026 onwards. The AI Basic Act refers to the need to "minimise risks and build trust". The AI Basic Act covers important principles such as transparency and explainability, as well as safety and reliability of AI. Firms using "high-impact AI" will be expected to provide users with advance notice. They will also need to: develop and implement a risk management plan, a user protection plan, ensure human supervision and oversight, and maintain documentation on safety and reliability measures – although details on how this should be done are still left open.

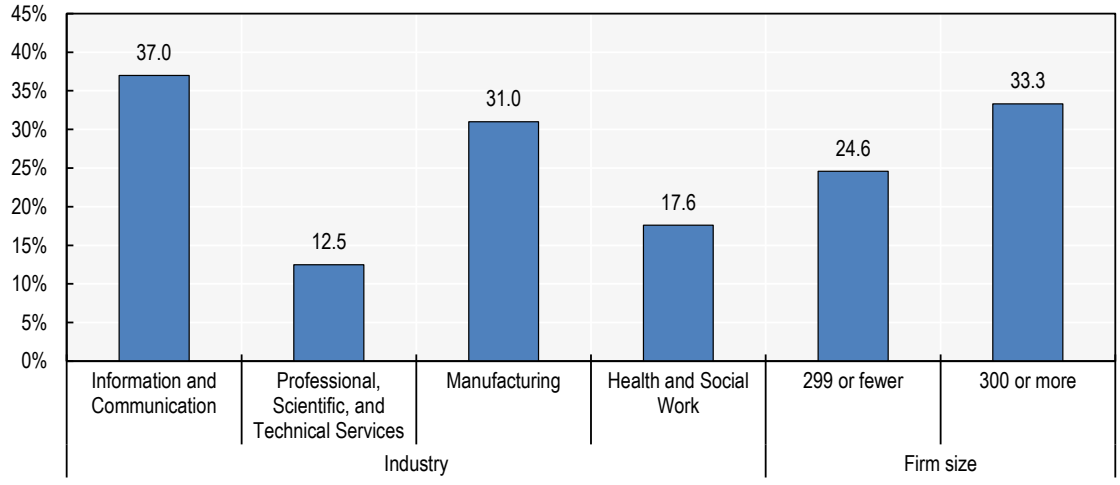
Korea also has comprehensive data protection legislation. The Personal Information Protection Act (PIPA) offers similar rights and protections as the GDPR in the EU, including in the case of fully automated decisions where the PIPA, unlike the GDPR, specifically mentions the use of AI. When personal data is collected and processed, the consent of individuals is required. While the meaningfulness of consent in the context of an employer-employee relationship has been questioned, given the power imbalance between the two parties, in Korea, an interesting solution to this challenge appears to have been found: if there is a trade union (labour union) in the workplace, consent is deemed to be given when the union agrees, while in workplaces without unions, the condition is met when more than half of all workers express their agreement.

Despite these legislative efforts, Korea's approach to regulating AI is based more on principles than on detailed prescriptions and regulations. This may encourage innovation, but it also makes enforcement more difficult. The AI Basic Act is deliberately less restrictive than the EU AI Act and aims to combine ethical AI and safe practices with domestic innovation. While the EU AI Act is closer to a product safety regulation, the AI Basic Act contains strong elements of an industrial policy. Other principles, like the guarantee of human rights, and bias and discrimination, are not included in the AI Basic Act but are covered by the Korea Guidelines for Ethical Standards of Artificial Intelligence instead.

Going forward, it will be important to develop specific guidance on the use of AI in the workplace. Indeed, while some companies in Korea (26.2%) have developed their own guidelines for the use of AI, the majority have not (Figure 1.3). The AI Basic Act defines "high-impact AI", similar to "high-risk AI" in the EU AI Act. However, the use of AI in employment (a high-risk case in the EU AI Act) is only alluded to briefly in the AI Basic Act when it mentions AI that involves "Judgment or evaluation that has a significant impact on an individual's rights and obligations, such as hiring." It is not clear, therefore, to what extent some of the AI Basic Act would apply to situations in the workplace other than hiring, nor what steps employers should take to ensure the safe and trustworthy use of AI.

Figure 1.3. The majority of firms in Korea do not have guidelines for the use of AI

Percentage of firms reporting the existence of guidelines, by sector and firm size



Note: The survey targeted firms that use AI, focussing on industries classified under the Korean Standard Industrial Classification (KSIC), specifically: Manufacturing, Information and communication, Professional scientific and technical service, Healthcare. Only firms that utilise AI and have 10 or more employees were included in the survey. HR managers and AI developers provided the survey responses. The survey was conducted over a two-month period, from 20 October 2024 to 31 December 2024. The survey covered a population of 9 625 establishments, including 3 292 in manufacturing, 3 118 in information and communication, 1 788 in professional and scientific services, and 790 in healthcare. The sample was drawn using a random sampling method, with a target sample size of 200. Ultimately, the study achieved valid responses from 145 firms, whose data were incorporated into the final analysis.
Source: Survey on AI Utilisation and Labour Market Changes conducted by the Korea Labor Institute (2024).

Social dialogue can facilitate the AI transition

In translating the above laws and principles into practical guidelines in the workplace, social dialogue will be critical. OECD research has shown that social dialogue and collective bargaining can play a key role in supporting workers and firms in the AI transition, and in fostering fair and dynamic labour markets (OECD, 2023[4]), and also that the outcomes for workers when AI is adopted in the workplace are better when employers consult them about the use of AI (Lane, Williams and Broecke, 2023[12]).

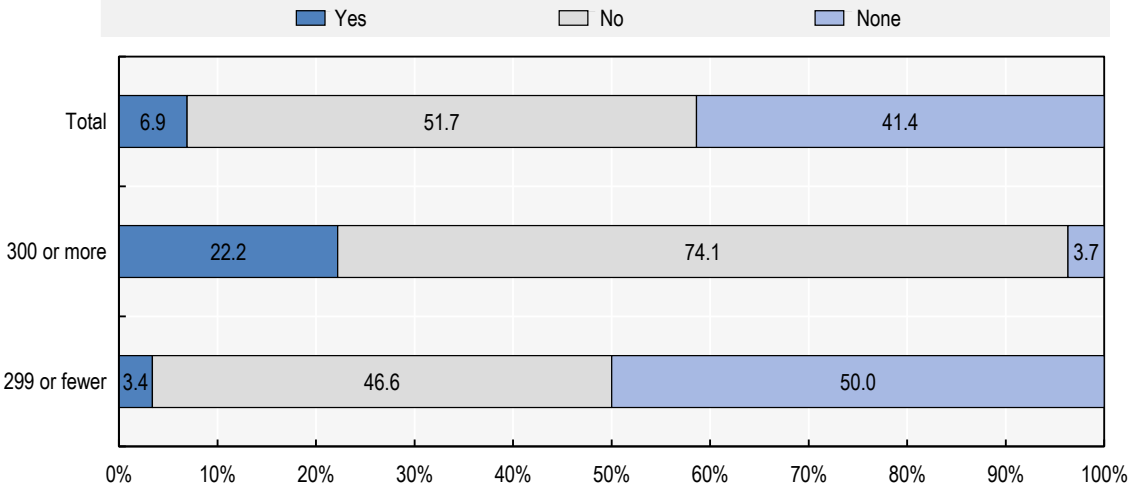
At the national level, social dialogue in Korea is still in its infancy. Discussions on AI and technology issues take place in the National Artificial Intelligence Commission, which is composed of ministers, heads of public institutions, academics, and presidents of technology companies – however there is no specific focus on the labour market. The latter topic is discussed separately in the Economic, Social and Labour Council, which recently launched the "AI and Labour Research Association", composed of worker and employer representatives, officials from the ministries of labour and Industry, as well as professors and researchers.

At company level, the Labour Standard Act stipulates that employers in Korea need the consent from workers (from the union if there is one, if not from the majority of workers) when they intend to alter the rules of employment in a way that is unfavourable to employees (i.e. leads to a deterioration in working conditions). However, there is uncertainty surrounding how AI adoption impact working conditions and what this means for the obligation of employers to consult workers.

In practice, worker consultation on AI adoption in Korea appears limited. A survey of workers in Korea showed that 56.3% were not involved in discussions around AI adoption in their workplace and only 6.9% said their firms engaged in discussions with unions or labour management councils (Figure 1.4). As expected, these discussions are far more common in large firms. In the few cases where workers were consulted, the most common topics covered were: AI's impact on the number of jobs, changes in specific occupations, emerging training needs, and methods of data collection and use. A case from Korea further illustrates how the involvement of workers in AI adoption and maintenance appears limited (Box 1.2).

Figure 1.4. Few workers in Korea say their employer consults unions or councils on the adoption of AI

Percentage of employees saying employers consult unions or councils on AI adoption, by firm size



Note: "Yes" indicates that a labour union or works council exists and is consulted. "No" indicates that a labour union or works council exists but is not consulted. "None" indicates that no labour union or works council exists. The survey targeted individual employees who use AI in firms operating within four industries classified under the Korean Standard Industrial Classification (KSIC): Manufacturing, Information and Communication, Professional, Scientific and Technical Services, and Healthcare. Employees using AI provided the survey responses. The survey was conducted over a two-month period, from 20 October 2024 to 31 December 2024. The sample was drawn using a random sampling method, with a target sample size of 600. Ultimately, the study achieved valid responses from 426 employees, whose data were incorporated into the final analysis.
Source: Survey on AI Utilisation and Labour Market Changes conducted by the Korea Labor Institute (2024).

Box 1.2. Case study: AI adoption processes in an electronic parts manufacturer in Korea

A firm producing multilayer ceramic capacitors (MLCC), power inductors, chip resistors, tantalum, camera and IT modules, semiconductor package substrates, and others, applies AI to the quality inspection of finished products in the MLCC production process. As product quality is a key competitive factor in the MLCC market, strict quality control is essential. To address yield losses caused by the limitations of visual inspections conducted by human workers, the firm introduced an AI model.

At the AI development stage, production workers contribute minimally to AI development, while AI developers and manufacturing technology team members play dominant roles. The production workers were expected to provide domain knowledge to aid in AI development, but instead, some manufacturing technology team members, who possess high domain expertise and extensive work experience, took on this role. As a result, the production workers had little involvement in AI development. At the improvement stage, AI developers again dominate the process of re-teaching AI. As the data used for AI training drifts over time, due to changes in product designs or work methods, regular re-learning of AI is necessary. AI for machinery-operating tasks is updated daily, while AI for product quality inspection is updated weekly. Interestingly, the re-learning process is automated within the AI algorithm itself. As a result, production workers play a very limited role in AI improvement.

During the AI use stage, AI tends to replace human labour in this firm, leaving little room for workers to contribute. The adoption of AI led to the downsizing of hundreds of workers in the quality inspection processes. Most of the affected workers were from subcontractors, while directly employed workers were reassigned to other roles. The machinery-operating processes also face downsizing, with just two workers now handling jobs that previously required dozens of employees. Additionally, two-thirds of clerical workers who perform simple tasks are expected to be made redundant in the future. However, the firm has been growing rapidly, and AI adoption has not yet led to overall redundancy but rather slowed the increase in the workforce. Notably, new plants were recently built at each of the two domestic factories.

Investing in skills will be critical to make a success of AI

A lack of skills can be a significant barrier to AI adoption and use. Indeed, the greatest barrier to adoption cited by SMEs that have not adopted generative AI in Korea, is a lack of skills among employees (cited by 53%) (OECD, 2025[11]). These findings are consistent with research for other countries, which showed that 40% of employers in the manufacturing and finance sectors said that skills were a barrier to AI adoption (Lane, Williams and Broecke, 2023[12]). At the same time, workers in these same sectors who say they have been trained to work with AI are considerably more positive about the impact of AI on their performance, enjoyment of work, and mental and physical health than workers who did not receive such training (Lane, Williams and Broecke, 2023[12]).

In addition, Korea faces a challenge in retaining AI talent – reflecting a wider brain drain issue which can be traced back to the 1950s, with high-skilled workers seeking better job opportunities and higher living standards abroad. While the Korean Government has introduced AI-focussed education and vocational training programmes, the shortage of AI experts has been persistent with intensified competition and a surge in global demand for AI professionals. This threatens technological progress and productivity growth.

It is therefore encouraging to see the AI Basic Act mention the importance of skills. It stipulates that a "basic" plan will have to be elaborated every three years by the Minister of Science and ICT which must cover: "Matters related to training professional manpower for systematic fostering of the artificial

intelligence industry". The AI Basic Act also states that "The Minister of Science and ICT shall train and support professional manpower related to artificial intelligence." Korea already has several publicly funded education and training programmes to develop AI skills, including K-Digital Training, a vocational training initiative that aims to provide high-skilled workers in digital and edge-tech industries and which, so far, has benefited over 5 000 participants in more than 200 courses. However, going forward, the Korean Government should: promote more on-the-job learning; ensure that training programmes are tailored to the needs of SMEs; and co-ordinate effectively between ministries. To achieve the latter, Korea may want to set up a specialised, overarching AI agency to co-ordinate AI education and training (Ministry of Labour and Employment) and industrial policies (Ministry of Trade, Industry and Energy).

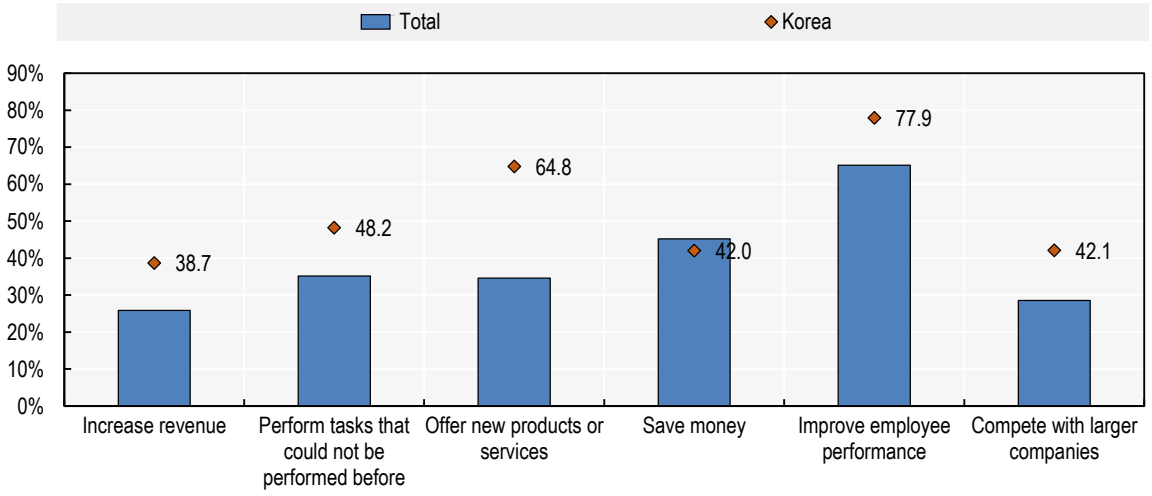
It will be important to ensure that training does not focus only on AI technical skills required for developing and maintaining AI, but also on more general skills required to work with AI. Indeed, most workers will be exposed to AI in the workplace, without necessarily needing such technical skills (Green, 2024[13]). In this respect, the K-Digital Beginner-level Skill Training, which provides beginner-level digital skills to participants, is a promising programme, although its coverage is currently limited (22 000+ participants) compared to the number of workers who will be exposed to AI at work. Article 4 of the EU AI Act, which requires providers and deployers of AI systems to ensure a sufficient level of AI literacy of their staff and other persons dealing with AI systems on their behalf, may also serve as inspiration to Korean policymakers.

Special support should be provided to SMEs

Boosting AI adoption among SMEs in Korea could result in significant economic gains, particularly given the large share of employment that they represent. The productivity of SMEs in Korea is only about one-third of that of large companies (compared to around half in other OECD countries) (OECD, 2024[1]) and AI adoption is also significantly lower among SMEs than it is among larger firms: 27.4% in firms with 50 to 249 employees, compared to 63.3% in firms with more than 250 employees (NIA, 2025[9]). At the same time, SMEs that use AI in Korea are very positive about its impact: nearly half of the SMEs experiencing skills shortages believe that generative AI has helped address them, 4 in 5 say it has increased employee performance, and around 2 in 5 say it has saved money, increased revenue, and helped them compete against larger companies (Figure 1.5).

Figure 1.5. SMEs in Korea are positive about the impact of generative AI

Percentage of SMEs reporting generative AI helped the company



Note: The total reflects the combined results from all countries participating in the survey (Austria, Canada, Germany, Ireland, Japan, Korea, the United Kingdom).
Source: OECD (2025[11]), Microdata from the OECD SME Survey on Generative AI.

It is encouraging to see the AI Basic Act mention "education support related to the introduction and utilisation of artificial intelligence technology for […] employees of small and medium-sized enterprises" as well as "support for funds used for the introduction and use of artificial intelligence technology by small and medium-sized enterprises." At the same time, Korea should ensure that such support goes hand-in-hand with efforts to consolidate the various other forms of support and protections for SMEs, to reduce the risk that these policies lock resources into low-productive uses and thereby hold back overall productivity (OECD, 2024[1]).

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2 The impact of AI on the labour market

While most OECD economies are still in the early phases of AI adoption, the technology is expected to have a profound impact on the world of work. This chapter explores the evidence from across the OECD as well as from Korea on how AI has so far affected: job quantity and skills, job quality, and inclusiveness in the labour market. So far, there is little evidence of a negative impact on the number of jobs, although some groups are more affected than others. AI holds promise to improve job quality, but there are risks too. Moreover, these risks and benefits of AI are not equally distributed across population sub-groups.

In Brief

The impact of AI on job quantity and skills

- AI has made the most progress in non-routine, cognitive tasks. Therefore, the occupations most exposed to AI tend to be white-collar occupations, such as IT professionals, business professionals, managers, and science and engineering professionals. However, high exposure to AI does not necessarily imply workers in these occupations will be displaced. So far, across OECD countries, there is little evidence of negative aggregate employment outcomes due to AI.
- In Korea, there is some evidence that over the period 2018 to 2023, more "traditional" AI was associated with lower growth in full-time, permanent jobs, particularly in the manufacturing sector. However, no such relationship was found for generative AI. These findings need to be interpreted in a context of 2.4% employment growth in full-time, permanent jobs overall during the same period, as well as 5.8% growth in total employment (including non-standard forms of work). In addition, in a survey of Korean firms, 95.5% report no workforce changes so far at the department- or team-level following the adoption of AI.
- These limited effects on job automation suggest that, by itself, AI will not solve labour shortages in Korea. However, AI can help mitigate them. For instance, of the 37% Korean SMEs reporting a worker shortage in the last two years, 27% say that generative AI helps compensate for these shortages. Similarly, 24% of Korean SMEs report a lack of skills and experience among staff, and 47% of these say that generative AI helps to address this challenge.
- While AI may not automate jobs at large scale, it does change the tasks workers do and the skills required of them. 56.5% of Korean firms that have adopted AI say it has replaced specific tasks within existing jobs. Moreover, 32.2% say the use of AI has resulted in an increase in the kinds of skills required to carry out current tasks, and 38.3% say that AI has increased the level of skills required. Firms in Korea that have adopted AI are more likely to report an increase in communication among team members (18.4% v. 7.1%), percentage), with managers (19.1% v. 7.1%), as well as between teams (27% v. 7.8%). For Korean SMEs, AI increases the importance of data analysis and interpretation skills increases the most, followed by programming and coding skills.

  The changing skills needs resulting from the adoption of AI in the workplace call for new training opportunities. This is particularly important in the context of the continued brain train from Korea, including of AI talent. However, Participation in adult learning in Korea is the lowest across OECD countries: 13%, compared to an OECD average of 40%. While firms in Korea do provide training to employees for working with AI, only 42% of those that have adopted AI have done so, and the share is higher in large firms than it is in small ones.

The impact of AI on job quality

- Wages are a key dimension of job quality. If AI boosts productivity then it could result in higher wages for workers. In OECD countries, the wage benefits of AI have so far been concentrated among high-income and highly skilled workers. Similarly, in Korea, only the occupations most exposed to generative AI have benefited from higher wage growth.

- AI could improve job quality in other ways as well. The automation of tedious and repetitive tasks could improve job enjoyment and allow workers to focus on more complex and interesting tasks. AI could also improve physical safety by automating dangerous tasks and improving monitoring systems and safety procedure controls. At the same time, there are some risks too. For example, case study evidence from OECD countries shows instances of increased work intensity due to higher performance targets or complexity induced by AI. Ultimately, the effect of AI on the work environment depends on how thoughtfully and strategically it is integrated into workplace practices.
- In Korea, AI appears to improve job satisfaction. However, there is a gap between the perceptions of firms and employees, with the former being more positive than the latter. In addition, many workers in Korea – particularly those in smaller firms and the manufacturing sector – report no noticeable reduction in either physical or mental burden following the adoption of AI. One possible explanation is that AI adoption in Korea is still in its early stages, and its potential to ease work intensity has not yet fully materialised.

The impact of AI on inclusiveness

- Workers vary in the extent to which they are exposed to AI, but also in their ability to adapt to and benefit from new technologies. Thus the impact of AI need not be uniform across different socio-demographic groups. So far, the evidence from OECD countries suggests that high-income and high-skilled workers benefit the most from AI, while low-skilled workers may lose out. For example, the impact of AI on employment growth has been found to be significant and positive for high-income and high-skilled occupations, and for jobs where computer use is high. Similarly, high-income and high-skilled occupations, as well as jobs with high computer use, tend to experience positive effects on wage growth associated with AI exposure, while lower income and lower skilled workers do not seem to benefit in the same way, or less so.
- In Korea, the negative impact of traditional AI on regular, full-time employment growth appears to be concentrated among younger workers, low- to medium-skilled workers and women – although for the latter, as well as for high-skilled workers, higher exposure to generative AI is associated with higher employment growth. Furthermore, generative AI is associated with higher wage growth for men and high-skilled workers, while traditional AI is associated with higher wage growth for older workers and high-skilled workers. By contrast, traditional AI appears to reduce wage growth for low-skilled workers. These findings apply to full-time, permanent employees only, and the findings for non-standard workers may be different.

The impact of AI on job quantity and skills: Evidence from OECD countries

AI has made the most progress in non-routine cognitive tasks, therefore affecting mostly white-collar occupations

Recent advances in AI have extended the types of tasks that can be automated to non-routine, cognitive tasks, exposing workers who were previously relatively protected from the risk of automation (e.g. the high-skilled). In the past, computers and robots followed strict rules set by programmers and therefore could only automate routine tasks, affecting mostly low- and medium-skilled workers (Autor, Levy and Murnane, 2003[1]).

As of 2023, AI has exceeded human performance across various tasks. It outperformed human baselines in image classification[1] as early as 2015, basic and medium-level reading comprehension in 2017 and 2018 respectively, visual reasoning[2] in 2020 and natural language inference[3] in 2021 (Maslej et al., 2024[2]). Advancements in Natural Language Processing (NLP), and in particular in Large Language Models (LLM), enable applications like Generative AI to perform a wide range of language and cognitive tasks, often at a level comparable to humans and much faster. Generative AI refers to AI systems capable of creating new content based on patterns learned from existing data. For instance, ChatGPT, Gemini, or HyperCLOVA X in Korea, can write poems, computer code, and essays, compose music, and explain complex scientific ideas to a broader audience. When evaluated against answers given by experts on different questions, ChatGPT performance has been assessed as good as that of a team of experts (Guo et al., 2023[3]).

AI can now answer around 80% of the literacy and two-thirds of the numeracy questions included in the OECD Survey of Adult Skills of the Programme for International Assessment of Adult Competencies (PIAAC). Comparing these results to those of the adults performing the tests highlights the potential for AI to outperform large portions of the adult population in reading and mathematics. Experts predict that increasing investments in AI research and development, in particular in NLP, will lead to further significant advancements of AI in both reading and mathematics over the coming years (OECD, 2023[4]).

Important progress has also been made in AI's ability to replicate psychomotor abilities, specifically: the ability to work in cramped workspace, finger dexterity and manual dexterity. Finger dexterity refers to the ability to make precisely co-ordinated movements of the fingers to grasp, manipulate, or assemble very small objects. Manual dexterity, by contrast, is the ability to quickly move the hand, the hand together with the arm, or the two hands to grasp, manipulate, or assemble objects. Older technologies, such as robots, are being improved through the integration of AI (Lassébie and Quintini, 2022[5]).

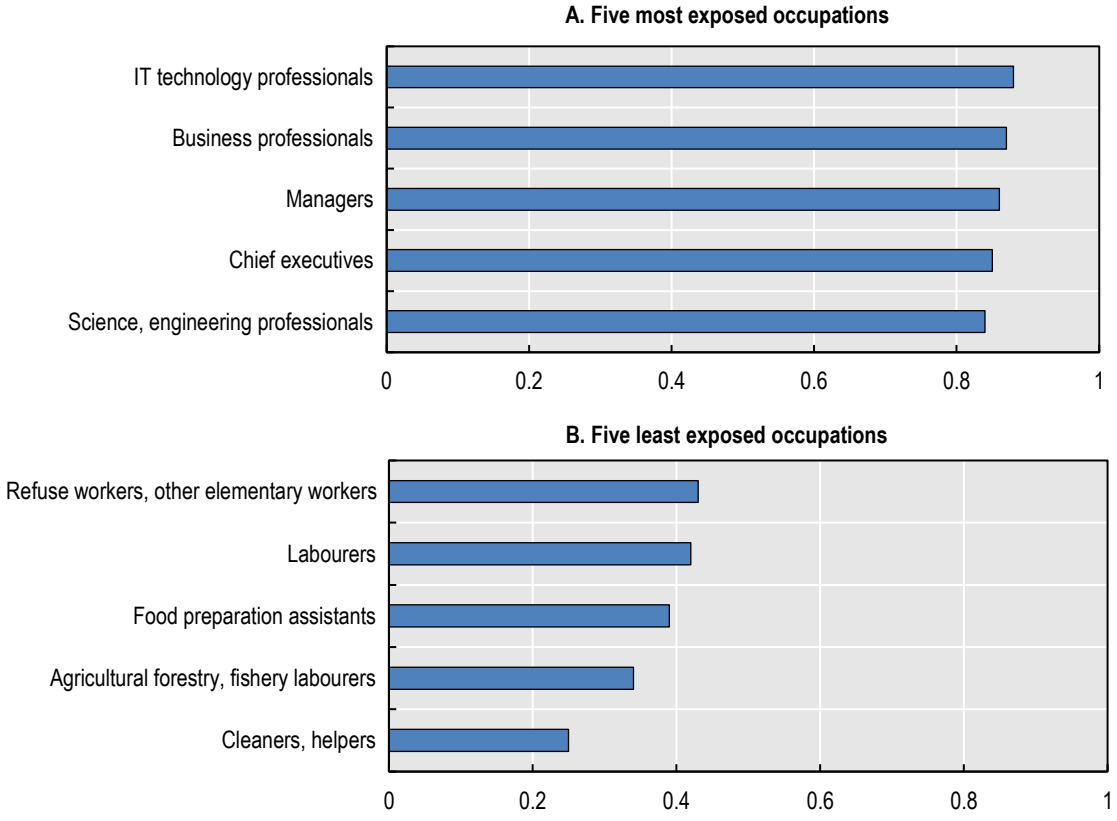
AI has made the least progress in physical abilities such as static, dynamic, and trunk strength.[4] These are tasks more common in non-cognitive, non-routine occupations such as dancers, athletes, bricklayers, and farm workers.[5] There are also other skills and abilities that humans still have a comparative advantage in, such as negotiation, social perceptiveness, assisting and caring for others, originality, and persuasion. Bringing people together and reconciling different views, understanding why people react a certain way, or providing emotional support, all remain complicated tasks for machines to perform (Georgieff and Hyee, 2021[6]; Lassébie and Quintini, 2022[5]). As of 2023, AI fails to exceed human ability also in some more complex cognitive tasks, such as visual commonsense reasoning[6] and advanced level mathematical problem solving (Maslej et al., 2024[2]).

Measures of AI exposure, such as the one constructed by Felten, Raj and Seamans (2021[7]), evaluate the overlap between the abilities required in an occupation and the technical capabilities of AI. The occupations most exposed to AI are white-collar occupations, which are most likely to involve non-routine cognitive tasks requiring formal training and/or tertiary education, such as IT professionals, business professionals, managers, and science and engineering professionals. Occupations requiring manual skills and strength, such as cleaners, agricultural forestry and fishery labourers, food preparation assistants and labourers,

are the least exposed to AI (Figure 2.1) (Lane, 2024[8]; Georgieff and Hyee, 2021[6]). Focusing on generative AI, Eloundou et al. (2023[9]) observe that most occupations exhibit some degree of exposure to LLMs. Occupations with higher wages and information processing industries exhibit high exposure, while manufacturing, agriculture, and mining industries demonstrate lower exposure (Eloundou et al., 2023[9]). Felten, Raj and Seamans (2023[10]) also find that occupations with higher wages are more likely to be exposed to rapid advances in language modelling, and that education and legal service sectors exhibit higher exposure. Box 2.1 presents data on AI adoption based on survey results.

Figure 2.1. White collar occupations are more exposed to AI than occupations requiring manual skills and strength

Average AI exposure by occupations, 2022



Source: Average AI exposure scores retrieved from Lane (2024[8]), "Who will be the workers most affected by AI?: A closer look at the impact of AI on women, low-skilled workers and other groups", https://doi.org/10.1787/14dc6f89-en.

Box 2.1. AI Adoption: Evidence form surveys

AI is increasingly recognised as a transformative technology with the potential to significantly impact workplaces. As a result, there is growing interest in understanding how widely these technologies are adopted by companies. According to Information and Communication Technology (ICT) surveys conducted by National Statistical Offices in 2024, the average AI adoption rate across OECD countries is 14%. Adoption rates vary by firm size. On average across OECD countries, 40% of large firms use AI, compared to 20% of medium-sized firms and just 12% of small firms (OECD, 2025[11]). For some countries, the latest available data predate the release of ChatGPT and other forms of generative AI. If more recent data were available for these countries, the average OECD AI adoption rate would likely be higher.

While European surveys benefit from standardised questions that facilitate cross-country comparisons, surveys from other regions often differ in design and definitions, posing challenges to comparability. New data on AI adoption in SMEs (small and medium-sized enterprises) has emerged from an OECD survey conducted between October and December 2024 examining the impact of generative AI on SMEs' labour and skill needs (OECD, 2025[12]). The results highlight significant cross-country differences in AI adoption by SMEs, ranging from 27% in Japan to 51% in Germany. Korea is on the lower end of the scale, with 31% of SMEs saying they've adopted AI (Figure 1.2).

So far, in OECD countries, AI seems to have had no significant negative impact on overall employment

High exposure to AI does not necessarily imply workers in these occupations will be displaced. Theoretically, there are various channels through which the introduction of AI in the workplace could impact labour demand. Firstly, AI can substitute workers by automating tasks previously performed by human labour (displacement effect). Secondly, as some tasks are automated and AI can complement workers helping them perform tasks more efficiently, productivity increases and costs are reduced. This leads to lower quality-adjusted prices, potentially increasing product/service demand and, consequently, the demand for workers essential in the production process (productivity effect). Lastly, AI can create new tasks and jobs, particularly in AI development and maintenance (reinstatement effect). Therefore, the overall effect of AI on labour demand is theoretically ambiguous and depends on which effects dominate (Acemoglu and Restrepo, 2019[13]). To understand the impact of AI on aggregate employment empirical research is needed.

So far, across OECD countries, there is little evidence of negative aggregate employment outcomes due to AI. Instead, there appears to be a slight positive relationship between AI exposure and employment growth, suggesting that AI may be creating more jobs than it is destroying. At the same time, specific AI technologies could have different, and in some cases negative, impacts. What most studies highlight, is that while more jobs may be impacted by AI, very few are at risk of disappearing entirely. Most occupations involve a combination of skills and abilities that can and cannot be automated. Even highly impacted occupations are unlikely to be fully replaced by automation. Instead, work may need to be organised differently, and workers in these roles may require retraining as technology takes over certain tasks (Lassébie and Quintini, 2022[5]).

Case studies carried out by the OECD in the finance and manufacturing sectors of 8 OECD countries[7] in 2022 showed that for 23% of the firms interviewed, AI technologies reduced the number of jobs in the most affected occupations. However, most firms managed these reductions by reallocating workers within the company or through attrition, keeping employees until they either left voluntarily or retired. In addition, firms often opted to slow hiring instead of implementing job cuts, using this approach as a safeguard against the

potential failure or underperformance of AI solutions (Milanez, 2023[14]). This is consistent with the finding by Acemoglu et al. (2022[15]) that firms more exposed to AI reduce their overall hiring. Only a handful of studies, exploiting variation in AI adoption across US commuting zones, have found a negative effect of AI exposure on employment overall (Huang, 2024[16]; Bonfiglioli et al., 2025[17]).

The majority (77%) of the firms participating in the aforementioned case studies reported no impact on the quantity of jobs for workers most affected by AI technologies. Half of these firms implemented AI technologies to boost production volumes or improve product or service quality, rather than to reduce labour costs. For the other half, the implementation of AI led to the reorganisation of jobs, with workers displaced from certain tasks reassigned to other existing or new tasks. In some cases, AI technologies automated tasks that constituted only a minor share of workers' jobs, thus not leading to displacement. In other cases, job reorganisation affected more substantial shares of workers' tasks. However, these jobs were not eliminated, and the automation of certain tasks allowed workers to focus on more complex tasks that could not yet be automated (Milanez, 2023[14]). Additionally, 83% of SMEs report that the use of generative AI has had no effect on the overall number of staff they need (OECD, 2025[12]). Similarly, several studies do not find a significant relationship between AI exposure and aggregate employment (Felten, Raj and Seamans, 2019[18]; Georgieff and Hyee, 2021[6]; Acemoglu et al., 2022[15]). However, it is possible that significant impacts on aggregate economic data only become detectable once the technology is widely adopted and the necessary complementary processes and assets are developed (Brynjolfsson, Rock and Syverson, 2017[19]; Acemoglu et al., 2022[15]; Lane, 2024[8]).

Studies by Albanesi et al. (2023[20]) and Lane (2024[8]) have found a small, positive and statistically significant effect of AI exposure on aggregate employment, although direct causality is difficult to prove. The positive association between AI exposure and employment could be due to a productivity effect, or because AI creates new jobs directly. Green and Lamby (2023[21]) find that employment growth for the AI workforce, defined as workers with the skills necessary to develop and maintain AI systems, is strong. On average employment growth was 63% for the AI workforce between 2017 and 2019–although this workforce is still relatively small, representing less than 0.3% of workers overall. Acemoglu et al. (2022[15]) also find a rapid take-off of AI vacancy postings starting in 2010 and accelerating around 2015-2016. Moreover, in 30% of the OECD case studies, interviewees noted that employment was increasing in occupations related to the development and maintenance of AI (Milanez, 2023[14]).

AI could help mitigate labour shortages

Labour shortages are becoming a critical concern across many OECD countries. Labour market tightness, measured as the number of vacancies per unemployed person, has eased in the last quarter of 2023 but continues to exceed pre-COVID-19 levels in many countries (OECD, 2024[22]). Population ageing is a significant factor contributing to this challenge. As the workforce shrinks and demand for services like healthcare grows, innovative solutions are needed to avoid significant skills and labour shortages.

AI could help address these challenges by automating tasks and by enhancing worker productivity, enabling a more efficient use of resources, and making organisations better equipped to manage with a reduced workforce. AI could also support healthcare professionals by, for example, serving as a documentation assistant reducing the time spent on administrative tasks, or by assisting radiologists in scanning medical images, freeing up time for doctors to spend on care (Anderson and Sutherland, 2024[23]).

Furthermore, AI could help extend working lives and increase the labour market participation of the elderly. Many physically demanding jobs can lead to muscular-skeletal problems, but AI could be used to protect workers from injury, enabling them to remain employed longer. For example, the company German Autowerks invested in AI to analyse videos of mechanics at work, identifying pressure points and potential problem areas on the body. This information was then used to select specific exoskeletons which make heavy tasks much easier to perform. The company opted not to automate these tasks, believing that

humans are more flexible and adaptable to changing job requirements. Instead, they focussed on using AI to assist workers, helping them work for longer (Machin, 2024[24]).

Despite the potential of AI to address challenges associated with labour shortages, it can only be part of a wider package of solutions to tackle these issues. Even if AI, particularly since the advent of Large Language Models, could be applied to a substantial share of tasks done by workers (Eloundou et al., 2023[9]), there are still tasks AI cannot do (or that society would not find acceptable for AI to do) and it cannot therefore fully replace workers (Lassébie and Quintini, 2022[5]). In addition, while several experimental studies show that AI could significantly enhance worker productivity in certain tasks (see section on Equalisation of performance within occupations below), the extent of this impact on aggregate productivity remains a topic of debate. This uncertainty is reflected in the ''productivity paradox'', which refers to the lag in productivity growth over the past decade despite advancements in AI and other technologies. One possible explanation is that the aggregate productivity gains from AI might be modest (Acemoglu, 2024[25]). Alternatively, delays in AI implementation and organisational restructuring could mean that substantial economic gains from AI may take years or even decades to materialise (Lane and Saint-Martin, 2021[26]).

In OECD countries, AI has increased the need for new skills, including specialised AI and analytical skills

The integration of AI into the workforce has expanded the demand for specialised AI skills needed for the development and maintenance of AI systems. However, these positions still only represent a small fraction of total employment (Green and Lamby, 2023[21]). Most workers will have to interact with AI applications which often feature user-friendly interfaces, requiring only basic digital skills. The demand for skills complementary to AI – such as cognitive, management, social, and digital skills – appears to be increasing overall, while that for routine skills might decrease. Nonetheless, research also suggests these increases might not be related to AI per se, and AI exposure might be associated with a fall in demand for some of those skills.

The demand for AI skills in the labour market is increasing. Using data on skill requirements in online vacancies, Alekseeva et al. (2021[27]) show that the demand for these skills quadrupled over the period 2010 to 2019. The skills most demanded in AI vacancies are machine learning, natural language processing, deep learning, image processing, programming languages like Python, and big data management (Alekseeva et al., 2021[27]; Manca, 2023[28]; Squicciarini and Nachtigall, 2021[29]). These skills will be needed not only to design algorithms, but also to explain their functioning to non-technical professionals, and to monitor outcomes to make sure that AI systems are operating as intended, detecting mistakes and potential biases, and addressing any unintended consequences (Wilson, Daugherty and Morini-Bianzino, 2017[30]). Job postings that require specialised AI skills also tend to ask for high-level cognitive skills such as creative problem solving, social skills and management skills (project and people management), suggesting that these skills are complementary to AI. Conversely, these jobs typically do not require routine skills, like general administrative and clerical skills. As a result, an increase in AI-related employment is likely to drive demand for high-level cognitive skills while decreasing demand for routine skills (Alekseeva et al., 2021[27]; Manca, 2023[28]).

Nonetheless, most workers who will interact with AI may not need AI-specific skills or a deep understanding of AI systems. A survey of AI start-ups found that only 10% required users of their AI products to have expert coding or data skills, while 59% required only general computer familiarity, and the remainder required no specialised skills at all (Bessen et al., 2023[31]).

In many cases, AI adoption has not yet significantly changed skill requirements within firms. In 2022, 57% and 48% of firms that had adopted AI in finance and manufacturing, respectively, reported no change in skill needs (Lane, Williams and Broecke, 2023[32]). Similarly, in case studies of firms having implemented AI in finance and manufacturing, 60% of firms said that AI adoption had not yet modified skill requirements

(Milanez, 2023[14]). This could be partly because AI adoption at the time of those studies was still relatively low and many firms were only experimenting with the technology, but also because interacting with AI applications often requires only basic digital skills, such as the ability to use a computer or smartphone, relying on existing skills.

That being said, 40% of the firms interviewed as part of the above-mentioned case studies reported a need for new skills, including specialised AI skills and analytical skills. As simple tasks become automated, the proportion of complex tasks performed by workers rises, necessitating specialised knowledge and advanced analytical skills, such as the ability to comprehend and apply new ideas (Milanez, 2023[14]). Managers using algorithmic management software report that the use of such tools mostly increases their need for the ability to use or interpret data, and for digital skills (Milanez, Lemmens and Ruggiu, 2025[33]). Employers also say that, while AI has increased the importance of specialised AI skills, it has increased the importance of human skills, such as creativity and communication, even more, as well as the need for highly educated workers more generally (Lane, Williams and Broecke, 2023[32]). Green (2024[34]) shows that occupations with high AI exposure predominantly demand management, business processes, social and digital skills, with the largest increase in demand for skills related to collaboration, originality, and basic office tools.

At the same time, there is tentative evidence of a relative decline in the demand for management, business process, cognitive, digital, emotional and communication skills in workplaces that are highly exposed to AI (Green, 2024[34]). These skills are the skills of white-collar support occupations: finance, human resources, legal, communications, administrative assistants and project managers. These effects are modest and should be viewed as relative changes amidst an overall increase in demand for most of these skills in the aggregate (Green, 2024[34]). In addition, however, managers using algorithmic management tools are more likely to report decreases in human interactions than increases. In the European countries surveyed,[8] managers were also more likely to believe that the use of such tools was decreasing managers' need for empathy rather than increasing it (Milanez, Lemmens and Ruggiu, 2025[33]).

These findings point to an additional concern, which is the potential deskilling of the workforce as a result of AI adoption. The case studies carried out by the OECD in the manufacturing and finances sectors of eight OECD countries documented some instances of deskilling, where the machine performed the skilled tasks, and the worker was only required to operate a very intuitive system, with no judgment involved (Milanez, 2023[14]).

Most OECD countries will need to ramp up training provision to address AI-induced skills demand

The changing skills needs resulting from the adoption of AI in the workplace call for new training opportunities. While initial education plays a crucial role in equipping workers with the skills to work with AI, upskilling and reskilling the existing workforce will be equally important to help individuals adapt and prepare for the transition (OECD, 2024[35]). Older adults and lower skilled workers in particular will need to acquire basic digital skills essential for interacting with AI technologies. Meanwhile, managers and business leaders require training to efficiently organise the integration of AI into their operations.

More than half of workers who use AI in the manufacturing and finance sectors said that their company had either provided or funded training so that they could work with AI. Yet, more training would help address existing barriers to AI adoption, considering that around 40% of employers in those sectors declared that the lack of relevant skills was a barrier to AI adoption (Lane, Williams and Broecke, 2023[32]). When the AI technology is simple to use, training can be brief and take the form of webinars, presentations, or workshops (Milanez, 2023[14]). In a small number of case studies, large firms operated more ambitious training programmes to help employees transition to other occupations. Some large companies try to grow AI talent in-house instead of seeking those employees on the external labour market. However, several

firms call for more government funding for AI education and training, recognising that these specialised AI skills should also be developed in initial education (Milanez, 2023[14]).

Initial education plays a crucial role in acquiring the skills necessary to develop and maintain AI systems, with two-thirds of the AI workforce holding a tertiary degree. The share of AI workers who report having participated in some sort of training in the last four weeks is similar to that of the entire population with a tertiary degree (16% and 18%, respectively). Most of the training that the AI workforce undertakes is non-technical in nature. Nonetheless, workers who have skills closely related to AI skills may acquire more explicit AI skills simply by being part of a research team or the AI development process within their firms (Green and Lamby, 2023[21]).

Lower-skilled and older workers are less likely to possess the basic digital skills required in a workplace transformed by the adoption of AI. Based on the Survey of Adult Skills, that tests adults in basic information processing skills, around one in four adults (aged 16-65) have no or only limited experience with computers or lack confidence in their ability to use them. Additionally, nearly half of all adults can only use familiar applications to solve problems involving few steps and explicit criteria, such as sorting emails into pre-existing folders. Among low-educated adults, 41% lack basic proficiency in using information and communications technology (ICT) to even take the survey's test, and those who can undertake the test perform poorly. The percentage of adults without basic ICT skills decreases to 15% for those with upper secondary education and 4% for those with tertiary education. Compared to younger adults (aged 25-34) older adults (aged 55-65) are significantly more likely to have no computer experience and lower scores. Among young adults, 8% have no computer experience and 43% perform well. In contrast, 34% of older adults have no computer experience, and only 10.3% perform well (OECD, 2019[36]).

Moreover, older and lower-skilled adults, as well as low-wage workers, are less likely to take part in adult learning in every single country participating in the Survey of Adult Skills. Considering that around half of all adults neither participate nor want to participate in adult learning, it will be crucial to find effective ways to address barriers and motivation to training participation (OECD, 2019[37]). For example, the provision of more flexible learning options (e.g. part-time study or online delivery) would allow learners to better balance training alongside work or other commitments (OECD, 2024[35]).

Managers also need training to effectively organise the integration of AI into their operations. They need to understand AI systems to assess where and how innovation can be utilised within the company, identify the benefits and risks of AI, and determine the best ways to integrate AI systems into existing processes. Managers would have to decide which tasks are better performed by AI systems and which by humans, recognising the strengths and weaknesses of each (OECD, 2023[38]). A German insurance provider reported that managers planning AI projects are expected to have a minimum knowledge of how the technology works (Milanez, 2023[14]). In the OECD survey on algorithmic management in the workplace (2025[33]), 75% of managers report their firms offer training on how to use the software. Training for managers could enhance their proficiency with specific tools, deepen their understanding of the data used by these tools, and ensure their skills keep pace with the growing demand for analytical capabilities. Additionally, it could help them use software in a trustworthy manner (Milanez, Lemmens and Ruggiu, 2025[33]).

Encouragingly, several OECD countries have developed dedicated AI training strategies (OECD, 2024[35]). Many have introduced incentives to support employers in providing training for their employees. Fourteen governments have invested in publicly funded AI training programmes, with nine focussed on developing AI professionals and seven aimed at enhancing AI literacy for the general public. More broadly, publicly funded digital skills training, without an explicit focus on AI, is more common (OECD, 2024[35]).

The impact of AI on job quantity and skills: Evidence from Korea

The adoption and use of AI in the workplace in Korea is lower than in other countries

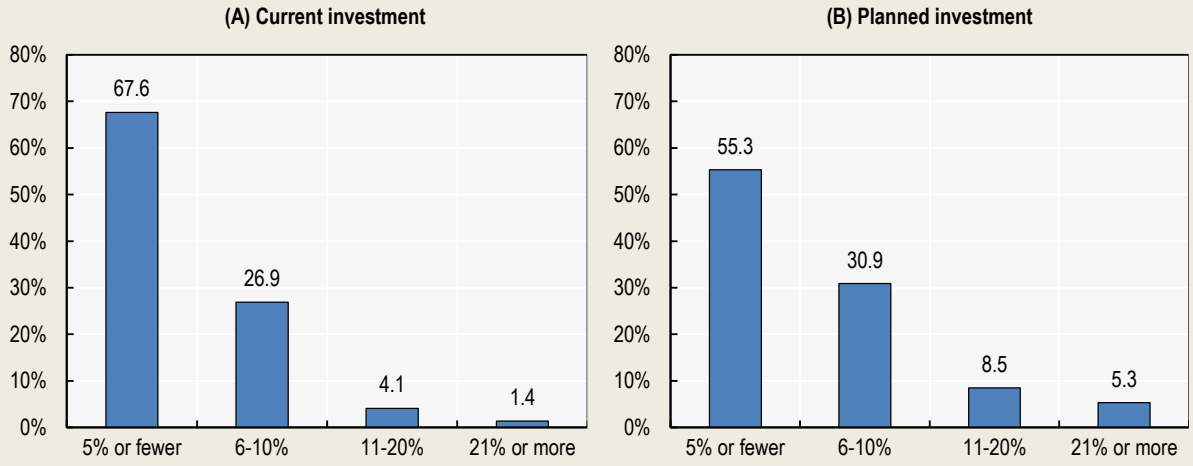
The adoption of AI in Korea appears low compared to other OECD countries (9.9% in 2024 from Han (2023[39]), 6.35% in 2023 from 2024 Survey of Business Activities (KOSIS, 2025[40]), 30.3% in 2023 from the 2024 Enterprise Informatization Statistics (NIA, 2025[41]) and see Figure 1.2) and firms appear to take a cautious stance towards AI, as shown by their investments in AI (Box 2.2).

Box 2.2. Firm investment in AI in Korea

The majority of firms that participated in the Survey on AI Utilisation and Labour Market Changes conducted by the Korea Labor Institute invest 5% or less of their sales revenue in AI development (Figure 2.2, Panel A). Among the companies that indicated they would increase AI investment in the future, a majority (55.3%) reported that their investment would be limited to 5% or less of their total sales revenue, suggesting a cautious stance on AI development expenditures in Korea (Figure 2.2, Panel B). This stance toward AI is due to concerns about the maturity of the technology and uncertain returns. Many firms prefer a gradual and incremental approach.

Figure 2.2. Currently, most Korean firms only invest a small share of sales revenue in AI, and even planned investment in AI by Korean firms is relatively low

Percentage of firms reporting investment of 5% or less (of sales revenue), 6-10%, 11-20% and 21% or more

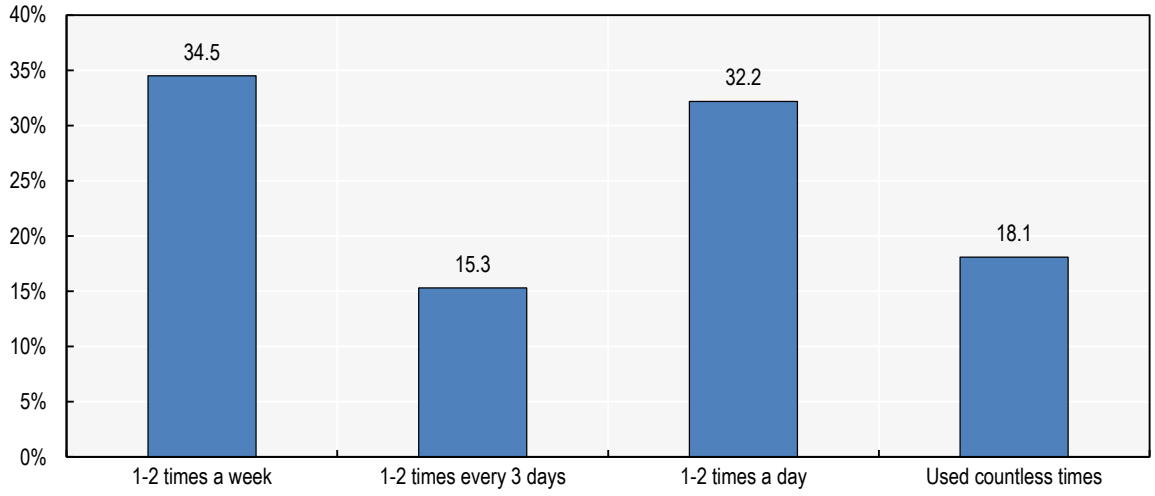


Note: The survey targeted firms that use AI, focussing on industries classified under the Korean Standard Industrial Classification (KSIC), specifically: Manufacturing, Information and communication, Professional scientific and technical service, Healthcare. Only firms that utilise AI and have 10 or more employees were included in the survey. HR managers and AI developers provided the survey responses. The survey was conducted over a two-month period, from 20 October 2024 to 31 December 2024. The survey covered a population of 9 625 establishments, including 3 292 in manufacturing, 3 118 in information and communication, 1 788 in professional and scientific services, and 790 in healthcare. The sample was drawn using a random sampling method, with a target sample size of 200. Ultimately, the study achieved valid responses from 145 firms, whose data were incorporated into the final analysis.
Source: Survey on AI Utilisation and Labour Market Changes conducted by the Korea Labor Institute (2024).

Even if AI is adopted by organisations in Korea, that does not mean that employees use it frequently. 34.5% of workers who use AI, use it once or twice a week, while 32.2% used it once or twice a day (Figure 2.3). According to the Survey on AI Utilisation and Labour Market Changes conducted by the Korea Labor Institute as well as qualitative evidence, employees within the same team or department differ significantly in how frequently and intensively they use AI. AI users typically begin experimenting with the technology out of curiosity. As they gain experience, they become more comfortable and gradually expand their use of AI across various tasks. Users emphasise that AI reduces the time and effort needed to visualise design concepts, allowing for greater efficiency. In contrast, non-users tend to avoid engaging with AI altogether. They cite two main reasons: first, they see no meaningful application of AI in their specific tasks; second, they believe their current manual methods are faster and more accurate. This variation in AI adoption, even among employees performing identical work, highlights the importance of understanding individual-level factors that influence technology acceptance in the workplace.Box 2.3 provides a concrete example of this in a publishing firm in Korea.

Figure 2.3. Nearly 1 in 3 Korean workers uses AI 1 to 2 times a day

Percentage of employees reporting using AI 1-2 times a week, 1-2 times every day, 1-2 times a day, countless times



Note: The survey targeted individual employees who use AI in firms operating within four industries classified under the Korean Standard Industrial Classification (KSIC): Manufacturing, Information and Communication, Professional, Scientific and Technical Services, and Healthcare. Employees using AI provided the survey responses. The survey was conducted over a two-month period, from 20 October 2024 to 31 December 2024. The sample was drawn using a random sampling method, with a target sample size of 600. Ultimately, the study achieved valid responses from 426 employees, whose data were incorporated into the final analysis.
Source: Survey on AI Utilisation and Labour Market Changes conducted by the Korea Labor Institute (2024).

Box 2.3. Understanding individual differences in AI adoption within the workplace: Evidence from the use of image-generation AI in a book cover design team

A Korean publishing firm employing around 100 people promotes the adoption of AI in the workplace but does not require employees to use it. AI is applied across multiple departments. A notable example is a team responsible for designing book covers, where designers use image-generation AI tools. Even within this team, the level of AI use varies. The team is composed of five designers; two actively use AI, whereas the other three do not. Those who use AI often begin out of curiosity. As they gain experience, they become more comfortable with the tools and gradually expand their use across different tasks. Designers who do not use AI rarely attempt to engage with the technology. AI users emphasise the reduced time and effort required to visualise design concepts. They report that AI enables them to generate images more quickly and efficiently. In contrast, non-users argue that their manual design methods offer superior quality and greater control.

While total employment continues to grow in Korea, some forms of more traditional AI appear associated with less growth in full-time, permanent employment

So far, in Korea, most research either finds no or a small negative impact of AI on employment overall, and the impact depends on both the type of technology and the industry. Chang et al. (2024[42]) concludes that AI-adopting firms experience productivity gains without reducing employment while Han (2023[39]) finds employment increases in high-skilled jobs and losses in low-skilled jobs. New analysis carried out for this report shows that more "traditional" AI appears to be associated with lower growth in full-time, permanent jobs, concentrated in the manufacturing sector, while there is no such association with generative AI (Box 2.4). In particular, a 10-percentile point increase in exposure to "traditional" AI (Webb, 2020[43]) appears to be associated with 5.7% lower growth in full-time, permanent employment. This needs to be interpreted in a context of 2.4% employment growth in full-time, permanent jobs overall during the same period, as well as 5.8% growth in total employment (including non-standard forms of work).

Box 2.4. The impact of AI on full-time, permanent employment growth in Korea: New evidence from employment insurance data

This box presents new analysis of the impact of AI on employment growth at the occupational level in Korea, spanning the period from 2018 to 2023. The analysis draws on three primary data sources: employment insurance data, exposure indices from the studies of Webb (2020[43]) and Felten et al. (2023[10]), and the routinisation index extracted from the 2020 Korea Dictionary of Occupations, published by the Korea Employment Information Service (2020[44]).

Employment insurance data contain detailed individual-level information, including worker demographics (e.g. age, gender, career history), occupation, and wages, as well as information regarding the region, industry, and size of the establishments where individuals are employed. Notably, the employment insurance data include annual information on individual labour market transitions and the diverse characteristics of workplaces. However, as this dataset is specifically used for the administration of employment insurance, it only covers individuals and workplaces enrolled in the scheme. In Korea, employment insurance typically applies only to permanent employees, resulting in a potential bias, as the data predominantly reflects regular, full-time workers (Kwon, 2022[45]). According to the Economically Active Population Survey, approximately 25% of employed individuals in Korea were temporary workers as of 2023.

Two distinct AI exposure indices were employed: one developed by Webb (2020[43]) and the other by Felten et al. (2023[10]). Webb's (2020[43]) index measures AI exposure by extracting job-related information from AI patents, representing exposure to more "traditional" AI technologies. In contrast, Felten et al. (2023[10]) assess exposure based on the degree to which occupations are affected by AI language modelling capabilities, providing a measure of exposure to generative AI technologies.[1] To account for other automation technologies that influence labour demand and supply within occupations, it was necessary to control for their effects, distinct from those of AI. Accordingly, the analysis incorporates software exposure and robot exposure at the occupational level, as calculated by Webb (2020[43]).

While existing studies on AI and automation technologies typically focus on the US labour market, variations in occupational structures between countries such as Korea, the US, and EU and its high-income constituent members, can arise due to diverse factors like industrial structure. To control for these potential differences and to reflect the exposure to pre-AI automation technologies within Korea's occupational classification system, a routinisation index was used. This index, first introduced by Kim, Koh and Cho (2014[46]), categorises occupations according to three primary attributes – data, people, and "objects" (i.e. the various tangible assets employed during the execution of job duties)–based on the 2020 Korea Dictionary of Occupations.[2] Each occupation is assigned a score between 0 and 2 for each characteristic, with the highest score determining the final routinisation index. A higher value indicates lower exposure to routinisation, while a lower value suggests greater exposure.

For the analysis, raw values of the AI exposure indices, as well as the routinisation index, were converted into percentiles. This approach mitigates potential distortions caused by the clustering of values within the raw indices, facilitating a clearer understanding of the differences in occupational exposure. Consequently, the results focus on changes in the dependent variables in response to shifts in percentiles, rather than the raw values of the indices.

Table 2.1 presents the findings of the analysis, which explores the impact of the two AI exposure indices on the growth in full-time, permanent employment in Korea's labour market over the 2018-2023 period. The year 2018 was chosen as the baseline, as AI adoption in Korea was minimal prior to this period.

Model (1) controls for various occupational and industry-level characteristics, such as gender ratio, average monthly wages, and age distribution. Model (2) incorporates the software exposure index, while Model (3) includes the robot exposure index. Model (4) further controls for the routinisation index, and Model (5) accounts for trends in the dependent variable prior to the analysis period (2015-2018). Unless otherwise noted, the results discussed herein refer to the outcomes from Model (5).

Table 2.1. The impact of AI on full-time, permanent employment in Korea: Regression results

	(1)	(2)	(3)	(4)	(5)
Panel A: Impact of Webb's AI Occupational Exposure on Log Employment					
AIOE Percentile	0.0026	-0.0041	-0.0052*	-0.0060*	-0.0057*
	(0.0019)	(0.0026)	(0.0029)	(0.0031)	(0.0030)
Panel B: Impact of Felten's AI Occupational Exposure on Log Employment					
AIOE Percentile	-0.0003	0.0033	0.0052	0.0054	0.0046
	(0.0020)	(0.0022)	(0.0038)	(0.0039)	(0.0038)
Obs.	4 633	4 633	4 633	4 633	4 633
Control Variables	v	v	v	v	v
Software Index		v	v	v	v
Robot Index			v	v	v
Routinisation Index				v	v
Pre-Trend(EMP)					v

Note: AIOE stands for AI Occupational Exposure Standard errors are shown in parentheses, and statistical significance is indicated as follows: *** 1%, ** 5%, * 10%.
Source: Employment insurance data and information provided by Webb (2020[43]), "The Impact of Artificial Intelligence on the Labor Market", https://www.michaelwebb.co/webb_ai.pdf; and Felten et al. (2023[10]), "How will Language Modelers like ChatGPT Affect Occupations and Industries?", https://doi.org/10.48550/arXiv.2303.01157 compiled by the authors.

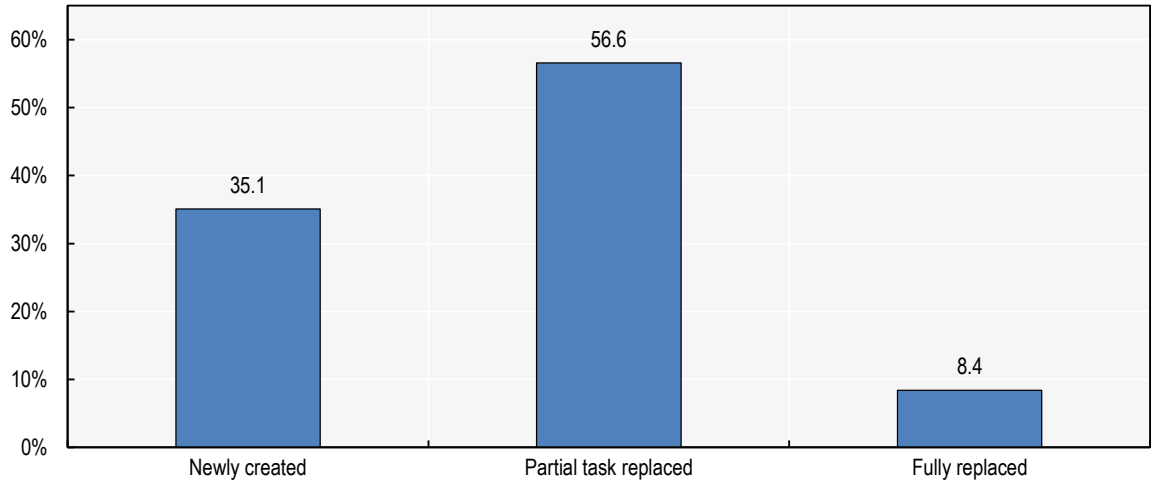
The results show that a 10 percentile point increase in exposure to traditional AI is associated with a 5.7% decline in full-time, permanent employment growth, whereas no statistically significant relationship exists for generative AI. Given that there has been a 2.4% increase in permanent employment over this period (2018 to 2023), these findings suggest that there has been employment growth at median levels of exposure to traditional AI, but that this positive effect reduces as exposure rises and that the displacement begins to outweigh the productivity gains at higher levels of exposure to traditional AI.

1. Although Felten et al. (2018[47]) also created an index for traditional AI through expert surveys, analyses using this index did not yield results significantly different from those obtained from Webb's exposure index. Therefore, for the purpose of this study, only the Webb and Felten indices are employed to distinguish the impacts of traditional and generative AI technologies on the labour market.
2. The 2020 Korea Dictionary of Occupations breaks down each occupation into three characteristics: the use of data, interaction between people, and the use of things. In other words, "objects" collectively refers to the various types of tangible assets employed during the execution of job duties.

At the same time, a recent survey showed that 95.5% of firms in Korea reported no workforce changes at the department- or team-level following the adoption of AI. Case studies carried out in Korea suggest this may be because AI adoption still remains relatively low (see Box 2.5). Among the firms that reported changes in tasks as a result of AI adoption, only 8.4% reported full automation of all tasks in a job (Figure 2.4). In addition, 35.1% of firms indicated that AI had been adopted to perform entirely new tasks that had not previously existed within the scope of traditional roles, suggesting that AI adoption may not necessarily be geared towards replacing workers.

Figure 2.4. Full automation of tasks by AI is rare in Korea

Percentage of firms reporting that AI creates entirely new tasks, partially replaces tasks, or fully replaces tasks in a job



Note: The survey targeted firms that use AI, focussing on industries classified under the Korean Standard Industrial Classification (KSIC), specifically: Manufacturing, Information and communication, Professional scientific and technical service, Healthcare. Only firms that utilise AI and have 10 or more employees were included in the survey. HR managers and AI developers provided the survey responses. The survey was conducted over a two-month period, from 20 October 2024 to 31 December 2024. The survey covered a population of 9 625 establishments, including 3 292 in manufacturing, 3 118 in information and communication, 1 788 in professional and scientific services, and 790 in healthcare. The sample was drawn using a random sampling method, with a target sample size of 200. Ultimately, the study achieved valid responses from 145 firms, whose data were incorporated into the final analysis.
Source: Survey on AI Utilisation and Labour Market Changes conducted by the Korea Labor Institute (2024).

Box 2.5. Current and future workforce changes from AI: Evidence from Korean case studies

KLI carried out interviews with HR and technology managers from firms using AI within the industries covered by the Survey on AI Utilisation and Labour Market Changes, i.e.: manufacturing (2 interviewees), information and communications (5), healthcare (3), and professional, scientific, and technical services (5). The interviews were conducted over approximately one month, from 24 February 2025 to 26 March 2025, either in person or online, depending on the interviewees' preferences. The interviews paint a nuanced picture of AI's impact on automation. While job losses may happen in the future, automation is currently limited partly because of low adoption but also because AI tends to automate only parts of, and not the entire job.

Case study 1: Intellectual Property Dispute Resolution

One company in Korea has developed an internal AI tool for foreign language translation and utilises an internal version of ChatGPT. The AI tool assists with translating foreign language documents (with 90% accuracy), searching case law, and drafting legal documents. The implementation of AI has not led to any changes in the team's composition. Employees perceive that AI can perform only about 2 out of 10 tasks in their overall workload. However, as technology advances, they anticipate that fewer team members will be needed for the same tasks in five to six years.

Case study 2: Radiology Technologist

In the field of pathology, AI adoption is more advanced than in other areas due to the vast amount of accumulated data, allowing for extensive AI training. As a result, AI is more actively utilised in pathology than in any other hospital department. However, one major limitation remains: since organ placement and size vary across patients, achieving consistently accurate results is still challenging. With further technological advancements, AI is expected to not only assist in imaging procedures but also take over diagnostic interpretations. Consequently, the demand for radiologic technologists may decline, as fewer professionals will be required to perform these tasks.

Case study 3: Manufacturing

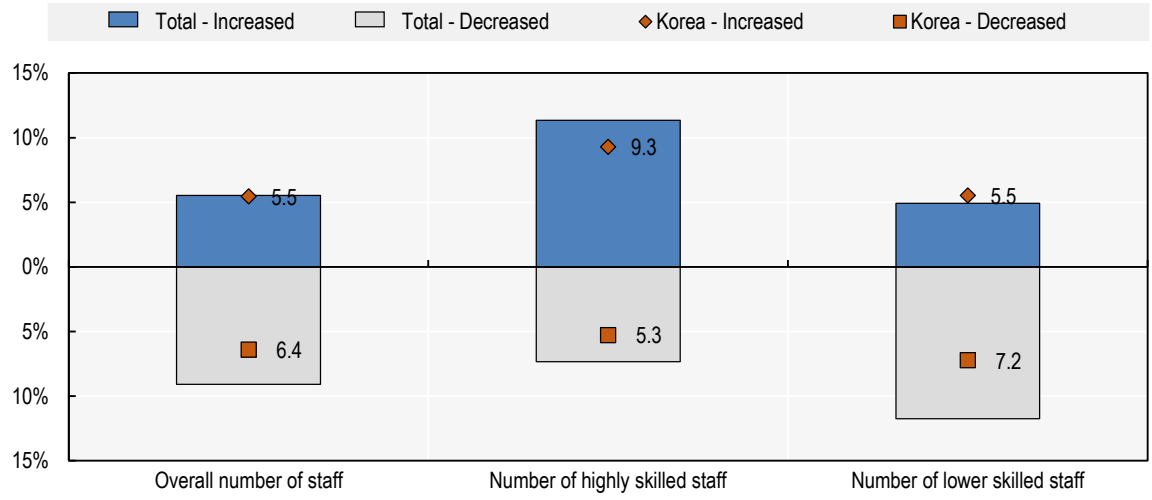
Most of the AI models adopted in a manufacturing firm in Korea are used as references for the corresponding production workers. Workers can shut down and inspect the equipment by an alert of an AI to a potential equipment failure. Previously, workers would intuitively detect such failures based on noise, temperature, vibration, or other factors. Now, the AI senses the failure by combining relevant data. If the AI is accurate and reliable, stricter criteria can be set for the failure threshold. If not, looser criteria are used. The strictness of these criteria varies across AI models, but many models in this firm are said to have somewhat loose criteria. This suggests that most AI models are used as references rather than as a judge which completely replaces human labour. It is also worth noting that even in cases where AI replaces human labour, only part of the job (one or two tasks) is replaced, not the entire role. In this sense, AI and human labour work together, and the adoption of AI models rarely affects the overall employment size of the firm.

The limited impact of AI on human labour stems primarily from the lower accuracy and reliability of the AI models in this manufacturing firm. Therefore, this does not necessarily mean that AI will not have a negative impact on employment in the future. As AI technology advances, and as the quality and quantity of data improve, AI will become more accurate and reliable. Given the complexity of work processes, the active involvement of production workers as domain knowledge experts is crucial to improving the quality of AI learning outcomes. Data quality and data-handling capabilities remain essential in AI development, even with more advanced AI techniques. However, the involvement of workers in advancing AI further in this firm does not seem to be sufficient. To enhance worker co-operation, management needs to ensure that AI adoption will not negatively affect employment. This is a contradiction, because AI utilisation is typically aimed at reducing labour costs.

In line with the above findings, a recent OECD survey (2025[12]) shows that most Korean SMEs report no effect of generative AI on the overall number of staff (88%), the number of highly skilled staff (85%), or the number of lower skilled staff (87%). Also in line with the findings reported above, among the SMEs that have experienced an impact, firms are more likely to report an increased need for highly skilled workers than a reduction, and more likely to report a reduced need for low-skilled staff than an increase (Figure 2.5) (OECD, 2025[12]).

Figure 2.5. Few Korean SMEs report an impact of generative AI on staffing needs

Percentage of SMEs reporting generative AI has impacted the company staffing needs



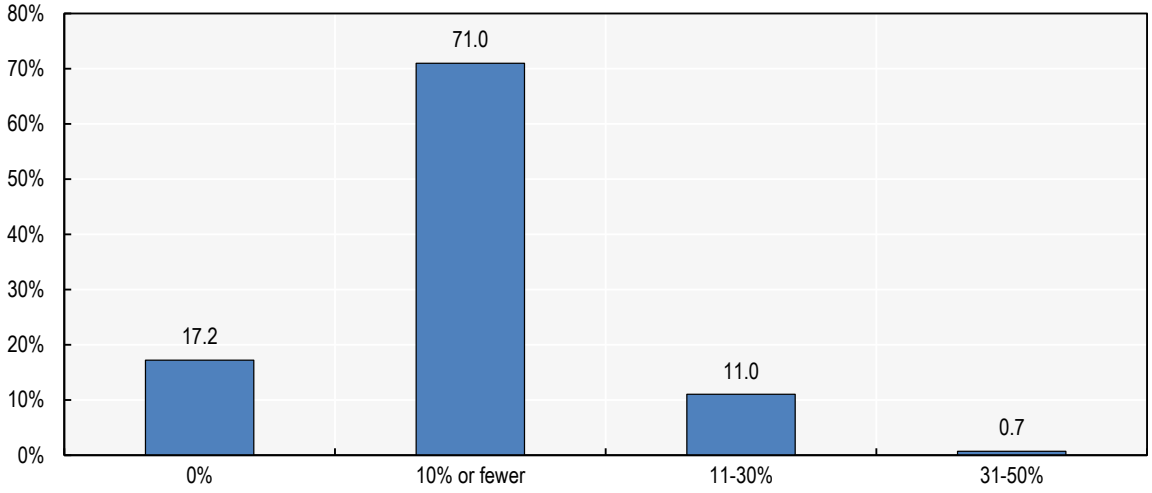
Note: The total reflects the combined results from all countries participating in the survey (Austria, Canada, Germany, Ireland, Japan, Korea, the United Kingdom).
Source: OECD (2025[12]), Microdata from the OECD SME Survey on Generative AI.

AI is already changing the tasks that workers do in Korea

AI changes the tasks that workers do. In a survey of Korean firms that have adopted AI, 56.5% reported that AI replaced specific tasks within existing jobs (rather than automating the entire job) (see Figure 2.5 above). Moreover, 71% of Korean firms reported that AI substituted approximately 10% of an employee's tasks, and 17.2% reported that AI had not replaced any of their tasks at all (Figure 2.6).

Figure 2.6. The vast majority of firms in Korea say that AI only replaces up to 10% of tasks

Percentage of firms reporting that AI replaces 0%, 10% or fewer, 11-30% and 31-50% of tasks



Note: The survey targeted firms that use AI, focussing on industries classified under the Korean Standard Industrial Classification (KSIC), specifically: Manufacturing, Information and communication, Professional scientific and technical service, Healthcare. Only firms that utilise AI and have 10 or more employees were included in the survey. HR managers and AI developers provided the survey responses. The survey was conducted over a two-month period, from 20 October 2024 to 31 December 2024. The survey covered a population of 9 625 establishments, including 3 292 in manufacturing, 3 118 in information and communication, 1 788 in professional and scientific services, and 790 in healthcare. The sample was drawn using a random sampling method, with a target sample size of 200. Ultimately, the study achieved valid responses from 145 firms, whose data were incorporated into the final analysis.
Source: Survey on AI Utilisation and Labour Market Changes conducted by the Korea Labor Institute (2024).

Unlike previous automating technologies, AI can also automate non-routine, cognitive tasks. Case studies of lawyers, physicians and webtoon creators in Korea show that while AI contributes to enhanced efficiency in tasks such as document drafting, diagnostics, and visual rendering, it does not yet fully substitute for human involvement in strategic decision making, interpersonal communication, or creative processes (Box 2.6).

Box 2.6.AI and the automation of tasks of lawyers, physicians and webtoon creators in Korea

Between 24 February 2025 and 26 March 2025, KLI carried out interviews with HR and technology managers from firms using AI. These interviews showed how, regardless of the occupation where AI was used, the technology only automated some tasks while leaving other tasks untouched.

Case study 1: Lawyers

AI is being used to assist with legal document drafting and case law analysis. However, tasks such as legal consultation, courtroom representation, and negotiation still require human expertise. These complex, judgment-based activities remain beyond AI's current capabilities.

Case study 2: Physicians

AI supports diagnostics, medical testing, and treatment planning in clinical settings. Yet, tasks involving direct patient interaction, complex diagnoses, and surgeries remain firmly in the domain of human professionals. The need for empathy, intuition, and clinical judgment limits AI's role.

Case study 3: Webtoon creators

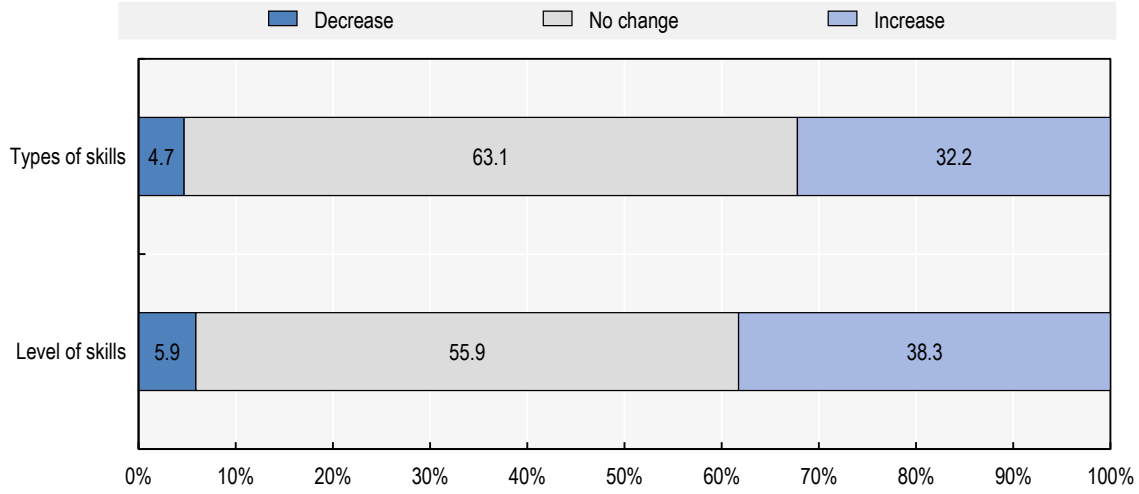
AI is used in tasks like storyboard generation, sketching, colouring, and adding special effects. Nonetheless, story development, character design, and audience interaction continue to depend on human creativity. These artistic and narrative aspects resist automation.

AI is increasing the demand for high-level and social skills in Korea

The changes in tasks brought about by AI will change the demand for skills too. A survey of firms in Korea reveals that 32.2% say the use of AI has resulted in an increase in the kinds of skills required to carry out current tasks, while 63.1% say there has been no change. Similarly, 38.3% of Korean firms said that AI had increased the level of skills required, compared to 55.9% of firms that said there was no change (Figure 2.7).

Figure 2.7. Firms in Korea report increases in the kinds and levels of skills required following AI adoption

Percentage of firms reporting that (i) the kinds of skills and (ii) the level of skills required following AI adoption increase, decrease, do not change

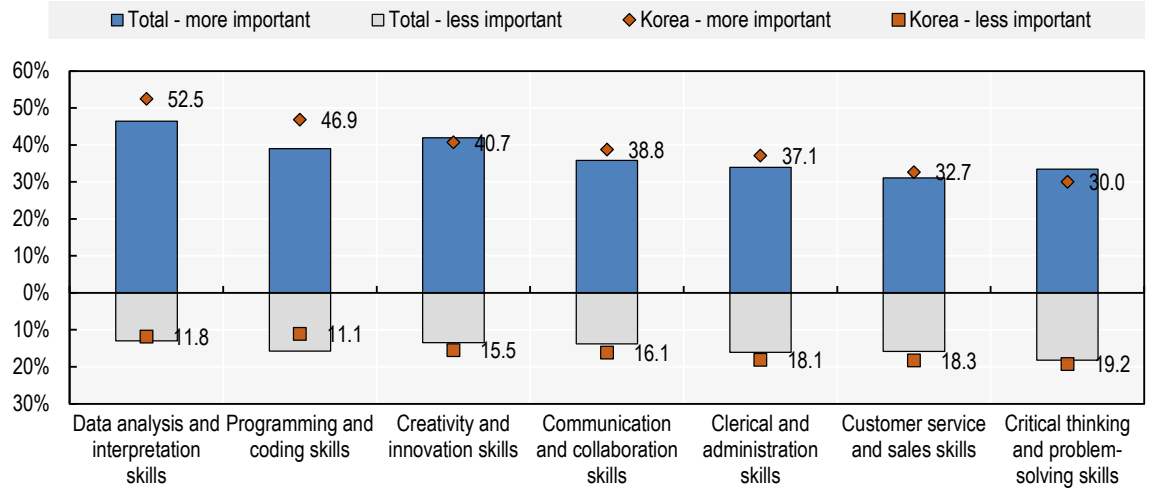


Note: The survey targeted firms that use AI, focussing on industries classified under the Korean Standard Industrial Classification (KSIC), specifically: Manufacturing, Information and communication, Professional scientific and technical service, Healthcare. Only firms that utilise AI and have 10 or more employees were included in the survey. HR managers and AI developers provided the survey responses. The survey was conducted over a two-month period, from 20 October 2024 to 31 December 2024. The survey covered a population of 9 625 establishments, including 3 292 in manufacturing, 3 118 in information and communication, 1 788 in professional and scientific services, and 790 in healthcare. The sample was drawn using a random sampling method, with a target sample size of 200. Ultimately, the study achieved valid responses from 145 firms, whose data were incorporated into the final analysis.
Source: Survey on AI Utilisation and Labour Market Changes Conducted by the Korea Labor Institute (2024).

These findings are consistent with what Korean SMEs say about skills needs changes due to generative AI. Overall, the demand for most skills is rising, with increases outweighing decreases. The importance of data analysis and interpretation skills increases the most, followed by programming and coding skills. The largest reported decline in importance is for critical thinking and problem-solving skills (Figure 2.8).

Figure 2.8. Generative AI increases the demand for skills in SMEs, including in Korea

Percentage of SMEs reporting whether generative AI has made the skill more important or less important

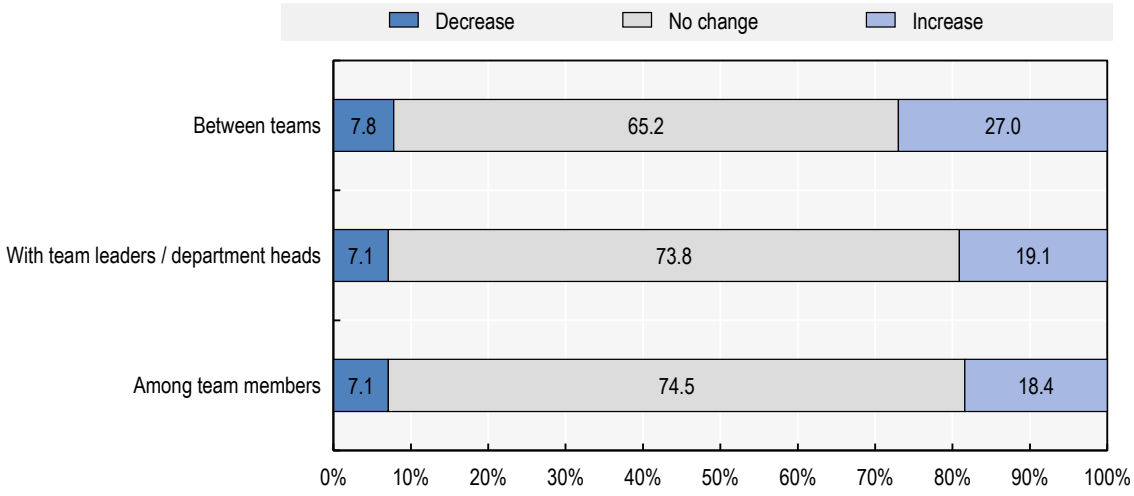


Note: The total reflects the combined results from all countries participating in the survey (Austria, Canada, Germany, Ireland, Japan, Korea, the United Kingdom).
Source: OECD (2025[12]), Microdata from the OECD SME Survey on Generative AI.

In line with these findings, firms regardless of size in Korea are more likely to say that the adoption of AI results in an increase in the frequency of communication: among team members (18.4% v. 7.1%), with managers (19.1% v. 7.1%), as well as between teams (27% v. 7.8%) (Figure 2.9). These shifts may indicate a growing need for competencies typically classified as social skills, particularly in environments where collaborative decision making is essential. At the same time, while AI demonstrates strong performance in tasks such as data analysis and generating decision options, it remains limited in areas requiring emotional understanding, creative problem-solving, negotiation, and persuasion. These social skills are difficult to replicate through AI. As such, there is a growing argument that the integration of AI in the workplace increases the importance of social skills, such as communication and teamwork.

Figure 2.9. AI increases the frequency of communication within firms in Korea

Percentage of firms reporting that the frequency of communication decreases, does not change, increases



Note: The survey targeted firms that use AI, focussing on industries classified under the Korean Standard Industrial Classification (KSIC), specifically: Manufacturing, Information and communication, Professional scientific and technical service, Healthcare. Only firms that utilise AI and have 10 or more employees were included in the survey. HR managers and AI developers provided the survey responses. The survey was conducted over a two-month period, from 20 October 2024 to 31 December 2024. The survey covered a population of 9 625 establishments, including 3 292 in manufacturing, 3 118 in information and communication, 1 788 in professional and scientific services, and 790 in healthcare. The sample was drawn using a random sampling method, with a target sample size of 200. Ultimately, the study achieved valid responses from 145 firms, whose data were incorporated into the final analysis.
Source: Survey on AI Utilisation and Labour Market Changes Conducted by the Korea Labor Institute (2024).

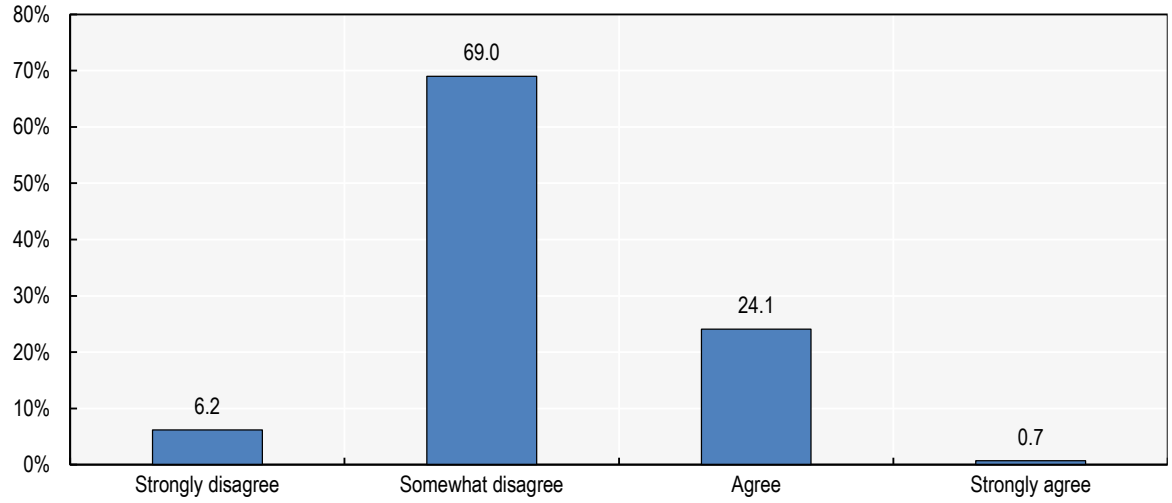
By itself, AI will not solve labour shortages in Korea, but it can help mitigate them

Both the evidence on automation and changes in skills needs raise the question of whether AI can help firms compensate for worker shortage or lack of skills. Korea faces a rapidly ageing population. Although in 2022 only 17.5% of its population was 65 or older, this figure was 11.5% just a decade earlier and is steadily rising. This trend is driven by Korea's fertility rate of 0.7 live births per woman in 2023, the lowest in the world (OECD, 2024[48]). Korea considers robots crucial for addressing the challenge of population ageing. The government has advocated for the establishment of a "K-robot economy", encouraging the deployment of robots across various sectors including manufacturing, defence, aerospace, and services (Matsuura, 2024[49]). Many of these robots are likely to be integrated with AI systems to perform their tasks. SMEs in Korea experience significant labour shortages and generative AI might help in addressing these issues (OECD, 2025[12]).

In a survey of firms, 24.1% reported that AI played a role in mitigating labour shortages (Figure 2.10). These figures suggest that while AI by itself will not solve labour shortages, it can at least help mitigate the challenges. This finding is confirmed by a recent OECD survey of SMEs. 37% of Korean SMEs report experiencing a worker shortage in the last two years, and 27% of SMEs reporting shortages say that generative AI helps compensate for these shortages (Figure 2.11). Similarly, 24% of Korean SMEs report a lack of skills and experience among staff, and 47% of these SMEs say that generative AI helps to address this challenge.

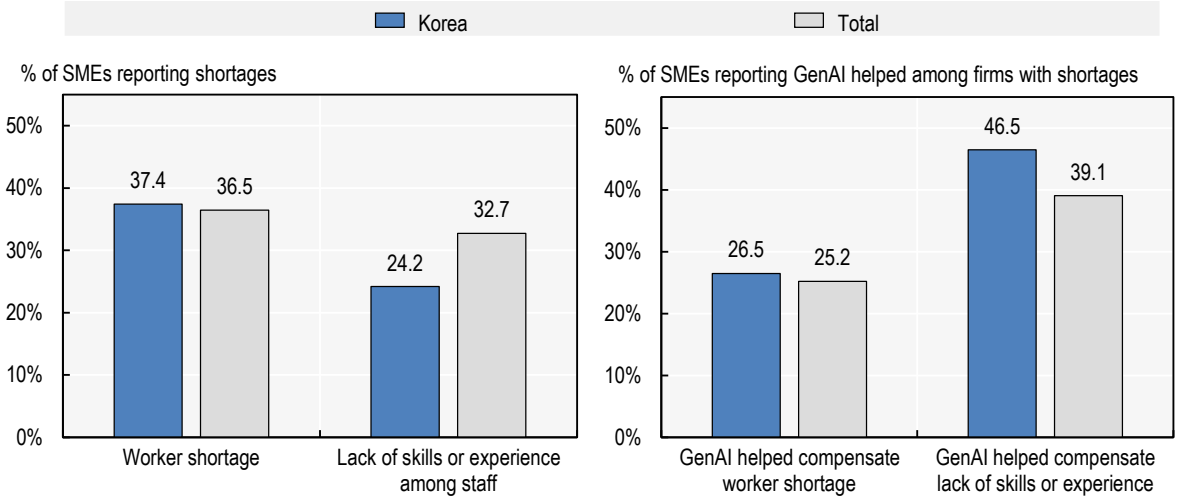
Figure 2.10. Nearly one in four firms in Korea say AI has helped them address labour shortages

Percentage of firms agreeing that AI solves workforce shortages



Note: The survey targeted firms that use AI, focussing on industries classified under the Korean Standard Industrial Classification (KSIC), specifically: Manufacturing, Information and communication, Professional scientific and technical service, Healthcare. Only firms that utilise AI and have 10 or more employees were included in the survey. HR managers and AI developers provided the survey responses. The survey was conducted over a two-month period, from 20 October 2024 to 31 December 2024. The survey covered a population of 9 625 establishments, including 3 292 in manufacturing, 3 118 in information and communication, 1 788 in professional and scientific services, and 790 in healthcare. The sample was drawn using a random sampling method, with a target sample size of 200. Ultimately, the study achieved valid responses from 145 firms, whose data were incorporated into the final analysis.
Source: Survey on AI Utilisation and Labour Market Changes Conducted by the Korea Labor Institute (2024).

Figure 2.11. Generative AI has helped some Korean SMEs compensate for worker shortage or lack of skills



Note: The total reflects the combined results from all countries participating in the survey (Austria, Canada, Germany, Ireland, Japan, Korea, the United Kingdom).
Source: OECD (2025[12]), Microdata from the OECD SME Survey on Generative AI.

A key challenge in Korea is the brain drain of AI talent

Korea has experienced emigration of high-skilled workers since the 1950s. The main motives for migration have been social environment and political security, as well as a desire for higher living standards and better job opportunities (Jung, 2018[50]). However, as evidenced in the Artificial Intelligence Index Report 2025 (Maslej et al., 2025[51]), AI has introduced a new dimension to the brain drain. With long working hours and low wages compared to the OECD average, Korean AI experts have emigrated to the United States and high-income countries in Europe to seek better salaries and working conditions. Reduced costs of international mobility resulting from globalisation and advances in transport have exacerbated the outflow of high-skilled workers. The analysis of Korean employment insurance statistics showed that, in Korea, generative AI only led to increases in wages of STEM and high-paying occupations, while in the United States it led to increases in both wages and employment (Bonfiglioli et al., 2025[17]). This discrepancy likely reflects differences in the supply of AI experts: whereas the United States appears to have an adequate supply of AI professionals that meets increased demand, Korea has seen rising demand without a corresponding increase in labour supply, resulting primarily in wage increases for these workers.

In an effort to address this shortfall in skilled AI professionals, the Korean Government has implemented a range of AI-related educational initiatives and vocational training programmes. These programmes have been to some extent successful in supplying the market with workers possessing low to intermediate skill levels, but unsuccessful in providing high-skilled professionals, most of whom seek overseas job opportunities pursuing higher salaries and better working conditions. The primary concern is that this exodus undermines the nation's AI competitiveness and threatens productivity. A shortage of AI experts slows down technological progress and productivity gains remain limited. Low productivity growth negatively affects corporate performance and firms' ability to offer high salaries. This, in turn, exacerbates the shortage of skilled AI workers, creating a self-reinforcing cycle of brain drain and economic stagnation.

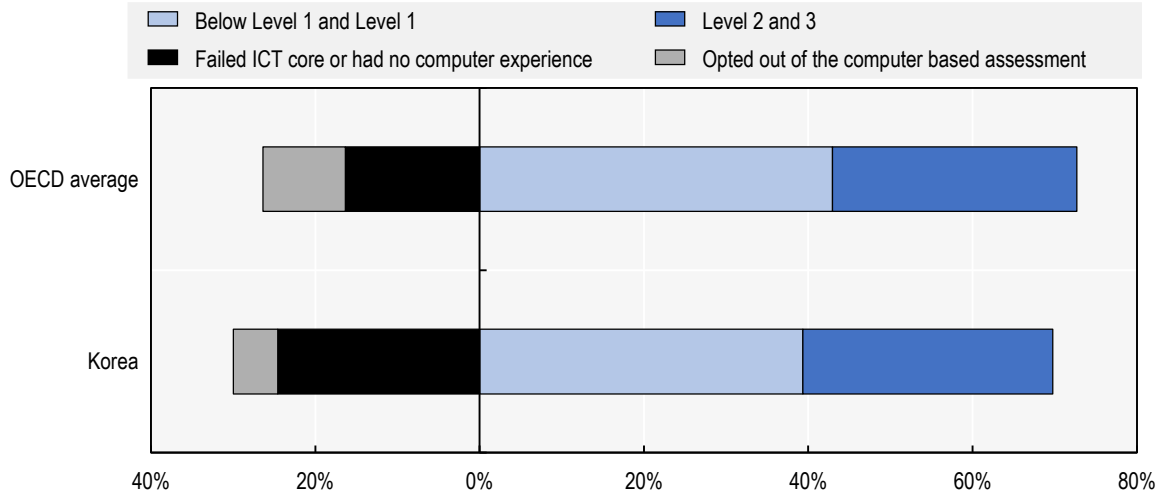
While the most effective way to retain AI talent would be to offer higher wages, firms in Korea have been reluctant to do so, relying on alternatives instead, such as non-pecuniary benefits. The Korean Government attempts to shore firms up by providing training for workers and education programmes for students. However, these efforts have not so far been successful in increasing the supply of high-skilled AI workers in the domestic labour market.

Participation in adult learning in Korea is the lowest across OECD countries

Participation in adult learning in Korea is the lowest among OECD countries: 13%, compared to an OECD average of 40%. In Korea, as in all other OECD countries, older and lower-skilled adults, as well as low-wage workers, are less likely to take part in adult learning (OECD, 2025[52]). At the same time, adult skills in Korea are low. 30% of adults (aged 25-64) have no or limited experience with computers or lack confidence in their ability to use them. Additionally, 40% of Korean adults can only use familiar applications to solve problems involving few steps and explicit criteria, such as sorting emails into pre-existing folders (Below Level 1 or Level 1) (Figure 2.12). Among low-educated adults in Korea, 76% lack basic proficiency in using information and communications technologies (ICT), and those undertaking the proficiency test perform poorly. The percentage of adults without basic ICT skills decreases to 7% for those with tertiary education (Figure 2.13, panel A). Compared to younger adults (aged 25-34) older adults (aged 55-65) are significantly more likely to have no computer experience and lower scores. Among young adults, 7% have no computer experience and 49% perform well. In contrast, 64% of older adults have no computer experience, and only 4% perform well (Figure 2.13, panel B) (OECD, 2019[36]).

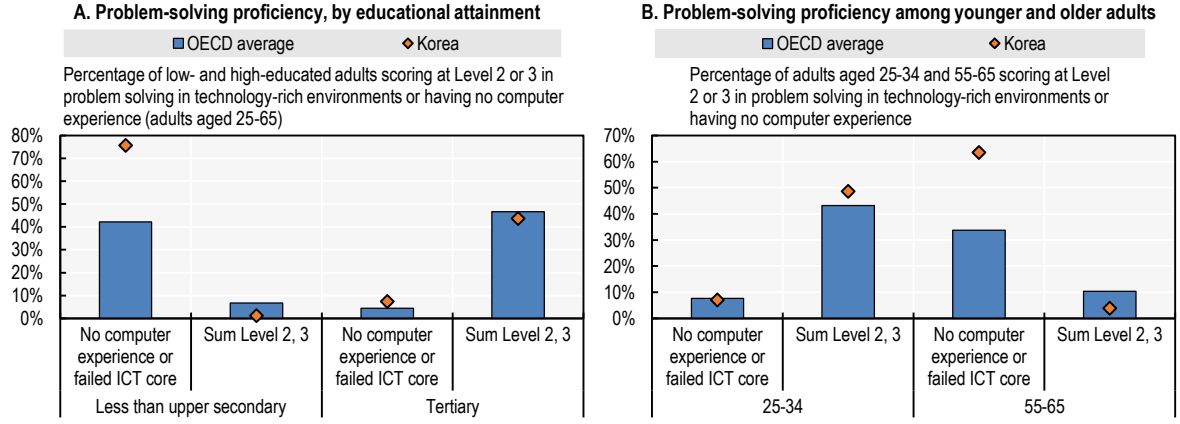
Figure 2.12. Proficiency in problem solving in technology-rich environments among adults

Percentage of 16-65 year-olds scoring at each proficiency level



Note: The scale of problem solving in technology-rich environments is divided into four levels of proficiency (Levels 1 to 3 plus below Level 1).
Source: Survey of Adult Skills (PIAAC) (2012, 2015, 2018), (OECD, 2019[36]).

Figure 2.13. Proficiency in problem solving in technology-rich environments among adults, by educational attainment and age

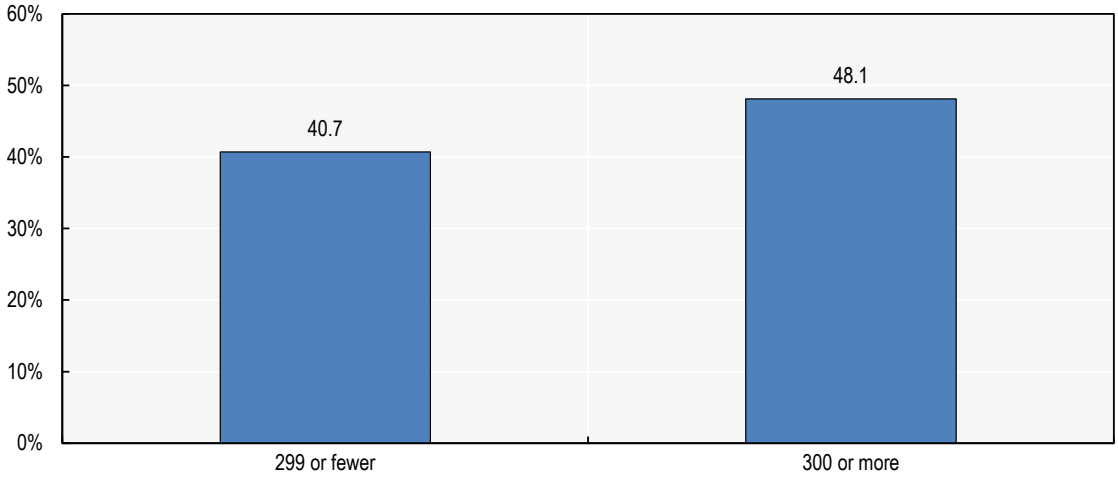


Note: The scale of problem solving in technology-rich environments is divided into four levels of proficiency (Levels 1 to 3 plus below Level 1).
Source: Survey of Adult Skills (PIAAC) (2012, 2015, 2018), OECD (2019[36]), *Skills Matter: Additional Results from the Survey of Adult Skills*, https://doi.org/10.1787/1f029d8f-en.

While firms in Korea do provide training to employees for working with AI, only 42% of those that have adopted AI have done so, and the share is higher in large firms than it is in small ones (Figure 2.14). Firms in the Manufacturing sector are also more likely to provide training than those in the Information and communication sector (32.6%).

Figure 2.14. Less than half of firms in Korea say they have provided training for workers to work with AI

Percentage of firms reporting providing training programmes to employees



Note: The survey targeted firms that use AI, focussing on industries classified under the Korean Standard Industrial Classification (KSIC), specifically: Manufacturing, Information and communication, Professional scientific and technical service, Healthcare. Only firms that utilise AI and have 10 or more employees were included in the survey. HR managers and AI developers provided the survey responses. The survey was conducted over a two-month period, from 20 October 2024 to 31 December 2024. The survey covered a population of 9 625 establishments, including 3 292 in manufacturing, 3 118 in information and communication, 1 788 in professional and scientific services, and 790 in healthcare. The sample was drawn using a random sampling method, with a target sample size of 200. Ultimately, the study achieved valid responses from 145 firms, whose data were incorporated into the final analysis.
Source: Survey on AI Utilisation and Labour Market Changes conducted by the Korea Labor Institute (2024).

The impact of AI on job quality: Evidence from OECD countries

The quality of jobs can be assessed along a number of dimensions, including: the level and distribution of earnings; employment security; and the quality of the work environment, which includes aspects such as work intensity, performing physically demanding tasks, and worker autonomy (Cazes, Hijzen and Saint-Martin, 2015[53]). The introduction of AI in the workplace will affect many of these outcomes.

In OECD countries, the wage benefits of AI have been concentrated among high-income and highly skilled workers

At an aggregate level, there is no evidence to date in OECD countries of statistically significant relationship between AI exposure and wage growth. However, the effects vary across occupations and income groups, with workers employed in occupations with either high software prevalence or high incomes appearing to benefit from AI exposure in terms of higher wages.

The impact of AI on wages is theoretically ambiguous. Automation could reduce the need for workers in certain tasks, lowering demand for those occupations and putting downward pressure on wages. Conversely, increases in productivity, leading to cost reductions and lower prices, could boost demand for goods and services, increase labour demand and result in higher wages. Additionally, workers with specialised skills in AI development and maintenance would be in higher demand, which could lead to higher wages for this subset of workers.

At an aggregate level, empirical evidence shows little evidence of a relationship between wage growth and AI exposure (Acemoglu et al., 2022[15]; Albanesi et al., 2023[20]). Similarly, in case studies carried out by the OECD in the finance and manufacturing sectors of 8 OECD countries, 84% of interviewees reported that the wages of workers most affected by AI remained unchanged and 15% reported increases (Milanez, 2023[14]). One possible explanation for this lack of relationship is that AI advances may not lead to substantial increases in productivity. Acemoglu (2024[25]) predicts that total factor productivity (TFP) gains over the next decade will be modest, with an estimated annual increase of no more than 0.06%. However, such estimates are highly uncertain and depend on the underlying assumptions. A recent OECD study (Filippucci, Gal and Schief, 2024[54]) presents a more optimistic outlook, estimating aggregate gains for annual TFP growth between 0.25 and 0.6 p.p. Acemoglu (2024[25]) also anticipates a widening gap between capital and labour income, suggesting that the benefits of any productivity increases are likely to accrue more to capital owners than to workers. This implies that while AI may enhance productivity, the economic gains may not translate into significant wage increases for the labour force. These findings highlight the importance of social dialogue and collective bargaining in achieving a fair share of any productivity gains that might accrue (see section on social dialogue in Chapter 3).

Some studies find a positive relationship between AI and wage growth when focussing on specific groups of workers. Felten, Raj and Seamans (2019[18]) find that AI exposure correlates positively with wage growth, and that this result is largely driven by occupations requiring a high level of familiarity with software. The same study finds that the relationship between AI and wage growth is positive and statistically significant for high-income occupations but not for low- or middle-income occupations. Fossen and Sorgner (2022[55]) find a positive relationship between AI exposure and wage growth, but which is statistically significant only for individuals with at least upper secondary education. They argue that education enhances the ability to learn new information allowing highly educated workers to adapt better to new technologies. These workers are also more likely to possess skills that cannot yet easily be replaced by digital technologies, such as creative and social intelligence, reasoning, and critical thinking skills.

With regards to the AI workforce, Alekseeva et al. (2021[27]) document a dramatic increase in the demand for AI skills over the period 2010-2019 in the US economy across most industries and occupations (albeit from a very low baseline). This is associated with a wage premium of 11% for job postings that require AI skills within the same firm and of 5% within the same job title. However, according to Green and Lamby (2023[21]), wages grew cumulatively by 7% for the AI workforce compared to 9% overall over the period 2017 to 2019, suggesting that supply of AI workers may have been keeping up with the demand for them.

Evidence for OECD countries suggests that while AI can enhance job satisfaction and safety, it may also intensify work and increase stress

The automation of tedious and repetitive tasks by AI could improve job enjoyment and allow workers to focus on more complex and interesting tasks. AI could also improve physical safety by automating dangerous tasks and improving monitoring systems and safety procedure controls. However, there are concerns around increased work intensity and stress related to AI use in the workplace. Ultimately, the effect of AI on the work environment depends on how thoughtfully and strategically it is integrated into workplace practices. Firms that use AI to support and empower their employees are more likely to see positive outcomes than those that deploy AI in ways that increase pressure and reduce autonomy.

Workers who use AI are more than four times as likely to report that AI has improved working conditions than worsened them, across all indicators considered such as job satisfaction, physical health, mental health, and fairness in management. Most AI users reported that AI had assisted them with decision making, which workers appeared to appreciate (Lane, Williams and Broecke, 2023[32]). Similarly, managers using algorithmic management tools – technologies, including AI, to fully or partially automate tasks traditionally carried out by human managers – report improvements in the quality of their decision making and in their own job satisfaction. Beyond benefiting firms, improved decision making by managers may

also benefit workers through greater consistency and objectivity of decisions (Milanez, Lemmens and Ruggiu, 2025[33]).

Similar findings about a positive impact of AI on working conditions emerged from more qualitative research, with case study interviewees often reporting fewer tedious and repetitive tasks as a result of AI adoption, allowing workers to spend more time on stimulating and interesting tasks, thus increasing job enjoyment. For example, chatbots can deal with a high percentage of basic and repetitive customer service queries, freeing up agents to deal with more complex questions (Moore, 2019[56]). Workers' physical safety was improved following AI implementation as the automation of processes allowed dangerous machines to run within enclosures or behind barriers. Visual inspection tools used to ensure the quality of products reduced workers' eye fatigue. Mental health improvements were noted as well. For example, in one company, an AI system monitored the stock of materials along an assembly line and automatically ordered replenishments when needed, relieving workers from this responsibility, and reducing stress. Another example is a predictive maintenance AI technology used in a drug manufacturing company to identify early signs of degradation in seals, which was welcomed for removing the pressure of making these decisions. The implementation of an AI-based tool in manufacturing helped solve maintenance issues along a production line, aiding in the discovery of root causes and suggesting solutions, thus allowing maintenance workers to solve problems quickly and reducing stress (Milanez, 2023[14]).

However, some reports indicated that AI could lead to a deterioration in job quality. Case study evidence showed some instances of increased work intensity due to higher performance targets or complexity induced by AI. An AI developer acknowledged this issue and chose to retain 10% of easy tasks, which could have been automated, to provide workers with necessary mental breaks (Milanez, 2023[14]). Survey evidence shows that three-quarters of AI users said that AI had increased the pace at which they perform their tasks. While this could be related to increased worker productivity, it might also reflect increased work intensity. In finance 49% of workers and in manufacturing 39% reported that their company's AI systems collected data on them as individuals or on their performance at work. Of these employees, 62% in finance and 56% in manufacturing experienced increased pressure to perform due to this data collection (Lane, Williams and Broecke, 2023[32]).

Some of the impact of AI on working conditions may be linked to the increased use of algorithmic management in the workplace. These tools can, for instance, be used to allocate work schedules and activities, or monitor and evaluate workers. Despite the potential benefits discussed above, some concerns remain. Over a quarter (27%) of managers expressed concerns about inadequate protection of workers' physical and mental health (Milanez, Lemmens and Ruggiu, 2025[33]). When algorithms assign tasks and set deadlines, workers may feel pressured to accelerate their pace of work. This pressure can lead to stress and anxiety and, in the most extreme case, burnout or accidents in order to meet the deadlines set (Todolí-Signes, 2021[57]). Algorithmic management can also reduce workers' autonomy and sense of control over their work. For example, warehouse workers are sometimes equipped with wearable devices that dictate what to collect, where to find it, and how long they have to retrieve each item, but also guide their movements through vibrations to be more efficient. If it takes longer than suggested, the worker may receive a warning notice. Depriving workers of the ability to make even minor decisions, or how to move their own limbs, reduces autonomy and can remove an important sense of dignity and humanity from work (Moore, 2018[58]; Brione, 2020[59]).

Ultimately, AI technologies can lead to different outcomes depending on the organisational context in which they are implemented. In hierarchical organisations, AI adoption can create an "algorithmic cage" limiting worker autonomy and increasing resistance to its use. In contrast, organisations that allow room for professional judgment can foster an "algorithmic colleague", where AI is used as a supportive tool to enhance human decision making (Meijer, Lorenz and Wessels, 2021[60]).

The Impact of AI on job quality: Evidence from Korea

In Korea, the wage benefits of AI have been concentrated on the occupations most exposed to generative AI

While traditional AI has had no significant impact on the wages of full-time, permanent employees so far, new analysis of employment insurance data suggests that generative AI may be associated with higher wage growth in occupations with the highest exposure (Box 2.7). There are two potential explanations for this result. One is that generative AI, as observed by Moon et al. (2023[61]), increases productivity, leading to higher wages. The other is that while labour demand for generative AI skills has increased, the novelty of the technology has led to an inelastic labour supply. This could result in an increase in wages without a corresponding change in the equilibrium quantity of labour, meaning employment remains stable while wages rise. While only market-traded labour and wage data are observed, and excess labour demand or supply are not directly captured, it is highly probable that labour demand for generative AI in the labour market is increasing.

Box 2.7. The impact of AI on the wages of full-time, permanent employees in Korea: New evidence from employment insurance data

This box extends the analysis of Box 2.4 to look at the impact of AI on wage growth among full-time, permanent employees. The results in Table 2.2 show that there is no statistically significant relationship between traditional AI (Webb index) and wage growth, while there is a positive association between generative AI and wage growth (Felten index).

Table 2.2. The impact of AI on the wages of full-time, permanent employees in Korea: Regression results

	(1)	(2)	(3)	(4)	(5)
Panel A: Impact of Webb's AI Exposure on Log Wage					
AIOE Percentile	-0.0005	0.0006	0.0001	0.0002	0.0004
	(0.0005)	(0.0006)	(0.0005)	(0.0006)	(0.0006)
Panel B: Impact of Felton's AI Exposure on Log Wage					
AIOE Percentile	0.0022***	0.0020***	0.0027**	0.0028**	0.0025**
	(0.0005)	(0.0006)	(0.0010)	(0.0011)	(0.0011)
Obs.	4 633	4 633	4 633	4 633	4 633
Control Variables	v	v	v	v	v
Software Index		v	v	v	v
Robot Index			v	v	v
Routinisation Index				v	v
Pre-Trend(EMP)					v

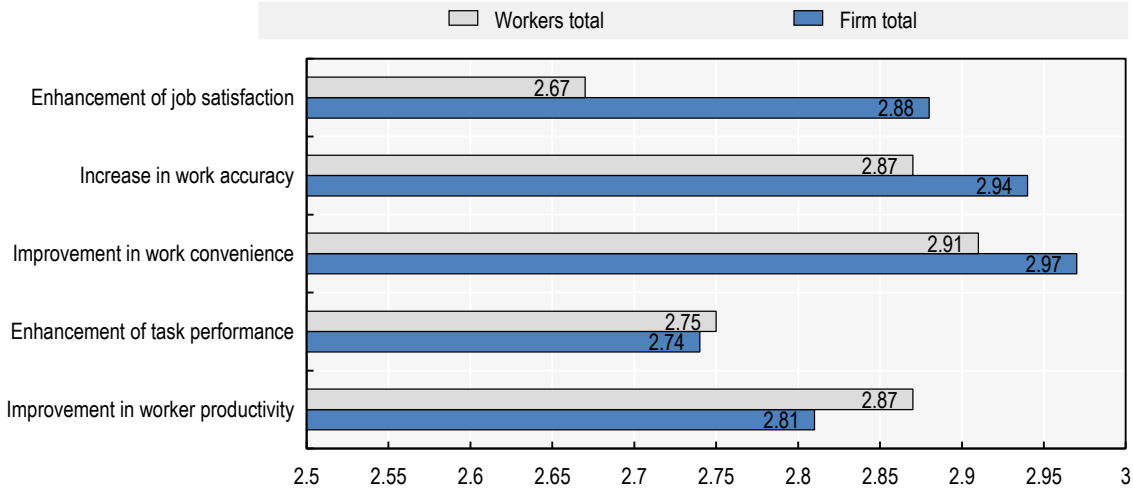
Note: Standard errors are shown in parentheses, and statistical significance is indicated as follows: *** 1%, ** 5%, * 10%.
Source: Employment insurance data and information provided by Webb (2020[43]), "The Impact of Artificial Intelligence on the Labor Market", https://www.michaelwebb.co/webb_ai.pdf; and Felten et al. (2023[10]), "How will Language Modelers like ChatGPT Affect Occupations and Industries?", https://doi.org/10.48550/arXiv.2303.01157 compiled by the authors.

The impact of AI on other aspects of job quality in Korea is mixed

A survey conducted by the Korea Labor Institute in 2024 shows that AI appears to improve job performance and productivity, as well as job satisfaction. Firms and workers are equally positive about the impact of AI on job performance and productivity (Figure 2.15). However, there is a gap between the perceptions of firms and employees when it comes to job satisfaction. Firms gave an average score of 2.88, whereas employees reported a lower score of 2.67. Compared to firms, workers perceive less improvement in job satisfaction resulting from the use of AI.

Figure 2.15. According to firms and employees, AI improves productivity, performance, and job satisfaction

Average score reported by firms and employees on how AI has influenced work outcomes



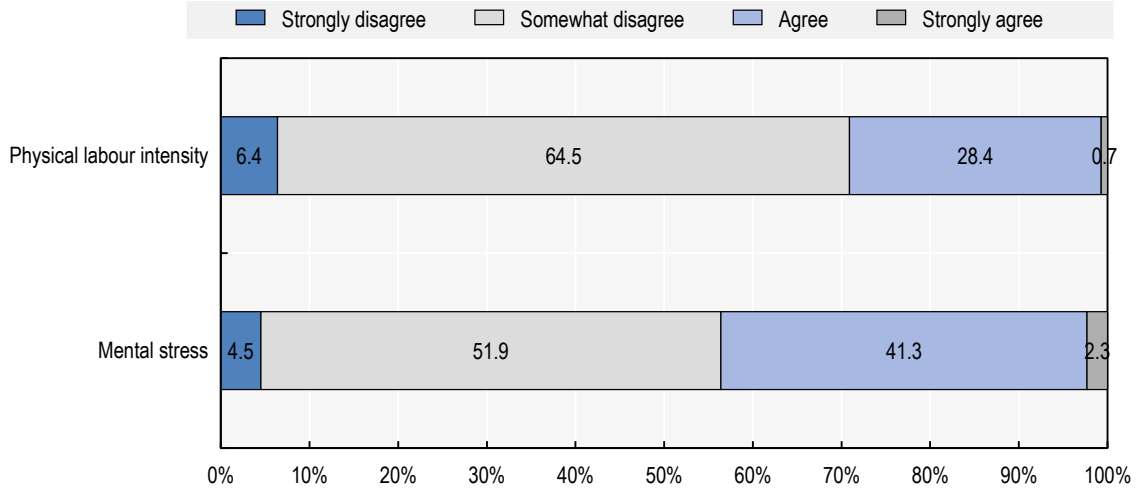
Note: Workers who use AI were asked to rate, on a 4-point scale, the extent to which they experienced increases in job satisfaction, work accuracy, work convenience, task performance, and productivity due to AI use. The response options were: 1 (Not at all), 2 (Not really), 3 (Somewhat), and 4 (Very much so). The survey targeted firms and employees that use AI, focussing on industries classified under the Korean Standard Industrial Classification (KSIC), specifically: Manufacturing, Information and communication, Professional scientific and technical service, Healthcare. Only firms that utilise AI and have 10 or more employees were included in the survey. HR managers, AI developers and individual employees provided the survey responses. The survey was conducted over a two-month period, from 20 October 2024 to 31 December 2024. The sample was drawn using a random sampling method, with a target sample size of 200 firms and 600 employees. Ultimately, the study achieved valid responses from 145 firms and 426 employees, whose data were incorporated into the final analysis.
Source: Survey on AI Utilisation and Labour Market Changes conducted by the Korea Labor Institute (2024).

In the same survey, when asked whether AI helps reduce their physical labour intensity, 71% of employees disagreed, while only 29% agreed (Figure 2.16). At the same time, when asked whether AI helps reduce their mental stress, 56% of employees disagreed, while 44% agreed (Figure 2.16).

In conclusion, the findings suggest that AI utilisation does not clearly lead to a reduction in physical labour intensity, and its impact on mental stress is mixed. While AI may substitute for certain cognitive tasks, many workers – particularly those in smaller firms and the manufacturing sector – reported no noticeable decrease in either physical or mental burden. One possible explanation is that AI adoption in Korea is still in its early stages, and its potential to ease work intensity has not yet fully materialised. Moreover, although AI can assist with cognitive processes, the need for human intervention in producing final outputs may diminish its stress-reducing effects. Overall, these results imply that while AI may enhance efficiency, its contribution to improving workers' well-being is still uneven and inconclusive. Evidence from a case study of a game character designed in Korea confirms that the impact of AI on job quality is not black or white (Box 2.8).

Figure 2.16. Most workers disagree that AI reduced physical labour intensity and mental stress

Percentage of employees agreeing that AI helps reduce: (i) physical labour intensity; and (ii) mental stress



Note: The survey targeted individual employees who use AI in firms operating within four industries classified under the Korean Standard Industrial Classification (KSIC): Manufacturing, Information and Communication, Professional, Scientific and Technical Services, and Healthcare. Employees using AI provided the survey responses. The survey was conducted over a two-month period, from 20 October 2024 to 31 December 2024. The sample was drawn using a random sampling method, with a target sample size of 600. Ultimately, the study achieved valid responses from 426 employees, whose data were incorporated into the final analysis.
Source: Survey on AI Utilisation and Labour Market Changes Conducted by the Korea Labor Institute (2024).

Box 2.8. Case study: Changes in work intensity and mental stress for a game character designer in Korea

A character designer at a gaming company in Korea began using AI tools such as Mid-Journey and Stable Diffusion to assist with character creation. Prior to adopting AI, it took more than ten days to develop a character from an initial concept, primarily due to the time-intensive manual sketching process. With AI, the production time has been reduced to one or two days, as the need for repetitive sketching has diminished. However, new forms of labour have emerged. The designer must now engage in prompt engineering and refine outputs through repeated trial and error to achieve the desired result. Additional stress arises from the pressure to ensure that AI-generated characters are indistinguishable from manually created ones, given the market's growing awareness of AI use. As a result, despite the decrease in physical workload, the designer reports no clear reduction in mental stress due to the unfamiliar nature of these new tasks.

AI may be driving increases in non-standard employment

Non-standard forms of employment refer to different employment arrangements that deviate from standard employment. They include temporary employment; part-time and on-call work; temporary agency work and other multiparty employment relationships; as well as disguised employment and dependent self-employment. Non-standard employment features prominently on digital labour platforms (ILO, n.d.[62]). AI technologies are contributing to the fast growth of the platform economy. Platforms use AI-driven algorithms to match workers with tasks that align with their skills and preferences, automate administrative functions such as invoicing, implement dynamic pricing models, and optimise logistics.

Many workers – especially youth – are drawn to non-standard jobs due to low entry barriers, flexible work schedules and autonomy. In Korea, employment insurance data, which captures employees covered by employment insurance, show a significant decline in youth (i.e. aged 20-39) employment between 2018 and 2023. While a 6% decline in the youth population accounts for part of the decline in youth employment, the remaining unexplained decline may indicate a shift of young workers from regular to non-regular employment (e.g. gig work such as delivery services).[9]

The changes in the employment status of 20-39 year-olds can be attributed to both voluntary and involuntary factors. Voluntary factors may include shifts in job preferences, for instance, platform jobs can offer substantial flexibility in working hours and days, along with competitive hourly wages (Lim, 2022[63]). Involuntary factors are more likely to reflect structural changes in the labour market. The advent of AI and robots may reduce the availability of regular jobs for which young people are qualified (Dauth et al., 2021[64]). Labour market rigidity might also make it difficult to dismiss employees before the retirement age. This discourages firms to hire, particularly younger workers who are further from retirement and thus represent long-term commitments (see Box 2.9).

Non-regular employment can meet the needs of some workers and raise labour force participation, but many non-regular jobs often lack adequate social protection. While regular employment in Korea offers strong job security and comprehensive benefits, non-regular workers face higher separation and layoff rates, lower wages – on average just over half those of regular workers – and limited social benefits coverage in pension, health and employment insurance (Tam and Xu, 2024[65]). To enhance flexibility, firms have increasingly relied on non-regular workers (Schauer, 2018[66]; Jones, 2005[67]), in particular Korea has the highest share of temporary employment among OECD countries (27% in 2024).[10]

Relaxing employment protection for regular workers and increasing the coverage of the social safety net for non-regular workers would help limit the extent of labour market dualism (Jones, 2005[67]; Tam and Xu, 2024[65]). Such reforms would foster a more inclusive labour market, support workforce adaptation to AI-driven transformations, and enhance both employment outcomes and firm-level productivity. Without these changes, the continued erosion in demand for regular employment could further undermine job quality.

The impact of AI on inclusiveness: Evidence from OECD countries

AI is increasingly capable of automating tasks in high-skilled occupations, yet low-skilled jobs remain the most at risk of automation (Lassébie and Quintini, 2022[5]) and of job loss. Factors such as education, skills, gender, and firm size influence access to AI opportunities and its benefits, raising concerns about widening inequalities. At the same time, AI can help bridge productivity gaps between low- and high-skilled workers within occupations by capturing and disseminating best practices. While AI could help address human biases by incorporating bias detection and mitigation strategies, not carefully designed systems risk reinforcing discrimination. AI-powered solutions can also support people with disability in the workforce. Ensuring that AI fosters inclusiveness requires addressing its risks while expanding access to its opportunities.

Across OECD countries, access to AI opportunities is uneven

The introduction of AI in the workplace holds potential to improve both employment prospects and job quality. However, the benefits of AI adoption may not be distributed evenly across different groups of workers and firms. Factors such as education, skills, gender, and firm size can affect who benefits from AI advancements and who may be left behind. The uneven access to AI opportunities could prevent the benefits of AI from being broadly and fairly shared.

Workers not only vary in the extent to which they are exposed to AI, but also in their ability to adapt to and benefit from new technologies, thus the impact of AI need not be uniform across different socio-demographic groups.

High-income and high-skilled workers benefit the most from AI, while low-skilled workers may lose out

The impact of AI on employment growth has been found to be significant and positive for high-income and high-skilled occupations, and for jobs where computer use is high (Felten, Raj and Seamans, 2019[18]; Albanesi et al., 2023[20]; Georgieff and Hyee, 2021[6]). Conversely, the impact for low-skilled workers has in some cases been found to be negative. There is some evidence of an up-skilling effect, with more exposed firms reducing their employment of blue-collar workers and hiring more high-skilled, white-collar workers (Engberg et al., 2024[68]). Bonfiglioli et al. (2025[17]) find that AI adoption reduces employment among low-skilled and production workers, while increasing employment for workers at the top of the wage distribution and for those in STEM occupations. Similarly, Huang (2024[16]) finds that AI exposure negatively affects employment in the manufacturing and low-skill services sectors, middle-skill workers, non-STEM occupations, and individuals at the two ends of the age distribution.

As far as wages are concerned, high-income and high-skilled occupations, as well as jobs with high computer use, tend to experience positive effects on wage growth associated with AI exposure, while lower income and lower skilled workers do not seem to benefit in the same way, or less so (Felten, Raj and Seamans, 2019[18]; Fossen and Sorgner, 2022[55]). These findings suggest that AI adoption risks increasing inequalities between groups.

These differences between workers may derive from the crucial role education plays in enhancing the ability to learn new information, making highly educated workers better equipped to adapt to new technologies (Fossen and Sorgner, 2022[55]). More educated workers are also more likely to possess the skills required to interact with, develop, and maintain AI systems. Looking at the AI workforce, for example, over 60% has at least a tertiary degree, and this figure rises to 80% within the 10 top occupations most demanding AI skills (Green and Lamby, 2023[21]). AI users are also more likely to be younger and more educated than non-users (Lane, Williams and Broecke, 2023[32]). These trends are not surprising given that 41% of low-educated adults and 33.7% of older adults lack basic proficiency in using information and communications technology (OECD, 2019[36]), making them less prepared to engage with AI systems in the workplace. Without targeted training, these workers are likely to be excluded from the benefits of AI adoption.[11]

Gender disparities limit women's access to AI opportunities

The AI workforce and AI users are also predominantly male. Women constitute only 35% of the AI workforce, compared to 53% of those with tertiary education (Green and Lamby, 2023[21]). Additionally, in the OECD AI surveys of employers and workers, 41% of male workers reported using AI, compared to just 29% of female workers (Lane, Williams and Broecke, 2023[32]). Similarly, in a recent Danish study, female workers were 20 p.p. less likely to say they had used ChatGPT than male workers in the same occupation (Humlum and Vestergaard, 2024[69]). This gender disparity limits women's access to AI-related employment opportunities and to productivity-enhancing AI tools in the workplace, and could reflect broader digital skill divides, as well as women's lower participation in science-related tertiary education. Although women and men across OECD countries tend to display similar levels of basic digital skills (OECD, 2019[36]), men on average tend to have more advanced digital skills like coding (European Commission, 2018[70]). Among 16-24 year-olds in OECD countries, 20.1% of men can write code in a programming language, while the rate for women is only 9.9% (OECD, 2023[71]). Similarly, the share of female graduates in the field of Information and Communication Technologies (ICTs) is 22.6%, while it is of 32.5% in the field of Science, Technology, Engineering and Mathematics (STEM) (OECD, 2021[72]).

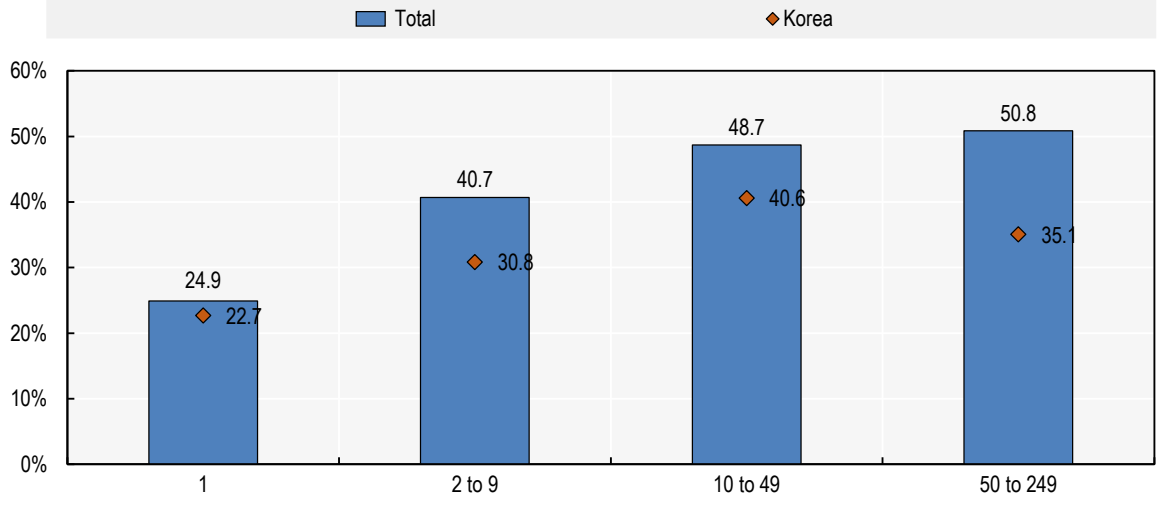
Gender differences in interests, aptitudes and aspirations widen with age, suggesting that, at some point, girls are discouraged from scientific careers (OECD, 2024[73]). At age 15, boys and girls perform similarly in science and mathematics tests, however, only 1% of girls report that they want to work in ICT-related occupations, compared to 8% of boys (OECD, 2019[74]). The lack of female role models in STEM has been shown to have an impact on girls' subject choices in school and university (Bottia et al., 2015[75]; Breda et al., 2020[76]). Additionally, discrimination in recruitment processes within technology and STEM fields results in women being less likely to gain employment, even when they possess the necessary skills (Friedmann and Efrat-Treister, 2023[77]).

Large firms are ahead of SMEs in AI adoption

The polarised adoption of AI, primarily by larger firms, combined with AI's ability to reinforce existing inequalities, risks widening the gap between larger and smaller firms, and consequently between their workers. Data from Information and Communication Technology (ICT) surveys carried out by National Statistical Offices, reveal that AI adoption increases with firm size (see Box 2.1). Regression analysis further supports this, showing that larger firms are more likely to adopt AI, even after controlling for factors such as firm age and sector of activity (Calvino and Fontanelli, 2023[78]). Additionally, the evidence highlights the key role of complementary assets in AI adoption. AI use is more likely in presence of digital infrastructure and other digital capabilities, such as cloud computing services, other digital technologies, ultra-fast broadband connection, and higher ICT skills. The selection of larger firms into AI can be attributed to their greater resources, which enable them to face the high fixed costs associated with AI adoption and to acquire the complementary assets, related to firm digitalisation and human capital, needed to fully leverage the potential of AI (Calvino and Fontanelli, 2023[78]).

However, cost is not the only barrier to AI adoption, as evidenced by the fact that even the adoption of generative AI (which tends to be lower cost) increases with firm size (Figure 2.17). In Korea, however, medium-sized firms are less likely to use generative AI than small-sized firms, but not less likely than micro-firms (OECD, 2025[12]).

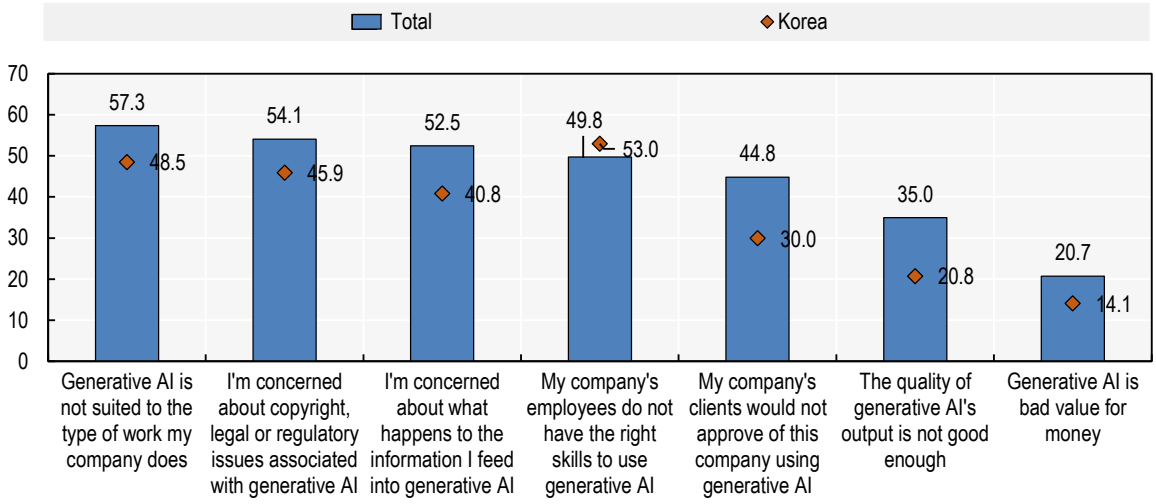
Figure 2.17. Adoption of generative AI increases with firm size



Note: The total reflects the combined results from all countries participating in the survey (Austria, Canada, Germany, Ireland, Japan, Korea, the United Kingdom).
Source: OECD (2025[12]), Microdata from the OECD SME Survey on Generative AI.

The three most commonly mentioned reasons for non-adoption of generative AI by SMEs were that: (i) generative AI is not suited to the type of work the company does (57%), (ii) concerns about copyright, legal, or regulatory issues (54%); and (iii) concerns about how the information fed into the system is handled (53%). The most reported barrier to use of generative AI in Korean SMEs was a lack of skills among employees (Figure 2.18) (OECD, 2025[12]).

Figure 2.18. The most reported barrier among Korean SMEs is a lack of skills among employees



Note: The total reflects the combined results from all countries participating in the survey (Austria, Canada, Germany, Ireland, Japan, Korea, the United Kingdom).
Source: OECD (2025[12]), Microdata from the OECD SME Survey on Generative AI.

Equalisation of performance within occupations

Despite little indication that AI has affected wage inequality between occupations so far, AI might be associated with lower wage inequality within occupations. AI systems demonstrate potential to enhance productivity in certain tasks, particularly for less experienced and lower-performing workers, by capturing and disseminating the effective practices of top performers, reducing performance inequality. However, for complex tasks, these tools can sometimes be counterproductive, especially for workers who struggle to identify errors in AI-generated outputs or who blindly adopt its output without careful review.

When a job's core skill involves making predictions based on data patterns, and AI enhances the accuracy of these predictions, AI could help close the productivity gap between high- and low-skilled workers. In the context of taxi drivers, for example, an AI system assisting drivers with finding customers, by suggesting routes along which the demand is predicted to be high, narrowed the productivity gap between high- and low-productivity drivers by 14% (Kanazawa et al., 2022[79]).

Several other experiments and empirical studies focussing specifically on generative AI suggest that these tools can improve the performance of the least experienced or lowest performing workers the most. Peng et al. (2023[80]) found that GitHub Copilot, an AI tool that assists developers by providing code suggestions, helped programmers finish their task 56% faster, with the greatest gains among less experienced and older programmers. Noy and Zhang (2023[81]) showed that ChatGPT increased the productivity of college-educated professionals in writing tasks, reducing average task time by 40% and increasing output quality by 18%, with the largest benefits for lower-performing participants. Brynjolfsson, Li and Raymond (2023[82]) analysed a generative AI-based conversational assistant, which provided real-time response suggestions to agents, while they maintained discretion to accept or ignore the suggestions. Access to the

tool increased productivity (measured by issues resolved per hour) by 14% on average, including a 34% improvement for novice and low-skilled workers but with minimal impact on experienced and highly skilled workers. Dell'Acqua et al. (2023[83]) conducted a field experiment on AI's performance in complex consulting tasks, finding that for tasks within the frontier of AI capabilities, consultants using AI were significantly more productive, both in terms of quantity and quality of the output. All consultants benefited, but those below the average performance threshold benefited more.

Analysing data across 19 OECD countries, Georgieff (2024[84]) finds some evidence that AI may be associated with lower wage inequality within occupations. While these findings are very preliminary and need to be interpreted with caution, they are consistent with the idea that AI can reduce productivity differentials between workers.

Nonetheless, researchers warn that Large Language Models can generate plausible yet incorrect results that are difficult to detect, particularly for less experienced workers. The strong performance of such tools in tasks like text summarisation, combined with confident delivery, may create a false sense of reliability across other areas. Yet, even seemingly simple tasks, such as basic mathematics, can challenge some AI models. Identifying AI's strengths and limitations requires experience, but even experts can struggle with this distinction. Dell'Acqua et al. (2023[83]) found that, for tasks outside the frontier of AI capabilities, humans relied too much on the AI and were more likely to make mistakes when using it. Professionals who had a negative performance when using AI tended to blindly adopt its output and interrogate it less. Kabir et al. (2024[85]) analysed ChatGPT's response to 517 programming questions, finding that 52% contained errors – yet users overlooked mistakes 39% of the time due to AI's comprehensive and well-articulated answers. Kreitmeir and Raschky (2024[86]) exploited Italy's sudden ChatGPT ban as a natural experiment, showing that the short-term lack of access resulted in an increase in output quantity and quality for less experienced users, but reduced productivity in routine tasks for experienced users. The authors suggest that, for complex tasks such as coding, less experienced workers may struggle to detect and correct errors in the AI-generated content but might continue relying on it due to the high cost of acquiring skills independently.

Depending on their design, algorithms can either codify or reduce bias

To effectively use AI while promoting diversity and inclusiveness, it is essential to address the potential biases that can emerge both at the data or input level and at the system level. Algorithms, if not carefully designed and implemented, can perpetuate existing human biases, leading to discrimination on a larger scale. This occurs particularly when the training data reflects historical biases against underrepresented groups due to existing discrimination in the labour market. However, AI models could also help address human bias by incorporating bias detection and mitigation strategies.

Bias at the system level is introduced through various decisions made during the development of AI systems, including the selection of variables, the decision on how to measure them, and the choice of data on which the system is trained. These decisions are often influenced by the developers' own experiences and priors, which highlights the importance of ensuring diversity within the AI tech industry. A diverse and representative AI workforce is more likely to recognise and address these biases, leading to the development of fairer and more inclusive AI systems (Salvi del Pero, Wyckoff and Vourc'h, 2022[87]; Green and Lamby, 2023[21]).

Moreover, bias at the input or data level often derives from the use of historical data that is already biased, non-representative samples, or data that is incomplete, incorrect, or outdated. Research, such as correspondence experiments in economics, has shown that human decision making is also biased. These studies, which involve sending to real job openings fictitious job applications differing only in a randomly assigned characteristic, reveal discrimination against ethnic minorities, pregnant women, mothers, transgender people, Muslims, and people with disabilities (Bertrand and Duflo, 2017[88]; Baert, 2017[89]). Since applicants from underrepresented groups are less likely to be hired for high-income jobs due to

existing biases, they are underrepresented in training datasets. As a result, AI models trained on such data may disproportionately favour historically hired groups, reinforcing discriminatory practices and reducing diversity compared to human-led hiring processes (Li, Raymond and Bergman, 2020[90]). While algorithms are not responsible for societal biases, they can replicate, ingrain, and/or amplify them at scale. This automated discrimination is often more abstract and harder to detect than traditional forms, complicating enforcement of non-discrimination laws (Salvi del Pero, Wyckoff and Vourc'h, 2022[87]).

Nonetheless, if designed and implemented well, AI models could be used to address and mitigate human bias. For instance, in 2018, LinkedIn introduced an AI feature that ensured that top search results seen by recruiters had a gender breakdown more representative of the potential applicant pool (Bogen and Rieke, 2018[91]; Chan, 2018[92]). Some firms are dedicated to developing diversity and inclusion technologies, which aim to reduce bias in AI systems through innovative techniques. One approach, known as "post-processing," involves setting quotas to ensure that the recommendations made by the algorithm include a balanced representation from various population sub-groups. Another method involves training the algorithm with artificial profiles, thereby increasing the likelihood that candidates from underrepresented groups will be selected (Broecke, 2023[93]).

AI-powered tools for workers with disabilities

AI has the potential to support people with disability in the labour market. This technology has been implemented in numerous tools that can either reduce barriers by providing workarounds for people with disability (such as live captioning for deaf individuals), or that address disabilities directly (such as AI-powered prosthetics). Other tools make content and workplaces more accessible. However, significant challenges remain in funding, accessibility, and user engagement.

Building on desk research and interviews with over 70 stakeholders, an OECD study (Touzet, 2023[94]) identified 142 AI-powered solutions that can support people with disabilities in the workforce, 75% of which would not exist in their present form without AI. More than half of the identified tools are disability-centred, designed to either directly address disabilities or provide workarounds. Examples include AI-powered hearing aids, live captioning algorithms for deaf or hard-of-hearing individuals, image recognition solutions allowing blind or low-vision individuals to hear descriptions of their surroundings, self-driving wheelchairs, and speech-to-text solutions for people with dysarthric speech or who cannot type on a keyboard. Other tools identified in the study focus on making environments more inclusive by adapting content and workplaces rather than requiring persons with disabilities to adjust. Examples include AI powered indoor positioning systems to make buildings accessible to blind and low-vision individuals, as well as natural language processing applications that translate written content into plain language, improving accessibility for neurodiverse individuals.

Furthermore, AI is enhancing prosthetics by interpreting the user's intentions based on physiological data and brain signals, enabling robotic parts to perform tasks like opening and closing the hand, moving individual fingers, and navigating stairs and ramps. AI can also quantify external touch and sensory input, allowing prostheses to convey these sensations to the brain. Additionally, AI-powered voice assistants can help people carry out routine daily actions through voice commands, such as turning lights on and off, regulating room temperature, and unlocking doors (Pancholi, Wachs and Duerstock, 2024[95]). AI's versatility allows for broader applications compared to traditional assistive technologies, offering greater customisation and embedding accessibility features into mainstream products.

However, the development and adoption of these technologies face several challenges. One major barrier is the scarcity of funding for research and development (R&D) as both public and private investment in disability-focussed innovations remain scarce, often leaving promising tools at the prototype stage. Commercialisation also presents hurdles: direct sales to users can create inequities, while integrating public reimbursement pathways is often too complex for small firms. Employer adoption is further constrained by limited awareness of accessibility needs. This limits the reach of AI-powered solutions,

restricting access to those who can afford them and are informed about their existence. Additionally, the lack of user engagement in the development process can lead to irrelevant or impractical solutions. Lastly, low levels of IT literacy among some end users and issues with interoperability between new AI solutions and existing assistive technologies further hinder adoption (Touzet, 2023[94]).

The impact of AI on inclusiveness: Evidence from Korea

In terms of the impact of AI on inclusiveness, a significant gap between large firms and SMEs in Korea in terms of both productivity and AI adoption has already been documented in this report. In addition, the negative impact of traditional AI on regular, full-time employment growth appears to be concentrated among younger workers, low- to medium-skilled workers and women – although for the latter, as well as for high-skilled workers, higher exposure to generative AI is associated with higher employment growth. Generative AI is associated with higher wage growth for men and high-skilled workers, while traditional AI is associated with higher wage growth for older workers and high-skilled workers. By contrast, traditional AI appears to reduce wage growth for low-skilled workers. Once again, however, it needs to be remembered that these findings apply to full-time, permanent employees only, and the findings for non-standard workers may be different. Further details for these findings are provided in Box 2.9.

Box 2.9. The impact of AI on full-time, permanent employment and wage growth in Korea: Differences by socio-demographic groups

This box breaks the analysis of Box 2.4 down by gender, age and skill level.

Gender-based heterogeneity was found in both traditional AI and generative AI. Table 2.3 shows that for women, traditional AI (Webb index) is associated with a statistically significant negative effect on employment growth, while generative AI (Felten index) exhibits a statistically significant positive effect. In contrast to its impact on employment, there is a positive effect of generative AI on wage growth for male employees (Table 2.4). This finding is particularly noteworthy given that, on average, women are more exposed to generative AI. This apparent discrepancy stems from the fact that men are disproportionately represented in occupations situated within the higher percentiles of generative AI exposure.

In the age subgroup analysis, “Young” refers to individuals aged 39 and below,[1] “Middle” to those aged 40-49, and “Old” to those aged 50 and above. The negative association of AI with employment growth was statistically significant for traditional AI only among the younger cohort, with no observed effects in other age groups (Table 2.3). This finding suggests that the reduced labour demand stemming from AI exposure might have operated more by curtailing new hiring than through layoffs of existing employees. In Korea’s relatively rigid labour market, where layoffs are challenging, firms may be hesitant to increase new hires due to difficulties in flexible workforce adjustment following the introduction of AI technology. This phenomenon is similar to that observed in German manufacturing following the introduction of industrial robots (Dauth et al., 2021[64]). A statistically significant and positive relationship between AI and wage growth is only observed for older workers and traditional AI (Table 2.4), which might be because older workers tend to be more exposed to traditional AI, and less so to generative AI. This points to a more nuanced dynamic – while traditional AI may dampen employment growth among younger cohorts, it appears to support wage growth for older workers already in employment, particularly in roles characterised by higher levels of AI exposure.

Finally, traditional AI appears to be associated with lower employment growth among low-skilled and medium-skilled workers, while generative AI is associated with higher employment growth among high-skilled workers (Table 2.3). Both kinds of AI are also associated with higher wage growth for high-skilled workers only, while traditional AI is associated with lower wage growth for low-skilled workers (Table 2.4). This result aligns with the findings of Bonfiglioli et al. (2025[17]), who posited a positive impact of AI adoption on STEM occupations and high-wage workers. The divergence between low- and high-skilled workers is likely driven by distinct market dynamics. In the case of generative AI, a rapid increase in demand for highly skilled labour, combining with relatively inelastic supply, has resulted in a statistically robust positive effect on wage growth. By contrast, traditional AI appears to exert a displacement effect on lower-skilled labour, contributing to downward pressure on wage increases for these groups.

Once again, however, it needs to be remembered that these findings apply to full-time, permanent employees only, and the findings for non-standard workers may be different.

Table 2.3. The impact of AI on full-time, permanent employment growth in Korea: Regression results by gender, age and skill level

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Heterogeneity by Gender						
	Webb Index		Felten Index			
	Male	Female	Male	Female		
AIOE Percentile	-0.0049	-0.0062**	0.0037	0.0063*		
	(0.0030)	(0.0028)	(0.0037)	(0.0034)		
Panel B: Heterogeneity by Age Groups						
	Webb Index			Felten Index		
	Young	Middle	Old	Young	Middle	Old
AIOE Percentile	-0.0061*	-0.0031	-0.0036	0.0045	0.0045	0.0056
	(0.0034)	(0.0024)	(0.0028)	(0.0042)	(0.0030)	(0.0034)
Panel C: Heterogeneity by Skills						
	Webb Index			Felten Index		
	Low	Middle	High	Low	Middle	High
AIOE Percentile	-0.0051*	-0.0062*	-0.0038	0.0014	0.0047	0.0072***
	(0.0027)	(0.0033)	(0.0024)	(0.0039)	(0.0040)	(0.0027)
Obs.	4 633	4 633	4 633	4 633	4 633	4 633

Table 2.4. The impact of AI on full-time, permanent wage growth in Korea: Regression results by gender, age and skill level

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Heterogeneity by Gender						
	Webb Index		Felten Index			
	Male	Female	Male	Female		
AIOE Percentile	0.00044	-0.00024	0.00017*	-0.00034		
	(0.00032)	(0.00063)	(0.00009)	(0.00056)		
Panel B: Heterogeneity by Age Groups						
	Webb Index			Felten Index		
	Young	Middle	Old	Young	Middle	Old
AIOE Percentile	0.000045	0.00027	0.0013***	0.00012	-0.00017	0.000087
	(0.00047)	(0.00054)	(0.00048)	(0.00048)	(0.00054)	(0.00062)
Panel C: Heterogeneity by Skills						
	Webb Index			Felten Index		
	Low	Middle	High	Low	Middle	High
AIOE Percentile	-0.0011	0.000059	0.00070**	-0.0042*	-0.0000062	0.00019*
	(0.0017)	(0.00020)	(0.00032)	(0.0023)	(0.00019)	(0.00010)
Obs.	4 633	4 633	4 633	4 633	4 633	4 633

Note: Standard errors are shown in parentheses, and statistical significance is indicated as follows: *** 1%, ** 5%, * 10%.
1. In general, the OECD defines "youth" as those individuals aged 25 and under. However, in the context of Korea, the labour market participation rate among those under 20 is extremely low, and the target group for youth policies typically ranges from 20 to 39 years of age. Therefore, the age bracket for youth has been defined as 20 to 39 years in this report.
Source: Employment insurance data and information provided by Webb (2020[43]), "The Impact of Artificial Intelligence on the Labor Market", https://www.michaelwebb.co/webb_ai.pdf; and Felten et al. (2023[10]), "How will Language Modelers like ChatGPT Affect Occupations and Industries?", https://doi.org/10.48550/arXiv.2303.01157 compiled by the authors.

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Notes

[1] Image classification refers to the ability of machines to categorise what they see in images (Zhang et al., 2022[96]).

[2] Visual reasoning assesses how well AI systems can reason across a combination of visual and textual data (Zhang et al., 2022[96]). AI models take an image and a textual question as input and generate a relevant answer.

[3] Natural language inference is the task of determining whether, given a premise, a hypothesis is true (entailment), false (contradiction), or undetermined (neutral) (Zhang et al., 2022[96]).

[4] Trunk strength is the ability to use your abdominal and lower back muscles to support part of the body repeatedly or continuously over time without "giving out" or fatiguing (O*NET[97]).

[5] Many of these occupations remain exposed to technologies other than AI. In addition, AI is frequently embedded in such technologies (e.g. robots).

[6] Visual commonsense reasoning (VCR) refers to the ability of AI systems to not only answer questions based on images but also reason about the logic behind their answers. Performance in VCR is measured by evaluating the machine's ability to both select the correct answer to a question and choose the appropriate rationale behind that answer (Maslej et al., 2024[2]).

[7] The OECD case studies of AI implementation were conducted in Austria, Canada, France, Germany, Ireland, Japan, the United Kingdom and the United States.

[8] France, Germany, Italy, Spain.

[9] To isolate the impact of changes in employment insurance eligibility criteria, the analysis was confined to salaried, permanent employees, with the explicit exclusion of self-employed, non-regular, and freelance workers. The sample was further refined to include only those regular employees for whom complete data were available across all primary variables, specifically gender, age, occupation, and industry.

[10] OECD 2024 Employment by permanency of the job – Incidence http://data-explorer.oecd.org/s/24j.

[11] With respect to youth, studies based on jobs and studies based on individuals may give opposite results. Youth come out as more at risk in studies that assess automatability at the level of tasks/jobs because they tend to hold jobs with fewer high-level cognitive tasks (career-related). However, looking at individuals directly, youth are better prepared because they have better digital skills.

3 Seizing the opportunities and managing the risks: The policy response to AI

The impact AI will have on the labour market, including whether the benefits will outweigh the risks and how these will be distributed, will depend on the policies, regulations and institutions countries have in place. This chapter reviews how workers can be supported through the transition, including through training, social protection, employment services and social dialogue, and also what steps can be taken to ensure no one is left behind, and promote the safe and trustworthy use in the workplace.

In Brief

Supporting workers through the transition

- As documented in Chapter 1, AI will likely result in significant change in the labour market, and workers will need help in managing the transition. Outcomes for workers are better when they are consulted about the use of AI in the workplace, and also when they have received training. For workers who will be displaced by AI, social protection combined with re-employment services will be essential to help them find new jobs.
- Most OECD countries, including Korea, already have strong institutions and systems in place for training, social protection and re-employment services. However, AI brings new challenges which may require either a scaling-up of existing efforts, or more AI-specific solutions.
- Korea has already implemented several publicly funded education and training programmes to develop AI skills, including K-Digital Training, a vocational training initiative that aims to provide high-skilled workers in digital and edge-tech industries. To further improve the alignment of skills needs and supply, Korea should aim to: (i) strategically co-ordinate training policies between the Ministry of Trade, Industry and Energy and the Ministry of Employment and Labour; (ii) tailor training programmes to the specific needs of SMEs; and (iii) promote more work-based learning.
- AI may be able to assist in the provision and improvement of training. For instance, AI has the potential to increase training participation, including among currently underrepresented groups, by lowering some of the barriers to training that people experience, increasing motivation to train, personalising content and delivery, and offering more targeted learning pathways. Moreover, certain AI solutions for training may improve the alignment of training to labour market needs, and help in planning and delivering training policies.
- In Korea, the Ministry of Employment and Labour has also begun deploying AI technologies in the provision of employment services and counselling to job seekers (Work24), thereby improving labour market matching.

Promoting an inclusive transition

- AI will not affect all groups equally. Some individuals are more likely to gain, while others are at higher risk of either losing their job or experiencing changes on the job. Policymakers should aim to promote an inclusive transition, targeting training, as well as employment and social support on those who need it most. At the same time, the development and adoption of AI tools that boost the employability of underrepresented groups (e.g. those with disabilities) need to be promoted, and bias and discrimination embedded in AI tools need to be addressed.

Promoting safe and trustworthy AI

- Policymakers should take steps to ensure that the AI that is used in the workplace is safe and trustworthy. This is not only to protect workers, but also to promote the adoption of such tools and reduce potential worker resistance. Specifically, and in line with the OECD AI Principles:

- *Worker health and safety needs to be protected.* While AI may boost productivity and lower costs, this should not come at the expense of increased worker stress, anxiety or risk of accidents. Most countries have regulations that set out employers' obligations towards employees concerning their occupational safety and health. While in theory such regulations should also cover AI, there may be gaps. Also, while most countries have product liability regulations, these might need to be adapted to the use of AI systems. Moreover, labour inspectorates may lack the knowledge and/or capacity to address new risks posed by AI.
- *Workers personal data and privacy should be protected.* The growing integration of AI in the world of work will likely result in greater collection and analysis of data on workers and job applicants. Workers may worry about their privacy when such data is personal. They might also worry that the data are used for purposes other than for which they were intended. Increased monitoring and surveillance could also lead to stress. In many countries, data protection and privacy rules, or their implementation, may need to be strengthened. In particular, asking workers for consent to collect and use personal data may not be meaningful in the context of the workplace and the inherent power imbalance between employers and workers. In Korean workplaces, consent is deemed to be given when the union agrees with the data collection, while in workplaces without unions, the condition is met when more than half of all workers express their agreement.
- *There should be human agency and oversight.* Automated decision making and algorithmic management practices can pose threats to workers, particularly where they impact consequential decisions such as hiring, evaluations, promotions, and terminations. Policymakers across OECD countries are taking steps to regulate automated decision making by: clarifying the circumstances under which automated decision making may or may not be used, requiring human oversight throughout the AI lifecycle as well as transparency; requiring periodic testing and validation of the AI; and giving individuals rights to: human intervention, express their opinion, to obtain an explanation, and challenge/contest decisions taken by algorithms. One of the challenges in regulating automated decision making is how to make a "human in the loop" more than just the rubberstamping of automatic decisions.
- *There should be transparency in the use of AI in the workplace.* The ability of workers to detect risks or harms, effectively question outcomes, and exercise their rights, hinges on their awareness of their interactions with AI systems and how those systems reach their outcomes. Most AI principles that have been published in OECD countries to date underscore the importance of transparency of AI and its use, and several countries are introducing legislation requiring employers to notify individuals when they are interacting with certain forms of AI.
- *Workers should be entitled to meaningful information about the logic involved in A*I outputs. AI systems yield outcomes that can be difficult or even impossible to explain. A lack of explainability can undermine the trust and confidence that people place in AI systems and the decisions that are informed by them. It also makes it difficult for individuals to provide informed consent to the use of such systems, or to identify and seek redress for adverse effects caused by AI systems in the workplace.
- *Establishing clear lines of accountability is fundamental for a trustworthy use of AI and the ability to enforce regulations*. In recent years, legislators across the OECD, have made efforts to promote accountability mechanisms, such as impact assessments and/or audits of AI systems to provide evidence and assurance that they are trustworthy and safe to use.

- In 2025, Korea passed a draft AI Basic Act to be implemented in 2026 which aims to promote AI development. At the same time, the AI Basic Act aims to "minimise risks and build trust", and

covers important principles such as transparency and explainability, as well as safety and reliability of AI. Korea's approach to regulating AI is based more on principles than on detailed prescriptions and regulations, and the private sector will be encouraged to develop and implement its own mechanisms for ensuring AI safety and reliability. That being said, AI does not operate in a regulatory vacuum and existing laws, such as the Labour Standards Act and the Personal Information Protection Act, remain applicable.

- Social dialogue could play an important role in making a success of AI in the workplace. OECD evidence shows that workers who have been consulted about the use of new technologies are more positive about the impact of AI on their work than those who have not. In Korea, the Economic, Social and Labour Council (ESLC) is a tripartite dialogue body made up of representatives from labour, business, academia and government. In January 2025, the ESLC established a special committee, the "AI and Labour Research Association," tasked with studying changes in the labour market due to AI adoption and identifying necessary legal and policy responses. Although this discussion remains in its early stages, it is anticipated that, once a conclusion is reached, each stakeholder in the social dialogue will begin to take corresponding actions.
- At company level, the Labour Standard Act stipulates that employers in Korea need the consent from workers (from the union if there is one, if not from the majority of workers) when they intend to alter the rules of employment in a way that is unfavourable to employees (i.e. leads to a deterioration in working conditions). However, there is uncertainty surrounding how AI adoption impact working conditions and what this means for the obligation of employers to consult workers.
- In practice, worker consultation on AI adoption in Korea appears limited. A survey of workers in Korea showed that 56.3% were not involved in discussions around AI adoption in their workplace and only 6.9% said their firms engaged in discussions with unions or labour management councils. As expected, these discussions are far more common in large firms. In the few cases where workers were consulted, the most common topics covered were: AI's impact on the number of jobs, changes in specific occupations, emerging training needs, and methods of data collection and use.

Review of international developments on AI policy and regulation

This section first sets out some important questions for policymakers to consider when deciding whether or not, and how, to regulate AI. It then moves on to discuss the key policy priorities and the extent to which OECD countries have tried to address challenges in these areas. Finally, the section discusses recent regulatory and policy developments in Korea and identifies policy gaps.

Regulatory considerations

Policymakers need to decide whether or not to regulate AI and, if so, whether such regulation should apply to the technology or only to certain uses of it. There are also important questions about proportionality and international spillovers to consider.

Enforcing existing regulation

The first consideration should be how to better enforce existing regulation. AI does not operate in a regulatory vacuum. Most OECD countries have laws in place that govern data protection and privacy,

discrimination, employment protection, product safety, occupational safety and health, etc. In a first instance, steps should be taken to ensure that existing laws are adequately enforced. In some cases, that may mean clarifying the existing regulation and/or providing guidelines to employers and workers.

New regulation or not?

Countries will need to decide whether new regulation is required or not. The EU has been very active in this field – having adopted the EU AI Act and the Platform Work Directive. Some countries, however, are not convinced that new regulation will be required. In Japan, the government has recently passed the AI Act. Rather than introducing new regulation, this act relies on the voluntary efforts of AI developers and businesses to promote AI-related policies in Japan. In the United States, innovation has taken a front seat and the government has revoked some existing AI policies and directives that were considered barriers to American AI innovation. Other countries, like Australia, do not currently have new regulation related to AI and are considering their proposed approach to AI regulation. Canada seems to be opting for a middle path between regulation and self-governance. The proposed Artificial Intelligence and Data Act (AIDA) would set out a timeline for a new regulatory system, "In the initial years after it comes into force, the focus of AIDA would be on education, establishing guidelines, and helping firms to come into compliance through voluntary means." This way, the government would allow time for the ecosystem to adjust to the new framework before enforcement actions are undertaken (Government of Canada, 2023[1]).

Regulating the technology, or its specific uses and consequences?

If countries decide new regulation may be necessary, then there is a choice to be made between regulating the technology itself, regardless of its applications, or regulating specific uses of the technology only (e.g. in finance or for facial recognition) or consequences (e.g. invasions of privacy or lack of transparency). Each approach has its merits and challenges, and countries have opted for different paths.

The EU AI Act is an example of AI-specific legislation. Other countries have preferred a more tailored approach. In Switzerland, for example, it is felt that "using algorithmic systems does not generally lead to entirely new challenges" and that existing regulation addresses most challenges of AI. Instead, Switzerland has opted to selectively amend certain laws (e.g. integrating AI transparency rules into existing data protection laws; modifying product liability laws) (Thouvenin et al., 2021[2]). Under the previous government, the United Kingdom acknowledged the existence of AI risks but, like Switzerland, did not feel the need for AI-specific legislation. Instead of targeting a specific technology, the United Kingdom preferred to focus on the context in which that technology was deployed (e.g. self-driving vehicles, or foundation models and LLMs), because "AI can have different impacts depending on how it's used" (Ponomarov, 2024[3]). At the same time, such regulation would be guided by cross-cutting principles published by the government. However, the current government indicated in its manifesto that it would introduce new regulation and has committed to ensuring that new surveillance technologies will not find their way into the workplace without consultation with workers (Booth, 2024[4]). In July 2024, the King's Speech announced plans to establish "appropriate legislation to place requirements on those working to develop the most powerful [AI] models" as well as a Digital Information and Smart Data Bill which would be accompanied by reforms to data-related laws. In March 2025, an Artificial Intelligence (Regulation) Bill was (re-)introduced into parliament which called for mandatory AI impact assessments and standardised compliance obligations, amongst others (Moreno, 2025[5]).

An important consideration policymakers will need to make, is whether to ban certain technologies, or at least the application of certain technologies. For example, Article 5 of the EU AI Act prohibits various AI "practices", such as: "AI systems to infer emotions of a natural person in the areas of workplace" and "the use of biometric categorisation systems that categorise individually natural persons based on their biometric data to deduce or infer their […] trade union membership".

The importance of proportionality

Regulatory intervention should be proportionate to the impact of the technology. This is why the EU AI Act has opted for a risk-based approach which imposes a gradual scheme of requirements and obligations depending on the level of risk posed to health, safety and fundamental rights. Canada ("high impact"[1]) would be following a similar approach. In New Zealand, the Ministry of Business, Innovation and Employment has said it "will take a light-touch, proportionate and risk-based approach to AI regulation" (New Zealand Ministry of Business, 2024[6]).

Proportionality can also be applied to firm size. The burden of regulation is likely to be heavier for small firms. In the United States, a proposed Algorithmic Accountability Act said it would focus on large firms only.[2] Similarly, in Canada under the proposed AIDA, smaller firms would not be expected to have governance structures, policies, and procedures comparable to those of larger firms with a greater number of employees and a wider range of activities. In addition, in Canada, SMEs would receive assistance in adopting the practices needed to meet the requirements.

International spillovers

While countries may have different starting points, institutional set-ups as well as preferences, it is inevitable that legislative measures in one country will have spillover effects beyond its borders. The same way in which the General Data Protection Regulation (GDPR) resulted in non-EU companies adapting GDPR standards (and non-EU countries adapting comparable legislation), the EU AI Act is likely to have an impact on individuals and companies outside the EU, and to influence regulatory efforts in non-EU countries. Already, several countries are taking similar risk-based approaches to AI regulation, and legislative proposals on the table in a number of countries (e.g. Brazil, Chile) mimic elements of the EU AI Act. This impact will not just be felt where the technology is deployed, but also where it is developed. For example, regulation in the United States around discrimination in hiring may lead to developers in other countries adopting the four-fifths rule[3] when designing AI hiring tools. There is a clear first-mover advantage in setting regulation, but consensus on the challenges to be addressed and the possible solutions can be promoted through international cooperation. For example, while Switzerland has chosen to rely on sectoral rules rather than AI-specific legislation, it has acknowledged that this may cause tension with international regulatory frameworks (FDFA, 2022[7]) and Switzerland is taking an active role in shaping global AI regulations, e.g. as part of the Council of Europe Committee on AI. The council of Europe's Framework Convention on AI has been signed by a number of countries, including the United Kingdom and the United States.

The OECD of course also plays an important role in these international discussions on how to address the challenges of AI and seize its benefits. In 2019, the OECD Ministerial Council adopted the first intergovernmental standard on AI – the AI Recommendation – which aims to foster innovation and trust in AI by promoting the responsible stewardship of trustworthy AI while ensuring respect for human rights and democratic values. At the 2024 OECD Ministerial Council Meeting, ministers called on the OECD to develop an action plan to seize the benefits and address the risks of AI in the labour market.

Supporting workers through the transition

A key priority for countries will be to support workers through the transition. Like previous technological change, AI is likely to result in a transformation of the labour market (e.g. the kinds of jobs that are created, the skills that are demanded, the content of jobs and how we carry them out) and workers will need to be equipped with the tools to make the most of this transition. Most OECD countries already have strong institutions and systems in place for training, social protection, re-employment services, and social dialogue. However, AI brings new challenges which may require either a scaling-up of existing efforts, or more AI-specific solutions. This section provides an overview of the kinds of initiatives OECD countries

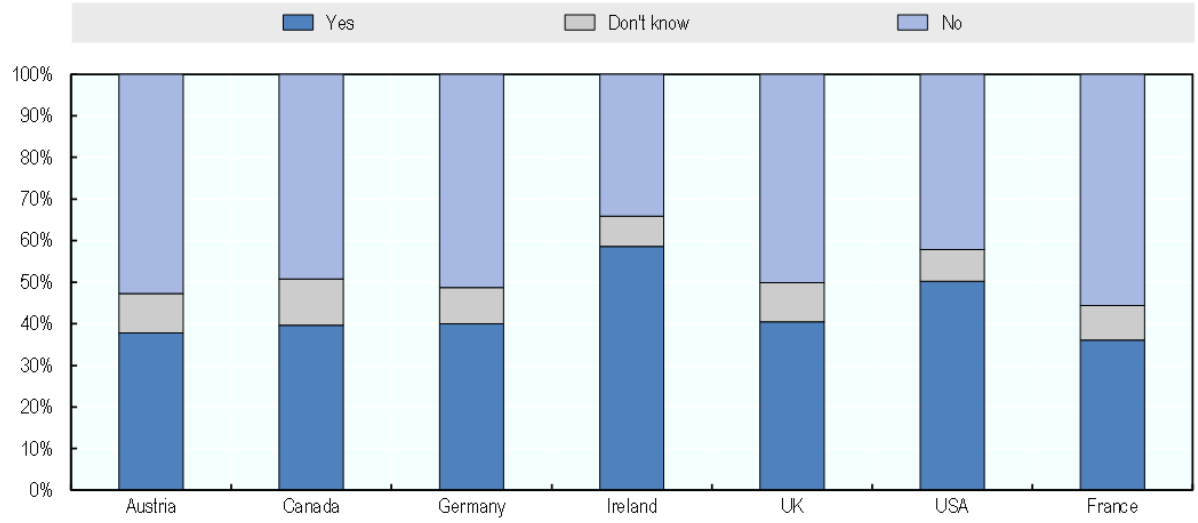
have been undertaking, as well as the outstanding gaps. With an eye on inclusiveness (see next section) it is important also that these measures ensure no one is left behind.

Training

Employers already provide training to workers who work with AI. In a survey of workers in the manufacturing and finance sectors of seven OECD countries, nearly 50% said their employer had provided training to work with AI (Figure 3.1). At the same time, employers in those same sectors and countries identified a lack of skills as a major barrier to AI adoption, suggesting that there is scope for government intervention in this field (Figure 3.2).

Figure 3.1. Nearly one in two workers say their employers provide training to work with AI

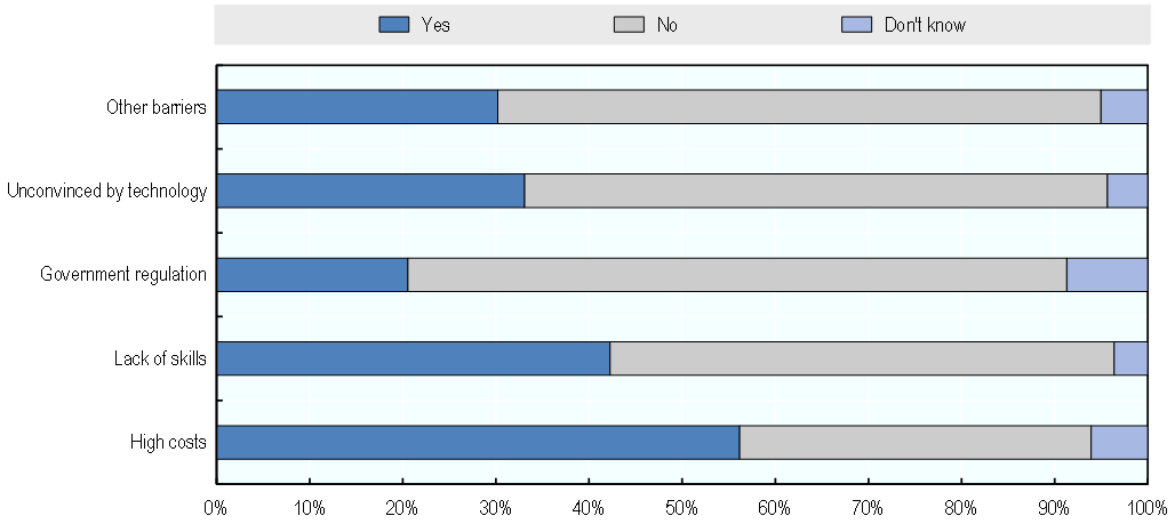
Percentage of workers



Note: Workers in manufacturing and finance sectors of Austria, Germany, France, the United Kingdom, Ireland, the United States and Canada.
Source: Lane, Williams and Broecke (2023[8]), "The impact of AI on the workplace: Main findings from the OECD AI surveys of employers and workers", https://doi.org/10.1787/ea0a0fe1-en.

Figure 3.2. Employers cite a lack of skills as a major barrier to adopting AI

Share of employers



Note: Employers in manufacturing and finance sectors of Austria, Germany, France, the United Kingdom, Ireland, the United States and Canada.
Source: Lane, Williams and Broecke (2023[8]), "The impact of AI on the workplace: Main findings from the OECD AI surveys of employers and workers", https://doi.org/10.1787/ea0a0fe1-en.

Most countries recognise the importance of skills and training to make a success of AI. A recent OECD survey showed that several countries have developed AI strategies that place emphasis on skills (OECD, 2024[9]). In the United States, Executive Order 14110 "on Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence" (now revoked) had promised to support programmes to provide Americans with the skills they need for the age of AI. Similarly, in Norway, the National AI Strategy places emphasis on expanding the offer of education programmes and workplace training in the field of AI in order to create a solid basis of digital skills and capabilities.

Few countries, however, have proposed concrete action plans. Existing programmes tend to focus on digital or AI skills, but the share of workers requiring specialised AI skills represents only 0.3% of total employment (Green and Lamby, 2023[10]) and recent OECD analysis of training catalogues confirms that only between 0.3% and 5.5% of available training courses in Australia, Germany, Singapore and the United States deliver AI content (OECD, 2024[9]). Most workers who will be exposed to AI will not need such specialised AI skills. Skills demanded in occupations highly exposed to AI include: general project management, finance, administration and clerical skills. While the demand for these skills is still increasing overall, there is some indication that demand may be falling in the workplaces most exposed to AI (Green, 2024[11]). Analysis focussing on Canada reveals instead an increasing demand for social skills (Green, 2024[12]). Training systems will need to be agile to respond to such changes in skills demand.

Workers and the population more generally will also need basic AI literacy – i.e. a non-technical understanding of, and an ability to critically reflect on, AI applications. Article 4 of the EU AI Act requires providers and deployers of AI systems to ensure a sufficient level of AI literacy of their staff and other persons dealing with AI systems on their behalf, and the EU AI Office published "Questions & Answers" to explain what this means. Several countries have already introduced publicly funded training programmes for AI literacy (OECD, 2024[9]). In Austria, the initiative "Digital Everywhere" (*Digital Überall*) would roll out 3 500 workshops in all municipalities throughout 2024 with the aim of bolstering basic digital competencies, including AI and cybersecurity, among the general population. To ensure inclusivity across diverse

demographics, the workshops are conducted at diverse venues, including youth centres and retirement homes, facilitating access for individuals from different backgrounds and age groups. Singapore launched a training initiative aimed at assisting jobseekers and employees from various professional backgrounds and skill levels in acquiring digital and AI literacy skills that equip them for the digital economy. The initiative is targeted at adults in jobs likely to be affected by AI and with low levels of skills and education.

Technological developments are one of the major forces behind the need for retraining, but they can also be part of the solution. In particular, AI has the potential to increase training participation, including among currently underrepresented groups, by lowering some of the barriers to training that people experience, increasing motivation to train, personalising content and delivery, and offering more targeted learning pathways. Moreover, certain AI solutions for training may improve the alignment of training to labour market needs, and help in planning and delivering training policies. To realise the benefits of AI for training and ensure that it yields benefits for all, it will be necessary to address potential drawbacks in terms of changing skills requirements, inequalities in access to data, technology and infrastructure and important ethical issues. Finally, even when these drawbacks can be addressed, the introduction and expansion of AI tools for training is constrained by the supply of AI skills in the workforce and the availability of scientific evidence regarding the benefits of AI tools for training and whether they are cost-effective (Verhagen, 2021[13]).

Social protection and re-employment services

While AI is unlikely to lead to massive technological unemployment or a jobless future, change in the labour market will be inevitable with some jobs disappearing and new ones created. This change in the labour market will require workers to adjust, with some needing to transition between jobs. In countries without adequate social protection, efforts will need to be made to ensure that such workers are adequately supported. In the United States, Executive Order 14110 “on Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence” (now revoked) had stated that there was a need to “assess how current or formerly operational Federal programmes designed to assist workers facing job disruptions – including unemployment insurance and programmes authorised by the Workforce Innovation and Opportunity Act (Public Law 113-128) – could be used to respond to possible future AI-related disruptions.” Similarly, other countries will need to ensure access to employment support measures for workers most exposed to AI-related disruption.

At the same time, AI can help improve the delivery of minimum income benefits (MIB) and unemployment assistance (UA), for instance by providing information to individuals, through determining eligibility based on pre-determined statutory criteria and identifying undue payments, to notifying individuals about their eligibility status. One of the key opportunities of using AI for these purposes is that this may improve the timeliness and take-up of MIB and UA. However, it may also lead to systematically biased eligibility assessments or increase inequalities, amongst others (Verhagen, 2024[14]). Similarly, AI can help improve the provision of public employment services (PES) and half of PES in OECD countries are already employing AI to enhance their services, including most commonly to match jobseekers with vacancies. While AI offers many opportunities to improve PES services, there are also risks that need to be managed, including through: prioritising the transparency of AI algorithms and explainability of results, establishing governance frameworks, ensuring end-users (staff and clients) are included and supported in the development and adoption process, and committing to rigorous monitoring and evaluation to increase the positive and manage any negative impact of AI solutions (Brioscú et al., 2024[15]).

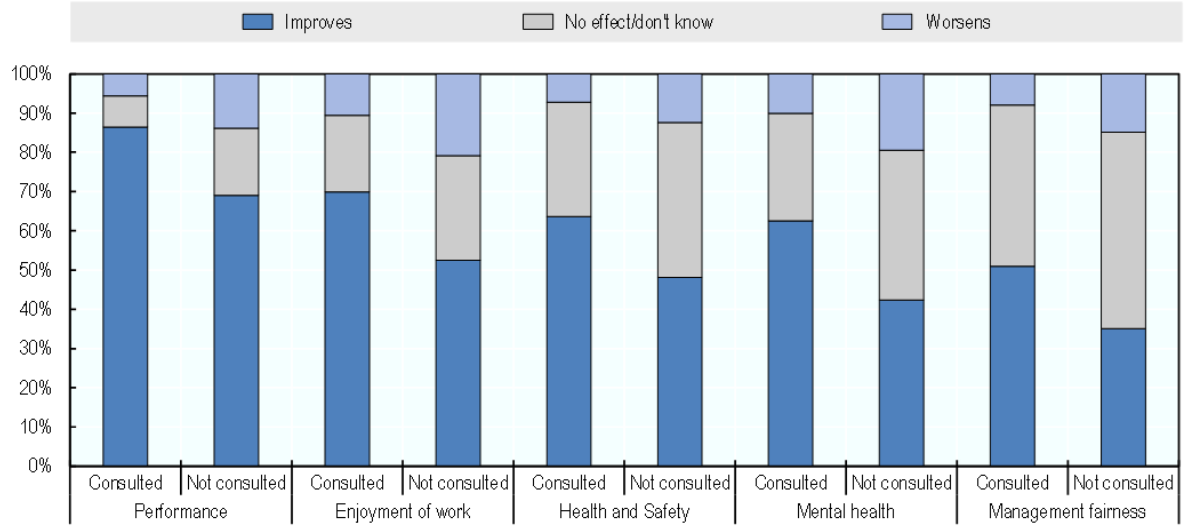
Social dialogue

Social dialogue, including collective bargaining, can play a critical role in facilitating the trustworthy use of AI in the labour market by helping to identify opportunities for the use of AI that simultaneously achieve business objectives, mitigate risks, and safeguard human rights and international labour standards. Meaningful and early engagement with social partners provides a way for workers and worker

representatives to voice questions, concerns and feedback and for social partners to negotiate to find flexible and pragmatic solutions throughout any transition period. Social dialogue will also be important to ensure that workers obtain their fair share of the benefits of AI. In general, evidence shows that the outcomes of AI for workers are more positive in firms that consult workers and their representatives on the adoption of AI (Figure 3.3).

Figure 3.3. Workers who say their employer consults them about the adoption of new technologies are more positive about the impact of AI on their jobs

Percentage of workers who work with AI



Note: Workers in manufacturing and finance sectors of Austria, Germany, France, the United Kingdom, Ireland, the United States and Canada.
Source: Lane, Williams and Broecke (2023[8]), "The impact of AI on the workplace: Main findings from the OECD AI surveys of employers and workers", https://doi.org/10.1787/ea0a0fe1-en.

However, AI may bring some risks to social dialogue. When employers have access to more data than necessary about workers, there is a risk that information (and hence bargaining) asymmetries are exacerbated, especially when workers are not aware that they are interacting with AI, or not sufficiently informed about the outcomes of this interaction. There is a risk also that data collected or inferred through AI is used to limit workers' right to organise (Glass, 2024[16]). In the United States, the company Whole Foods allegedly used AI-driven data analysis to create a "unionisation heat map" to predict which stores were most likely to have union organising campaigns (CLJE, 2024[17]). Similarly, Amazon has been accused of using electronic monitoring and productivity quotas as a means to retaliate against employees engaged in union organising (Oakford, Bivens and McNicholas, 2024[18]).

This is happening in a context where the number of workers who are members of unions and are covered by collective agreements has declined in most OECD countries, and the development of new forms of work and new business models, partly facilitated by AI, risks exacerbating the under-representation challenge faced by traditional social partners (OECD, 2019[19]). The lack of AI-related expertise among social partners is a major challenge to support their members in the AI transition (OECD, 2023[20]).

Regulatory initiatives have focussed on addressing the information asymmetry between employers and workers. For example, the EU AI Act expects all employers to inform workers' representatives and the affected workers if they will be subject to the use of the high-risk AI system. And the EU Platform Work Directive, in an attempt to regulate algorithmic management, expects information to "be given in due time

to enable platform workers' representatives to prepare for consultation, with the assistance of an expert chosen by the platform workers or their representatives in a concerted manner where needed." In 2021, Germany amended its Works Constitution Act to give works councils a right to information if AI is used in the workplace.

Other measures that governments could implement to strengthen social dialogue include: developing guidance, tools and practical mechanisms to support the effective implementation of existing relevant regulations and establish best practices for employers (including SMEs) to involve, inform and consult workers and worker representatives in the adoption of AI systems in the workplace; supporting the development of AI-related expertise and skills among social partners; and engaging social partners in the delivery of training for AI and digital literacy initiatives for workers and management.

Promoting an inclusive transition

AI will not affect all groups equally. Some individuals are more likely to gain, while others are at higher risk of either losing their job or experiencing changes on the job (Lane, 2024[21]). The kinds of initiatives to accompany workers through the transition outlined in the previous section, particularly if well-targeted, will go some way in counteracting a potentially negative impact of AI on inclusiveness. However, there are other channels through which AI could either harm or benefit inclusiveness in the labour market, including through: the employability of underrepresented groups; bias and discrimination; and labour market concentration.

AI tools to boost the employability of underrepresented groups

Certain AI applications (e.g. live captioning for deaf individuals, AI-powered prosthetics) might help underrepresented groups achieve better outcomes on the labour market. Policies that promote the development and adoption of such tools can therefore promote inclusiveness, however these are currently lacking in OECD countries (Touzet, 2023[22]). In the case of disability, for example, Klaus Höckner from the Austrian Association of Blind and Visually Impaired People explains that "[AI] is sometimes talked about in terms of avoiding the bias, but very rarely in terms of seizing the potential" (Touzet, 2023[22]). The EU AI Act calls on member countries to support and promote research and development of AI solutions in support of socially beneficial outcomes, such as AI-based solutions to increase accessibility for persons with disabilities and tackle socio-economic inequalities. Some policy options for governments include: funding research; help developers create sustainable business models; invest in publicly available data for the development of AI tools; promote awareness of existing solutions; and promote diversity in AI development teams (Touzet, 2023[22]).

Bias and discrimination

Existing anti-discrimination legislation is applicable to AI use in the workplace. There may, however, be gaps and loopholes in this legislation and scholars have argued that the law may need to evolve (Adams-Prassl, Binns and Kelly-Lyth, 2022[23]). While relevant case law is still limited, automated decision making systems are increasingly facing challenges (Adams-Prassl, Binns and Kelly-Lyth, 2022[23]). In the United States, for example, the Equal Employment Opportunity Commission sued and settled with iTutorGroup after it was found that the company's recruitment software automatically rejected female applicants aged 55 and over and male applicants aged 60 and older. The bias was discovered when one of the applicants reapplied for the same job using a more recent birthdate and did get an interview (Wilkinson and Lukens, 2023[24]).

The policy response so far contains a mixture of: awareness raising, enforcement of existing legislation, impact assessments/audits, as well as data governance requirements, and (proposed) revisions to the

legislation (e.g. by inverting the burden of proof). Fighting bias and discrimination will also depend on transparency and explainability of AI tools (discussed further down).

In the United States, some states are proposing modifications to their anti-discrimination law, including California, where there is a proposal by the California Civil Rights Council to hold employers liable for the use of AI-Based Employment Decision Tools that have a discriminatory impact against an applicant or employee based on a protected characteristic (Wilkinson and Lukens, 2023[24]). At the same time, California introduced AB 331 on 30 January 2023, which would prohibit employers from using automated decision tools in a way that contributes to algorithmic discrimination, and would also, amongst others, require them to perform impact assessments for automated decision tools in use, provide individuals with notice of the use of such tools and allow them to request an alternative process (Wilkinson and Lukens, 2023[24]). On 17 May 2024, Colorado enacted the first comprehensive AI legislation in the United States with a specific focus on discrimination. Developers and deployers must use reasonable care to avoid discrimination via AI systems that make, or are a substantial factor in making, a consequential decision "that has a material legal or similarly significant effect on the provision or denial to any consumer of, or the cost or terms of employment or an employment opportunity".

However, implementing such laws can be tricky. One of the first attempts at addressing bias in automated employment decision tools was New York City's Local Law 144 of 2021 which prohibits employers and employment agencies from using such tools unless they have been subject to a bias audit within one year of their use, information about the bias audit is publicly available, and certain notices have been provided to employees or job candidates. Six months after the implementation of the law, researchers found only 18 bias audits and 13 transparency notices from nearly 400 employers analysed (Wright et al., 2024[25]). One of the main reasons for this seemingly low compliance may be that the law narrowly focusses on tools that are used without any human oversight. It is, however, very easy to get round that by arguing there is a human in the loop somewhere (Weber, 2024[26]).

In Canada, while the Canadian Human Rights Act (CHRA) as well as provincial human rights legislation protect individuals against discrimination, it is felt that AI systems risk causing harm to historically marginalised communities on a large scale if not properly assessed for bias. The Artificial Intelligence and Data Act (AIDA), if passed, would address this risk by requiring firms to proactively identify, assess and mitigate the risk of bias on grounds prohibited by the CHRA prior to a high-impact system being made available for use.

The EU AI Act calls for AI systems to be "developed and used in a way that includes diverse actors and promotes equal access, gender equality and cultural diversity, while avoiding discriminatory impacts and unfair biases that are prohibited by Union or national law". The EU AI Act places emphasis on the quality of data which should be "sufficiently representative, and to the best extent possible free of errors and complete in view of the intended purpose of the system" and that attention should be paid to "the mitigation of possible biases in the datasets" "to ensure that the high-risk AI system performs as intended and safely and it does not become a source of discrimination". To achieve this, the EU AI Act states that "providers should, exceptionally, to the extent that it is strictly necessary for the purposes of ensuring bias detection and correction in relation to the high risk AI systems, […] be able to process also special categories of personal data". The EU AI Act also calls for "appropriate data governance and management practices", potentially with recourse to "third parties that offer certified compliance services including verification of data governance, data set integrity, and data training, validation and testing practices." At the same time, and as mentioned above, the EU bans the use of certain systems such as those "intended to be used to detect the emotional state of individuals in situations related to the workplace".

In Switzerland, there is an acknowledgement that the current legislation, which only prohibits discrimination by state actors, may need revision and there is a call for a "general equal treatment law that covers and sanctions discrimination by private parties, especially, companies, based on specific protected

characteristics" and that the difficulty of proving discrimination "could be solved by reversing the burden of proof" (Thouvenin et al., 2021[2]).

Something else countries could do is promote diversity in the AI workforce (i.e. the subset of workers with skills in statistics, computer science and machine learning who could actively develop and maintain AI systems). Today, this workforce is primarily male (Green and Lamby, 2023[10]) and this is likely to impact the design of AI technologies, consciously or unconsciously, potentially resulting in bias and discrimination.

Labour market concentration

There are also concerns that AI may worsen labour market concentration, which is already substantial and pervasive in OECD economies (Araki et al., 2022[27]). This could result in lower wages and fewer employment opportunities for workers.

In the United States, before being revoked, Executive Order 14110 "on Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence" had placed importance on promoting competition in AI and other markets and called for actions to address "the risks arising from concentrated control of key inputs, taking steps to stop unlawful collusion and prevent dominant firms from disadvantaging competitors, and working to provide new opportunities for small firms and entrepreneurs. In particular, the Federal Trade Commission is encouraged […] to ensure fair competition in the AI marketplace and to ensure that consumers and workers are protected from harms that may be enabled by the use of AI."

A related issue is the lower adoption of AI by SMEs compared to larger firms which is likely to accentuate inequalities in productivity and growth between firms, as well as between workers in those firms. Even when it comes to generative AI, where barriers to use by smaller firms are supposedly lower, larger firms are still more likely to use such technologies. In Korea, while SMEs cite incompatibility with what the company does and incompatibility with company culture as important barriers to generative AI use, as well as the cost of generative AI, a lack of skills within the company is the biggest barrier, suggesting policymakers can promote the use of generative AI among SMEs by investing in training and possibly subsidising AI adoption (OECD, forthcoming[28]).

Promoting a safe and trustworthy AI

Protecting worker health and safety

Most countries have regulations that set out employers' obligations towards employees concerning their occupational safety and health. While details vary from country to country, employers usually have to assess risks, eliminate or reduce these risks with preventative and protective measures, and inform workers about the risks and train them. While in theory such regulations should also cover AI, there may be gaps. Also, while most countries have product liability regulations, they likely will need to be adapted to the use of AI systems. Moreover, labour inspectorates may lack the knowledge and/or capacity to address new risks posed by AI.

In the EU, Directive 89/391/EEC of 12 June 1989 introduced measures to encourage improvements in the safety and health of workers at work, including the obligation for employers to assess the occupational health and safety risks, and it laid down general principles of prevention that employers are to implement. Since AI systems potentially have significant impact on the safety and on the physical and mental health of platform workers, this directive would apply to employers using AI. However, the EU has since worked on more AI-specific legislation.

The EU AI Act is "essentially a product safety regulation" (Martens, 2024[29]): it aims to ensure that AI systems used in the EU are safe. AI systems which are judged to be high-risk (which includes AI systems used in employment, worker management and access to self-employment) will need to be assessed before

being put on the market and throughout their lifecycle. To this end, technical and organisational measures should be taken, for example by designing and developing appropriate technical solutions to prevent or minimise harmful or otherwise undesirable behaviour. Those technical solutions may include mechanisms enabling the system to safely interrupt its operation (fail-safe plans) in the presence of certain anomalies or when operation takes place outside certain predetermined boundaries.

On top of the EU AI Act, the Platform Work Directive provides extra protections for workers on digital labour platforms in the EU. For example, the directive expects digital labour platforms to carry out an evaluation, at least every two years, of the impact of automated monitoring or decision making systems on the working conditions of platform workers, amongst others. These mandatory evaluations should indicate whether the safeguards of the systems are appropriate to address those risks and digital labour platforms should take appropriate preventive and protective measures. The digital labour platform should make their risk evaluation and the assessment of the mitigating measures available to platform workers, their representatives and the competent authorities.

In October 2024, the US Department of Labor issued "Principles and Best Practices for Developers and Employers" to promote worker well-being – although these remain very high-level and highlight the importance of worker consultation and transparency, clear governance systems, protecting labour rights, worker upskilling and responsible data use, amongst others. It is not clear to what extent these principles reflect the policies of the current administration.

In addressing AI-related risks to health and safety, countries could strengthen the capacity of labour authorities to supervise and enforce compliance with the law including through effective sanctions and sanctioning procedures for non-compliance, and through building their capacity to make use of AI in a trustworthy manner.

Data protection and privacy

The growing integration of AI in the world of work will likely result in greater collection and analysis of data on workers and job applicants. In some cases, data on workers is collected as a byproduct and is not the main purpose of the AI system. In other cases, AI systems may be specifically designed for measuring productivity or worker surveillance. Data collected may include information such as: worker movements, biometric data, as well as digital activities.

Workers may worry about their privacy when such data is personal. They might also worry that the data are used for purposes other than for which it was intended. Increased monitoring and surveillance could also lead to stress. In addition, AI may be used to infer personal data. As was pointed out in the United States Executive Order 14110 "on Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence" before it was revoked, "Artificial Intelligence is making it easier to extract, re-identify, link, infer, and act on sensitive information about people's identities, locations, habits, and desires. Artificial Intelligence's capabilities in these areas can increase the risk that personal data could be exploited and exposed."

The protection of workers against privacy risks varies considerably across OECD countries and gaps remain even in those with the strongest protections.

In the EU, the GDPR regulates the use of personal data by AI systems: (i) requiring such AI systems to be developed with a clearly-defined purpose; (ii) allowing the use of personal data on the basis of only six legal grounds (consent, compliance with a legal obligation, performance of a contract, completion of a public interest mission, the safeguarding of vital interests, the pursuit of a legitimate interest); (iii) requiring data minimisation;[4] (iv) limiting the retention period; (v) requiring transparency; and (vi) respecting the individuals data rights.[5]

In practice, data protection and privacy rules for workers across Europe are far from "harmonised, consistent, and comprehensive" because GPDR "leaves the issue of employee data protection to be addressed at the Member State level" (Abraha, 2022[30]). There are various reasons why it is hard to regulate workplace privacy through a general privacy law (Abraha, 2022[31]): (i) employers often rely on supposed legitimate interest for monitoring workers, making it harder to decide what is acceptable and what is not; (ii) the power imbalance implicit in the employer-employee relationship casts doubt over the meaning of consent in such settings; (iii) in the employment context, there are collective rights to information, participation and co-determination, and such rights are missing in general data protection regulations. Many EU member countries have no employment-specific provisions in their data protection laws. However, workers' personal data can also be regulated through other laws (e.g. labour law) and/or collective agreements. Only a small number of countries, such as Malta, do not include any employment-specific provisions in either their respective data protection law or labour law. In some countries (e.g. Austria, Germany, Sweden) social partners play an important role in the introduction/use of new technologies for monitoring purposes, while this role is more limited in others (e.g. France and Finland). As a result, workers' data protection in Europe is regulated through a mixture of national labour law and collective agreements, in addition to data protection law, and there are differences across countries in the extent to which workers' data is protected (Abraha, 2022[31]).

Another challenge in the context of AI, is that the GDPR relies on general principles which leave room for interpretation. Such uncertainty combined with the high penalties of non-compliance, could discourage many companies (and in particular small and medium-sized ones) from investing in AI. Guidance from data protection bodies (or other competent authorities) would go a long way in addressing such uncertainty (Sartor and Lagioia, 2020[32]). Thus, the successful application of GDPR to AI will depend on what guidance data protection bodies and other competent authorities provide. Appropriate guidance diminishes the cost of legal uncertainty and directs companies to efficient and data protection-compliant solutions (Sartor and Lagioia, 2020[32]).

The EU platform work directive, by virtue of regulating algorithmic management, takes worker privacy a step further by forbidding: (i) the processing of personal data on the emotional or psychological state of the person performing platform work; (ii) the processing of any personal data in relation to private conversations, including exchanges with other persons performing platform work and their representatives; (iii) the collection of any personal data while the person performing platform work is not offering or performing platform work; (iv) processing personal data to predict the exercise of fundamental rights, including the right of association, the right of collective bargaining and action or the right to information and consultation; (v) the processing of any personal data to infer racial or ethnic origin, migration status, political opinions, religious or philosophical beliefs, disability, state of health, including chronic disease or HIV status, the emotional or psychological state, trade union membership, a person's sex life or sexual orientation; and (vi) the processing of any biometric data of a person performing platform work to establish that person's identity by comparing that data to stored biometric data of individuals in a database.

Awareness of these issues is growing, however, and some countries are considering taking steps. For example, in Germany, political discussions have been underway to enact a German national law on employee data protection in addition to the EU GDPR, which could also contain dedicated provisions on AI (White & Case, 2024[33]).

Gaps in privacy protections are greater in other OECD countries.

In the United States, data protection and privacy laws have been described as a "checkerboard of federal and state privacy" (Kerry, 2020[34]) as well as a "patchwork with varying applicability to the employment context" (Gaedt-Sheckter and Maxim Lamm, 2023[35]), leaving "workers in the U.S. virtually unprotected from employers using digital workforce management technologies" (Feng, 2023[36]).

At federal level in the United States, the Electronic Communications Privacy Act (ECPA) prohibits an employer from intentionally intercepting the oral, wire and electronic communications of employees, unless

the monitoring is done for a legitimate business reason or the employer obtained the employee's consent. In practice, this offers little protection for employees since both express and implied consent suffice, including the inclusion of a disclaimer in an employee handbook or electronic communications policy that explicitly provides notice to employees that the employee has no expectation of privacy in the use of the company's communications systems and that the company maintains the right to monitor employee communications (Lee et al., 2022[37]).

While various states have passed privacy laws, most of these laws specifically exempt employee and job applicant data (Gaedt-Sheckter and Maxim Lamm, 2023[35]). California is a notable exception. Under the California Privacy Rights Act (CPRA), workers have the right to know when employers are monitoring them and for what purpose. They can access their data and request to correct or delete it. They can know if employers are profiling them or buying data about them, like social media activity. And they can opt out of employers selling their data (Feng, 2023[36]). There are similarities between the CPRA and the GDPR, but there are also important differences such as: the CPRA does not require a legal basis for the processing of personal data (and hence consent is not required to process information under the CPRA in the same way that processing is defined under the GDPR). In addition, the CPRA only applies to companies of a certain size (OneTrust DataGuidance and Newmeyer & Dillion LLP, 2022[38]).

In some cases, policymakers decide to ban some AI technologies to protect privacy. In the United States, for example, various cities have adopted bans on facial recognition technologies. Similarly, the EU AI Act prohibits AI systems that create or expand facial recognition databases through the untargeted scraping of facial images from the internet or CCTV footage.

Not all countries feel like data protection and privacy regulations need to change. In Switzerland, for example, the view is that the processing of personal data by algorithmic systems does not raise any fundamentally new questions and that it therefore seems possible (in principle) to solve the challenges for the protection of privacy and data using existing data protection law (Thouvenin et al., 2021[2]). Similarly, in New Zealand, the existing Privacy Act is deemed to cover AI tools and the Office of the Privacy Commissioner issued guidance on compliance with privacy law when using AI (New Zealand Privacy Commissioner, 2023[39]).

Human agency and oversight

As algorithms and automation permeate the workplace, there is a risk that individuals lose the ability to control their choices and decisions (i.e. their autonomy). Not only could this result in breaches of human rights and democratic values, but it could also undermine human dignity if it "instrumentalises" individuals or robs them of their sense of self-worth (Teo, 2023[40]).

A particular threat to agency and dignity comes from automated decision making and algorithmic management practices, which gained prominence in the platform economy but are very common in more traditional workplaces too (Milanez, Lemmens and Ruggiu, 2025[41]). The prevalence of algorithmic management tools ranges from 90% of firms in the United States to 79% in European countries and 40% in Japan. These practices involve the use of automated systems to replace functions that managers usually perform, such as allocating tasks, determining work schedules, giving instructions, monitoring and evaluating workers, as well as providing incentives or imposing sanctions. Algorithmic management can be intrusive and can restrict workers' autonomy and diminish opportunities for human interaction, with potentially important consequences for working conditions and equal treatment at work, amongst others. It could also lead to a shift in management and power relations within the workplace.

While "a total prohibition of automated decision-making would not be feasible" (Lukács and Váradi, 2023[42]), policymakers across OECD countries are taking steps to regulate it by: clarifying the circumstances under which automated decision making may or may not be permitted, requiring human oversight throughout the AI lifecycle as well as transparency (see next section); requiring periodic testing

and validation of the AI; and giving individuals rights to: human intervention, express their opinion, to obtain an explanation, and challenge/contest decisions taken by algorithms.

In the EU, automated decision making is regulated by the GDPR. More specifically, Article 22 of the GDPR states that "data subjects shall have the right not to be subject to a decision based solely on automated processing". In practice, however, very few decisions in the employment context rely solely on automated processing. It is easy to argue that there is a "human in the loop" even if that only means the rubberstamping of AI decisions. There are also exceptions that would allow for decisions based solely on automated processing: (i) if the automated processing is necessary for entering into, or performance of a contract; (ii) when the decision based on automated processing is authorised by "Union or Member State law"; and (iii) if the data subject has given his or her explicit consent. That does not mean there are no requirements for the employer who uses those exceptions to justify decisions based solely on automated processing: individuals subject to such decisions would still have a right to obtain human intervention, to express their point of view, and to contest the decision.

The EU Platform Work Directive takes these regulations a step further. It ensures that a person performing platform work cannot be fired or dismissed based on a decision taken by an algorithm or an automated decision making system. Instead, platforms must ensure human oversight on important decisions that directly affect the persons performing platform work. The data subject has a right to obtain human intervention, to express his or her point of view, to obtain an explanation and to contest the decision. The Directive also states that digital labour platforms shall not use automated monitoring and decision making systems in any manner that puts undue pressure on platform workers or otherwise puts at risk the physical and mental health of platform workers. Digital labour platforms are expected to regularly monitor and evaluate the impact of individual decisions taken or supported by automated monitoring and decision making systems on working conditions. They are expected to tackle systematic shortcomings on the use of automated monitoring and decision making systems. When the outcome of the oversight activities identifies high risks of discrimination at work, or the infringement of rights of persons performing platform work, digital labour platforms should take appropriate measures to address them, including the possibility to discontinuing such systems.

The EU Platform Work Directive also takes steps to ensure that human oversight is meaningful. In particular, digital labour platforms should ensure sufficient human resources for human oversight and the persons charged with the function of overview should have the necessary competence, training and authority to exercise that function and the right to override automated decisions. They should be protected from dismissal, disciplinary measures or other adverse treatment for exercising their functions.

In Australia, the government has agreed with the recommendations made by the Privacy Act Review Report around automated decision making (Australian Government, 2023[43]), including: a requirement for privacy policies to set out the types of personal information that will be used in substantially automated decisions; the introduction of a right for individuals to request meaningful information about how substantially automated decisions are made. The first of these has already been implemented, through the passage of the *Privacy and Other Legislation Amendment Act 2024*, and will come into effect on 10 December 2026. These recommendations are very much in line with the EU GDPR except that they extend to "substantially automated" decisions, rather than being restricted to "solely automated decisions" because "few decisions are made without any level of human intervention, and if the proposal was restricted to solely automated decisions, entities could potentially bypass requirements by including a negligible level of human involvement" (Australian Government Attorney-General's Department, 2022[44]).

In Canada there has been a Directive on Automated Decision-Making since 2019, however it only applies to tools used in administrative decision making. The directive requires algorithmic impact assessments prior to the production of an automated decision system, as well as the regular reviewing and updating of it. Other important aspects of the directive include: transparency (e.g. providing notice before decisions, or explanations after decisions) as well as recourse for clients wishing to challenge a decision.

In the United States, a proposal at federal level (the "No Robot Bosses Act") had sought to prohibit certain uses of automated decision systems (ADS) by employers, require employers to disclose how and when ADS are being used, and to add protections for employees and applicants related to ADS. In particular, the act would have: (i) prohibited employers from relying solely on ADS in making employment-related decisions; (ii) required pre-deployment and periodic testing and validation of ADS for issues like discrimination or bias before they are used in employment-related decisions; (iii) required employers to train individuals or entities on the operation of ADS; (iv) directed employers to provide independent human oversight of ADS outputs before using outputs in employment-related decisions; (v) required employers to timely disclose their use of ADS, the data inputs and outputs of these systems, and employee rights related to decisions aided by these systems; and (vi) established a Technology and Worker Protection Division at the Department of Labour to regulate the use of ADS in the workplace. Given the change in the policy environment in the United States, it seems unlikely that this act will become law.

At state level in the United States, some legislation around automated decision making has already been adopted, mainly around its use in recruitment, while further legislation is being proposed. As mentioned above, New York City Local Law 144 prohibits employers and employment agencies from using Automated Employment Decision Tools (AEDTs) unless they meet certain requirements around bias and transparency.

Transparency

The ability of workers to detect risks or harms, effectively question outcomes, and exercise their rights, hinges on their awareness of their interactions with AI systems and how those systems reach their outcomes. However, in many cases, workers are not aware they are interacting with an AI system. In the United Kingdom, for example, only 17% of adults can often or always tell when they are using AI (Harris et al., 2023[45]). In addition, workers (or their representatives) may not have access to information on how the AI systems work or which data they use, nor on what rights they have when interacting with such systems. Employers, in turn, may not be fully aware of how the AI systems they purchase from providers work, nor what their limitations or potential risks are.

Most AI principles that have been published to date underscore the importance of transparency of AI and its use. As put in the EU AI Act: "transparency means that AI systems are developed and used in a way that allows appropriate traceability and explainability, while making humans aware that they communicate or interact with an AI system, as well as duly informing deployers of the capabilities and limitations of that AI system and affected persons about their rights".

To address concerns related to the opacity and complexity of AI systems, the EU AI Act requires transparency for high-risk AI systems both before and after they are placed on the market or put it into service. High-risk AI systems will have to be designed in a manner that enables deployers (in this case: employers) to understand how the AI system works, evaluate its functionality, and comprehend its strengths and limitations. All such systems should be accompanied by appropriate information in the form of instructions of use, including the characteristics, capabilities and limitations of performance of the AI system. This should assist employers in making the correct choice of system, as well as in the subsequent use of that system. Employers in turn need to provide information to workers and their representatives on the planned deployment of high-risk AI systems. In particular, individuals should be notified that they are interacting with an AI system (unless this is obvious from the point of view of an individual who is reasonably well-informed, observant and circumspect taking into account the circumstances and the context of use). The information provided by the employer should include the intended purpose and the type of decisions made by the AI system, as well as the individual's rights under the EU AI Act.

The EU Platform Work Directive takes this a step further: "digital labour platforms should be subject to transparency and information obligations in relation to automated monitoring systems and automated systems which are used to take or support decisions that affect persons performing platform work, including

platform workers' working conditions, such as their access to work assignments, their earnings, their safety and health, their working time, their promotion or its equivalent and their contractual status, including the restriction, suspension or termination of their account. It should also be specified which kind of information should be provided to persons performing platform work regarding such automated systems, as well as in which form and when it should be provided. Individual platform workers should receive that information in a concise, simple and understandable form, in so far as the systems and their features directly affect them and, where applicable, their working conditions, so that they are effectively informed. They should also have the right to request comprehensive and detailed information about all relevant systems. Comprehensive and detailed information regarding such automated systems should also be provided to representatives of persons performing platform work, as well as to national competent authorities upon their request, in order to enable them to exercise their functions."

The EU Platform Work Directive only applies to workers on digital labour platforms, a small share of workers overall in the EU. In Spain, however, the so-called Riders Act extends transparency requirements to all companies using algorithmic management, and not only to platform companies operating in the food delivery sector. The new Article 64.4 of the Workers Statute establishes that workers' representatives must be informed of the "parameters, rules and instructions" that determine the work of the algorithm, which includes: how algorithms and artificial intelligence impact on working conditions, hiring decisions and layoffs, as well as the elaboration of workers' profiles.

In Switzerland, there is a feeling that "persons interacting with algorithmic systems must be able to recognise that they are doing so […] and not with a human being" and there is a suggestion that the Data Protection Act would be the best piece of legislation to introduce such a requirement, given that a person's interaction with an algorithmic system generally involves the processing of personal data (Thouvenin et al., 2021[2]). This is the approach of the EU in the GPDR.

Several States in the United States have introduced laws requiring employers to notify applicants and/or employees about their interactions with AI, but often these regulations do not encompass all conceivable AI applications and focus on the use of AI for recruitment or electronic monitoring only. The Illinois Artificial Intelligence Video Interview Act requires employers to notify applicants before the interview AI may be used to assess them and to provide applicants with information about how AI works and what characteristic(s) will be used to evaluate the applicants. New York City Local Law 144 requires certain notices to be provided to employees or job candidates before the use of Automated Employment Decision Tools (AEDTs).

One issue that may arise when pushing for more AI transparency is a potential tension with intellectual property and trade secret laws, which limit how much information can be disclosed. Within the EU, some commentators have argued that not all technical details of AI qualify for trade secret protection and that, even in those cases, there are exceptions to trade secret protection (Mylly, 2023[46]). Complicating this matter, however, is that trade secrets are treated differently in various jurisdictions (Kilic, 2024[47]).

Explainability

AI systems, particularly those using complex technologies like deep neural networks, yield outcomes that can be difficult or even impossible to explain. A lack of explainability can undermine the trust and confidence that people place in AI systems and the decisions that are informed by them. It also makes it difficult for individuals to provide informed consent to the use of such systems, or to identify and seek redress for adverse effects caused by AI systems in the workplace. A lack of trust and confidence, in turn, can cause worker resistance and hence hinder the adoption of AI systems in the workplace.

The platform economy is replete with examples of workers who faced "black box" algorithms and did not know the reasons for decisions taken by automated systems, while at the same time lacking the possibility

to obtain an explanation, to question and discuss those decisions with a human being, or to contest them and seek rectification and redress.

The EU Platform Work Directive seeks to address this. It states that "persons performing platform work have the right to obtain an explanation from the digital labour platform for any decision taken or supported by an automated decision-making system without undue delay. The explanation, in oral or written form, shall be presented in a transparent and intelligible manner, using clear and plain language." In practical terms, the digital labour platform needs to "provide persons performing platform work with access to a contact person designated by the digital labour platform to discuss and to clarify the facts, circumstances and reasons having led to the decision. Digital labour platforms shall ensure that such contact persons have the necessary competence, training and authority to exercise that function." Persons performing platform work will also "have the right to request the digital labour platform to review the decisions".

While the Platform Work Directive covers only platform workers, the EU AI Act has extended similar provisions to all workers who interact with AI systems. More specifically, the EI AI Act states that "affected persons should have the right to request an explanation when a decision is taken by the deployer with the output from certain high-risk systems […] which produces legal effects or similarly significantly affects him or her in a way that they consider to adversely impact their health, safety or fundamental rights. This explanation should be a clear and meaningful and should provide a basis for affected persons to exercise their rights". In a way, this is an extension of the GDPR which already required that data subjects be provided with "meaningful information about the logic involved" in automated decision making processes. In practice, however, the Platform Work Directive provides far more clarity than both the EU AI Act and the GDPR on what a meaningful explanation entails.

In Canada, amendments to the Quebec Act that entered into force in September 2023 now regulate automated decision making based on the processing of personal information, and require disclosure of the occurrence of processing and the provision of information about the reasons and factors that have led to a decision (White & Case, 2024[33]).

Accountability

While rules to ensure safety will reduce risks, they do not eliminate those risks entirely and, when they materialise, there may be harm or damage. In such cases, it is important to determine who is liable, however this is made particularly difficult in the case of AI given the complexity, autonomy and opacity of such tools, which can make it difficult or expensive for victims to identify the liable person and prove the requirements for a successful liability claim, and which may deter them from claiming compensation altogether.

To address this, the EU was preparing Liability Rules for Artificial Intelligence which would have eased the burden of proof through the use of disclosure and rebuttable presumptions. It would have established for those seeking compensation for damage a possibility to obtain information on high-risk AI systems to be recorded/documented pursuant to the AI Act. In addition to this, the rebuttable presumptions would have given those seeking compensation for damage caused by AI systems a more reasonable burden of proof and a chance to succeed with justified liability claims. The Liability Rules for AI have, however, been abandoned.

In Switzerland, it is felt that "the norms of general liability law also apply to [algorithmic] systems" (Thouvenin et al., 2021[2]) and that "in certain sectors, strict liability rules that apply to algorithmic systems (e.g. for vehicles in the Road Traffic Act or drones in the Air Traffic Act) are already available" (Thouvenin et al., 2021[2]), but also there is a question as to whether "strict operator liability should be introduced for operators of algorithmic systems in other sectors" and whether "the Swiss Product Liability Act must be updated" (Thouvenin et al., 2021[2]).

According to the Canada AIDA, accountability "means that organisations must put in place governance mechanisms needed to ensure compliance with all legal obligations of high-impact AI systems in the context in which they will be used. This includes the proactive documentation of policies, processes, and measures implemented."

In recent years, legislators across the OECD have made efforts to promote accountability mechanisms, such as requiring impact assessments and/or audits of AI systems to provide evidence and assurance that they are trustworthy and safe to use.

In Canada, the AIDA, if passed, would introduce obligations to establish and maintain written accountability frameworks by persons who make a general-purpose system or high-impact system available, or who manage the operations of such systems. Written accountability frameworks would include: (i) a description of the roles, responsibilities, and reporting structure for all personnel who contribute to making the system available or managing its operations; (ii) policies and procedures respecting the management of risks relating to the system and the data used by the system; and (iii) anything else required by regulation (White & Case, 2024[33]).

In the United States, New York City Local Law 144 expects employers using automated employment decisions tools to complete yearly bias audits.

The EU AI Act requires providers to carry out ex ante conformity assessments of high-risk AI tools before they are placed on the market, and to put in place post-market monitoring systems. The EU AI Act also places accountability with deployers (including employers) to use AI systems in accordance with the instructions of use. Indeed: "Whilst risks related to AI systems can result from the way such systems are designed, risks can as well stem from how such AI systems are used."

Accountability is closely linked to transparency and the information about AI systems that permit traceability – including technical documentation which demonstrates the compliance of the AI system with relevant requirements, as well as the automatic recording of events (logs) over the duration of the lifetime of the system (EU AI Act).

Accountability is also linked to human oversight, to ensure that AI systems are used as intended and that their impacts are addressed over the system's lifecycle. This includes making sure the system is subject to in-built operational constraints that cannot be overridden by the system itself and are responsive to the human operator, and that the natural persons to whom human oversight has been assigned have the necessary competence, training and authority to carry out that role.

Finally, skills and AI literacy are key to promoting accountability. The EU AI Act states that "AI literacy should equip providers, deployers and affected persons with the necessary notions to make informed decisions regarding AI systems". In the United States, the Federal Government will work to ensure that all members of its workforce receive adequate training to understand the benefits, risks, and limitations of AI for their job functions (BEO).

Recent regulatory and policy developments in Korea

The evolution of AI-related legislation in Korea

At present, no AI-specific legislation is in force in Korea; only regulatory frameworks scheduled to come into effect in 2026 have been established. Currently, the Personal Information Protection Act (PIPA) contains a limited number of provisions that relate to AI. All this reflects a broader tension within the Korean Government, mirroring trends observed internationally: the incentive to promote AI industry development, balanced against the need to regulate potential risks associated with AI.

Currently, Korea's economic growth is driven primarily by semiconductor industries and automotive manufacturing, which account for 20.9% and 13.4% of national exports, respectively (Yoo, 2025[48]). However, the government recognises AI as a potential new pillar for future economic development. Consequently, there has been a marked reluctance to introduce stringent regulations on AI, leading to a deliberate regulatory ambiguity. Both the government and the National Assembly have been responsive to these concerns that excessive AI regulations could undermine competitiveness in both the domestic market, in which global firms are not subject to those regulations, and the international market, cautioned by domestic AI firms, notably in the software and platform sectors. Although there are growing calls for pre-emptive regulatory measures to address emerging AI risks, the government's emphasis remains on boosting economic growth, resulting in a cautious approach to AI regulation.

South Korea's first law tangentially connected to AI was the PIPA, enacted in 2011. However, the original PIPA contained no AI-specific provisions, focussing instead on regulating the collection, use, and provision of personal data to safeguard individual privacy. At that time, AI was merely a possibility with limited relevance to everyday life or economic activity.

Following its enactment, there have been numerous amendments to PIPA, which were largely driven by the European Union – Korea Free Trade Agreement (EU-Korea FTA) signed in December 2015. With the General Data Protection Regulation (GDPR) entering into force in the EU in 2016, Korean companies seeking to maintain access to the European market were required to demonstrate compliance with GDPR-equivalent privacy standards. The domestic business community strongly advocated for regulations that matched – but did not exceed – GDPR standards (Joe et al., 2021[49]). Accordingly, the Korean Government and National Assembly focussed on aligning PIPA closely with GDPR requirements, and this shows Korea's approach to digital and AI-related legislation.

Explicit references to AI first appeared in PIPA through an amendment adopted on 14 March 2023. This amendment introduced Article 37(2), which defines what constitutes an automated system, including AI, and specifies the rights of data subjects with respect to automated decision making. For example, a data subject can request an explanation on how AI made a decision and refuse to accept it, when such decision made by AI has a significant effect on his or her right or duty. Also, the criteria and procedures for making automated decisions and the methods of processing personal information must be disclosed to each data subject upon request (Korea Legislation Research Institute, 2023[50]). Nonetheless, it would be more accurate to interpret this amendment as a preparatory step towards comprehensive AI legislation, rather than a fully-fledged regulatory framework for AI.

The Korean Government and National Assembly have passed a draft AI Basic Act, set to be implemented in 2026, and are currently conducting hearings with firms, various groups, and individuals to finalise the AI Basic Act. The legislation has three primary objectives: alignment with international standards, facilitating AI development, and providing ethical and operational guidelines.

The first objective is to establish a legal framework equivalent to the EU AI Act, thereby ensuring that Korean firms can continue to benefit from the EU-Korea FTA in digital trade. Korea's adequacy decision from the EU in 2021, confirming that PIPA provided GDPR-level protection (Jütten, 2024[51]), reflects the strategic importance of regulatory alignment in sustaining international trade relations. Similar to the motivation behind previous PIPA amendments – as an effort to ensure legal coherence aimed at promoting both exports and imports in the data sector, the proposed AI Basic Act focusses less on restricting AI and more on facilitating digital trade (European Commission, 2023[52]).

The second objective of the AI Basic Act addresses concerns from industry stakeholders, with focus on SMEs and start-ups, regarding current data restrictions under PIPA (Ministry of Science and ICT, 2024[53]). In its present form, PIPA imposes stringent conditions on the collection, processing, and use of personal data, complicating the acquisition of high-quality datasets essential for AI and machine learning. The current version of the AI Basic Act seeks to clarify the forms and conditions under which data may be used for AI development, thereby easing restrictions and promoting innovation. In particular, the law aims to

exempt AI-specific data activities from some of the more burdensome requirements of PIPA, such as the need for explicit consent from each data subject for every new use.

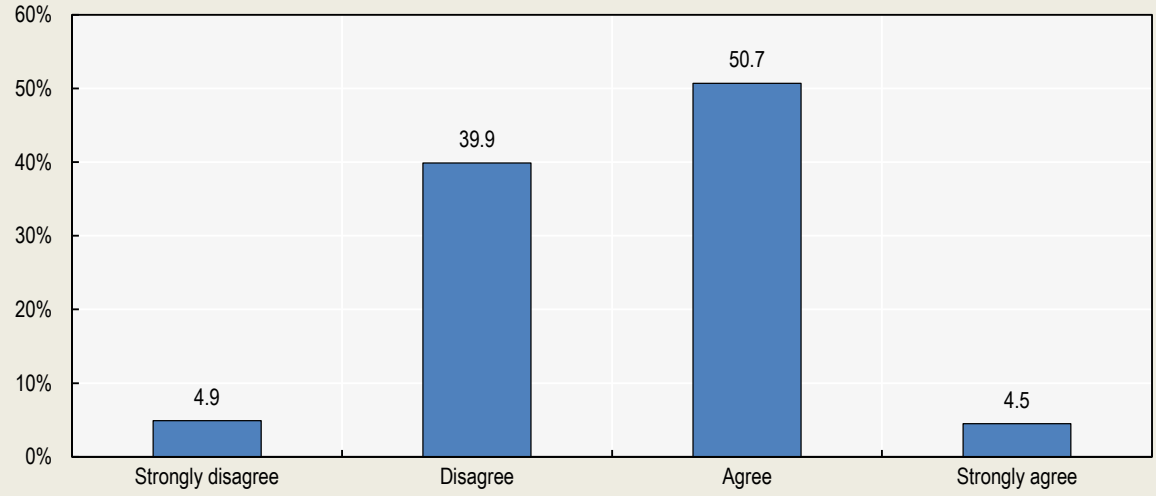
The third objective is to provide guidelines addressing some of the ethical issues surrounding the use of AI, including privacy, transparency and safety. Evidence from a survey suggests that Korean workers believe their employers do not always disclose the use of AI (Box 3.1). While the guidelines of the AI Basic Act may appear regulatory, they are intended primarily to clarify what business practices are prohibited. Importantly, the guidelines will not be enforced directly by the government; instead, the private sector will be encouraged to develop and implement its own mechanisms for ensuring AI safety and reliability. Current proposals suggest that, although companies must assess the trustworthiness of AI systems in employment, promotion and production management, the methods for doing so will be determined autonomously. Research indicates that data-related regulations in Korea, including PIPA amendments to align with GDPR, have had greater regulatory effects than trade-promoting effects (Lee et al., 2018[54]). This result, combined with domestic companies' concern on being left behind global competition, suggests that strong and direct regulation in Korea remains unlikely in the immediate future.

Box 3.1. Transparency on the use of AI in the workplace is sometimes lacking in Korea

In a survey of employees who use AI, 50.7% of employees agreed with the statement "My company is transparent about its use of AI", while 39.9% disagreed and 4.5% strongly disagreed (Figure 3.4).

Figure 3.4. Two in five workers in Korea say their employers are not being transparent about the use of AI in the workplace

Percentage of employees reporting they agree their employer is being transparent about the use of AI in the workplace



Note: The survey targeted individual employees who use AI in firms operating within four industries classified under the Korean Standard Industrial Classification (KSIC): Manufacturing, Information and Communication, Professional, Scientific and Technical Services, and Healthcare. Employees using AI provided the survey responses. The survey was conducted over a two-month period, from 20 October 2024 to 31 December 2024. The sample was drawn using a random sampling method, with a target sample size of 600. Ultimately, the study achieved valid responses from 426 employees, whose data were incorporated into the final analysis.
Source: Survey on AI Utilisation and Labour Market Changes conducted by the Korea Labor Institute (2024).

Integrating AI into Public Employment Services: The case of Korea's Work24 Platform

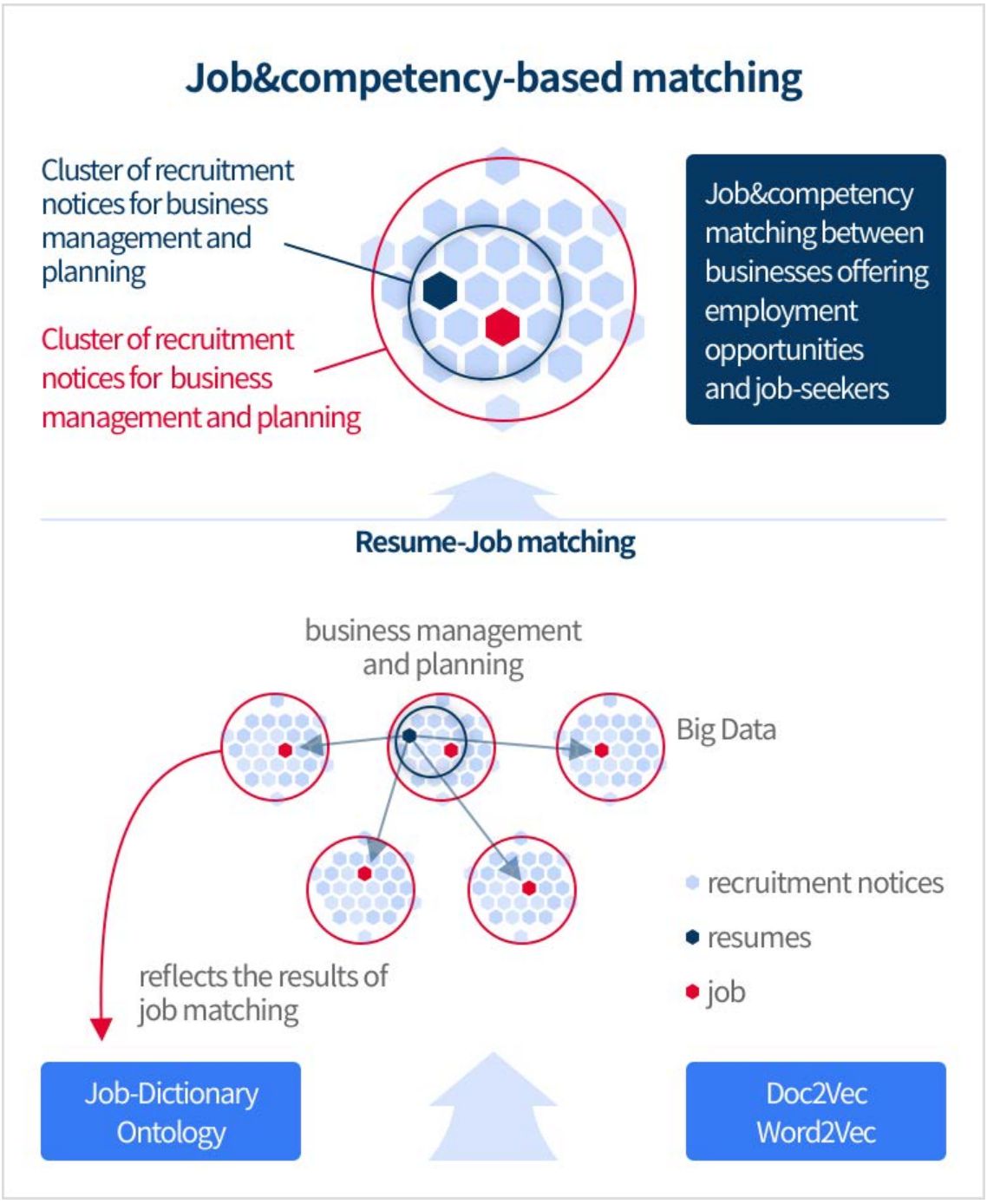
Meanwhile, the Korean Government is actively advancing the integration of AI into a range of public services. As part of this broader strategy, the Ministry of Employment and Labour has begun deploying AI technologies to enhance the delivery of employment services – an approach already well-established among private sector platforms. One such initiative is Work24, a website operated jointly by the ministry and the Korea Employment Information Service, which offers AI-driven job matching and recruitment services to both job seekers and employers.

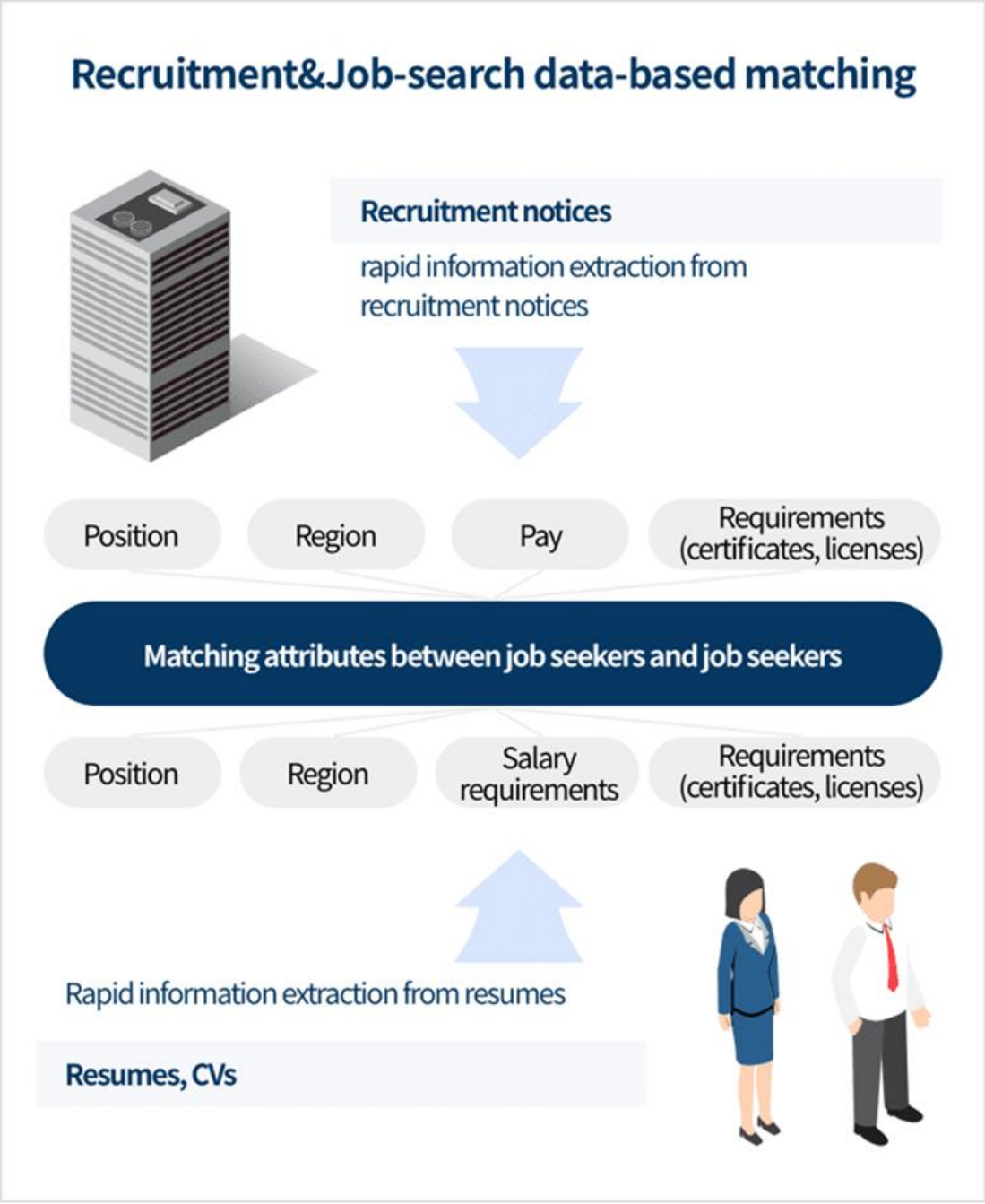
Previously known as WorkNet, Work24 serves as a public employment portal where companies may post job advertisements free of charge, and individuals can access job listings at no cost. Owing to its free-to-use model, the platform is primarily used by SMEs and public sector institutions, as opposed to large corporations. The predominant user base comprises medium- and lower-skilled job seekers targeting employment within SMEs, as well as older individuals seeking roles in the public sector (Kim et al., 2022[55]).

Work24 offers AI-based services through two primary channels:

- AI is employed to optimise the matching process for both employers and job seekers. When users upload their CVs, and consent to data processing, the system analyses their profiles to identify potential job matches. It also suggests additional information commonly searched for by individuals with similar profiles. These recommendation algorithms are underpinned by extensive training datasets, incorporating historical data on job postings, user activity, and previous matches.
- For employers, the AI system analyses job descriptions – factoring in criteria such as salary range, educational and skill requirements, job responsibilities, firm size, and industry – to suggest suitable candidates. This data-driven approach enhances the efficiency and relevance of the matching process on both sides of the labour market. Figure 3.5 illustrates the AI-driven matching process behind Work24.

Figure 3.5. AI-driven matching in Korea's Work24





Source: Ministry of Employment and Labor.

In addition to job matching, Work24 offers AI-enabled career counselling services. An AI chatbot provides tailored guidance on a broad spectrum of topics relevant to job search and career development. Given the considerable variation in required certifications and training across different occupations, it is challenging for human advisers to maintain up-to-date knowledge across all fields. The AI system overcomes this by retrieving and compiling real-time labour market information to deliver occupation-specific advice directly to users.

According to a 2025 announcement by the Korea Employment Information Service, the number of job seekers who secured employment through Work24 rose by nearly 31% in 2023–reaching

75 546 individuals, compared to 57 844 in 2022. This growth is attributed to the integration of AI into the platform's core services (Korea Employment Information Service, 2025[56]).

Nevertheless, limitations remain. Work24 primarily features job opportunities within SMEs, which tend to offer lower wages than larger firms. Consequently, the platform may be less effective in connecting highly skilled workers with high-paying positions. Despite this, Work24 plays a vital role in addressing the employment needs of the SME sector, often characterised by financial constraints and under-resourced recruitment capacities (Yang et al., 2024[57]).

Social dialogue on AI in Korean workplaces

At present, the AI Basic Act is a comprehensive legislation rather than a collection of specific guidelines, particularly with regards to labour markets. Consequently, potential AI challenges in the workplace are currently expected to be addressed through the Labour Standards Act and/or PIPA.

Although there is still a chance that the AI Basic Act scheduled for implementation in 2026 incorporates labour-related provisions, it is expected that many practical issues will continue to be handled via executive orders or ordinances. Specific discussions on these matters are ongoing through the Economic, Social and Labour Council (ESLC), a tripartite dialogue body involving representatives from labour, business, academia and government. In January 2025, the ESLC established a special committee, the "AI and Labour Research Association," tasked with studying changes in the labour market due to AI adoption and identifying necessary legal and policy responses (Economic, Social and Labor Council of Rep. of Korea, 2025[58]). Although this discussion remains in its early stages, it is anticipated that, once a conclusion is reached, each stakeholder in the social dialogue will begin to take corresponding actions.

An obligation to consult employees about unfavourable changes to the rules of employment?

A distinctive feature of labour law in Korea, as enshrined in the Labour Standards Act, pertains to provisions governing unfavourable changes to rules of employment. While many legal frameworks allow both employers and employees to negotiate the terms and conditions related to the rules of employment or working conditions, which include working hours, holidays, leave, wage determination, payment schedules, employee training, and matters concerning family allowances or retirement, the authority to unilaterally determine employment conditions rests exclusively with the employer (Article 93 of the Korean Labour Standards Act).

This inherent unilateralism creates a potential incentive for employers to modify employment rules in ways that could disadvantage employees. To mitigate this risk, labour laws in Korea mandate that when employers introduce amendments to employment rules or conditions that negatively affect employees, those employees must be recognised as key stakeholders in the decision making process. Article 94 of Korea's LSA explicitly outlines this requirement (Procedures for Preparation and Amendment of Rules):

1. An employer shall, with regard to the preparation or alteration of the rules of employment, hear the opinion of a trade union if there is such a trade union composed of the majority of the employees in the firm or workplace concerned, or otherwise hear the opinion of the majority of the said employees if there is no trade union composed of the majority of the employees: provided, that in case of amending the rules of employment unfavourably to employees, the employer shall obtain their consent thereto.
2. When an employer reports the rules of employment pursuant to Article 93, he or she shall attach a document stating the opinion as referred to in paragraph (1).

Consequently, any business activity resulting in wage reductions, increased working hours, deteriorated working conditions, or a weakening of employees' collective bargaining power requires the consent of

either a trade union representing the majority of employees or, in the absence of such a union, the majority of employees themselves. A landmark ruling by the Korean Supreme Court (Decision 77Da355, 26 February 1977) underscored that the legitimacy of unfavourable changes is determined not by the outcome itself (i.e. benefit or harm), but by whether the employer and employees negotiated from a position of equality. The legislative intent behind this provision is to ensure that employees, who intrinsically occupy a subordinate position within the employment relationship, are guaranteed collective participation when employment conditions are modified to their detriment (Kang, 2025[59]).

The adoption of AI in the workplace presents several potential legal challenges regarding unfavourable changes to the rules of employment. The main issue concerns the uncertainty surrounding how AI adoption impacts working conditions. When an employer decides to implement AI, it may not be immediately clear whether this will worsen or improve employees' working conditions. For instance, while AI could enhance productivity in manufacturing processes, potentially leading to layoffs – an action unequivocally requiring employee consent, AI might also result in reduced working hours and corresponding wage cuts, or unanticipated increases in work intensity across the production process.

This scenario raises critical questions: do such changes also necessitate employee consent? If so, must this consent be secured in advance, or is ex post facto consent sufficient? Furthermore, when unfavourable changes in employment conditions are implemented not through explicit amendments in contracts but through practical shifts within an otherwise unchanged set of employment rules, it remains ambiguous whether such changes should legally be regarded as a revision of employment rules. Additional questions arise, such as whether employees possess the right to refuse to work with AI, and whether compelling the use of AI constitutes an unfavourable change to the rules of employment.

While past court rulings have frequently categorised mixed changes – those entailing both favourable and unfavourable elements – as unfavourable, more recent judicial interpretations have shown a tendency to avoid requiring collective consent solely on the basis of a change being unfavourable (Kim, 2022[60]). Nevertheless, ambiguity persists for employers regarding the threshold at which changes become sufficiently significant to trigger the requirement for collective consent.

The Korean Labour Standards Act permits changes to employment conditions via rules of employment – even if unfavourable – when the possibility of such changes is explicitly stated in the employment contract (Kim, 2020[61]). However, it remains unclear whether this legal basis applies to mid- or long-term changes arising from AI adoption. This uncertainty is particularly problematic for SMEs, which lack comprehensive human resources management and legal teams. Consequently, SMEs may delay AI adoption until clearer legal guidance emerges – whether through case law, policy frameworks, or interpretations under Korea's nascent AI Basic Act. The hesitation of AI adoption from legal uncertainty may partly explain the significantly lower AI adoption rates observed in SMEs in Korea. However, given the considerable productivity gap between SMEs and large firms, and the substantial potential benefits of AI adoption in the SME, addressing this hesitation is crucial.

A further legal issue pertains to the decision making process for unfavourable changes to employment rules, which operates on the principle of majority rule. While requiring consent from a majority of employees or a union representing the majority promotes democratic decision making (Lee, 2022[62]), it also creates a potential for decisions that disproportionately disadvantage minority groups. For example, a majority union may consent to employment rule changes that impose burdens on non-union employees while concentrating benefits among union members (Kang, 2023[63]). In the context of AI adoption, a union representing the majority might request that AI be deployed preferentially (or last) in production lines or workplaces where non-union members are concentrated. Such outcomes would not align with the original intent of Article 94 of Labour Standards Act and may, in the future, raise concerns regarding fairness and inclusiveness in employment governance.

AI education and training policies in Korea

To address the growing demand for skilled labour in AI and digital technologies, the Korea Ministry of Employment and Labour has implemented a range of education and training programmes with targeted public support through various institutions (Box 3.2). However, three challenges going forward will be: (i) to achieve better strategic co-ordination between the Ministry of Trade, Industry and Energy and the Ministry of Employment and Labour; (ii) to provide training programmes tailored to the specific needs of SMEs; and (iii) to promote more work-based learning.

Box 3.2. AI-related education and training policies in Korea

Education programmes

"New Technologies Education for High-school Students" offers training opportunities to tenth-grade students enrolled in high schools that have restructured their curricula for new technologies, including AI. The programme provides financial support for students to take courses related to new technologies, as well as for teachers to participate in training programmes necessary to deliver such courses at schools. In 2024, of the total 3 138 participating students, 324 completed coursework specifically related to AI.

"High-tech Courses in Polytechnics" subsidises the costs of delivering advanced digital training courses to individuals under the age of 39 enrolled in polytechnic institutions that have established high-tech AI departments. In 2024, 215 young jobseekers completed AI-related training through this programme.

The government provides financial assistance to polytechnics offering two-year degree programmes focussed on applied AI skills. This initiative "Two-Year AI Degree Programme in Polytechnics" aims to rapidly cultivate a workforce equipped with practical competencies. As of 2024, a provisional total of 206 students were enrolled in these AI degree tracks. The concentration of AI education in polytechnic institutions reflects the urgency of mitigating labour shortages in the AI sector through accelerated training pathways.

Training programmes

The Ministry of Employment and Labour is implementing demand-responsive, project-based training initiatives in co-operation with leading companies, universities, and private institutions. These efforts fall under the umbrella of the "K-Digital Training programme", which is open to all individuals who are eligible for the National Training Card system[1] – both job seekers and incumbent workers.

Training courses are categorised by skill level, including basic, employed, and advanced programmes, with tuition subsidies of up to USD 250 per month. In 2024, over 5 000 individuals enrolled in 211 AI-related courses through this scheme.

For individuals requiring foundational digital skills, the "K-Digital Beginner-level Skill Training" programme is available under the same eligibility criteria. It offers additional tuition support of up to USD 400 annually for introductory-level courses. In 2024, more than 16 000 participants received AI training across 64 entry-level digital courses.

To better align workforce skills with regional industrial needs, the "Region-Industry Matching Training Programme" targets incumbent workers by offering customised training based on regional demand assessments conducted by local training centres. In 2024, of the total 54 494 participants, approximately 1 400 individuals received AI-specific training.

1. The National Training Card (NTC) system provides financial assistance ranging from USD 2 000 to USD 3 500 over a period of up to five years to individuals in need of vocational education and training. The level of support varies between 45% and 100% of training costs,

determined by factors such as household income, age, labour market status, and eligibility for the Earned Income Tax Credit (EITC). Extended coverage is available for individuals from low-income households, EITC-eligible recipients, and those aged under 35 or over 60. Prior to 2020, separate systems were provided to the employed and unemployed, and the system excluded certain groups such as short-time workers, dependent self-employed persons, and small business owners. Following reforms, all eligible applicants now receive standardised support regardless of employment status. However, the NTC remains unavailable to specific categories, including: public officials, employees of private schools, students below upper secondary level (pre-grade 12), first- and second-year university students, self-employed individuals with annual incomes exceeding USD 300 000, employees aged 45 or under working in large enterprises (with 1 000 or more employees) earning USD 2 000 or more per month, and independent contractors with monthly incomes exceeding USD 3 500.
Source: Ministry of Employment and Labour of Korea.

Strategic co-ordination amongst ministries

Industrial policies related to AI are primarily designed and implemented by the Ministry of Science and ICT and the Ministry of Trade, Industry and Energy, while human resource policies fall under the remit of the Ministry of Employment and Labour. This structural separation can lead to a lack of alignment between industrial policy and human resource supply strategies, potentially diminishing the effectiveness of both.

Korea already faces a chronic shortage of skilled AI talent, exacerbated by brain drain, which is undermining the competitiveness of several leading AI companies (Song and Song, 2015[64]). The analysis conducted in this report, utilising Korean employment insurance data, also revealed the potential for labour demand to outstrip supply for generative AI roles. Although the rapid emergence of generative AI means that labour demand is not yet a major concern, it underscores that the supply of labour for advanced AI technologies remains insufficient. Hence, beyond simply increasing the number of AI graduates, there is a need for more strategic co-ordination.

To address this issue, a specialised, overarching AI agency should be established to co-ordinate the policies of various ministries. Without such co-ordination, ministries may implement redundant or conflicting policies, reducing the effectiveness of AI-related initiatives. A dedicated AI agency could maximise policy outcomes by linking industrial policies across ministries and enhancing the effectiveness of AI education and training programmes through a more cohesive approach to human resource and industrial policies. Moreover, as AI raises both ethical and technical challenges, the involvement of an independent, specialised agency could address these issues more effectively than individual ministries.

Delivering training programmes tailored to the needs of SMEs

Han (2023[65]) indicates a strong demand for AI education, particularly its practical application, suggesting a need for AI training that is specifically tailored to the distinct requirements of individual companies. Large corporations, with a significant number of employees and substantial AI utilisation, can afford to design and offer AI education and training that addresses their employees' needs. However, SMEs often lack the financial resources and capacity to provide the necessary AI programmes independently. Disparities in training and education opportunities between large corporations and SMEs exacerbate the productivity gap between them (Van de Wiele, 2010[66]).

In Korea, employees can enrol in AI-related education through private or government-operated educational institutions via the National Training Card system. However, due to the group-based nature of these educational programmes, most institutions tend to focus on delivering general AI knowledge rather than providing training tailored to specific company needs. Consequently, according to data provided by the Ministry of Employment and Labour on AI-related training programmes, less than 14% of 37 566 participants in the K-Digital Training programme and less than a quarter of 95 532 participants in the K-Digital Basic Competency Training programme undertook AI-related courses.

The Ministry of Employment and Labor operates Regional Employment Agencies in each province and Employment Centres at the city level to provide employment services and administration. Therefore, by gathering feedback on training programmes and collecting demand for training services from job seekers and firms at these Regional Employment Agencies or Employment Centres, it is possible to identify educational and training needs at the local level. Granting autonomy to these local units to design training programmes based on this information would enable the creation of region-specific, customised training programmes.

Therefore, government-supported institutions and publicly funded educational entities should design and offer training programmes that reflect the specific needs of SMEs within their respective regions. By aligning the content of training programmes with the industrial characteristics of local SMEs, the Ministry of Employment and Labour can increase the incentive for SME employees to participate, thereby enhancing programme effectiveness. Localised and customised training will boost the productivity of SME workers, narrow the productivity gap between SMEs and larger corporations, and ultimately contribute to the productivity of the entire economy (O'Regan, Stainer and Sims, 2010[67]; Antonioli, Mazzanti and Pini, 2010[68]). This approach will also increase the adoption of AI within SMEs and improve the utilisation of AI within those SMEs that have already implemented it.

Transitioning from AI education in institutions to on-the-job training

Contemporary AI tools such as ChatGPT and Google Gemini afford users a high degree of operational flexibility. The scope and methods of AI usage vary significantly depending on the task, role, company, and industry. Consequently, while generic AI education has limited applicability in firms, there is growing demand for specialised, job-specific training (Maity, 2019[69]). The utilisation of AI technologies is also linked to the accumulation of firm-specific human skills (Czarnitzki, Fernández and Rammer, 2023[70]), thereby increasing firms' demand for firm-specific training (Kourad, 2024[71]). Moreover, even for general skills, employees' productivity can vary significantly depending on how these skills are applied in specific business contexts, leading companies to place a premium on on-the-job training (Lazear, 2009[72]).

The Ministry of Employment and Labour's K-Digital Training Programme already facilitates project-based learning in collaboration with firms. Similarly, training courses operated in conjunction with polytechnic institutions, such as high-tech courses in polytechnics and two-year AI degree programmes in polytechnics, have moved towards practice-based instruction. However, many training courses continue to focus on theoretical or general AI knowledge.

To address this, the government should shift its support from institutionalised training towards work-based learning. Such a transition would help reduce mismatches between labour supply and demand. Firms could train potential hires in firm-specific skills at lower cost, supported by public funding. In turn, this would increase firms' incentives to hire trainees and improve post-training employment outcomes. For job seekers, particularly young people, this approach offers valuable exposure to employers' actual needs and increases job-match quality, potentially reducing early-career turnover (Lynch, 1991[73]) and increasing wage levels (Langer and Wiederhold, 2023[74]).

By operating on-the-job training programmes and gathering relevant data, the government can better understand the skills and expertise in demand within the private sector. This information can inform the development of rational human resource supply strategies and educational policies, improving the alignment of industrial policies with the needs of the labour market.

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Notes

[1] While the Canadian approach to identifying "high-impact systems" would be similar to the EU's, the categories would be slightly different. An AI system will be considered "high-impact" if it is used: (i) to determine employment matters (i.e. to determine employment, recruitment, referral, hiring, remuneration, promotion, training, apprenticeship, transfer or termination); (ii) in matters relating to service access; (iii) to process biometric information in matters relating to the identification of an individual or the assessment of an individual's behaviour or state of mind; (iv) in matters relating to content moderation and prioritisation; (v) in healthcare or emergency services matters, with certain exceptions, pursuant to the Food and Drugs Act; (vi) by a court or administrative body in determinations relating to an individual who is a party to proceedings; and (vii) to assist a peace officer, as defined in the Criminal Code, in the exercise and performance of their law enforcement powers, duties, and functions (White & Case, 2024[33]).

[2] For example, in the case of automated decision systems, the law would apply only to persons, partnerships, or corporations with greater than USD 5 000 000 in average annual gross receipts or greater than USD 25 000 000 in equity value for the 3-taxable-year period preceding the most recent fiscal year.

[3] In the United States, the four-fifths rule is a guideline used to determine if there is adverse impact in the selection process of a specific group. The rule states that the selection ratio of a minority group should be at least four-fifths (80%) of the selection ratio of the majority group.

[4] I.e. The personal data collected and used must be appropriate, relevant and limited to what is necessary for the defined objective.

[5] These rights include: access, rectification, erasure, restriction, portability and objection.

Artificial Intelligence and the Labour Market in Korea

This report analyses the impact of AI on Korea's labour market from an internationally comparative perspective, and takes stock of Korea's policies and institutions, against the backdrop of the OECD AI Principles for trustworthy AI. The objective of the report is to help policymakers in Korea better understand the risks and opportunities, and offer them a menu of options to help workers and employers make a success of AI, drawing on examples and best practice from across the OECD. In addition, by providing an in-depth analysis of the impact of AI on the Korean labour market, this report allows policymakers from across the OECD to draw lessons from the Korean experience to inform their own policies and institutions.

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