POLICY BRIEF
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Digital transition and skill use at work in Europe

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HIGHLIGHTS

- Around 70–80% of changes in task content and skill use occur within occupations, rather than through shifts in occupational structure. Labour market information systems should therefore track how jobs themselves evolve, not only which occupations expand or decline, enabling policy to identify emerging skill needs earlier.
- Workers in lower- and middle-skilled occupations face particularly strong pressures to adapt. As these jobs become less routine and more intensive in social and other non-routine tasks, curricula and lifelong learning policies should prioritise workers in fast-changing occupations, especially those with limited access to employer-sponsored training.
- Digitalisation is a key driver of changing task and skill demands across the economy. It reduces routine work while increasing the importance of social skills and exposure to AI, making digital literacy a basic skill needed across the occupational spectrum rather than primarily in high-skilled jobs.
- European jobs are becoming less routine, more AI-exposed, and more reliant on social skills. Policies that help workers adapt to these shifts can facilitate technological adjustment while supporting productivity, earnings and, ultimately, higher living standards.

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1. Why are changes in the task content of jobs and skill use at work important

Technological progress and globalisation affect the demand for occupations, making some obsolete while also creating new ones (Autor et al. 2024). Such structural changes also modify how work in particular occupations is performed – the occupational task content – which in turn affects the demand for skills and their returns. Specifically, Information and Communication Technologies (ICT) have reduced the demand for human labour in routine tasks that are structured and repetitive (Autor et al. 2003; Spitz-Oener 2006) while complementing workers in non-routine tasks that require creativity, problem solving, or spatial awareness. They have also increased the role of social skills (Deming 2017). Recent advancements in Artificial Intelligence (AI) have extended the scope of cognitive task automation to jobs intensive in information processing (Felten et al. 2021), potentially exposing workers in occupations were largely immune to earlier waves of technological progress. Moreover, the transition to a low-carbon economy increases demand for occupations and skills needed to design, install and maintain green technologies, while it reduces the need for the so-called brown jobs related to fossil fuels and carbon-intensive industries (Vona et al. 2019). Overall, these trends can manifest in aggregate impacts on total employment as well as in distributional shifts that widen wage inequality.

From a policy-making perspective, it is therefore crucial to understand how the task composition of jobs and skill use at work evolve, to what extent these changes reflect shifts in occupational composition as compared to the evolution of occupation-specific demands and tasks, and finally what is the role of digital technologies and other factors behind these changes.

2. New evidence on the evolution of task content and skill use in Europe

The SkiLMeeT research provides the first comprehensive, cross-country assessment of the evolution of task content of jobs and skill use at work across European countries that accounts for cross-country differences in occupational demands and captures the shifts that occur within occupations (Frattini et al. 2026; Lewandowski et al. 2025; Lewandowski and Madoń 2026). To this aim, SkiLMeeT researchers used data from the OECD Programme for the International Assessment of Adult Competencies (PIAAC), a cross-country survey of adults conducted using a harmonised methodology that ensures comparability across participating countries and over time. Creating worker-level indicators of particular tasks and skills, they distinguished between the following dimensions:

- Routine task intensity that increases with the intensity of performing routine tasks that are structured, repetitive, and require precision and diligence rather than creativity, and decreases with the intensity of performing non-routine tasks that require problem-solving, information processing, decision-making, as well as managing, coaching, or interacting with people.
- AI exposure that increases with the intensity of performing tasks that are susceptible to the emerging AI technologies and decreases with the intensity of performing tasks unexposed to AI.

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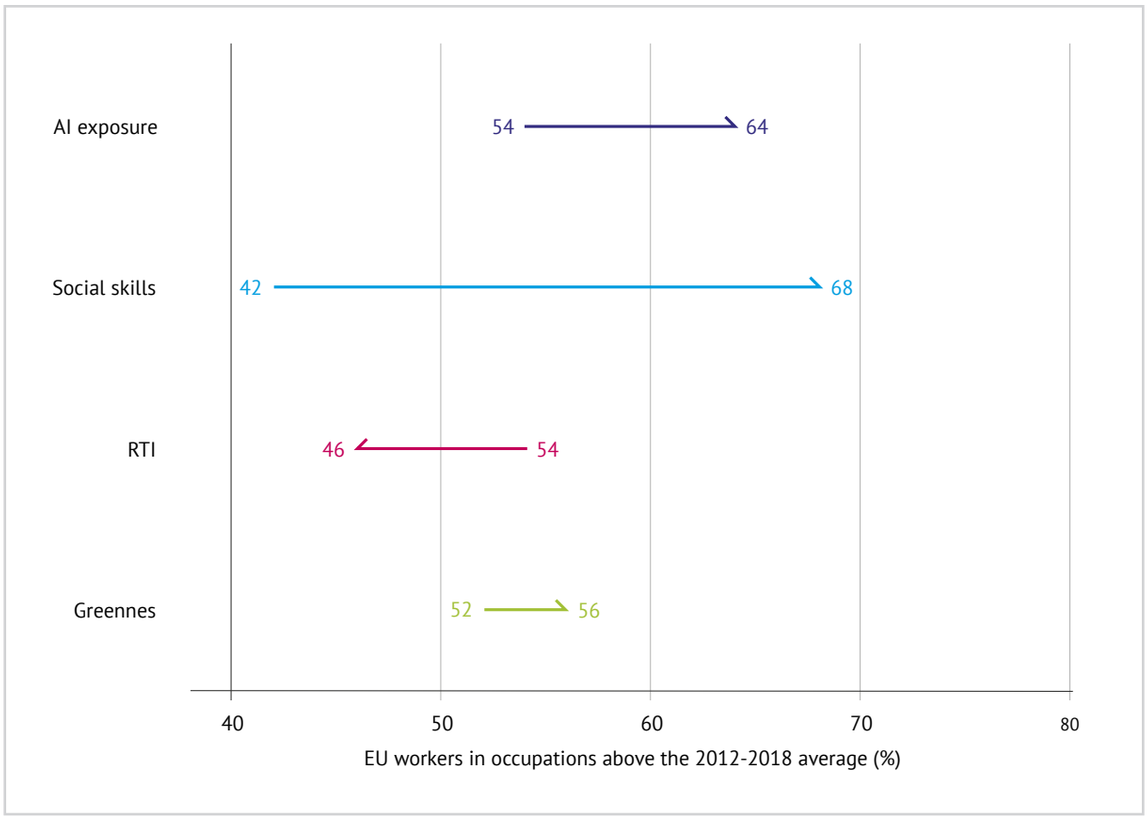
- Social skills that capture the importance of social perceptiveness, coordination, negotiation, and persuasion at work.

These worker-level measures are complemented with an indicator of green skills constructed at a granular occupational level (Vona et al. 2019).

2.1. Main facts on the changes in task content and skill use at work

The first key finding is that the European labour market has changed substantially between the early 2010s and the early 2020s. Specifically, they have evolved towards lower routine task intensity, higher exposure to AI, a stronger role of social skills, and higher greenness (Figure 1). Using an average worker in the United States in the 2010s as a reference point, we show that the changes were most pronounced in the case of the increase in social skill use, followed by the rising AI exposure and declining routine task intensity. The changes in greenness were much smaller (Figure 1). In general, such shifts in task and skill use structures are associated with higher productivity and earnings (Autor and Handel 2013; de la Rica et al. 2020). Hence, while they create challenges for workers who need to adapt, they open opportunities for higher living standards.

Figure 1. The evolution of task content and skill use at work in European countries between the 2010s and 2020s.

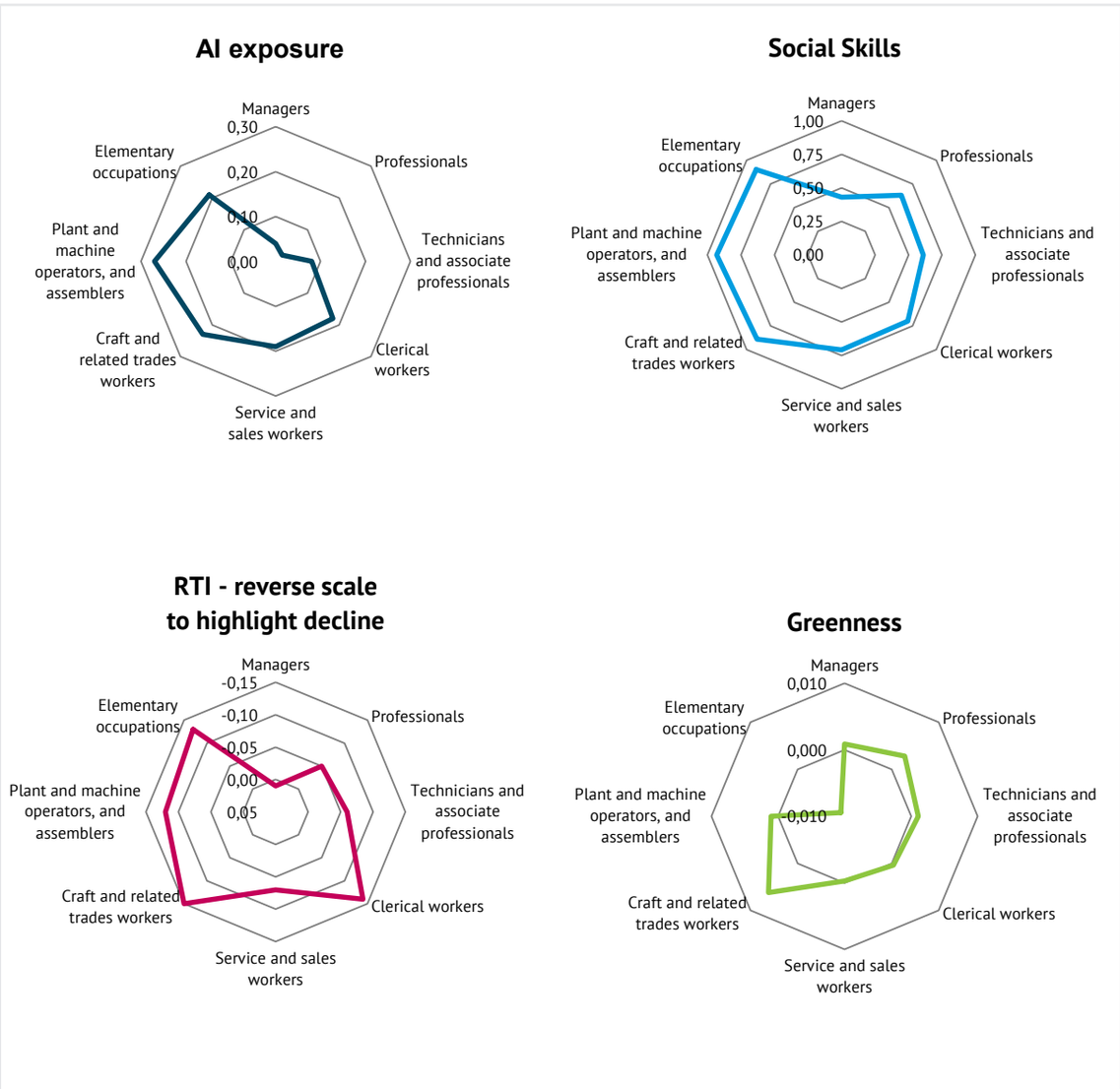


Source: own elaboration based on Frattini et al. (2026), Lewandowski et al. (2025), Lewandowski and Madoń (2026).

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The second main finding is that these overall changes were driven mostly by the within-occupational shifts in task composition and skill use, while changes in the occupational structure played a minor role. About 70-80% of the total change in tasks and skill use can be attributed to the developments occurring within occupations. Moreover, these within-occupational shifts were particularly strong in occupations that are lower-skilled, such as craft and related trades (ISCO 7), plant and machine operators (ISCO 8), and elementary occupations (ISCO 9), followed by middle-skilled occupations such as clerical occupations (ISCO 4) and sales and service occupations (ISCO 5). They were much smaller among workers in higher-skilled occupations, such as managers (ISCO 1) or professionals (ISCO 2). In consequence, the differences in tasks and skill use between these nominally less and more skilled occupations have declined over time. Moreover, the need to adapt to the evolving task and skill use structures was larger for workers in less-skilled occupations.

Figure 2. The changes in task content and skill use within occupations in European countries.



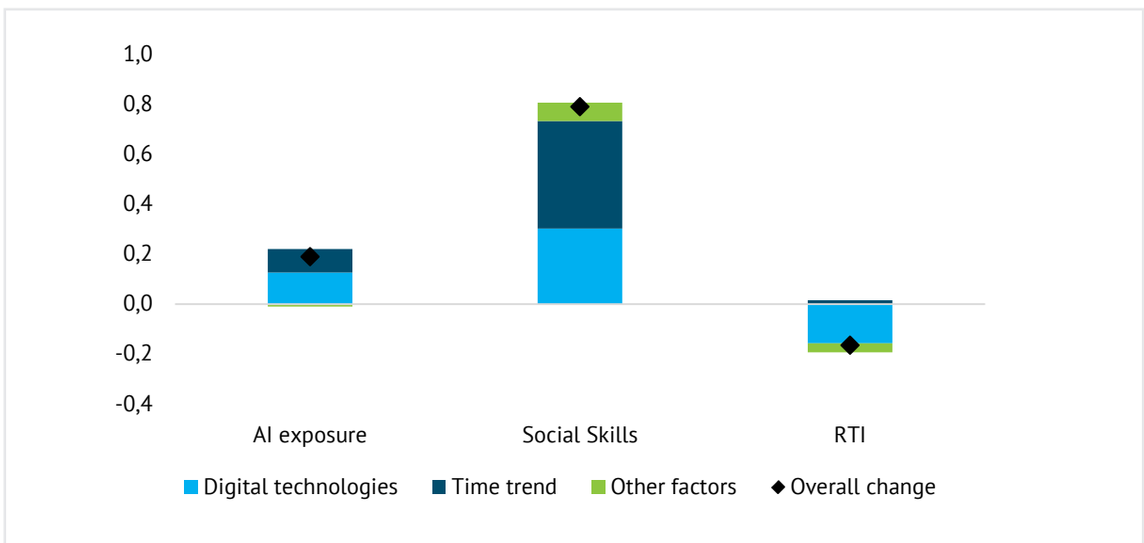
Source: own elaboration based on Frattini et al. (2026), Lewandowski et al. (2025), Lewandowski and Madoń (2026).

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2.2. The role of digital technologies in the evolution of task content and skill use at work

The third main finding is that the changes in task content and skill use can be largely attributed to the increasing use of digital technologies across all sectors of the economy (Figure 3). Digitalisation has reduced the routine task intensity, confirming that ICT substitutes workers in performing routine tasks. It has also accelerated the use of social skills, in line with arguments that digital technologies allow people to focus more on interpersonal tasks that cannot be automated (perhaps yet). It has also contributed positively to AI exposure, as more widespread computer use translates into more widespread performance of information processing tasks that are susceptible to AI. A secular shift towards higher AI exposure, stronger social skill use, and away from routine tasks across all countries and sectors (time trend on Figure 3) is the second key force driving the evolution of task content and skill use at work in Europe. This means that job structures evolve more quickly than one can expect based on technology adoption per se. Finally, other factors, such as global value chains and human capital, played a minor role.

Figure 3. Drivers of changes in the task content and skill use at work in European countries.



Source: own elaboration based on Lewandowski et al. (2025) and Lewandowski and Madoń (2026).

3. Policy Recommendations

Policymakers need to adapt labour market information systems, as well as labour market and training policy, to the evolving landscape of jobs. We identify three priorities for policy:

- **Adapting labour market information systems.** In many countries, labour market information systems focus on identifying declining and growing occupations, but barely pay attention to how occupations evolve. The dominant role of within-occupational changes in task and skill use structures suggests the need to modernise labour market information systems to identify occupations subject to most pronounced changes in how work gets done.

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- **Prioritising curricula updates and lifelong learning opportunities for workers in less-skilled occupations.** Substantial changes in task structures and skill use at work in occupations that are nominally middle- or lower-skilled suggest that workers in these occupations face particularly high demands to adapt, especially regarding performing more non-routine tasks with higher social skill intensity. However, workers in these occupations often lag behind workers in high-skilled occupations regarding access to employer-sponsored training. Policymakers should prioritise providing upskilling to workers in fast-evolving occupations, especially low- and middle-skilled.
- **Delivering digital skills as basic skills required across the job spectrum.** The dominant role of digital technology adoption for the changes in task content, combined with the advent of generative AI technologies suggests that digital skills emerge as a basic skill required across all types of jobs rather than a skill specific only to jobs intensive in cognitive tasks. Policymakers should improve the access to lifelong learning focused on building basic literacy in digital skills that can applied in different occupations.

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