

TRAILS

Enabling Data Analytics for Actions
Tackling Skills Shortages & Mismatch



Policy brief #6 TECHNOLOGICAL CHANGE, SKILLS MISMATCH AND TRAINING IN THE EUROPEAN LABOUR MARKET

Authors: Paul Redmond (Associate Research Professor), Luke Brosnan (Research Assistant) and Lorcan Kelly (Research Assistant) at the Economic and Social Research Institute (Ireland)

WHY IT MATTERS

Technological change is reshaping work across Europe. Ensuring that employees have **adequate digital skills** is critical for job security, productivity, and the EU's economic competitiveness. The EU's **Path to the Digital Decade** aims for 80% of adults to have basic digital skills and 20 million ICT specialists by 2030.

WHAT DATA SHOWS

Based on **Redmond et al. (2025)**, TRAILS examines the prevalence of **technological change, digital skills gaps, training provision, and training effectiveness** across EU sectors and countries.

KEY FINDINGS

- **Technological change is widespread:** In 2021, 42% of EU employees learned to use new technology for their job, with Nordic countries seeing >50% and Germany/France ~35%.
- **Digital skills gaps:** ~70% of EU employees are technologically underskilled; this rises to ~80% among those affected by recent technological change.
- **Sectoral differences:** Highest tech-underskilling in ICT, Professional Services, and Education; lowest in Accommodation, Food Services, and Transportation.
- **Training provision:** 84% of tech-underskilled employees impacted by technological change received training, versus 77% for non-underskilled employees.
- **Training effectiveness:** Multi-mode training (courses, seminars, on-the-job) improves task performance, speed, and satisfaction, with a 10.7 percentage point increase in reporting faster task completion.

POLICY IMPLICATIONS & RECOMMENDATIONS



the European Union

Union nor the granting authority can be held responsible for them. Europe research and innovation programme under grant agreement No 101132673

not
can

TRAILS

Enabling Data Analytics for Actions
Tackling Skills Shortages & Mismatch



- **Support multi-mode training:** Encourage employers to provide a combination of courses, seminars, and on-the-job learning to maximize skill development.
- **Promote digital upskilling across sectors:** Both lifelong learning initiatives and workplace training are essential for closing digital skill gaps.
- **Leverage microcredentials:** Flexible, targeted training can address fast-paced changes in skills requirements; coordinated European initiatives could expand access.
- **Inform and guide employers:** Clear guidance on effective training types ensures that investment in upskilling translates into measurable improvements in employee performance.

LOOKING AHEAD

Digital transformation requires **continuous, flexible, and sector-relevant upskilling**. By investing in effective training and innovative instruments like microcredentials, Europe can ensure workers remain adaptable, productive, and secure in a rapidly evolving labour market.

RESOURCES AND LINKS

- Full deliverables: D6.3 and TRAILS reports
- For more information, please visit the TRAILS website(<https://www.trails-project.eu/>) and social media channels.

