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CEDEFOP

Vocational education and training (VET) occupations in shortage

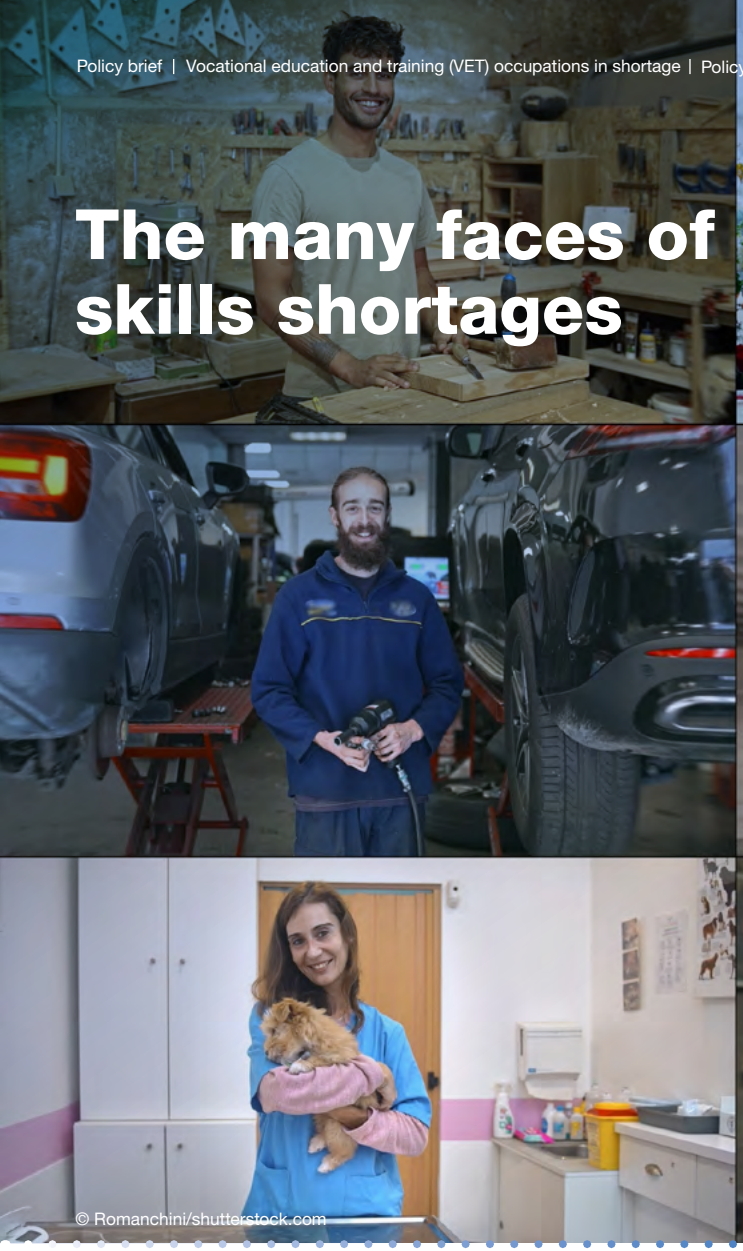
From evidence to coordinated policy responses

POLICY BRIEF

POLICY BACKGROUND

In this section

The many faces of skills shortages



Skills shortages occur when employers cannot find enough people with the right skills to fill available jobs. They may have several causes. Skills shortages may emerge simply because there are too few qualified workers, but also when supply would suffice but people with the right profiles are unwilling to take up employment due to low pay, strenuous working conditions, or workplace location. Rising wages in other occupations demanding similar skillsets may shift the preferences of workers away from lower-paid occupations. The effective supply of workers may also contract because non-work opportunities have become more attractive. The introduction of more generous unemployment benefits or family allowances may incentivise some workers to stay inactive rather than take up a low-paid or physically demanding job.

Skills shortages may also emerge because curricula become outdated following economic restructuring or policy-driven changes in countries where effective skills intelligence and governance are lacking. Shortages that coincide with high youth unemployment signal weaknesses in education and training systems in adapting skill provision to current or anticipated labour market needs, a lack of sector involvement in curriculum development, insufficient participation of companies in human capital investment, or a combination of these. Additionally, corporate recruitment practices may impede employers' ability to attract enough candidates. A company that insists on five years of work experience for entry-level jobs or technical skills that require costly training (e.g. licenses for cybersecurity roles) may receive very few applications. While such situations are sometimes misinterpreted as a labour supply shortage, the real reason is restrictive recruitment and HRM practices that effectively limit the pool of candidates.

...rising wages in other occupations demanding similar skillsets may **shift the preferences of workers away from lower-paid occupations**...

...shortages that coincide with **high youth unemployment** signal **weaknesses** in education and training and/or **insufficient participation** of companies in human capital investment...

...a company that insists on **five years of work experience** for entry-level jobs or technical skills that require costly training may receive **very few applications**...

Legal and regulatory constraints can amplify labour shortages

Restrictions on labour market entry can depress labour supply and further increase labour shortages. Such barriers include limits to programme enrolment at education and training providers (e.g. a fixed number of apprenticeship places in nursing or electro-technical installation vocational education and training (VET) programmes). Supply can also be restricted by regulating access to professions via legal licensing and certification requirements or standards set by professional organisations. Such institutional barriers to accessing professions can slow down the recognition of foreign qualifications, limit international mobility, and restrict the pool of available candidates for employers. Particularly in emerging fields, the regulation necessary to ensure high-quality training provision can lead to shortages of qualified trainers, which limit the capacity to train new workers. This is evident in occupations linked to the deployment of green transition technologies, such as hydrogen technology, where technical expertise and instructional capacity are in high demand.

...barriers include **limits to programme enrolment at education and training providers** (e.g. a fixed number of apprenticeship places)...

...barriers to accessing professions can **slow down the recognition** of foreign qualifications, **limit international mobility**, and **restrict** the pool of available candidates for employers...

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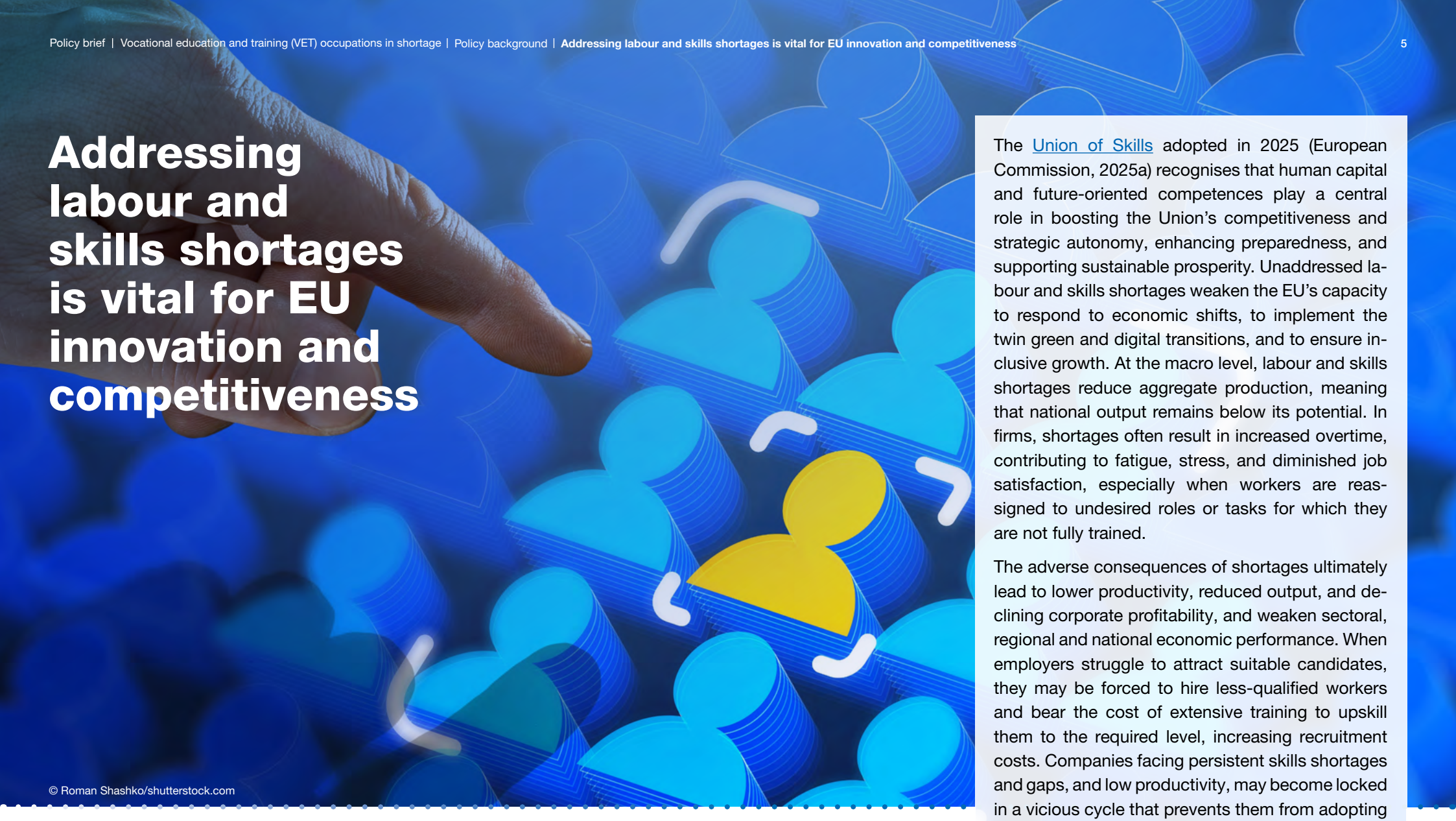
Addressing labour and skills shortages is vital for EU innovation and competitiveness



The Union of Skills adopted in 2025 (European Commission, 2025a) recognises that human capital and future-oriented competences play a central role in boosting the Union's competitiveness and strategic autonomy, enhancing preparedness, and supporting sustainable prosperity. Unaddressed labour and skills shortages weaken the EU's capacity to respond to economic shifts, to implement the twin green and digital transitions, and to ensure inclusive growth. At the macro level, labour and skills shortages reduce aggregate production, meaning that national output remains below its potential. In firms, shortages often result in increased overtime, contributing to fatigue, stress, and diminished job satisfaction, especially when workers are reassigned to undesired roles or tasks for which they are not fully trained.

The adverse consequences of shortages ultimately lead to lower productivity, reduced output, and declining corporate profitability, and weaken sectoral, regional and national economic performance. When employers struggle to attract suitable candidates, they may be forced to hire less-qualified workers and bear the cost of extensive training to upskill them to the required level, increasing recruitment costs. Companies facing persistent skills shortages and gaps, and low productivity, may become locked in a vicious cycle that prevents them from adopting new technology and boosting their competitiveness. Skills bottlenecks can also restrict businesses and sectors from leveraging new opportunities to scale up operations, pursue innovation, or introduce new products and services. Shortages of skilled workers in photovoltaic and wind energy, for example, can slow down the green transition.

...**unaddressed labour and skills shortages** weaken the EU's capacity to respond to economic shifts, to implement the twin green and digital transitions, and to ensure inclusive growth...

...employers struggling to attract suitable candidates may be **forced to hire less-qualified workers** and bear the cost of **extensive training to upskill them** to the required level...

VET is increasingly viewed as a solution to tackling shortages

From a policy perspective, many actions can help remedy shortages. Depending on their underlying causes, measures to address shortages range from investing in or expanding VET, through activation measures such as job search assistance and career guidance, to policies and measures supporting workforce recruitment, and skills-based migration approaches.

The Herning Declaration, adopted in 2025 (Danish Presidency, 2025), reinforces priorities set out in earlier VET communiqués and declarations, and emphasises the need to align VET policies with megatrends driving contemporary societal and labour market developments, such as the digital and the artificial intelligence transformation and the green transition. The declaration sets out actions for 2026-2030 at national and European levels. These focus on enhancing the attractiveness and quality of VET, fostering inclusiveness, and addressing labour and skills shortages, as well as teacher shortages.

Policies, measures, and actions to strengthen VET attractiveness have become much more important over time. While in 2015 EU Member States had collectively implemented 11 dedicated VET attractiveness measures, 140 attractiveness measures were in the implementation phase in 2024 (Figure 1).

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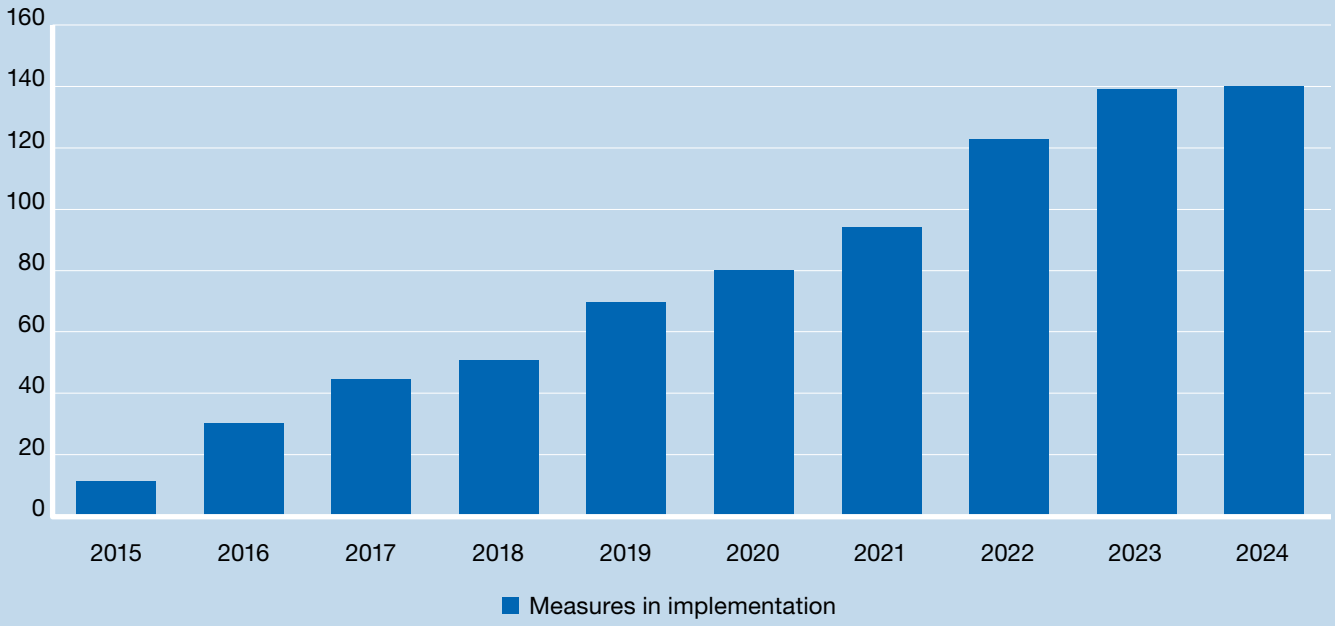
Key national priority actions include further strengthening work-based learning, promoting VET in critical fields such as science, technology, engineering, and mathematics (STEM), and increasing adult participation in upskilling. European-level actions focus on continued cooperation, monitoring, and easing access to financial support for VET reforms. It is noteworthy that the active involvement of social partners in processes and governance structures to align VET curricula with labour market needs was highlighted in the recent Council Recommendation on human capital in the EU (European Commission, 2025b).

Figure 1. **Number of policy actions and measures promoting VET attractiveness in implementation stage, 2015-2024**



NB: The data refer to the EU Member States, Norway and Iceland, and were reported by Cedefop's ReferNet.

Source: Cedefop timeline of VET policies in Europe.

Transparency and better skills recognition can help alleviate shortages

The Skills Portability initiative under the Union of Skills directly supports efforts to alleviate labour and skills shortages by addressing one of the major barriers to labour mobility within and into the EU: the lack of transparency of skills and qualifications. It also acts to modernise the still often lengthy, complicated and costly recognition processes. Labour shortages often persist not only because of an insufficient supply of skilled individuals overall, but also because of inefficiencies in matching available skills with job vacancies across regions and countries.

By digitalising learning credentials and improving skills transparency, the Skills Portability initiative will help workers more easily demonstrate their competences to employers, regardless of where those skills were acquired. This will particularly benefit mobile professionals and migrants, whose skills often remain under the radar due to outdated or fragmented credential recognition systems. By modernising recognition processes for regulated professions and simplifying procedures for recognising the qualifications of non-EU nationals, the initiative can accelerate the integration of skilled migrants into EU labour markets and contribute to filling critical shortages.

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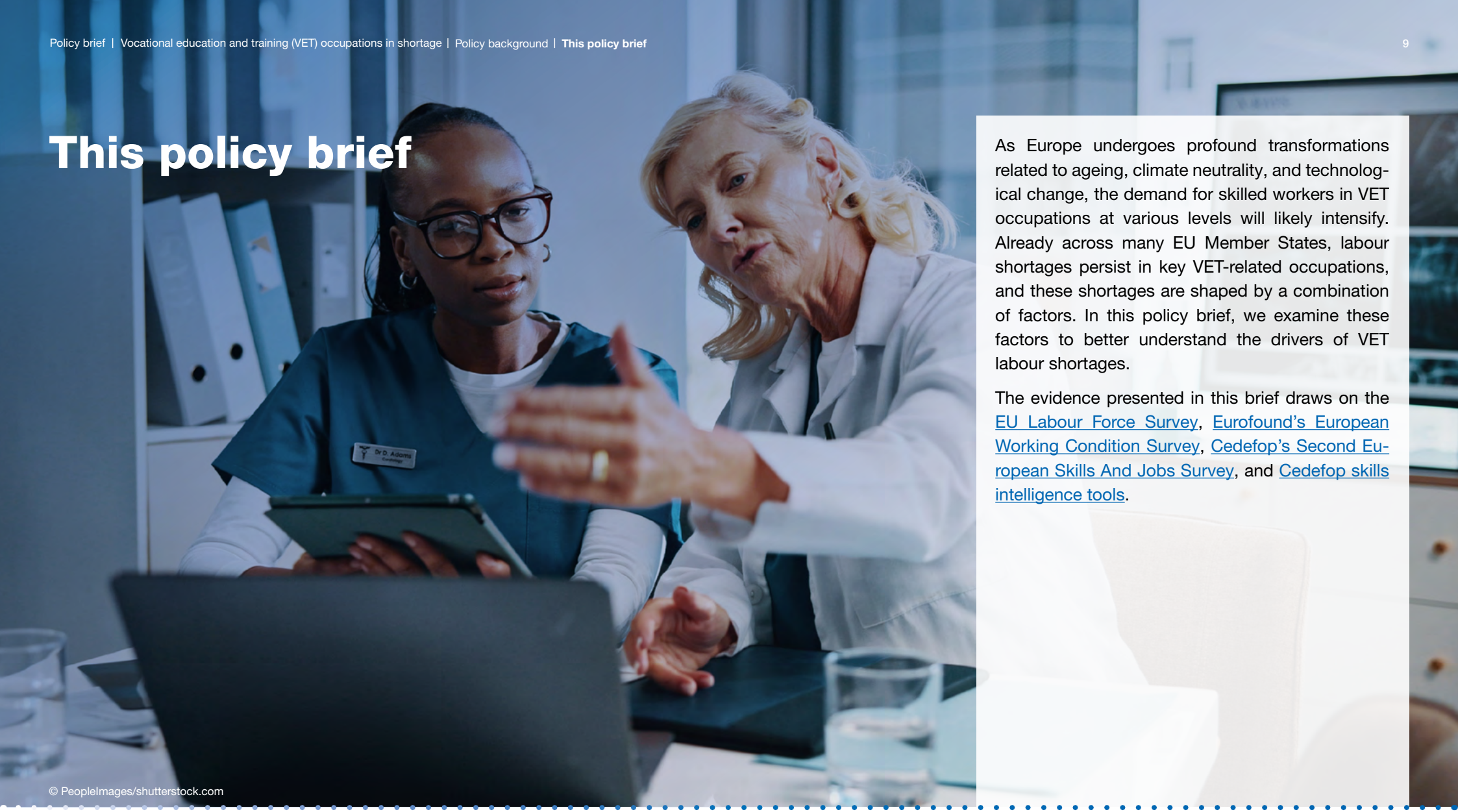
...the initiative can **accelerate the integration of skilled migrants** into EU labour markets and contribute to **filling critical shortages**...

This policy brief



As Europe undergoes profound transformations related to ageing, climate neutrality, and technological change, the demand for skilled workers in VET occupations at various levels will likely intensify. Already across many EU Member States, labour shortages persist in key VET-related occupations, and these shortages are shaped by a combination of factors. In this policy brief, we examine these factors to better understand the drivers of VET labour shortages.

The evidence presented in this brief draws on the EU Labour Force Survey, Eurofound's European Working Condition Survey, Cedefop's Second European Skills And Jobs Survey, and Cedefop skills intelligence tools.

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...we **examine** these factors to better **understand** the drivers of VET labour shortages...

EVIDENCE

In this section

The ageing workforce and low birth rates accelerate Europe's VET skills crisis

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In 2024, approximately two in three VET occupations (at the 4-digit level) were reported as shortage occupations in at least one EU Member State, and 22 VET occupations were in shortage EU-wide. The most widespread VET shortage occupations in the EU were:

- occupations in metal and manufacturing, including welders and flame cutters, and metal sheet workers;
- construction and building occupations, including building and related electricians, plumbers and pipe fitters, carpenters and joiners;
- food processing and preparation occupations, including cooks and food preparation workers, and bakers;
- transport and logistics occupations, including heavy truck and lorry drivers, and bus and tram drivers;
- health and social care occupations, including health care assistants and nursing associate professionals.

For some of these occupations, the shortage may intensify in years to come due to demographical change. The workforce in these occupations is ageing, which increases replacement needs, while population ageing more broadly limits the supply of people available to replace retiring workers. Employees nearing retirement already account for around 10% of total employment. In some occupations this share is even higher than 10%: for security guards (ISCO 5414), home-based personal care workers (ISCO 5322), and heavy truck and lorry drivers (ISCO 8332) more than 1 in 10 workers is about to retire. For some occupations, the share of employees aged 60 or older is related to the labour shortages reported in the EU (Figure 2).

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...workforce in shortage occupations is **ageing**, which **increases replacement needs**, while population ageing also **limits the supply** of people available to **replace retiring workers**...

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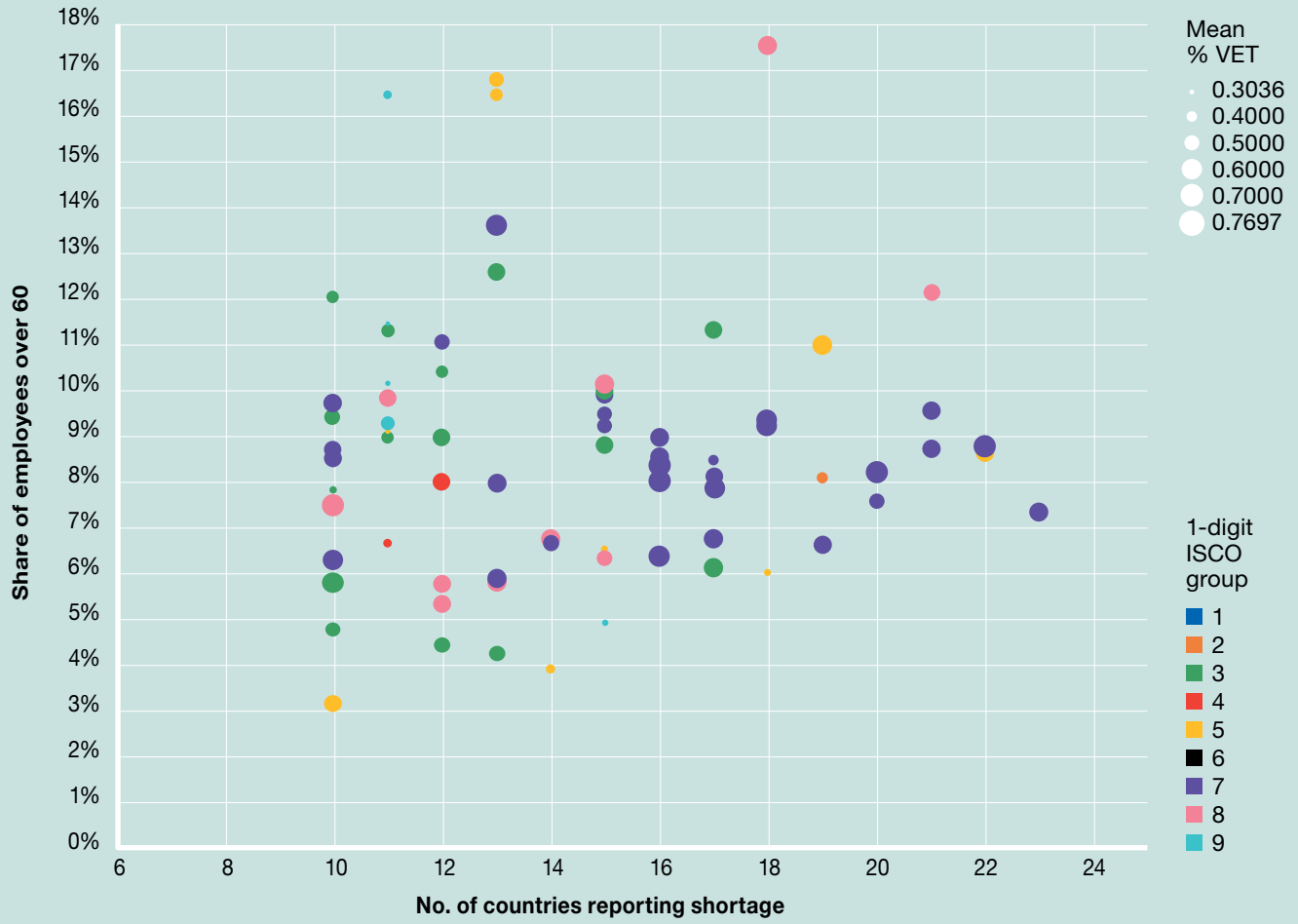
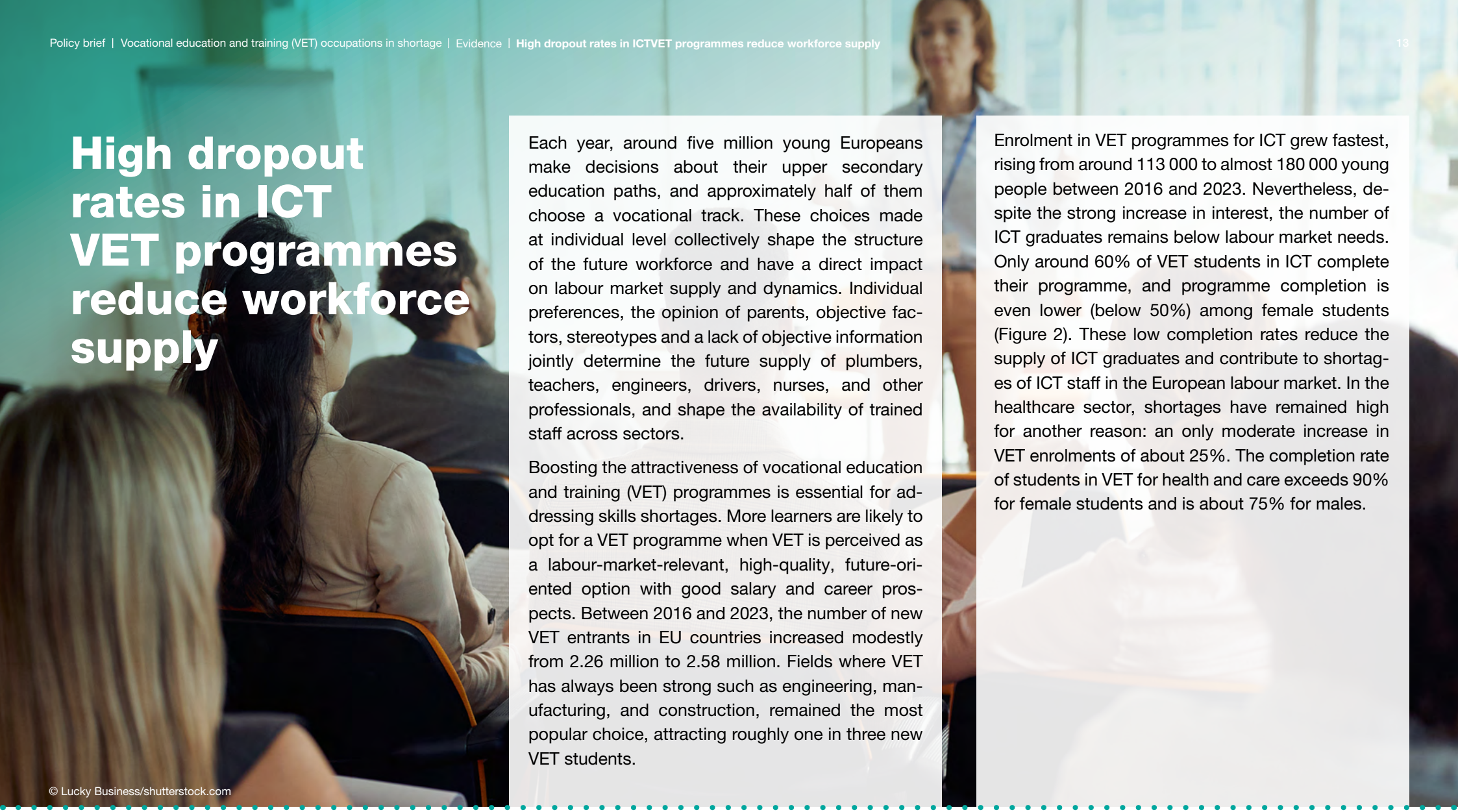
Figure 2. VET occupations by number of countries reporting shortages and % of employees above 60



NB: Only occupations that were reported by 10 or more countries are depicted. VET occupations are defined as occupations where more than 50% of employed individuals have a vocational qualification (mean value from LFS 2021-2024). The size of the dots corresponds to the share of employees with a VET qualification. The colours of the dots correspond to 1-digit ISCO groups.

Source: Own elaboration based on ELA reports and LFS 2021-2024 data.

High dropout rates in ICT VET programmes reduce workforce supply



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Each year, around five million young Europeans make decisions about their upper secondary education paths, and approximately half of them choose a vocational track. These choices made at individual level collectively shape the structure of the future workforce and have a direct impact on labour market supply and dynamics. Individual preferences, the opinion of parents, objective factors, stereotypes and a lack of objective information jointly determine the future supply of plumbers, teachers, engineers, drivers, nurses, and other professionals, and shape the availability of trained staff across sectors.

Boosting the attractiveness of vocational education and training (VET) programmes is essential for addressing skills shortages. More learners are likely to opt for a VET programme when VET is perceived as a labour-market-relevant, high-quality, future-oriented option with good salary and career prospects. Between 2016 and 2023, the number of new VET entrants in EU countries increased modestly from 2.26 million to 2.58 million. Fields where VET has always been strong such as engineering, manufacturing, and construction, remained the most popular choice, attracting roughly one in three new VET students.

Enrolment in VET programmes for ICT grew fastest, rising from around 113 000 to almost 180 000 young people between 2016 and 2023. Nevertheless, despite the strong increase in interest, the number of ICT graduates remains below labour market needs. Only around 60% of VET students in ICT complete their programme, and programme completion is even lower (below 50%) among female students (Figure 2). These low completion rates reduce the supply of ICT graduates and contribute to shortages of ICT staff in the European labour market. In the healthcare sector, shortages have remained high for another reason: an only moderate increase in VET enrolments of about 25%. The completion rate of students in VET for health and care exceeds 90% for female students and is about 75% for males.

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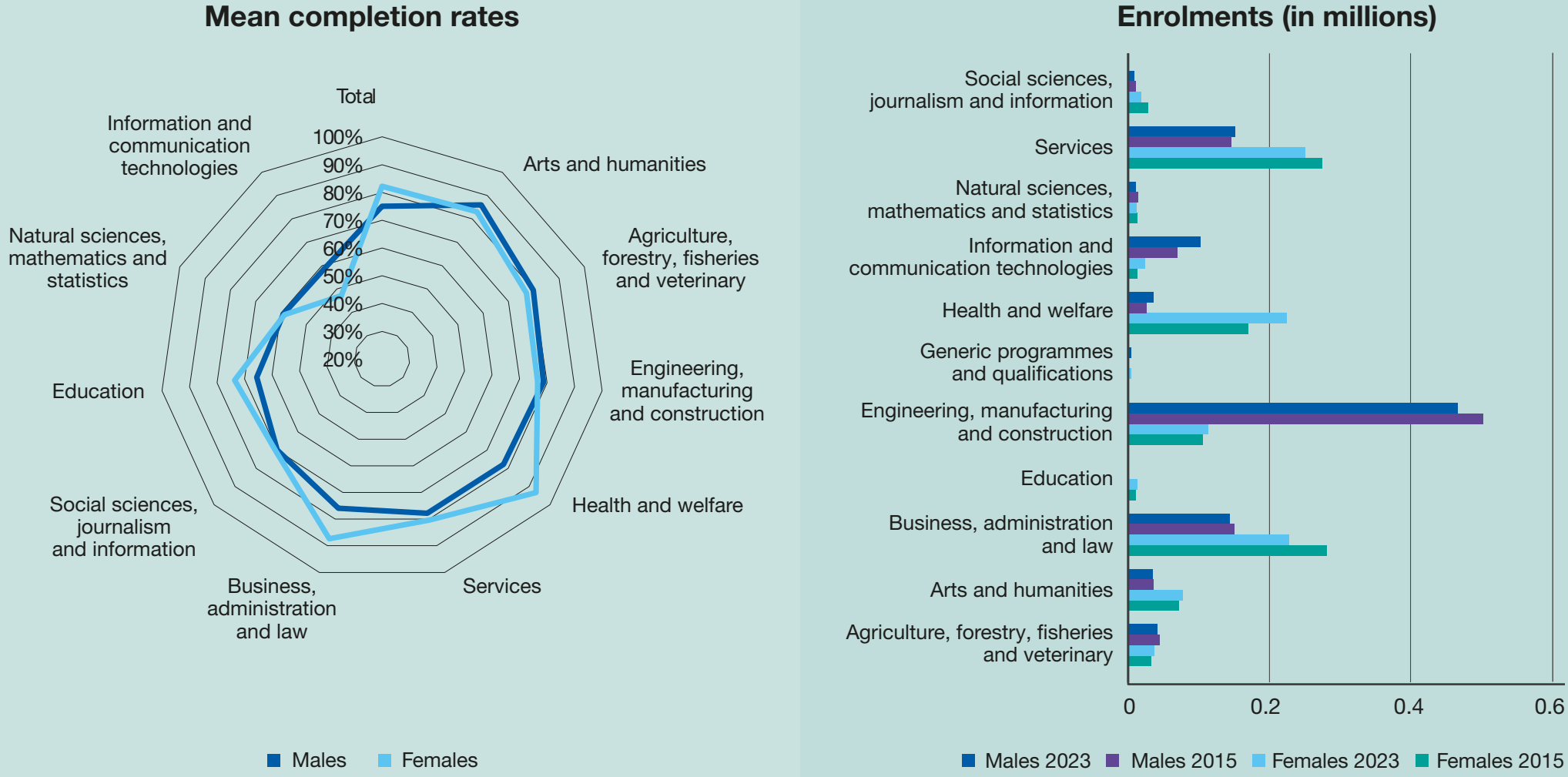
Figure 3. **Completion and enrolment in upper secondary vocational education by study field and gender**



NB: Means were computed based on values between 2017 and 2023.

Source: Eurostat (educ_uoe_enr, educ_uoe_grad).

Gender stereotypes as a source of skills shortages

In the decision-making process around education and career pathways, people are influenced by information and advice from family and friends, teachers, school counsellors, mentors, supervisors, members of the community, and others. Persistent gender stereotypes embedded in society can shape education and career choices, as they create perceptions of which occupations are 'appropriate' for men and women. Gender imbalances are a reality in several VET fields. They restrict the attractiveness of VET for underrepresented genders and can contribute to shortages on the labour market, as one gender is severely underrepresented in the pool of potential candidates.

Nursing and teaching, which are commonly viewed as female-dominated fields, and engineering and technology, mostly seen as male-dominated, are cases in point. Such gender stereotypes can affect how individuals perceive their own abilities and potential, leading to self-imposed restrictions on their education choices and career aspirations. Currently, women remain underrepresented in science (45% of VET enrolment), IT technology (14%), and engineering (15%), while they dominate in education (89% of VET enrolment), health and welfare (82%), and social sciences (60%).

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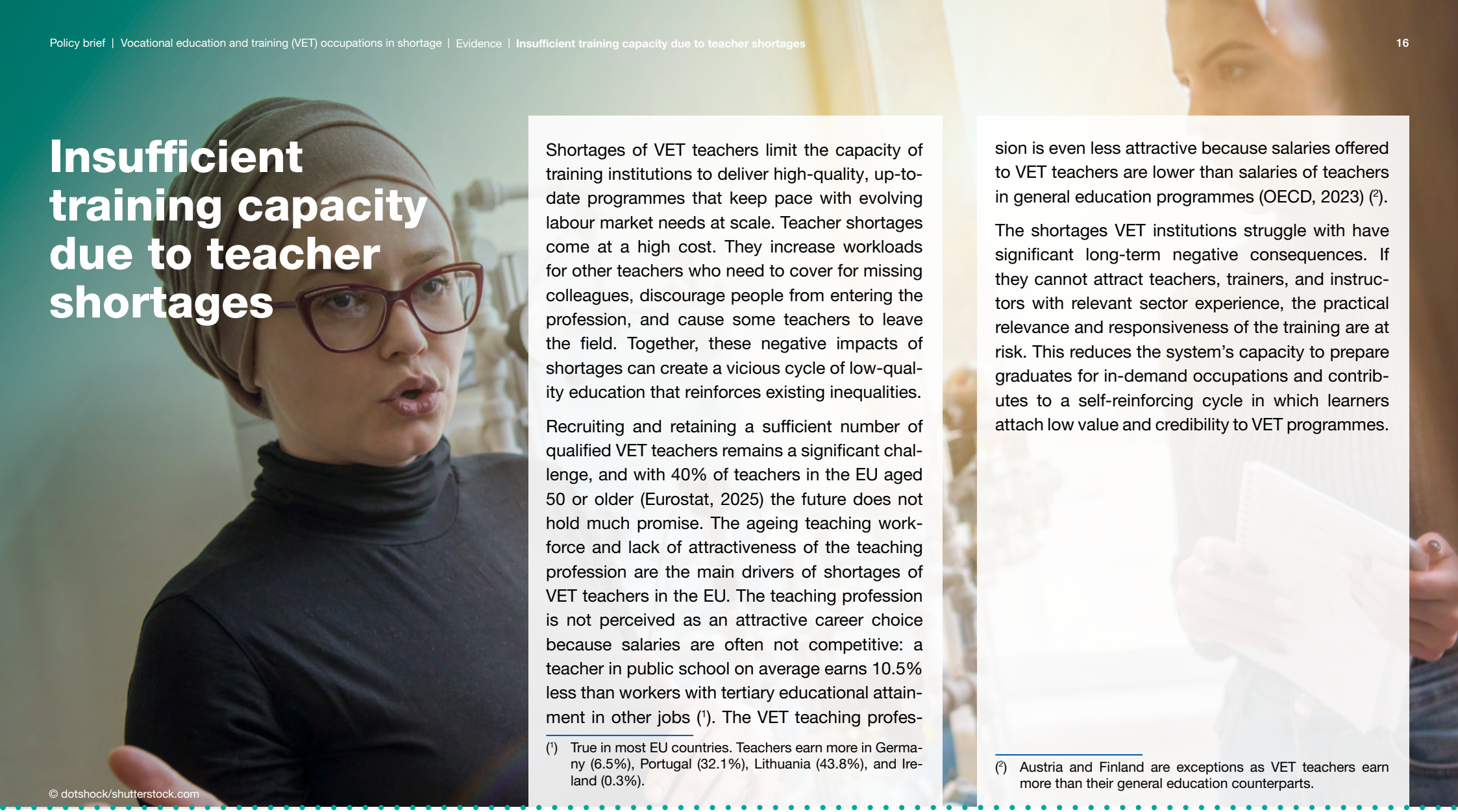
Insufficient training capacity due to teacher shortages



Shortages of VET teachers limit the capacity of training institutions to deliver high-quality, up-to-date programmes that keep pace with evolving labour market needs at scale. Teacher shortages come at a high cost. They increase workloads for other teachers who need to cover for missing colleagues, discourage people from entering the profession, and cause some teachers to leave the field. Together, these negative impacts of shortages can create a vicious cycle of low-quality education that reinforces existing inequalities.

Recruiting and retaining a sufficient number of qualified VET teachers remains a significant challenge, and with 40% of teachers in the EU aged 50 or older (Eurostat, 2025) the future does not hold much promise. The ageing teaching workforce and lack of attractiveness of the teaching profession are the main drivers of shortages of VET teachers in the EU. The teaching profession is not perceived as an attractive career choice because salaries are often not competitive: a teacher in public school on average earns 10.5% less than workers with tertiary educational attainment in other jobs ([1]). The VET teaching profession is even less attractive because salaries offered to VET teachers are lower than salaries of teachers in general education programmes (OECD, 2023) ([2]).

The shortages VET institutions struggle with have significant long-term negative consequences. If they cannot attract teachers, trainers, and instructors with relevant sector experience, the practical relevance and responsiveness of the training are at risk. This reduces the system's capacity to prepare graduates for in-demand occupations and contributes to a self-reinforcing cycle in which learners attach low value and credibility to VET programmes.

([1]) True in most EU countries. Teachers earn more in Germany (6.5%), Portugal (32.1%), Lithuania (43.8%), and Ireland (0.3%).

([2]) Austria and Finland are exceptions as VET teachers earn more than their general education counterparts.

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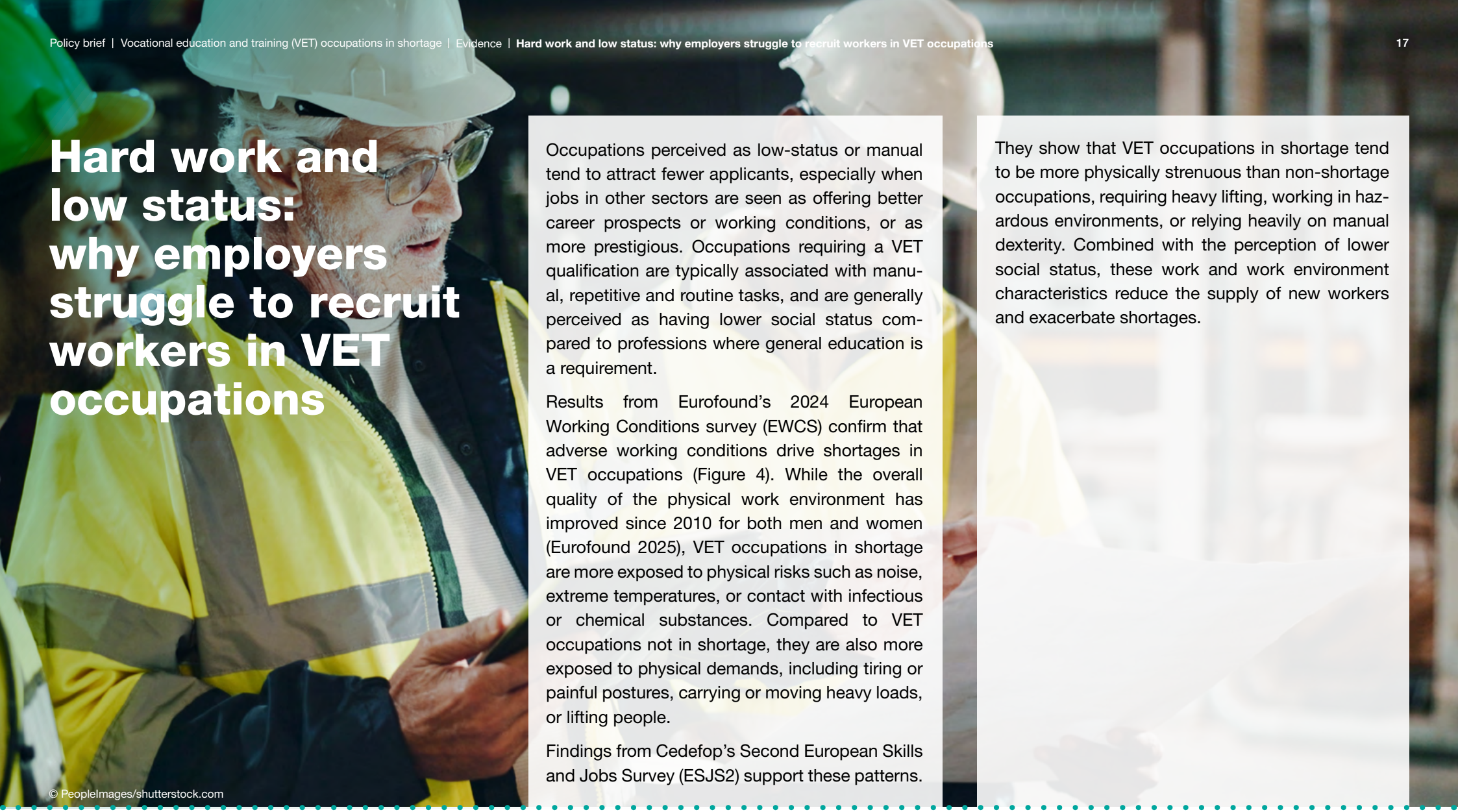
Hard work and low status: why employers struggle to recruit workers in VET occupations



Occupations perceived as low-status or manual tend to attract fewer applicants, especially when jobs in other sectors are seen as offering better career prospects or working conditions, or as more prestigious. Occupations requiring a VET qualification are typically associated with manual, repetitive and routine tasks, and are generally perceived as having lower social status compared to professions where general education is a requirement.

Results from Eurofound's 2024 European Working Conditions survey (EWCS) confirm that adverse working conditions drive shortages in VET occupations (Figure 4). While the overall quality of the physical work environment has improved since 2010 for both men and women (Eurofound 2025), VET occupations in shortage are more exposed to physical risks such as noise, extreme temperatures, or contact with infectious or chemical substances. Compared to VET occupations not in shortage, they are also more exposed to physical demands, including tiring or painful postures, carrying or moving heavy loads, or lifting people.

Findings from Cedefop's Second European Skills and Jobs Survey (ESJS2) support these patterns. They show that VET occupations in shortage tend to be more physically strenuous than non-shortage occupations, requiring heavy lifting, working in hazardous environments, or relying heavily on manual dexterity. Combined with the perception of lower social status, these work and work environment characteristics reduce the supply of new workers and exacerbate shortages.

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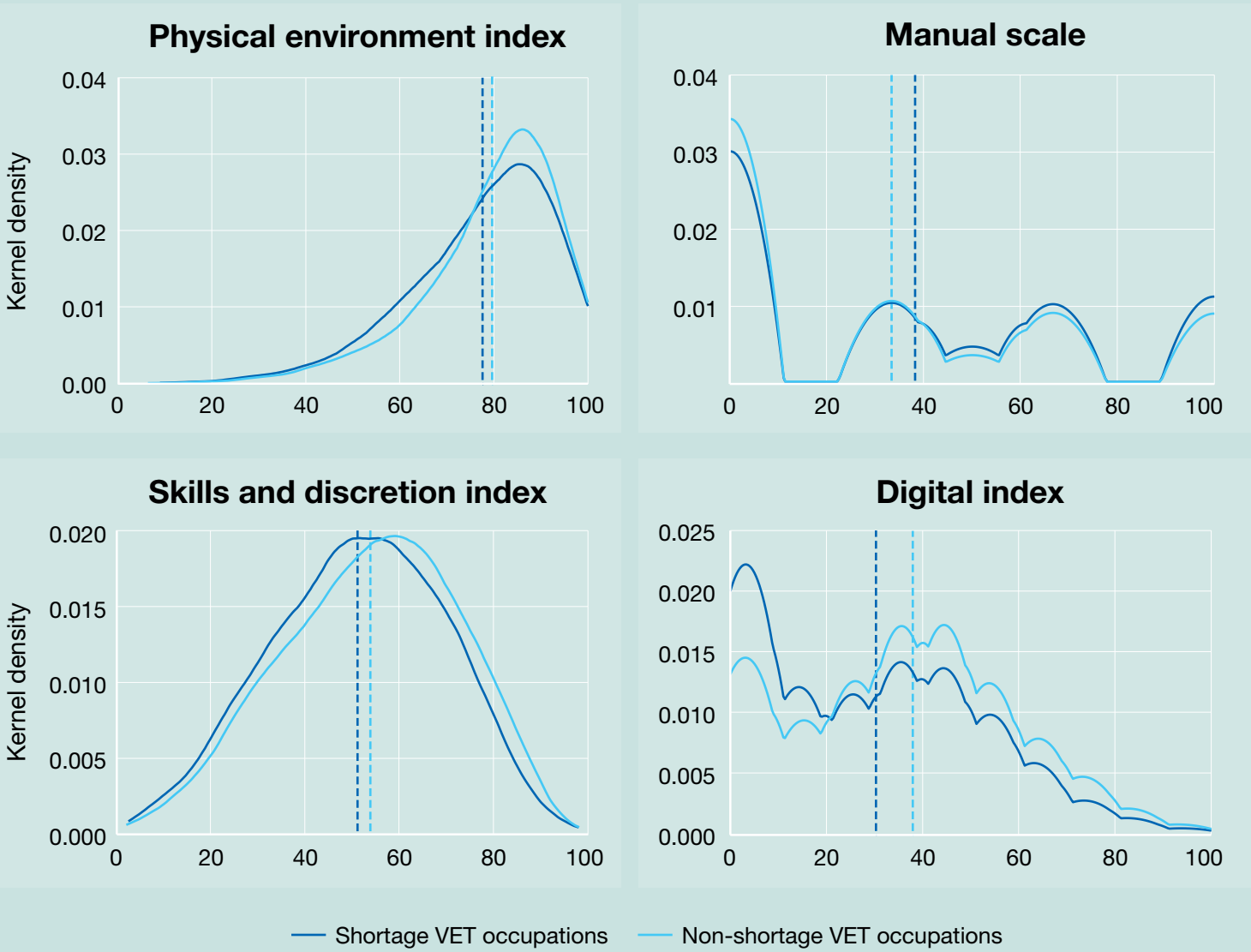
Figure 4. **Distributions in VET occupations by shortage status, EU-27**



Source: EWCS 2024, ESJS2.

Perceived low job attractiveness as a driver of VET labour shortages

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For young people to choose VET as an education pathway leading to a specific occupation, it must offer tangible returns in their eyes. For example, the occupation needs to be perceived as offering a decent income, job security and career advancement opportunities, enable personal fulfilment, and aligning with personal interests and aptitudes.

People are attracted to particular occupations or education pathways because of personal job fit, which is defined as the alignment between an individual's values and task expectations and the requirements of a job (Chapman et al., 2005). Analysis based on EWCS 2024 reveals that workers in shortage VET occupations typically have fewer opportunities to apply and develop their skills, less autonomy in performing tasks, and limited involvement in organisational decision-making. These factors are closely linked to job satisfaction, wellbeing, and long-term retention, and their absence can significantly undermine the appeal of shortage VET occupations.

Complementary ESJS2 findings show that many shortage VET occupations also score low on the digital skills index, indicating a relatively limited demand for digital competences. Limited digitalisation may make already relatively unattractive jobs even less attractive, particularly for younger workers who expect a modern and tech-enabled work environment. Together, the survey-based findings suggest that a combination of limited skill development and use, low task discretion, and limited digitalisation can contribute to persistent recruitment and retention challenges in key VET occupations, and exacerbate labour shortages.

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...people are **attracted** to particular occupations or education pathways because of **personal job fit**...

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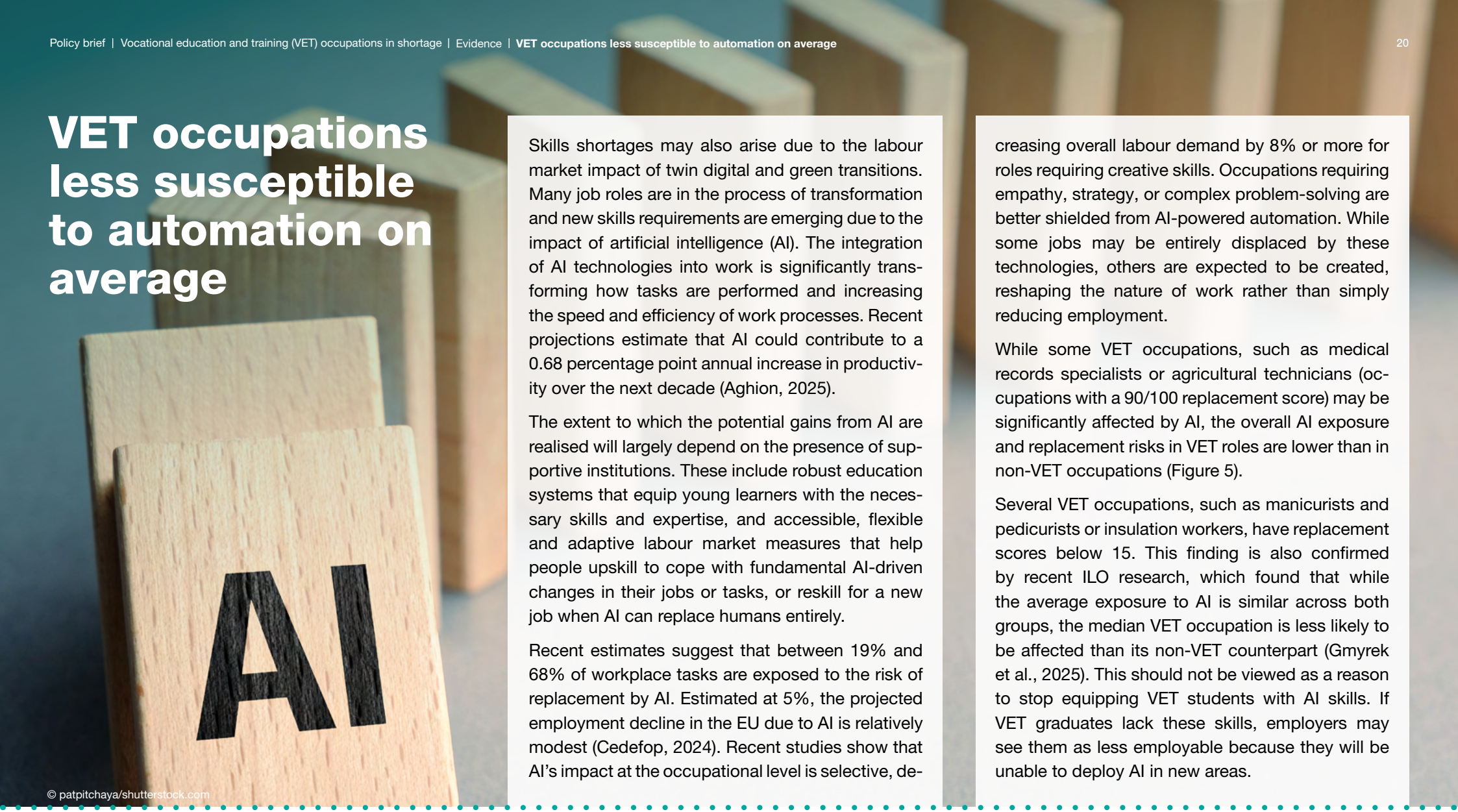
VET occupations less susceptible to automation on average



Skills shortages may also arise due to the labour market impact of twin digital and green transitions. Many job roles are in the process of transformation and new skills requirements are emerging due to the impact of artificial intelligence (AI). The integration of AI technologies into work is significantly transforming how tasks are performed and increasing the speed and efficiency of work processes. Recent projections estimate that AI could contribute to a 0.68 percentage point annual increase in productivity over the next decade (Aghion, 2025).

The extent to which the potential gains from AI are realised will largely depend on the presence of supportive institutions. These include robust education systems that equip young learners with the necessary skills and expertise, and accessible, flexible and adaptive labour market measures that help people upskill to cope with fundamental AI-driven changes in their jobs or tasks, or reskill for a new job when AI can replace humans entirely.

Recent estimates suggest that between 19% and 68% of workplace tasks are exposed to the risk of replacement by AI. Estimated at 5%, the projected employment decline in the EU due to AI is relatively modest (Cedefop, 2024). Recent studies show that AI's impact at the occupational level is selective, decreasing overall labour demand by 8% or more for roles requiring creative skills. Occupations requiring empathy, strategy, or complex problem-solving are better shielded from AI-powered automation. While some jobs may be entirely displaced by these technologies, others are expected to be created, reshaping the nature of work rather than simply reducing employment.

While some VET occupations, such as medical records specialists or agricultural technicians (occupations with a 90/100 replacement score) may be significantly affected by AI, the overall AI exposure and replacement risks in VET roles are lower than in non-VET occupations (Figure 5).

Several VET occupations, such as manicurists and pedicurists or insulation workers, have replacement scores below 15. This finding is also confirmed by recent ILO research, which found that while the average exposure to AI is similar across both groups, the median VET occupation is less likely to be affected than its non-VET counterpart (Gmyrek et al., 2025). This should not be viewed as a reason to stop equipping VET students with AI skills. If VET graduates lack these skills, employers may see them as less employable because they will be unable to deploy AI in new areas.

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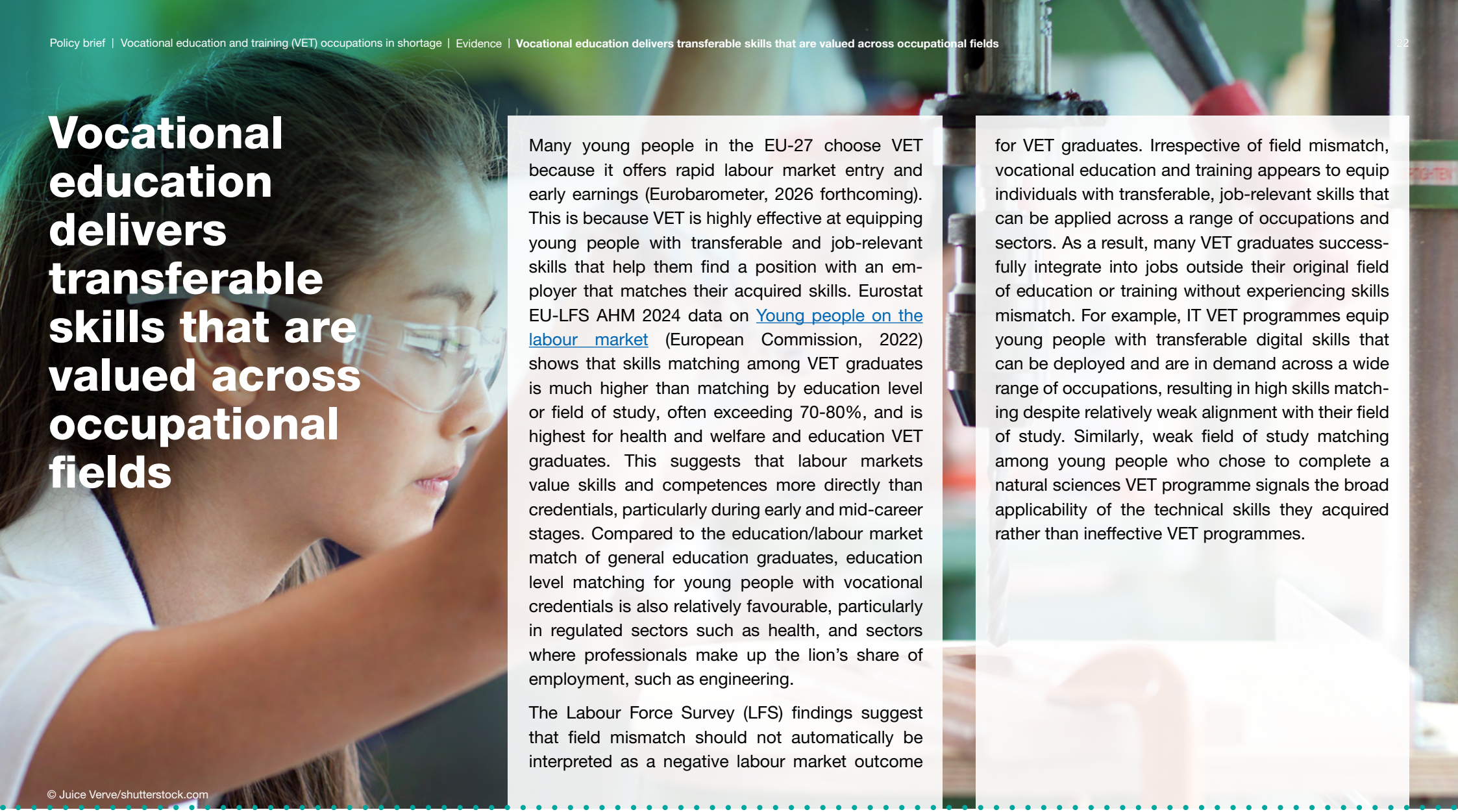
The skills required for adopting or using digital technologies were reported as having become 'somewhat' or 'much more important' by majority of SMEs in the EU (Eurobarometer, 2023). While AI skills requirements are growing in many contexts, it is important to not overlook foundational skills. Before AI skills can meaningfully be developed, it is necessary to address gaps in basic skills, as many VET students lack essential foundational mathematical competences required to become a proficient AI user or developer.

Figure 5. **VET and non-VET occupations by AI exposure and replacement**

Source: How is AI reshaping the labour market?

Vocational education delivers transferable skills that are valued across occupational fields



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Many young people in the EU-27 choose VET because it offers rapid labour market entry and early earnings (Eurobarometer, 2026 forthcoming). This is because VET is highly effective at equipping young people with transferable and job-relevant skills that help them find a position with an employer that matches their acquired skills. Eurostat EU-LFS AHM 2024 data on Young people on the labour market (European Commission, 2022) shows that skills matching among VET graduates is much higher than matching by education level or field of study, often exceeding 70-80%, and is highest for health and welfare and education VET graduates. This suggests that labour markets value skills and competences more directly than credentials, particularly during early and mid-career stages. Compared to the education/labour market match of general education graduates, education level matching for young people with vocational credentials is also relatively favourable, particularly in regulated sectors such as health, and sectors where professionals make up the lion's share of employment, such as engineering.

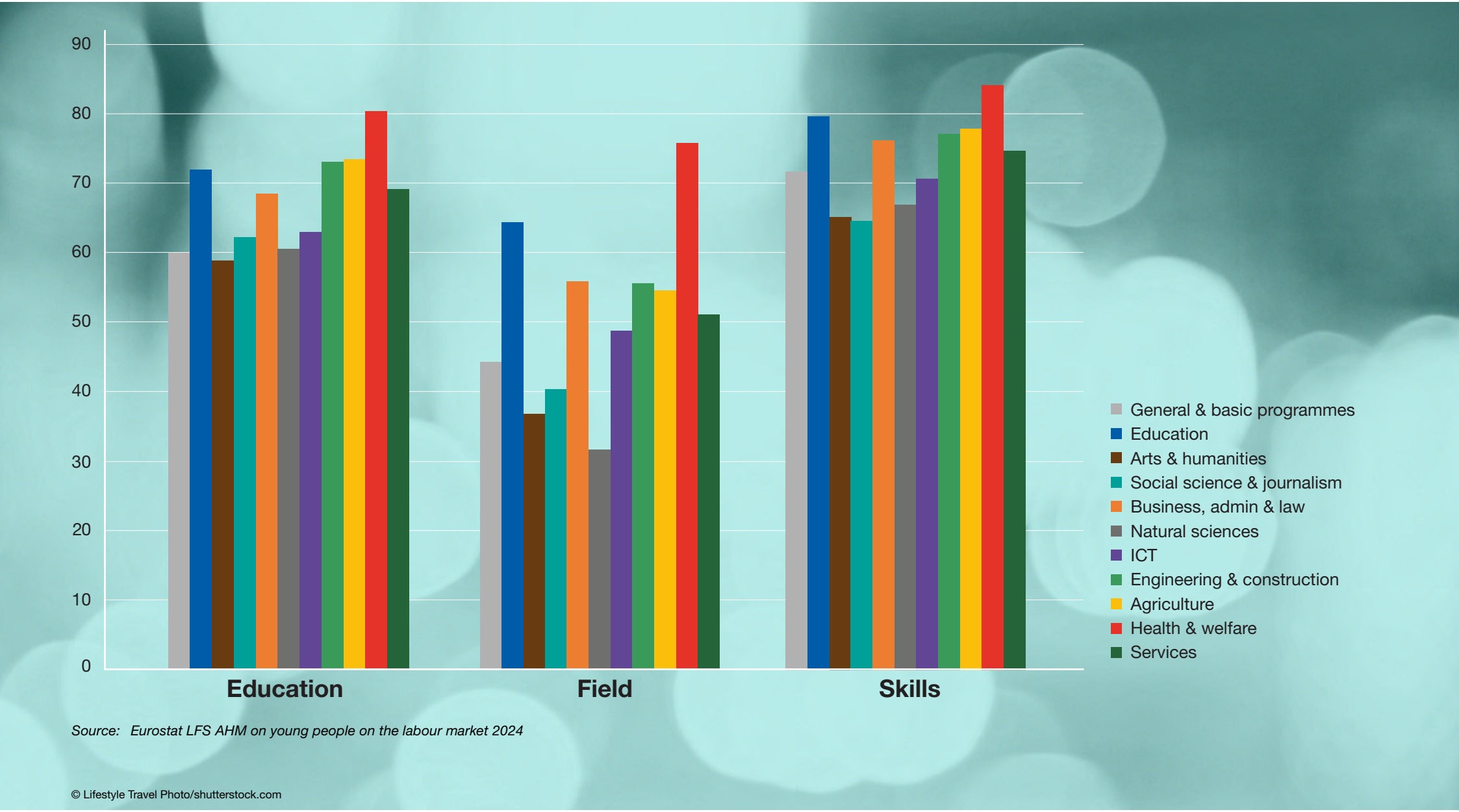
The Labour Force Survey (LFS) findings suggest that field mismatch should not automatically be interpreted as a negative labour market outcome for VET graduates. Irrespective of field mismatch, vocational education and training appears to equip individuals with transferable, job-relevant skills that can be applied across a range of occupations and sectors. As a result, many VET graduates successfully integrate into jobs outside their original field of education or training without experiencing skills mismatch. For example, IT VET programmes equip young people with transferable digital skills that can be deployed and are in demand across a wide range of occupations, resulting in high skills matching despite relatively weak alignment with their field of study. Similarly, weak field of study matching among young people who chose to complete a natural sciences VET programme signals the broad applicability of the technical skills they acquired rather than ineffective VET programmes.

...labour markets **value skills and competences** more directly than credentials, particularly **during early and mid-career stages**...

...**Labour Force Survey** findings suggest that field mismatch should not automatically be interpreted as a **negative labour market outcome** for VET graduates...

...many VET graduates **successfully integrate** into jobs **outside their original field of education or training** without experiencing skills mismatch...

Figure 6. **Education, field and skills matching among medium vocational graduates in EU-27**



Source: Eurostat LFS AHM on young people on the labour market 2024

CONCLUSIONS

In this section

Strengthening evidence-based policy through dedicated research

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Addressing the multidimensional drivers of VET shortages requires coordinated policy action at EU and national levels. The persistence of these labour shortages underscores the need for coordinated policy actions to make VET pathways more attractive, responsive, and inclusive to meet current workforce needs and to prepare for the challenges of the green and digital transitions.

Ongoing research at Cedefop aims to identify approaches and policy levers that will help secure the availability of the right skills for the labour market and contribute to reducing skills shortages and mismatches. Cedefop has selected 15 VET occupations in shortage to explore in more depth what drives the attractiveness of VET programmes, and to identify strategies to enhance their appeal. Cedefop will carry out stakeholder interviews with learners, social partners, career guidance professionals, and teachers and trainers to shed light on how to strengthen the attractiveness of VET programmes. This can entail action to improve perceptions of the careers such programmes give access to, increase awareness of long-term earnings prospects, and expand career guidance that reaches learners early, with a particular focus on reducing gender stereotypes.

Cedefop launched the European Vocational Teacher Survey (EVTS) in 2025 to collect new evidence about the challenges in recruiting VET teachers. The EVTS, the first ever pan-European survey among teachers, examines the main factors shaping work and wellbeing of today's VET teachers. While these teachers are instrumental for developing Europe's skilled workforce and supporting inclusive, prosperous societies, representative empirical information about the challenges they face has been scarce. The survey findings, based on interviews in 22 EU Member States, are expected in June 2027 and will provide reliable knowledge about the factors driving the low attractiveness of the VET teacher profession.

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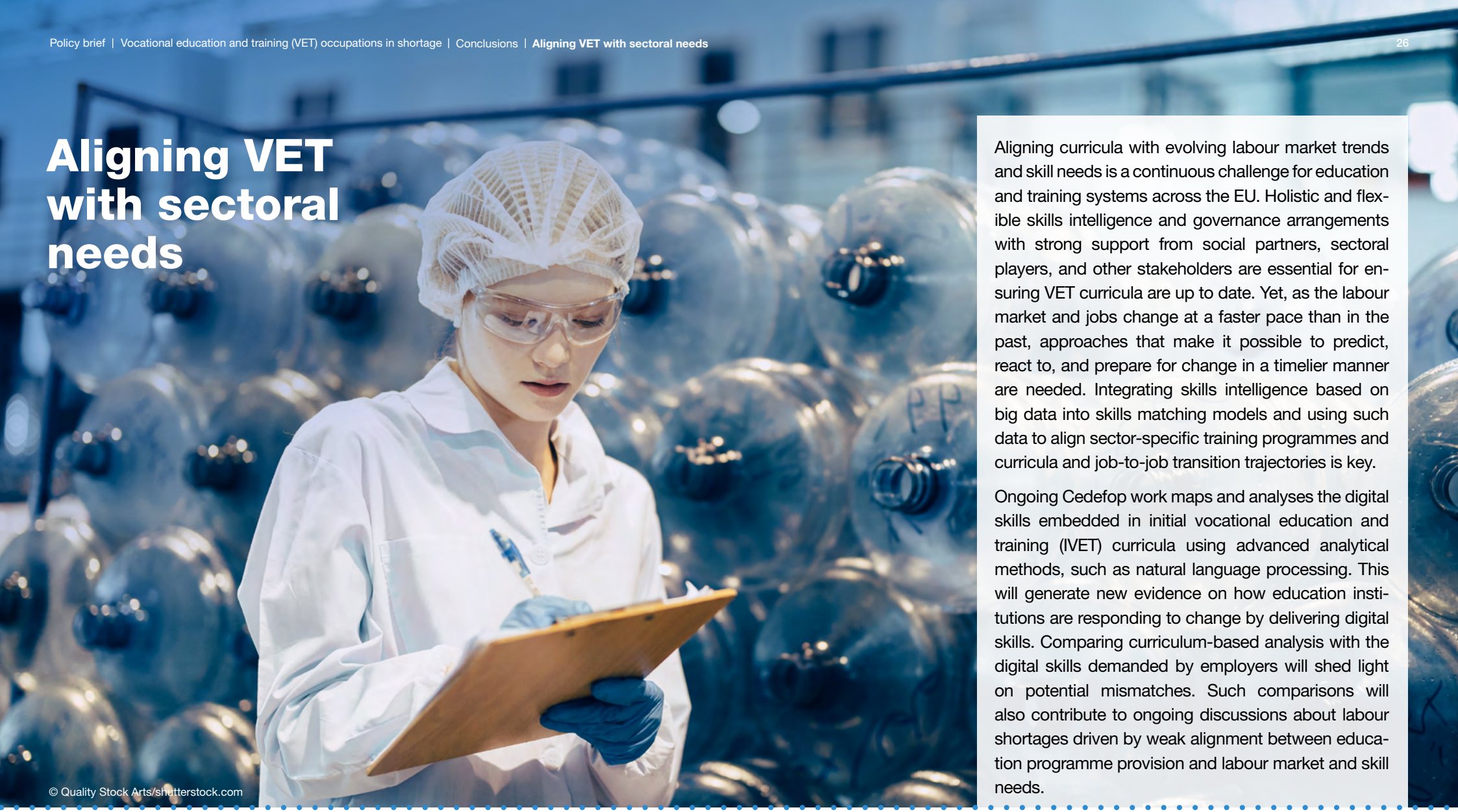
Aligning VET with sectoral needs



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Aligning curricula with evolving labour market trends and skill needs is a continuous challenge for education and training systems across the EU. Holistic and flexible skills intelligence and governance arrangements with strong support from social partners, sectoral players, and other stakeholders are essential for ensuring VET curricula are up to date. Yet, as the labour market and jobs change at a faster pace than in the past, approaches that make it possible to predict, react to, and prepare for change in a timelier manner are needed. Integrating skills intelligence based on big data into skills matching models and using such data to align sector-specific training programmes and curricula and job-to-job transition trajectories is key.

Ongoing Cedefop work maps and analyses the digital skills embedded in initial vocational education and training (IVET) curricula using advanced analytical methods, such as natural language processing. This will generate new evidence on how education institutions are responding to change by delivering digital skills. Comparing curriculum-based analysis with the digital skills demanded by employers will shed light on potential mismatches. Such comparisons will also contribute to ongoing discussions about labour shortages driven by weak alignment between education programme provision and labour market and skill needs.

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Supporting sector-VET collaboration is key to closing the skills gap

Cooperation with sectors is essential to ensure that VET programmes remain closely aligned with real workplace requirements and give people employment opportunities for emerging occupational profiles. This can be achieved by establishing sectoral advisory boards, which give employers a stronger voice in shaping VET, as shown by experience in Ireland, Estonia, and many other countries in the EU and beyond.

Such structures for collaboration could help alleviate skills shortages in sectors undergoing transformation, because they generate information on technological change and skill needs for curriculum design and updates more quickly. For example, in the renewable energy sector, VET institutions can work with solar and wind energy companies to co-develop training modules on installing and maintaining green energy systems. Similarly, in advanced manufacturing, partnerships with firms using robotics and AI can ensure learners are trained to use the latest equipment and software.

Cooperation between VET and industry and service sectors includes providing opportunities for students to gain hands-on experience through apprenticeships and other types of dual training. Collaborative arrangements can also involve industry professionals teaching part-time or giving guest lectures. This enriches the learning experience, boosts labour market relevance, and helps alleviate the shortage of VET teachers. Joint projects on learning for emerging technologies, such as the co-development of microcredentials, can also increase the capacity of VET providers to adapt quickly to evolving labour market needs.

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Overcoming gender stereotypes to address labour market gaps

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Gender imbalances in VET enrolment and programme completion, particularly in highly male- or female-dominated programmes and occupations, must be addressed to reduce skills shortages. It is essential to reinforce and scale up initiatives that support women's access to occupations traditionally dominated by men, such as STEM. In some contexts, new technologies can facilitate this shift: as robots increasingly take on heavy and hazardous tasks, manufacturing roles no longer depend on workers' physical attributes such as height, weight, or strength. This makes such jobs more accessible to a wider pool of candidates.

Current skills shortages in manufacturing offer a strong incentive to attract more women into technical and STEM careers. In contrast, the underrepresentation of men in female-dominated sectors, such as healthcare, education and social work is shaped by a complex interplay of social norms, occupational stereotypes, and perceived career limitations. The reluctance to pursue a career in a gender-dominated occupation is a systemic barrier that limits workforce diversity and exacerbates staff shortages in sectors already facing acute labour shortages. Addressing these challenges requires targeted awareness campaigns, for example to attract more men into the nursing profession (OECD, 2025), visible role models, and structural actions that highlight the value, impact, and career potential of professions that have been strongly gender-dominated to date (Delfino, 2024).

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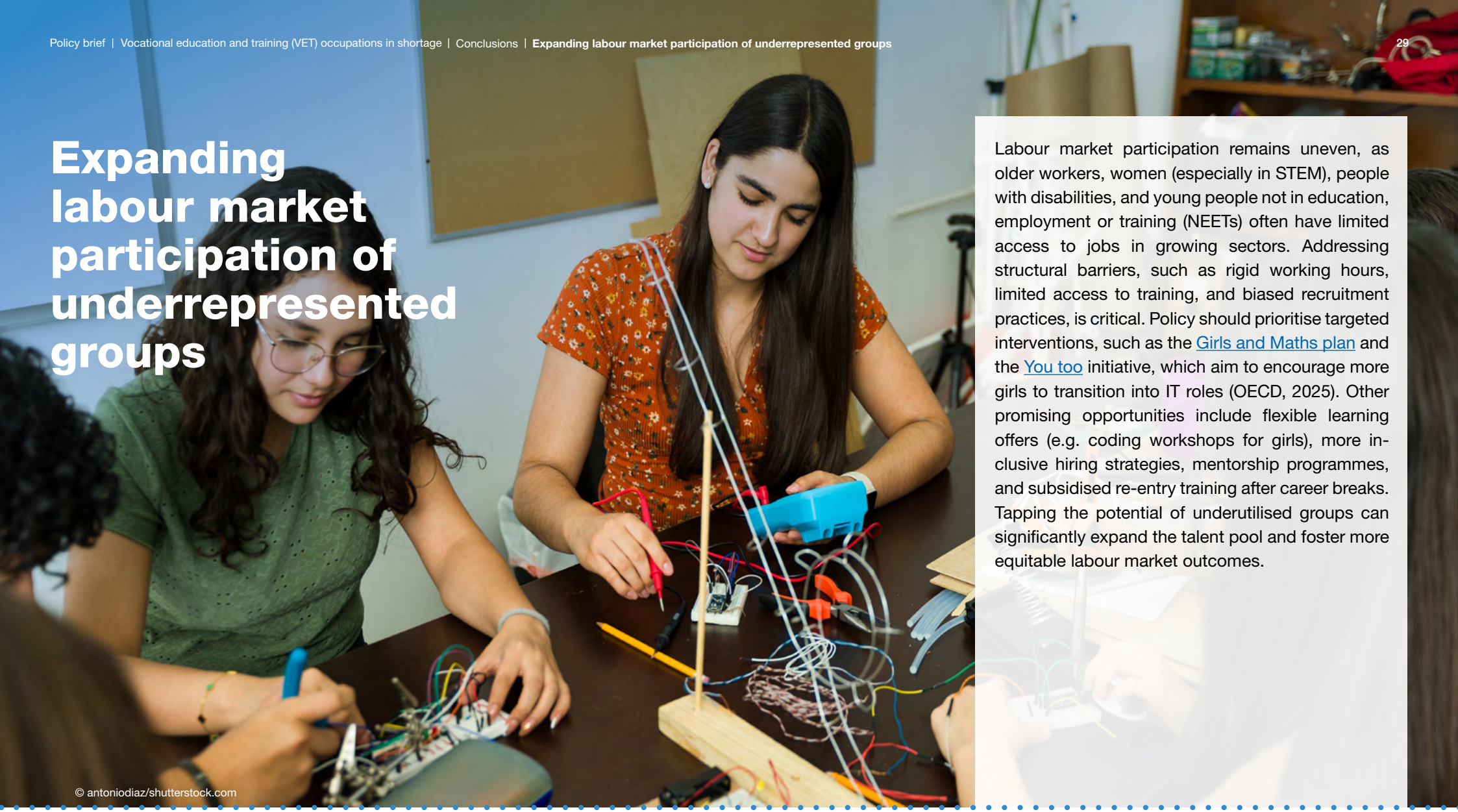
Expanding labour market participation of underrepresented groups



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Labour market participation remains uneven, as older workers, women (especially in STEM), people with disabilities, and young people not in education, employment or training (NEETs) often have limited access to jobs in growing sectors. Addressing structural barriers, such as rigid working hours, limited access to training, and biased recruitment practices, is critical. Policy should prioritise targeted interventions, such as the Girls and Maths plan and the You too initiative, which aim to encourage more girls to transition into IT roles (OECD, 2025). Other promising opportunities include flexible learning offers (e.g. coding workshops for girls), more inclusive hiring strategies, mentorship programmes, and subsidised re-entry training after career breaks. Tapping the potential of underutilised groups can significantly expand the talent pool and foster more equitable labour market outcomes.

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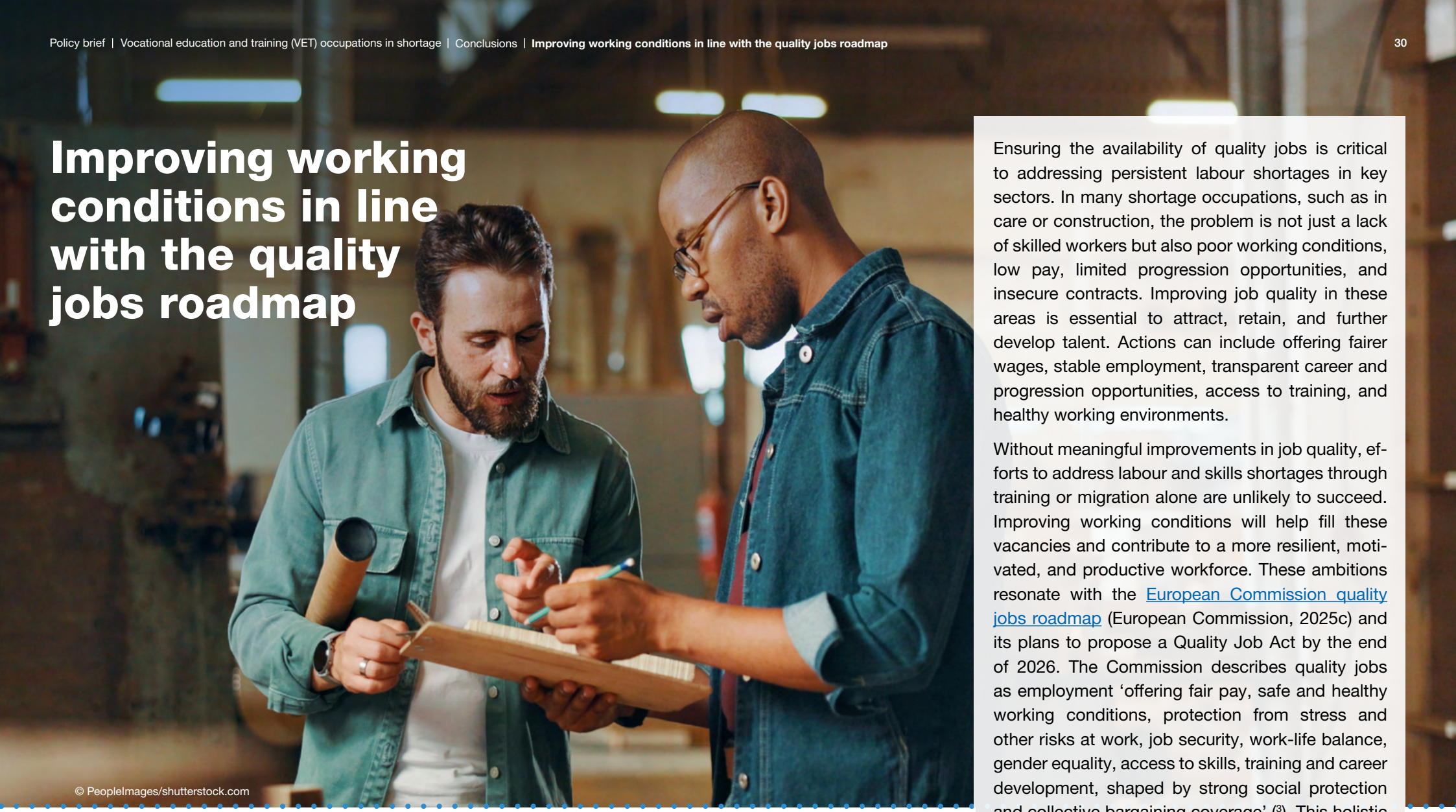
Improving working conditions in line with the quality jobs roadmap



...the problem is not just **a lack of skilled workers** but also poor working conditions, low pay, limited progression opportunities, and insecure contracts...

...the European **holistic understanding of job quality** will help ensure that the world of work keeps pace with the modern economy, while **protecting workers**...

Ensuring the availability of quality jobs is critical to addressing persistent labour shortages in key sectors. In many shortage occupations, such as in care or construction, the problem is not just a lack of skilled workers but also poor working conditions, low pay, limited progression opportunities, and insecure contracts. Improving job quality in these areas is essential to attract, retain, and further develop talent. Actions can include offering fairer wages, stable employment, transparent career and progression opportunities, access to training, and healthy working environments.

Without meaningful improvements in job quality, efforts to address labour and skills shortages through training or migration alone are unlikely to succeed. Improving working conditions will help fill these vacancies and contribute to a more resilient, motivated, and productive workforce. These ambitions resonate with the European Commission quality jobs roadmap (European Commission, 2025c) and its plans to propose a Quality Job Act by the end of 2026. The Commission describes quality jobs as employment 'offering fair pay, safe and healthy working conditions, protection from stress and other risks at work, job security, work-life balance, gender equality, access to skills, training and career development, shaped by strong social protection and collective bargaining coverage' ([3]). This holistic understanding of job quality will help ensure that the world of work keeps pace with the modern economy, while protecting workers and incentivising them to reach their full potential.

([3]) EU Commission sets out roadmap for future-proof quality jobs in a competitive Europe.

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POLICY BRIEF

Vocational education and training (VET) occupations in shortage

From evidence to coordinated policy responses

The EU labour market is undergoing a profound transformation because of demographic shifts, technological change, the green transition, and organisational and workplace dynamics. Vocational education and training (VET) plays a central role in equipping individuals with the knowledge and practical skills Europe needs to make and shape these transitions. At the same time, structural weaknesses, demographic pressures, skills mismatches, teacher shortages and the limited attractiveness of VET pathways, constrain VET's ability to meet labour market needs. In this policy brief, we examine the drivers of shortages in VET occupations and outline directions that can reinforce EU Member States' skills and sustainable economic growth policies by increasing VET attractiveness and participation.

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