

Training and skills development in SMEs

Analysing the role of support policies and NRRP strategies

Alessandra Pedone

INAPP

Roberto Angotti

INAPP

Domenico Barricelli

INAPP

The article addresses the characteristics of micro-enterprises and SMEs in the European and global context, in the field of training and skills development. Through the analysis of issues and opportunities for SMEs, in response to the Covid-19 emergency and the challenges of digital and ecological transitions, an overview of levels of participation in CVET (Continuing Vocational Education and Training) is provided, with a focus on territorial gaps in Europe. The growing need for adaptation of digital and transversal skills in human capital is analysed in the context of SMEs and micro-enterprises. A reading of European actions and programmes to support training, re-skilling and up-skilling is finally proposed with a focus on the National Recovery and Resilience Plan (NRRP).

L'articolo affronta il tema delle caratteristiche delle microimprese e delle PMI nel contesto europeo e mondiale, nell'ambito della formazione e dello sviluppo delle competenze. Attraverso l'analisi delle problematiche e opportunità per le PMI, in risposta all'emergenza Covid-19 e alle sfide delle transizioni digitale ed ecologica, viene fornito un quadro sui livelli di partecipazione alla formazione continua, con un'attenzione ai divari territoriali in Europa. La crescente esigenza di adeguamento delle competenze digitali e trasversali del capitale umano viene analizzata in particolare nell'ambito delle microimprese. Viene infine proposta una lettura delle azioni e dei programmi europei di sostegno alla formazione, al re-skilling e up-skilling, con un focus sul Piano nazionale di ripresa e resilienza (PNRR).

DOI: 10.53223/Sinappsi_2023-01-3

Citation

Pedone A., Angotti R., Barricelli D. (2023), Training and skills development in SMEs. Analysing the role of support policies and NRRP strategies, *Sinappsi*, XIII, n.1, pp.32-49

Keywords

Continuing vocational training
NRRP
Small and medium-sized enterprises

Parole chiave

Formazione professionale continua
PNRR
Piccole e medie imprese

Introduction

With the 'twin transitions', companies face the challenge of adapting quickly and flexibly to changing competitive conditions. The implications for skills development are mainly: dealing with new strategic management models, introducing innovations and new forms of work organisation and processes. New

conditions in a rapidly changing socio-economic context are affecting companies, SMEs and micro-enterprises. The idea of skills playing a key role in the broader green and digital transitions in a vision of a proactive training system – with policy choices capable of anticipating innovation and supporting the digitalisation process (European Commission 2020a) –

has guided European policies over the last ten years, with strongly differentiated outcomes, however, at Member State level. Attention to the development of skills and training in SMEs, considering the impact of the twin transitions together with the recovery from the Covid-19 emergency, can trigger a virtuous circle leading to the adoption of increasingly advanced technologies and methodologies, thanks to targeted investments, strategies and spaces for dialogue and territorial and sectoral cooperation (ILO 2021).

This contribution intends to investigate the causes that hinder innovation and skills development in SMEs, both in the pandemic period and in relation to green and digital transitions. The analysis of data on participation in CVET (Continuing Vocational Education and Training) in Italy, compared at European level, highlights inequalities in the distribution of training opportunities in Italy, particularly for smaller enterprises. Although companies are the main providers of training for employees in Europe, small and medium-sized enterprises (SMEs) encounter various obstacles in investing in human capital due to their size and more difficult access to information and capital markets (OECD 2021a).

1. Training participation in enterprises and Covid emergency effects

The impact of the Covid emergency on lifelong learning and CVET was, as in the case of education, disruptive, suddenly revolutionising working organisation systems and training provision with the sudden shift to distance training (Pedone 2021a). As with the world of education, critical issues have emerged, but one unexpected result has been the push towards innovation, which has made it even more urgent to develop new skills, especially digital ones, with the retraining of workers. Even the shift to remote forms of work and training, imposed by the pandemic, and then continued to a lesser extent, amplified the effects of a digital transformation that was already underway. The Covid emergency highlighted some of the critical aspects of training systems and, above all, made the digital divide in Europe evident, which was, however, able to cope with the period of physical distancing imposed on almost all sectors of work and education, making it possible to markedly accelerate the adoption of new measures for infrastructure and skills innovation in all sectors (Di Pietro and Karpiński 2021).

Critical factors for workers in training during the period of the closures included the digital divide and the

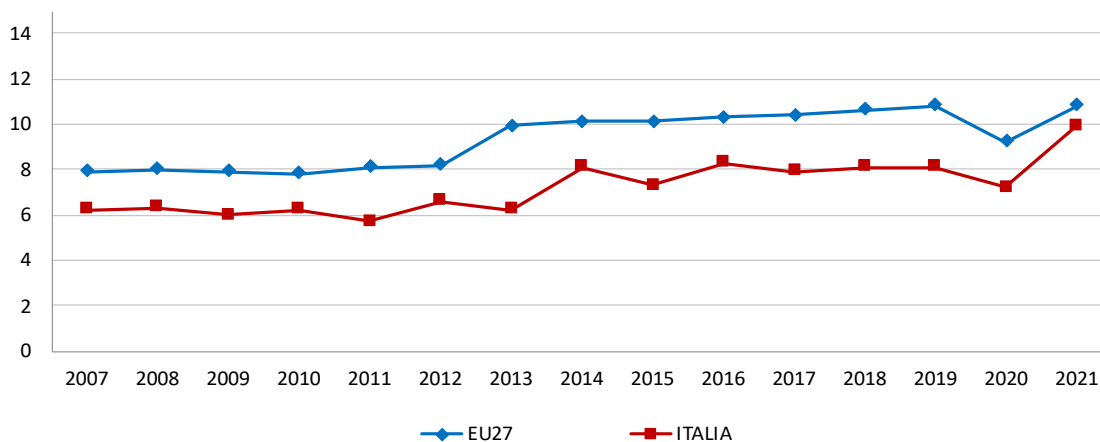
immediate availability of devices and fibre-optic connections; in particular, adults with low qualifications and lacking the basic skills needed to benefit from digital learning had more difficulties (Pedone 2021b). The share of training enterprises decreased in 2020 as companies were forced to abruptly review their operating methods and priorities. Both the OECD (2021b) and the European Commission (2020a) highlighted general critical issues in CVET that can be mainly traced back to the following aspects: difficulty in finding and using new distance learning tools; building a new relationship with learners; managing a very large workload; lack of digital, communication and basic transversal skills (resilience, creativity). In addition, the systems used for assessing competences and awarding qualifications were also affected by the pandemic emergency. European documents (Centeno *et al.* 2022), illustrate that the critical issues encountered during the closures were also accompanied by considerable opportunities: the massive use of digital technologies as a substantial impetus for lifelong digital learning and the digital transition in general.

Public and private services are bound to become exclusively available online and low-skilled adults risk not being able to actively use them if the digital divide is not bridged. The skill shortage is exacerbated by the demographic situation in several countries: the old-age dependency ratio, the ratio of the population aged sixty-five and over to the population of working age (15-64), has risen to 32.5% for the EU27 average in 2021, with Italy in the first position at 37%. A Eurostat projection also predicts that these figures will double by 2100.

These are the reasons that drive the EU towards the necessary up-skilling and re-skilling, especially for digital skills, as a priority in the post-covid recovery and as a prerequisite for inclusive and sustainable growth. Already before the pandemic, 128 million adults in Europe required up-skilling and re-skilling (46% of adults) (European Commission 2020), and subsequently, three out of four companies experienced a change in skills needs due to the pandemic (Van Loo *et al.* 2021).

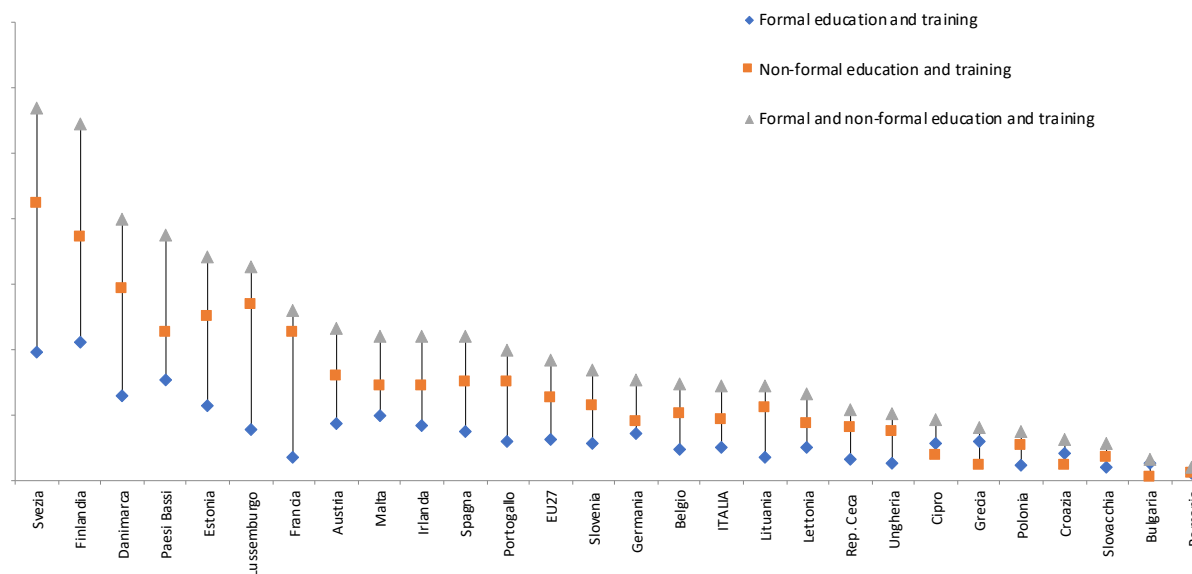
The EU-27 average rate of training participation fell to 9.2% in 2020, from 10.8% in 2019, and the impact of Covid-19 on training participation was strongest in countries where adult learning is most deeply rooted (Sweden, Denmark) and rather limited in Southern and Eastern European countries. In Italy, the rate dropped to 7.2% in 2020 (-0.9% compared to 2019) returning to the values of 2015, reducing the distance

Figure 1. Participation rate in education and training, years 2007-2021, Italy, EU27 (% of persons aged 25-64)



Source: Authors' elaboration on Eurostat data, Labour Force Survey (LFS)

Figure 2. Participation rate in education and training by type of activity attended – EU27 countries, the year 2021 (% of persons aged 25-64)



Source: Authors' elaboration on Eurostat data, Labour Force Survey (LFS)

from the European average value, but failing to reach the ET 2020 benchmark target of 15%, which was met by six countries, Sweden, Finland and Denmark, the Netherlands, Estonia, and Luxembourg, while Italy finished eight points behind the threshold (Angotti and Pedone 2022).

After a sudden decline in 2020, in 2021, there was a rebound, with an interesting growth in the participation rate, which reached 10.8% for the EU-27. In Italy, participation in training raised to reach 9.9%: the distance between the Italian figure and that of the EU-27 is signifi-

cantly reduced to less than one percentage point (-0.9%).

The main lagging factor in the training participation rate in Italy is the low access rates by vulnerable groups (low-skilled). Moreover, participation in formal training is very low, due not only to a low individual willingness to attend demanding and long-term courses but above all to the severe shortage of supply of these courses at the territorial level (Inapp 2021).

The analysis of the levels of adult learning participation in Italy and the gaps concerning Europe confirms, on the one hand, a serious problem of

inequality, which still appears to be widespread in the distribution of training opportunities, especially for private sector employers, and, on the other, a low rate of effectiveness of public training policies in the pursuit of equity objectives. The retention of wide gaps in training participation, despite the growth of the average participation indicator in 2021, signals the persistence of factors of inequality that are still very present and active, evidently not discouraged through the application of equity criteria intended to improve access to training opportunities for all social categories, especially the most vulnerable (Angotti 2022). These trends in lifelong learning and adult learning have a massive impact on CVET in SMEs where training for up-skilling and re-skilling of workers, managers and company owners constitutes a strategic asset (Eurofound 2020).

2. Micro-enterprises and SMEs as drivers of economic and social development

Micro, small and medium-sized enterprises (SMEs) are considered the 'backbone' of the European economy (European Commission 2020b), in terms of employment and added value, essential to foster competitiveness, growth and development, even in the face of a global scenario dominated by great uncertainty, continuous changes and "sudden transformations, which inevitably and inexorably impact on organisations, people and territories" (Barricelli 2021). An awareness of the importance of this aggregate of enterprises has grown over time and since 1996, when the Commission adopted a Recommendation on the common definition of SMEs, they have been defined according to their size, turnover, balance sheet and independence to ensure that support measures are only granted to those enterprises.

Based on this awareness and considering the economic developments achieved by SMEs over time in the European company environment, a subsequent Recommendation (which came into force on 1st January 2005) was produced, which determines the conditions for their qualification. For the first time, the category of micro-enterprises, the largest group in statistical terms within the SME macro-aggregate, is recognized for all intents and purposes. This is a major step towards improving the operating environment of SMEs, aimed at developing the promotion of entrepreneurship, investment, and growth, through specific support policies. In Italy as well, starting with the aforementioned Recommendation (Barricelli and Russo 2005) the issues

of micro-enterprise development in the face of the challenges of the third millennium have been promptly placed at the centre of the socio-economic and cultural debate; an accurate comparative reconstruction, in comparison with many international contexts, on the consistency, dynamics, and behaviours of micro-enterprises, useful for orienting specific policies and interventions.

The presence of SMEs is significant even considering the OECD Member Countries, accounting for 99% of all enterprises and about 60% of value added. In this context, "one out of three people work in a micro firm, two out of three in an SME" (OECD 2019).

In many territorial areas (regions and cities) of the OECD, SMEs not only contribute to the identity and social cohesion of local communities but are also the main vehicle for job creation, especially after crises. The advent of the digital age, with the creation of new technological products and services, has enabled the exponential growth of the number of micro-enterprises in the OECD area. Micro and small enterprises are often set up in those service sectors (*e.g.* trade, construction) that have lower start-up costs than other sectors (such as manufacturing); an element that for many people can represent a (seemingly) more immediate way of accessing the labour market.

SMEs represent, however, a heterogeneous aggregate that still needs to be distinguished within itself, in terms of size, but above all by the different types of activities (production/services), modes and styles of entrepreneurial (managerial) management. In addition, OECD considers the specificities that characterise the different territorial contexts in which micro-enterprises operate; their economic size, resource endowment, market structures, support institutions, and entrepreneurial culture are all determining aspects in their development and are not always homogeneous across countries. There are also different national definitions for this aggregate: Canada, the United States, and the Russian Federation, for example, exclude sole proprietorships from micro-enterprises, Switzerland excludes enterprises with fewer than 3 persons employed, while Australia and Turkey include up to nineteen persons employed within the category (OECD 2019).

Italy represents a relevant entrepreneurial reality in the European panorama. From the latest available statistical data (Istat 2021), there are 4.4 million active (non-agricultural) enterprises, employing 17.4 million people. At the same time, we have to consider the fra-

gility of our entrepreneurial fabric, since more than 60% of the total number of enterprises is made up of a single employee (enterprises with the owner self-employed), and a further third is made up of micro-enterprises (2-9 employees): two segments that employ a total of approximately 7.5 million people. This is significant in numerical terms when compared with small enterprises (10-49), which account for around 200,000 units, and medium and large enterprises, which account for 28,000 units (*i.e.* less than 0.7%) but represent more than a third of employment and more than half of the added value produced.

However, the difficult moment experienced with the Covid-19, and the uncertainty brought about by the ongoing Russian-Ukrainian conflict, when analysed through the evolution of the size structure of enterprises (and related employment) over the last decade (2011-2018), show a different picture of the national production system, with a decline in the number of micro-enterprises and of the number of people employed within them (Inapp 2021). When compared with the previous decade, it demonstrates a recent evolution of the production system that has shifted towards a larger average size, where the employment weight of large enterprises (the main protagonists of employment growth) has increased. The difficulties experienced by smaller enterprises during the recent pandemic crisis were then exacerbated by the uncertainty induced by the ongoing international geopolitical tensions, which are causing sharp increases in energy costs.

The development of micro and SMEs as a driver of employment in Europe, in the current scenarios of the digital economy, requires greater investment in innovation programmes, supported by substantial training interventions to adapt skills and knowledge systems. Indispensable factors to increase productivity levels (by pushing micro-enterprises towards higher value-added activities) and to improve employment (by providing higher wages) can, through the available (and emerging) digital technologies, help transform enterprise models and working practices that are still based on traditional sectors and management. It is important, therefore, to orient and guide smaller enterprises on the main drivers of change useful to seize, for instance, the opportunities of e-commerce, fostered by a progressive adoption of new practices in retail. But also with regard to the progressive growth of collaborative digital platforms (3D) in the construction sector, or sharing platforms in accommodation and food services, as well

as in logistics. Important inputs are useful in pushing small enterprises to achieve economies of scale without huge quantitative investments, compared to medium and large enterprises. Smaller and more responsive companies should be offered a competitive advantage through open innovation, to boost their competitiveness through initiatives aimed at developing renewed managerial skills and new networking activities, able to make them participate in international supply chains, in a now globalised scenario.

However, small enterprises struggle to activate the necessary skills to increase productivity through internationalisation and innovation channels, seizing the opportunities offered by the digital transition. It is for this reason that the policy agendas of different countries (OECD 2019) are investing resources in programmes capable of directing policies and resources to encourage micro-enterprises to activate innovative processes through the adoption of new technologies and skills, in addition to the necessary re-skilling and up-skilling initiatives.

A direct commitment is needed in building an environment conducive to the development of micro and SMEs, including through greater participation in extended networks, with closer links to large enterprises that, thanks to their technological know-how, knowledge, and skills (and presence in international supply markets) could carry out 'mentoring activities' towards smaller enterprises, facilitating their access to innovation and organisational development processes. For this reason, it is also necessary to improve the relationship with policymakers and stakeholders, adapting the technological, organisational, and cognitive infrastructures (of the knowledge available in a specific territory), which are useful to orient development interventions (shared between public and private) on the specific vocations (and needs) of the context. It's also important to analyse how entrepreneurs have experienced (and are experiencing) crises and how they are rethinking, reorganising, and repositioning themselves, as family-run micro and small enterprises often represent the pivot around which the rebirth of many territories and communities revolves, as recent research shows (Sharma *et al.* 2022).

3. Policies scenarios for Recovery and Resilience: supporting skills development and training for SMEs

SMEs play a key role in the European economy and account for 99.8% of all European enterprises. In 2021,

22.8 million SMEs were active in the EU, employing 83.2 million people, accounting for just under two-thirds of EU-27 employment in the private non-financial sector. From traditional manufacturing companies to high-tech start-ups, the SME landscape is extremely diverse and encompasses a wide range of sectors and company models. Moreover, financial, operational, or governance relationships between enterprises often make it difficult to distinguish an SME from a larger company and to assess which companies can benefit from EU funding programmes and policies. For these reasons, the European Commission developed an explanatory guide in 2020 'User guide to the SME Definition' accompanied by a practical tool for SMEs 'SME self-assessment tool'.

In general, the European Union's SME policy focuses mainly on five priority areas, which include: promoting entrepreneurship and skills, improving SMEs' access to markets, reducing red tape, improving SMEs' growth potential, and strengthening dialogue and consultation with stakeholders. Policies on the promotion of workers' skills are particularly important given the considerable number of workers employed in SMEs. The vast majority of SMEs in 2021 were micro-enterprises. However, these very small ones only account for 44% of SME employment and in general, SMEs mostly operate in low knowledge-intensive sectors with only 31% in knowledge-intensive or high-tech industries, where they employ 22% of all people employed by SMEs (Izsak *et al.* 2021).

During the Covid-19 crisis, SMEs were hit hard by supply chain disruptions and temporary closures. In 2020, the number of European SMEs fell by 1.3 %, SME employment by 1.7% and SME value added by 7.6 %. More than 60% of SMEs experienced a drop in turnover and about 66% of SMEs postponed investment decisions or downsized investments (European Commission 2022a). Economic reorientation and job changes have led to new skills and knowledge needs in many companies. The change in knowledge and skills needs has been most pronounced in companies with high innovation, with the need to adapt quickly to the crisis with innovative approaches to the market and with flexibility in reorganising work and retraining or updating their employees (Eurofound 2021).

In Italy, the pandemic has also generated a significant reduction in the number of SMEs operating in the Italian production system (Confindustria and Cerved 2022): based on the latest demographic and balance

sheet data in 2020, the estimated number of SMEs operating in the production system is 153,627, a figure that is down by 3.9% compared to almost 160,000 in 2019. The geographical area with the sharpest decline in the number of SMEs is the Centre, followed by the South, as losses in the North-East and North-West are limited. The substantial resilience of Italian SMEs to the shock of the pandemic was also helped by the massive doses of liquidity injected into the system following the extraordinary interventions promoted by the government. The improvement in the economic outlook following the overcoming of the most acute phase of the pandemic was also reflected in the economic indicators of SME health in 2021. The most significant increases are observed in the North-West, while in the South the trend is more contained. The rebound in company birth rates observed in 2021 did not, however, make it possible to compensate for the 'missed births' accumulated during the previous year, with a negative balance of about 11 thousand companies compared to the trend recorded before Covid, amounting to 11.7% of total births in 2019, particularly in the South and the Centre, characterised by activities strongly impacted by the pandemic and characterised by a slow recovery process. The destabilisation of the international framework following the Russian-Ukrainian conflict, together with the substantial increases in the prices of raw materials, could negatively affect the recovery prospects of Italian SMEs, after the significant rebound recorded in 2021.

These changed economic circumstances during 2020 and 2021 are also clearly reflected in the 2020 and 2021 European Surveys (European Commission 2022b) on Access to Finance for Enterprises (SAFE), in which EU27 SMEs assessed the importance of various issues and challenges they were facing. In 2021, the two issues considered by the EU27 SMEs as the most important were "availability of qualified staff or experienced managers" (higher than in 2020 in all SME size classes but to a lesser extent in micro-enterprises) as well as 'production or labour costs' (Kwaak *et al.* 2021). Interestingly, the importance of access to finance decreased significantly in 2021, probably reflecting the continued financial support provided by governments for the Covid-19 emergency and the generally easier credit conditions (European Commission 2022b). Indeed, the EU has adopted several action programmes to increase the competitiveness of SMEs through research and innovation and to provide better access to finance.

Table 1. European Union Financing Schemes and Initiatives for SMEs for Green and Digital Transitions

PROGRAMME	AIM	EU STRATEGY FRAMEWORK	EU POLICY	INTERACTION	PREDECESSOR
Small Business Act (2008 updated in 2011)	The main priorities (10 principles) of the SBA are to promote entrepreneurship, improve access to finance and market, reduce the regulatory burden and improve access to markets and internationalisation. The Network of SME envoys was set up in 2011. SME Performance Review	Europe 2020 Strategy, SME Strategy	European Commission Communication (COM(2008) 394 final) 'Think small first' A 'small business act' for Europe. Review of the 'Small Business Act' for Europe (COM(2011) 78 final of 23 February 2011)	New Industrial Strategy, InvestEU	
New Industrial Strategy (2020 updated in 2021)	A plan for how the EU's world-leading industry could lead the twin green and digital transitions. Initiative Skills for Industry	SME Strategy for a sustainable and digital Europe	COM(2021) 350 final 'Updating the 2020 New Industrial Strategy: Building a stronger Single Market for Europe's recovery'. COM(2020) 102 final 'The 2020 Industrial Policy package'	The Recovery and Resilience Facility, Cohesion Policy, Multiannual Financial Framework 2021-2027	
"Recovery and Resilience Facility (RRF)"	National Recovery and Resilience Plans. Financial support for investments and reforms, in relation to the green and digital transitions and the resilience of national economies. It will be linked to the European Semester. (NRRPs) to finance Green and Digital Transitions"	Next Generation EU - Covid-19 recovery package	Response to the COVID-19 pandemic crisis	Cohesion Policy, Multiannual Financial Framework 2021-2027	
Digital Europe Programme (DIGITAL)	Supercomputing and data processing capacities; core artificial intelligence (AI) capacities such as a data spaces and libraries of AI algorithms; cybersecurity; digital skills, expanding the best use of digital capacity in EU's society and economy; support to the digitalisation of businesses and public administrations	Digital Decade	Shaping Europe's digital future	Horizon, Connecting Europe Facility (for digital infrastructure), Creative Europe, the Recovery and Resilience Facility, Cohesion Policy, Multiannual Financial Framework 2021-2027	
Horizon Europe (2021-2027)	Artificial intelligence and robotics next generation Internet high performance computing big data key digital technologies 6G	Digital Decade	Shaping Europe's digital future, Green Deal	"Enterprise Europe Network, European industry clusters, Centres for Advanced Technologies for Industry, Open Innovation Test Beds, European Digital Innovation Hubs, Startup Europe"	Horizon
Single Market Programme (2021-2027)	To facilitate market access, promote entrepreneurship and the acquisition of entrepreneurial skills, and contribute to the modernisation of industry and address global and societal challenges	Single Market	Single Market	The Digital Markets Act, the Digital Services Act, the Data Governance Act	COSME 2014-2020 (Competitiveness of Small and Medium-sized Enterprises)
InvestEU	Aims to finance a broad range of policy goals, including recovery, green growth, quality jobs and wellbeing	European Investment Bank Group – comprised of the European Investment Banks (EIB) and the European Investment Fund (EIF)	Shaping Europe's digital future, Green Deal	New EU Industrial Strategy, SME Strategy for a sustainable and digital Europe	Investment Plan for Europe (European Fund for Strategic Investments (EFSI) and 13 other EU financial instruments available during the period 2014 – 2020)

Source: Authors' elaboration from EU Commission data and publications

The impact of the pandemic stimulated new thinking on economic recovery, reconstruction and building the resilience of SMEs in Europe. One of the first actions taken during the emergency period was the European Commission's SURE initiative, launched in April 2020, with a focus on training, including training of workers at risk of job loss, as a company and individual investment. Subsequently, the European Commission launched a new Digital Education and Training Action Plan, inviting the Member States to build on the emergency experience to develop better quality, more accessible and inclusive digital training, learning and assessment as a key element of the European transition, using the recovery and resilience instrument with the National Recovery and Resilience Plan (NRRP).

Two instruments foreseen by the European Skills

Agenda were then introduced: Individual Learning Accounts (ILA) and the so-called micro-credentials. These tools were envisaged by the European Commission, following the increasing use of informal digital training, in short modules and focused on specific, targeted, and immediate skills objectives, accentuated by the pandemic and social constraints. These are 'normative' tools that already existed in the Member States and were already widespread in countries such as Australia. The proposal is not intended to replace existing national processes in the organisation of education and training, employment, or labour markets, but only to consider the possibility of complementing them, with national governance in terms of quality assurance and recognition processes, into formal, non-formal and informal learning contexts. The proposal for a recom-

Table 2. EU Skills Development Programs and Policies

PROGRAMME	AIM	ACTIONS	EU POLICY FRAMEWORK	EU POLICY	INTERACTION
EU SKILLS AGENDA 2025	A five-year plan to help individuals and businesses develop more and better skills and to put them to use	A call to join forces in a collective action: Action 1: A Pact for Skills Actions to ensure that people have the right skills for jobs: Action 2: Strengthening skills intelligence Action 3: EU support for strategic national upskilling action Action 4: Proposal for a Council Recommendation on vocational education and training (VET) Action 5: Rolling out the European Universities Initiative and upskilling scientists Action 6: Skills to support the twin transitions Action 7: Increasing STEM graduates and fostering entrepreneurial and transversal skills Action 8: Skills for life Tools and initiatives to support people in their lifelong learning pathways: Action 9: Initiative on individual learning accounts Action 10: A European approach to micro-credentials Action 11: New Europass platform A framework to unlock investments in skills: Action 12: Improving the enabling framework to unlock Member States' and private investments in skills"	European Pillar of Social Rights, Green Deal, Recovery and Resilience Facility	Communication on a European Skills Agenda for sustainable competitiveness, social fairness and resilience	Digital Decade, European Digital Strategy, Industrial and Small and Medium Enterprise Strategy, Recovery Plan for Europe, Increased support for youth employment
DIGITAL DECADE 2030	A comprehensive framework that will guide through the Digital Compass all actions related to digital. Multi-country projects (EU, national, and private resources)	The Digital Decade policy programme, the Digital Decade targets, the objectives, the multi-country projects and the Digital Decade rights & principles. key performance indicators (KPIs) based on DESI	2030 Policy Programme Path to the Digital Decade, European Digital Strategy	Communication of 9 March 2021 entitled '2030 Digital Compass: the European way for the Digital Decade', Decision (EU) 2022/2481 of the European Parliament and of the Council of 14 December 2022 establishing the Digital Decade Policy Programme 2030	Eu Skills Agenda

Source: Authors' elaboration from EU Commission data and publications

Table 3. EU Skills Agenda Objectives

Indicators	Objectives for 2025	Current level (latest year available)	Percentage increase
Participation of adults aged 25-64 in learning during the last 12 month (in %)	50%	38% (2016)	32%
Participation of low-qualified adults 25-64 in learning during the last 12 months (in %)	30%	18% (2016)	67%
Share of unemployed adults aged 25-64 with a recent learning experience (in %)	20%	11% (2019)	82%
Share of adults aged 16-74 having at least basic digital skills (in %)	70%	56% (2019)	25%

Source: Authors' elaboration from EU Commission data and publications

mentation on ILA also states that the European Commission's impact assessment analysis highlighted two key issues: insufficient financial support for training, and insufficient incentives and motivation of individuals to take up training. The proposal covers all adults of working age, regardless of the labour force or employment status, including the self-employed and others in atypical forms of work.

As a fundamental part of the economy, the participation and inclusion of SMEs are crucial for the success of the digital and green transition. Although SMEs are extremely heterogeneous, the European Commission (2022a) has identified some key characteristics that define whether and how SMEs embark on the path towards the twin transitions: SMEs tend to operate in a geographic and product niche, with limited diversification; they tend to have limited access to resources, such as access to finance and access to skills, capabilities and human resources; they are often owned and managed by the same person and consequently depend on the ambitions, beliefs and values of the owner-manager; they have limited influence on the broader company environment (e.g. through lobbying or advocacy) or supply chains. In principle, SMEs with extremely limited digitalisation of their activities start the transition through external solutions. As digitalisation and thus experience increases, they increasingly rely on internal capabilities and competencies, or a mix of external solutions and internal capabilities, with the general perception that digitalisation and sustainability go hand in hand and that micro is a way for SMEs to

manage the transition to sustainability. European programmes and policies need to include the provision of technical assistance and capacity-building programmes for SMEs, to support companies in adopting practices and models geared toward the digital transition and sustainability, also addressing the issue of training to address skills shortages. Access to finance must be accompanied by development actions for SMEs that lag behind large companies in terms of the digitalisation of operations and models. The Enterprise Europe Network, the world's largest support network for small and medium-sized enterprises (SMEs), is active among the European networks. It includes technology clusters, innovation support organisations, universities and research institutes, regional development organisations, and chambers of commerce and industry. At the national level, Digital Innovation Hubs are also active in all states and play an important role in the promotion and development of the 'Digital Europe Programme' (2021-2027), which includes among its specific objectives 'Advanced Digital Skills' to bridge the digital divide and promote greater professionalism, in particular in the fields of high-performance computing and cloud computing, big data analytics, cybersecurity, distributed ledger technologies (e.g. blockchain), quantum technologies, robotics and AI. Operational objectives include high-quality short-and long-term courses and training, on-the-job training and internships for students and the workforce, particularly in SMEs and the public sector.

Another policy instrument to kick-start SME transitions had already been launched in March 2020: the SME Strategy for a sustainable and digital Europe (European Commission 2020b), which was later updated to the new post-pandemic situation in 2021 (European Commission 2022a) also in connection with the broader policy agenda of the Digital Decade.

The Path to the Digital Decade sets out the main targets that will affect the skills of workers and professionals within the digital transformation of companies and public services: to raise employed ICT specialists from 8 million to 20; 75% of enterprises using Cloud, Big Data and AI; to raise SMEs from 60 to 90% with at least a basic level of digital intensity.

On the lifelong learning side, the new Strategic Framework for European Cooperation in Education and Training, defined by the Council on 19 February 2021, aims at the realisation of a 'European Education and Training Area' by 2025, and the overall objective of the 'New European Agenda for Adult Learning 2021-2030'

Table 4. EU Digital Decade Targets

Indicators	Objectives for 2025	Current level (latest year available)	Increase
Aged 16-74 with at least basic digital skills (DESI indicators)	80%	56% (DESI2022)	24%
ICT specialists employed within the Union (promoting the access of women to this field and increasing the number of ICT graduates) DESI Indicators	20 million	8.4 million (DESI 2022)	+ 11,6 million
SMEs with at least basic level of digital intensity	>90%	60%	30%

Source: Authors' elaboration from EU Commission data and publications

(NEAAL 2030) will be to increase and improve the provision, promotion and take-up of formal, non-formal and informal learning opportunities for all, addressing the fragmentation of policies and actions to strive for a shared vision for enhanced provision. In addition to the strategic priorities of the new Agenda, seven targets (Eu-level targets – Reference levels of European average performance in education and training) have been defined.

The “reference level of European average performance in education and training” to be reached by 2025 concerning adult learning was set on 29 November 2021 by the ‘Council Resolution on a new European Agenda for Adult Learning 2021-2030’ at 47% (adults aged 25-64 years who should have participated in learning in the previous 12 months). A more ambitious target for 2030 was included in the Porto Declaration and the conclusions of the European Council of 24 and 25 June 2021: at least 60% of adults aged 25-64 should have participated in learning activities in the previous 12 months by 2030.

Both targets refer to Eurostat-LFS (Labour Force Survey) data for 2022. Given that the data source is expected to change in 2022 (from AES, Adult Education Survey to LFS), the target will be confirmed in 2023 based on experience with the new data source. The Commission, in cooperation with the ‘Standing Group on Indicators and Benchmarks’, will assess the impact of these changes by comparing the results of the AES and the LFS survey in 2023 and will consider possible changes to the LFS methodology or the level of the target. Based on this assessment, the Council will

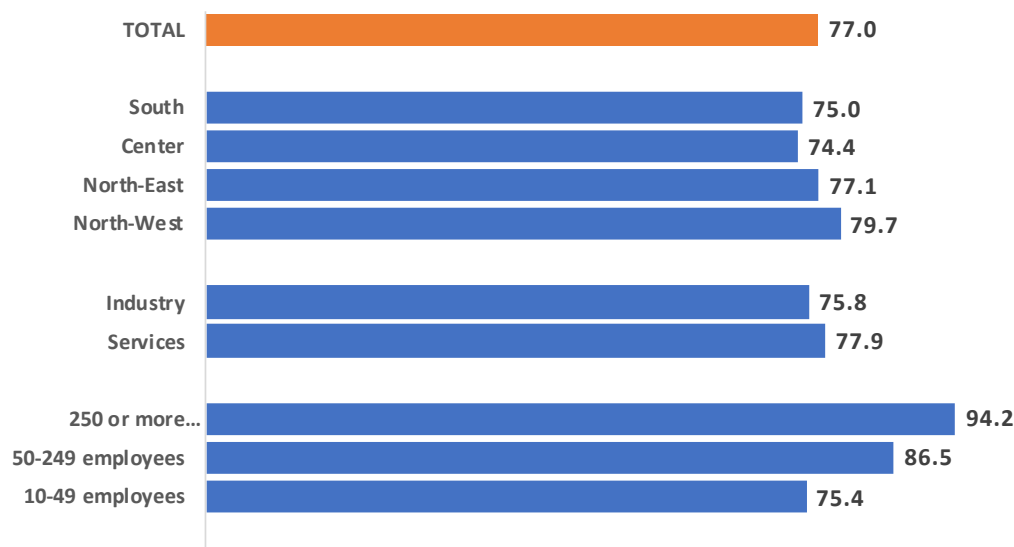
decide on a possible adjustment of the milestone level. LFS and AES use different reference periods to measure participation in education and training: LFS considers participation in education and training in the previous 4 weeks while AES covers learning activities in the preceding 12 months, which allows for a more comprehensive measure of participation in education and training, but AES data are only available every 5-6 years, therefore, annual LFS data were chosen for policy monitoring. From 2022, the LFS will measure participation in education and training in the previous 12 months biannually. Once available, this data will be used for policy monitoring, replacing the current 4-week indicator.

4. Skills development issues in Italian SMEs

A recent report by the European Commission, the 2022 Country Report - Italy, which assesses Italy's stability programme, gives us a snapshot of our country's economic and employment condition, highlighting the difficult long-term challenges ahead, despite the post-pandemic recovery. Although Italy ended 2021 (the year of post-pandemic recovery) on a solid footing in terms of GDP and falling unemployment, strong macroeconomic imbalances remain, which are unlikely to be reduced in the short term: public debt/GDP ratio, low productivity, structural deficiencies in labour and financial markets. Difficulties are exacerbated by the instability of international geo-political arrangements, which are putting intense pressure on the corporate system (linked to high operating costs), as well as the household system. The difficulties linked to the growing degree of uncertainty at the global level are grafted onto the well-known structural deficiencies in our country: high public debt (still a source of vulnerability); risk of poverty and social exclusion (growing); slow ecological transition (with strong disparities in territorial investments where the well-known gaps with the southern reality re-emerge); low employment rates (which penalise women and young people in particular); lack of specialised labour (more educated and trained) necessary to facilitate the green and digital transition of SMEs.

Concerning the process of digitalisation of the economy and society (European Commission 2022b), we can say that Italy is gradually catching up with the other European countries (EU 27): we went from 25th place in 2020 to 18th in 2022. In this context, even SMEs have reached at least a basic level of digital intensity. Still,

Figure 3. Enterprises with 10 employees and more that have adopted at least one digital technology in the last three years, by class of employees and territorial breakdown. The year 2021 (in % of enterprises)



Source: Inapp, Indaco-Imprese Survey 2020

only 15% of companies in our country provide their employees with ICT training, compared to the European average of 20%. We also need to make progress on the basic digital skills of individuals, which still see us below the European average (ITA 45.7%, EU 54%), in 25th place out of twenty-seven countries.

Regarding the development of digital technology, looking at the results of the survey on training investments in Italian companies (Inapp Indaco-Imprese Survey 2020¹), we find that 3/4 of Italian companies (150,000) claim they have adopted some form of digital technology in the previous three years and half of them say they intend to introduce digital technologies in the following three years. A seemingly positive figure, but if we explore the types of digital technologies adopted by the enterprises taken into consideration by the survey, it emerges that only 5% of these have adopted the hard ones, *i.e.* those indispensable to compete in the scenarios of the digital era.

Among the enterprises that have introduced KETS 4.0 (Key Enable Technologies) for digitisation and automation, 43.3% have also provided specific training for this purpose. Stratification by size class shows that about half of the medium-sized and large enterprises

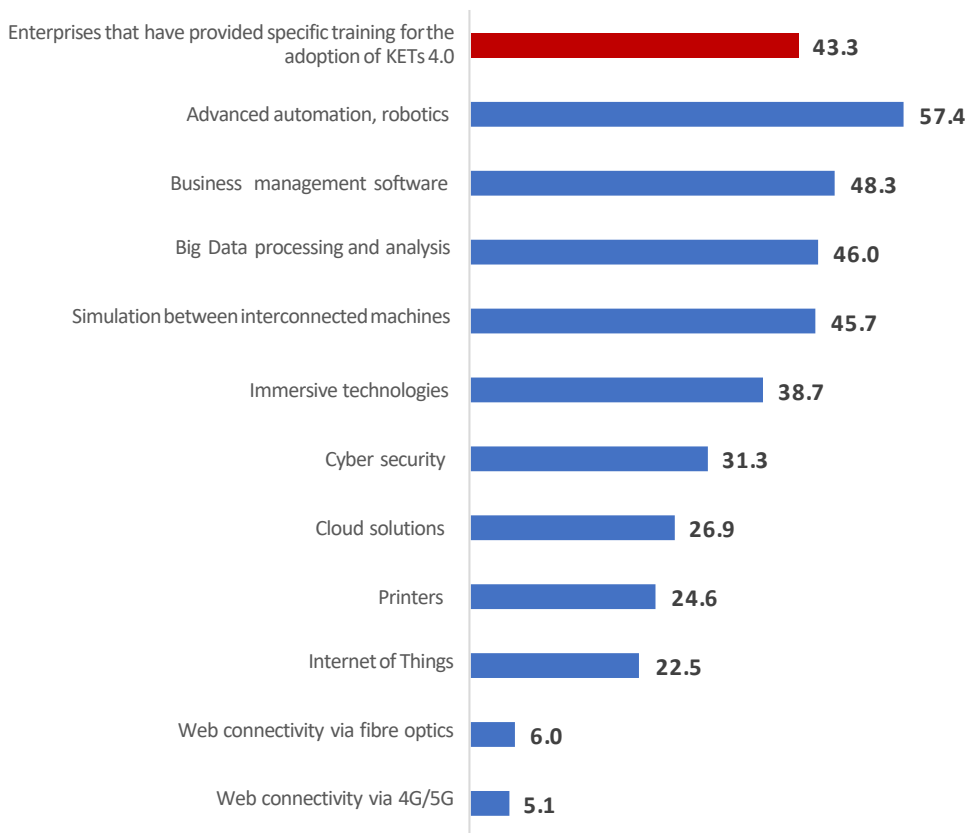
and 41.7% of the small enterprises were involved in training. Looking at the different types of technologies in more detail, the proportion of enterprises that have provided training activities is below 50% for all types except advanced automation and robotics (57.4%).

In response to the pandemic emergency, 36.3% of enterprises were forced to suspend their work (even if only once); this percentage drops to 18.3% when the interruption occurred twice or more. In contrast, the proportion of enterprises that managed to continue their activities – despite many difficulties and limitations – is 45.4% of the total. The forced closure following the lockdown involved small enterprises to a greater extent, both in the case of lockdown occurring once (36.9% compared to 20.9% of large enterprises) and on more than one occasion (19.4% compared to 8.4%). Of particular importance is the figure for financial services, insurance, and pension funds, which managed to ensure the continuation of their activities in 98.2% of cases.

The pandemic emergency forced just under a third of enterprises to reschedule their working hours. As a result of this, only about one in ten enterprises has set up training activities.

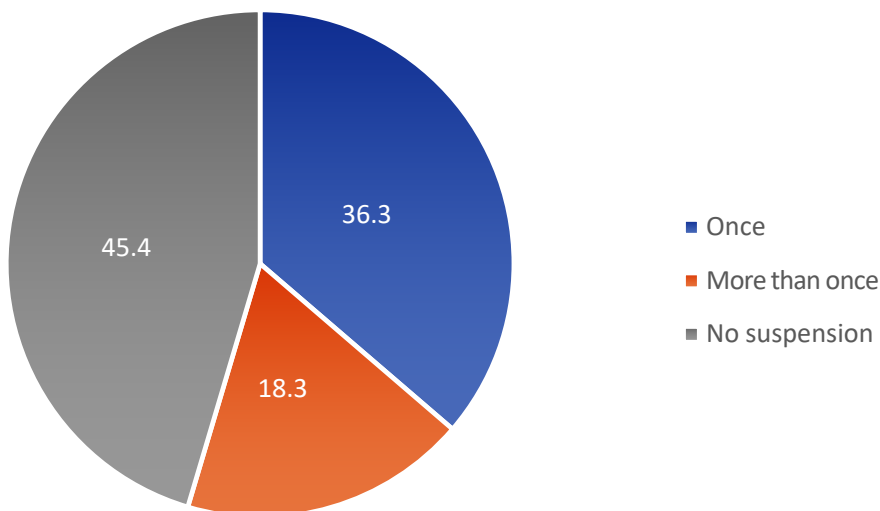
¹ Indaco-Imprese Survey, now in its fourth edition, is a sample survey (20 thousand companies interviewed) aimed at reconstructing the training offer in companies with at least 6 employees. Methodologically harmonized with Eurostat CVTS (Continuing Vocational Training Survey), of which it detects the key indicators, the survey also takes the name of Indaco-CVTS. It is carried out by Inapp on the basis of a methodological coordination shared with Istat. The survey is included in the National Statistical Program (IAP-00006) of SISTAN (the National Statistical System).

Figure 4. Enterprises with 10 employees and more that have provided specific training for the adoption of KETs 4.0 for digitisation and automation, according to the type of technology introduced. The year 2021 (in % of enterprises that have adopted KETs 4.0 for digitisation and automation)



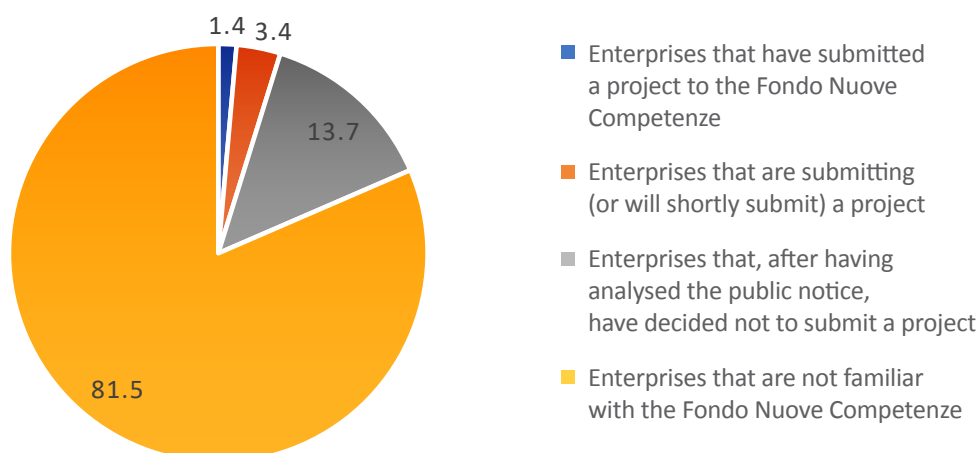
Source: Inapp, Indaco-Imprese Survey 2020

Figure 5. Enterprises with 10 employees and more than suspend their activities due to the Covid-19 emergency, according to the frequency of interruptions. The year 2021 (in % of enterprises)



Source: Inapp, Indaco-Imprese Survey 2020

Figure 6. Enterprises with 10 employees and more financing training activities through the New Skills Fund. The year 2021 (in % of enterprises)



Source: Inapp, Indaco-Imprese Survey 2020

Out of the total number of Italian enterprises with 10 employees and more, only a very small percentage has seen the call for proposals of the *Fondo Nuove Competenze* (New Skills Fund) and decided to present a training project (4.8%); the remaining part, instead, either chose not to make use of it (13.7%) or had never heard of it (81.5%). Therefore, only one in five enterprises claims to know about the *Fondo Nuove Competenze*.

Looking at the overall picture of our country's improvements on sustainable development issues, which can be traced back to the UN's surveys (on environmental sustainability, health, and well-being), structural problems remain in Italy, which can be traced back to poverty, employment, education, productivity, justice, taxation, corruption, and crime, which slow down economic and social development. This is why it is important to follow the relaunch and development starting from the investment priorities linked to the NRRP, which represents for our country the most conspicuous plan in terms of resources in the entire EU (EUR 191.5 billion, where 25.1% of these resources are earmarked for the digital transition): a relevant plan that includes important reforms and investments that put us in the best conditions to face the long-term challenges that await us and to overcome the well-known macroeconomic and structural difficulties.

Returning to the subject of micro-enterprises and SMEs, the NRRP gives great support to the issues of entrepreneurship, digitalisation, diversification,

and internationalisation of these, considering them necessary for the development of our productive fabric. This is a relevant aspect, since smaller enterprises still have low rates of digitalisation, reduced internationalisation trajectories and little use of managerial practices centred on the development of human capital, which hinder their transition to activities with higher added value, necessary to compete in the digital age.

In this sense, human capital represents a central element in the development of an area, where it is necessary (due to the well-known delays) to raise knowledge, skills, and abilities, through the lever of training investments, resulting from up-skilling and re-skilling programmes. We know from the recurring surveys on CVET (Inapp Indaco-Imprese Survey 2020), that training investments are often a prerogative of large companies, where those within them are more likely to participate in training and skills development. The propensity to carry out training measures increases, therefore, as company size increases: while 94.1% of large enterprises carry out training courses, only 56.7% of micro-enterprises invest in training. Similarly, participation in CVET is conditioned by the qualification level: entrepreneurs have the least opportunities to participate in training courses (56.3%), compared to executives and middle managers (92.9%), but also office workers (82.9%) and manual workers (70.9%).

Thus, significant discrimination still exists in terms of access to and participation in training for

entrepreneurs (company owners and partners), compared to executives, middle managers, office workers and manual workers. Differences are substantiated by a lower intensity and incidence of training hours on hours worked, despite the relevant need to raise skills within SMEs. The involvement of company owners, as well as of many self-employed workers, in CVET, still appears to be an unresolved aspect in our system of financing training activities, which will have to be tackled in some way in these years with great resolve to identify precise policy instruments (Barricelli and Carolla 2021).

It is equally important to open a reflection, beyond training in the strict sense, on how micro-enterprises recruit, hire, motivate, or reward staff, to analyse HR management practices and their impact on job performance. Aspects still largely unknown that could instead – if well analysed through qualitative analyses of existing surveys (Inapp Indaco-Imprese Survey 2022) – represent useful elements for understanding the delays in training (including managerial training) of owners of micro and small enterprises and the necessary retraining of employees. The issue of ownership and management within an individual or a family member is a detrimental element to the competitive development of a production system since owner-operators (especially within micro-enterprises) often tend to centralise the main management functions on themselves or within the family unit: in Italy, 75.2% of enterprises with at least three employees were controlled (directly or indirectly) by an individual or a family (Istat 2021). This figure is close to 80% in micro enterprises (3-9 employees).

Analysing the characteristics of company ownership and management in Italy could help to explain the differentials recorded by smaller firms in terms of training. In this context, it is also necessary to consider the different profiles linked to the HR management practices adopted by the owners of micro-enterprises, each one associated with a punctual 'strategic position', dictated by a specific 'entrepreneurial orientation' (Rodrigues *et al.* 2022), linked to the expected performance results. We refer to three different HR management practices: 'finance-centred practices' (which mainly revolve around the market and the company's financial results, in the short term); 'operations-centred practices' (with a strong focus on cost control, guaranteeing day-to-

day standards, but characterised by low participation and empowerment of people); 'people-built practices' (which guarantee high motivation, employment security, incentive pay, self-managed teams). The latter practice can make it possible to launch a real promotion of CVET and skills development initiatives. Practice with a long-term perspective but guaranteed by a high entrepreneurial orientation capable of elevating research and development (of new products/services/technologies), the assumption of related risks (with high-risk/reward projects), and the proactivity useful to seize the opportunities offered by change.

A hope, therefore, is to overcome the gap related to the technological and cognitive infrastructure of many micro and small enterprises, which also highlighted a pronounced tendency to make mainly traditional training investments (linked to regulatory updating), based on a more 'conservative/reactive' rather than 'strategic/proactive' approach. In fact (again based on the results of the Inapp Indaco-Imprese 2020 survey), the purposes linked to participation in training courses are mainly related to updating due to legal obligations (84.5%), with courses organised prevalently on this theme (83.5%). On the other hand, the purposes linked to the updating of existing skills (65.9%), or new ones (51.8%), take second place, with courses held by companies on specific production/service techniques and technologies being about fifty percentage points lower (32.5%) than those for legal obligations.

We hope, therefore, for greater sensitivity on the part of decision-makers to identify forms, methods, timing, and resources for interventions to support the development of the managerial skills of micro-enterprise owners, to raise investment in training and knowledge, and useful to orient towards activities with greater added value, a guarantee of better employability and development.

Concluding remarks on measures and incentive schemes for human capital in SMEs and micro-enterprises in Italy

In Italy, the National Recovery and Resilience Plan (NRRP) does not provide for measures specifically dedicated to SMEs, but it does provide for many interventions to support the development and competitiveness of enterprises, which involve SMEs,

Table 5. National Recovery and Resilience Plan. Main investments/reforms related to SMEs and skills

MISSIONS	INVESTMENTS / REFORM
Mission: Digitalisation, innovation, competitiveness, culture and tourism Component: Digitalisation, Innovation and Competitiveness of the Production System	TRANSITION 4.0. A tax credit scheme covering expenses in: tangible capital goods 4.0; intangible capital goods 4.0; standard intangible investment assets; research, development and innovation activities for green, digital and design innovation; training activities to obtain or strengthen knowledge of relevant technologies.
	Innovation and technology of Microelectronics. The investment aims to support the development of the strategic value chain of microelectronics by investing in silicon carbide substrates, which is a necessary input for the production of high-performance power devices. The investment will be carried out in line with current state aid regulations and is expected to have positive effects on employment, both of skilled workers and researchers.
	Reform of the Industrial Property System. Internationalisation of small and mid-size Italian companies. The investment would sustain small and mid-sized Italian companies based on two complementary courses of action: Refinancing of Fund 394/81; competitiveness and resilience of production chains (financial support to the companies, via the Development Contract instrument).
Mission: Digitalisation, innovation, competitiveness, culture and tourism Component: Tourism and culture 4.0	A tax credit for work aimed at improving accommodation facilities.
Mission: Digitalisation, innovation, competitiveness, culture and tourism Component: Digitalisation, innovation and security in the PA	To reduce the proportion of the current population at risk of digital exclusion by launching the Digital Civic Service initiative and strengthening the existing network of Digital Facilitation Centres .
Mission: Green revolution and ecological transition Component: Renewable Energy, Hydrogen, Power Grids and Sustainable Mobility	Creation of a dedicated fund (Green Transition Fund, GTF) and investment strategy on green sectors (venture capital funds, start-ups and in incubators/accelerator programs).
Mission: Education and research Component: From research to business	Local research and development champions: innovative training activities in synergy between universities and the private sector aimed at reducing the skills mismatch; research activities in collaboration with universities and SMEs; support for start-ups.
	Support the development of venture capital for start-ups by enhancing resources for the National Innovation Fund. The measure will support 250 small and medium innovative enterprises.
Mission: Inclusion and cohesion Component: Employment Policies	The creation of a Women's Enterprise Fund that will have to guarantee the financing of entrepreneurial initiatives through existing tools such as NITO (New Zero Rate Companies), aimed at young women who want to do business and Smart&Smart for highly innovative start-ups. 2,400 enterprises will receive financial support.
	Reform 1- ALMPs and Vocational Training. The creation of the Workers' Employability Guarantee (GOL) and a National Plan for New Skills that must offer a more targeted and effective Employment service, also ensuring the training of the unemployed with innovative methods.

Source: Authors' elaboration from NRRP

particularly on digital transition and sustainability.

In particular, the Transition 4.0 Plan, included in Mission 1.1, reconfirming the tax credit for companies investing in digitalisation training and related skills development, used so far with greater intensity in the Centre-North than in the South (Confindustria and Cerved 2022)².

The PNRR's Digitalisation Mission is of fundamental importance since innovation in enterprises, especially in SMEs, is related to developing digital and transversal skills (Angotti and Paliotta 2022). It is, therefore, necessary to stimulate innovation as a driver of change and to support training as a strategic asset as advocated in the Planned Investments.

2 However, the Budget Law 2022 (Law 197/2022) didn't extend the measure, so it is no longer possible to take advantage of the Training tax credit 4.0 for year 2023. Also, the voucher measure was not refinanced for 2023 despite the great interest of companies.

Within the framework of Mission 1.1, Digitalisation, innovation, and competitiveness in the production system, in addition to Transition 4.0, there are plans related directly to CVET. The strengthening of the New Skills Fund, established in 2020 to allow companies to reschedule working hours during the Covid emergency period, promotes training activities based on specific collective agreements with trade unions. The fund finances the cost of the hours spent in training, while companies are responsible for the costs of training, for which recourse to Interprofessional funds is possible. In September 2022, the decree regulating the New Skills Fund, the guiding programme for training workers employed under the National New Skills Plan, was adopted, orienting it towards supporting digital and ecological transitions. The reference framework for digital competencies will be the DgComp (the European reference framework for digital competencies), while for competencies useful for ecological transition the Esco classification will be used. The fund covers the costs of one hundred per cent of welfare and social security contributions and 60% of the hourly wage for the hours allocated to training. The Interprofessional funds will be the privileged access channel to the New Skills Fund. For companies not participating in the Inter-professional funds, training will have to be provided by nationally or regionally accredited bodies.

The missions and lines of action of the Italian NRRP dedicated to the development of the skills of workers in enterprises (re-skilling and up-skilling) are those outlined in Mission 5C1: Reform of active policies and vocational training, supporting pathways for the re-

training and reintegration of workers in transition and the unemployed. The reform is structured in two lines of action: the 'National Programme for Workers' Employment Guarantee (GOL)' for the provision of specific services and customised vocational planning; the 'National New Skills Plan' (up-skilling and re-skilling). In this sense, career guidance (career guidance), which today is a key element in the new perspectives of digital and green transitions, finds more space in the most innovative enterprises. Career guidance (Cedefop *et al.* 2020) has an indispensable function for the different needs: of those who enter the labour market and of those who aim instead an investment in their skills both within the company and to improve their transversal employability conditions in the labour market, with great attention to workers with low qualifications. Furthermore, orientation plays a key role in digital education, since, in addition to basic digital skills, digital and online learning requires a high level of autonomy and self-motivation that is not easy to manage, especially considering the high number of low-skilled adults and the low level of digital skills (Cedefop 2019).

These actions are fundamental for the significant growth of adult learning in general and CVET in particular; therefore, in order to close the gap with Europe, a decisive rebalancing intervention on the part of public policies is necessary, reaching above all the weakest groups. In this sense, the novelty of the GOL Programme for Workers' Employment Guarantee represents a particularly crucial element, which can play a rebalancing function if the programme will be developed homogeneously throughout the country.

Bibliography

- Angotti R. (2022), La partecipazione formativa degli adulti in Europa: la posizione dell'Italia, in Anpal, Inapp, *XXII Rapporto sulla Formazione Continua. Annualità 2020-2021*, Roma (forthcoming)
- Angotti R., Paliotta A.P. (2022), I divari territoriali della formazione continua: dati Indaco e CVTS, Intervento a *XLIII Conferenza Scientifica Annuale AISRe*, Milano, 5-7 settembre
- Angotti R., Pedone A. (2022), The renewed role of continuing vocational training for inclusion and territorial development in the twin transitions, Intervento a *XLIII Conferenza Scientifica Annuale AISRe*, Milano, 5-7 settembre
- Barricelli D. (2021), *L'era della grande incertezza. Scenari e prospettive per le organizzazioni del XXI secolo*, Roma, Aracne
- Barricelli D., Carolla S. (2021), I comportamenti formativi dei lavoratori autonomi in Italia, in Anpal, Inapp, *XX-XXI Rapporto sulla Formazione Continua. Annualità 2018-2019-2020*, Roma, Inapp, pp.11-18 <<https://bit.ly/3Ksv8pl>>
- Barricelli D., Russo G. (2005), *Think Micro First. La micro-impresa di fronte alla sfida del terzo millennio: conoscenze, saperi e politiche di sviluppo*, Milano, Franco Angeli
- Cedefop (2019), *The changing nature and role of vocational education and training in Europe. Volume 7: VET from a lifelong learning perspective: continuing VET concepts, providers and participants in Europe 1995-2015*, Cedefop Research Paper n.74, Luxembourg, Publications Office
- Cedefop, European Commission, ETF, ICCDPP, ILO, OECD, UNESCO (2020), *Career guidance policy and practice in the pandemic: results of a joint international survey. June to August 2020*, Luxembourg, Publications Office
- Centeno C., Karpinski Z., Urzi Brancati C. (2022), *Supporting policies addressing the digital skills gap: identifying priority groups in the context of employment*, Luxembourg, Publications Office of the European Union

- Confindustria, Cerved (2022), *Rapporto PMI Regionale 2022*, Roma, Confindustria <<https://bit.ly/431jfOq>>
- Di Pietro G., Karpiński Z. (2021), *COVID-19 and online adult learning*, Luxembourg, Publications Office of the European Union
- Eurofound (2021), *Business not as usual: How EU companies adapted to the COVID-19 pandemic*, Luxembourg, Publications Office of the European Union
- Eurofound (2020), *COVID-19: Policy responses across Europe*, Luxembourg, Publications Office of the European Union
- European Commission (2022a), *Annual Report on European SMEs 2021/2022. SMEs and environmental sustainability Background document*, Luxembourg, Publications Office of the European Union
- European Commission (2022b), *Digital Economy and Society Index Report 2022. Human Capital*, Luxembourg, Publications Office of the European Union
- European Commission (2021), *Commission Recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises*, GU L 124, 20 maggio <<https://bit.ly/40DIeGl>>
- European Commission (2020a), *Innovation & digitalisation: a report of the ET 2020 Working Group on Vocational Education and Training (VET): Eight insights for pioneering new approaches*, Luxembourg, Publications Office
- European Commission (2020b), *SME Strategy for a sustainable and digital Europe. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions*, Brussels, COM(2020) 103 final <<https://bit.ly/3MaT1Tv>>
- ILO (2021), *Skilling, upskilling and reskilling of employees, apprentices and interns during the COVID-19 pandemic. Findings from a global survey of enterprises*, Geneva, International Labour Organisation <<https://bit.ly/3M7Cgsz>>
- Inapp (2021), *Rapporto Inapp 2021. Lavoro, formazione e società in Italia nel passaggio all'era post Covid-19*, Roma, Inapp
- Istat (2021), *Rapporto sulle imprese 2021. Struttura, comportamenti e performance dal censimento permanente*, Roma, Istat
- Izsak K., Romanainen J., Stamenov B. (2021), *Advanced technologies for industry - Policy brief. Industrial recovery and technology policy*, Luxembourg, Publications Office of the European Union
- Kwaak T., Clarke M., de Kok J., Snijders J., Tollenaar S., Galesloot S., Oliveira Sadilek M.-L. (2021), *Survey on the Access to Finance of Enterprises (SAFE). Analytical Report 2021*, Luxembourg, Publications Office of the European Union
- OECD (2021a), *Training in Enterprises: New Evidence from 100 Case Studies, Getting Skills Right*, Paris, OECD Publishing
- OECD (2021b), *Adult Learning and COVID-19: How much informal and non-formal learning are workers missing? OECD Policy Responses to Coronavirus (COVID-19)*, Paris, OECD Publishing
- OECD (2019), *OECD SME and Entrepreneurship Outlook 2019*, Paris, OECD Publishing
- Pedone A. (2021a), The Key Role of Vocational Education and Training Systems in the Digital Transition. Recovery and Resilience of Vet Post COVID-19, in *Proceedings of the 2nd International Conference of the Journal Scuola Democratica "Reinventing Education". Volume I. Citizenship, Work and The Global Age*, Roma, Associazione "Per Scuola Democratica", pp.911-920
- Pedone A. (2021b), La formazione per la transizione o la transizione della formazione? Il digitale e la formazione continua. Micro-credenziali, ILA e innovazione nella formazione in Europa, *Professionalità studi*, 4, n.4, pp.116-133
- Rodrigues A.C., Carvalho H., Caetano A., Santos S.C. (2022), Micro-firms way to succeed: How owners manage people, *Journal of Business Research*, 150, pp.237-248
- Sharma G.D., Kraus S., Liguori E., Bamel U.K., Chopra R. (2022), Entrepreneurial challenges of COVID-19: Re-thinking entrepreneurship after the crisis, *Journal of Small Business Management*, 15 Jul, pp.1-23 <<https://bit.ly/431hcd3>>
- Van Loo J., Eiffe E., Van Houten G. (2021), *Adapting business practices to new realities in the middle of a crisis: First findings from the COVID-19 European company survey*, Cedefop Working Paper n.5, Luxembourg, Publications Office <<https://bit.ly/41dyEtt>>

Legislation

- Council of the European Union (2021), *Council Resolution on a new European agenda for adult learning 2021-2030*, OJ C 504, 14 December <<https://bit.ly/42YrWZV>>
- Council of the European Union (2021), *Council Resolution on a strategic framework for European cooperation in education and training towards the European Education Area and beyond (2021-2030)*, OJ C 66, 26 February <<https://bit.ly/3U2w8DU>>
- Council of the European Union (2021), *The Porto declaration*, Brussels, Council of the EU <<https://bit.ly/40yRV8w>>
- European Commission (2022), *2022 Country Report - Italy. Accompanying the document Recommendation for a Council Recommendation on the 2022 National Reform Programme of Italy and delivering a Council opinion on the Stability Programme of Italy*, Brussels, SWD(2022) 616 final/2 <<https://bit.ly/433aCTp>>
- European Commission (2021), *Executive Summary of the Evaluation of Commission Recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises (2003/361/EC)*, Commission Staff Working Document, Brussels, SWD(2021) 280 final
- European Commission (2021), *Proposal for a Council Recommendation on individual learning accounts*, Brussels, COM(2021) 773 final <<https://bit.ly/3nKJTuD>>
- European Commission (2021), *Proposal for a Council Recommendation on a European approach to micro-credentials for lifelong learning and employability*, Brussels, COM(2021) 770 final <<https://bit.ly/3McE5o8>>
- European Commission (2021), *Proposal for a Decision of the European Parliament and of the Council establishing the 2030 Policy Programme "Path to the Digital Decade"*, Brussels, COM(2021) 574 final <<https://bit.ly/3M8be4h>>

- European Commission (2021), *The European Pillar of Social Rights Action Plan. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions*, Brussels, COM(2021) 102 final <<https://bit.ly/3XIQZd>>
- European Commission (2021), *Updating the 2020 New Industrial Strategy: Building a stronger Single Market for Europe's recovery. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions*, Brussels, COM(2021) 350 final <<https://bit.ly/3ZPWGcV>>
- European Commission (2020), *A New Industrial Strategy for Europe. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions*, Brussels, COM/2020/102 final <<https://bit.ly/3K8qGuE>>
- European Commission (2020), *Digital Education Action Plan 2021-2027. Resetting education and training for the digital age. Accompanying the document. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions*, Brussels, SWD(2020) 209 final <<https://bit.ly/40U7cQZ>>
- European Commission (2003), *Commission Recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises*, GU L 124, 20 maggio <<https://bit.ly/40DIEgl>>
- European Commission (1996), *Commission Recommendation of 3 April 1996 concerning the definition of small and medium-sized enterprises*, GU L. 107, 30 aprile <<https://bit.ly/3GblcOk>>
- European Council (2021), *European Council meeting (24 and 25 June 2021). Conclusions*, Brussels, European Council <<https://bit.ly/40O2nJi>>
- European Parliament, Council of the European Union (2021), *Regulation (EU) 2021/694 of the European Parliament and of the Council of 29 April 2021 establishing the Digital Europe Programme and repealing Decision (EU) 2015/2240*, OJ L 166, 11 May <<https://bit.ly/3GdWhts>>
- Governo italiano (2021), *Piano Nazionale di Ripresa e Resilienza. #NextGenerationItalia*, Roma, Governo italiano <<https://bit.ly/3zL1SEl>>
- Legge 29 dicembre 2022, n.197, *Bilancio di previsione dello Stato per l'anno finanziario 2023 e bilancio pluriennale per il triennio 2023-2025*, GU n.303, 29 dicembre 2022 <<https://bit.ly/3GbHHCW>>

Alessandra Pedone

a.pedone@inapp.org

Researcher at Inapp, for more than 20 years she has been researching training policies, participates in the ReferNet Cedefop network, Coordinator of the project *Politiche di sostegno alla creazione di nuova impresa*. Her most recent publications include: *La formazione per la transizione o la transizione della formazione? Il digitale e la formazione continua: micro-credenziali, ILA e innovazione nella formazione in Europa*, *Professionalità Studi*, 2021; *The key role of Vocational education and training systems in the digital transition: recovery and resilience of Vet post Covid-19*, *Proceedings of the 2nd International conference of the Journal Scuola Democratica*, 2021.

Roberto Angotti

r.angotti@inapp.org

Senior researcher at Inapp, head of the Research Group *Formazione continua e Apprendimento degli adulti*, National Coordinator for ReferNet Italy (Cedefop), Responsible for the project *Promoting lifelong learning of adults through CVET systems and upskilling pathways - Thematic country reviews (TCRs) on upskilling pathways* (Cedefop), scientific coordinator of the XXII Rapporto al Parlamento sulla Formazione Continua in Italia. Recent publications include: Angotti R. *et al.*, *La formazione continua in Italia: questioni aperte, processi in atto e prospettive di ridisegno*, *Scuola Democratica*, n. 1/2023; *La formazione tra diversificazione dei percorsi e bassa partecipazione*, Chapter 4, Rubettino, 2022; with Fonzo C., *Teachers and trainers in a changing world - Italy*, Cedefop, 2022.

Domenico Barricelli

d.barricelli@inapp.org

Labour Sociologist, Trainer-Supervisor Counsellor, board member of the C.N.C.P. (Coordinamento nazionale counsellor professionisti), Lecturer in *Competenze per l'inserimento nel mondo del lavoro e il metodo interdisciplinare*, University of Rome Tor Vergata. Recent publications include: *Gli investimenti formativi delle imprese italiane di fronte alle transizioni "tecnologico-digitali" e "green"*, *formaFuturi*, Asfor/Apaform, 2022; *L'era della grande incertezza. Scenari e prospettive per le organizzazioni del XXI secolo*; Aracne, 2021.