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Shuffling the deck? Multiple transitions and the new spatiality of places and workspaces in the polycrisis post-COVID economy

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ABSTRACT

This research engages in a critical discussion of regional policies in the context of fundamental shifts in the spatial relationships between places and workplaces following the COVID-19 crisis. Focusing on the case of major advanced economies to illustrate its arguments, the analysis starts from a review of the heterogeneous dynamics defined by multiple regional transitions in a context of polycrisis. It then assesses the opportunities and challenges for tackling regional imbalances and rebuilding resiliently and sustainably by combining insights into the shifting nature in the spatiality of workplaces with a holistic perspective on cross-domain policy intervention(s) bridging regional industrial, skills and social policies.

KEYWORDS

COVID-19; (multiple) regional transitions; skills; workspace; regional policies; lagging regions; polycrisis

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1. INTRODUCTION

The significant scarring created by the COVID-19 pandemic and the subsequent strong policy response, from both health and socio-economic perspectives, have led to a growing discussion on the potential opportunities for more inclusive labour markets, regional development and innovation (Doussard & Clark, 2021; Lowe & Vinodrai, 2020). As noted by Gianelle et al. (2020), efforts in shaping post-pandemic economies should not be confined to restoring pre-existing socio-economic conditions. Instead, the unprecedented fiscal policy efforts, along with a renewal of industrial policy across advanced economies (Bailey et al., 2019, 2023), may provide the foundation for supporting 'high-quality growth opportunities and tackle the social and environmental challenges of our age' (Gianelle et al., 2020, p. 1323), and 'build forward better' (Martin, 2021, p. 145).

However, opportunities in the post-pandemic socio-economic scenario may be yet again unevenly distributed, reflecting the significant heterogeneity in knowledge, capabilities and sectoral structures across regional economies (Florida et al., 2023). Indeed, the growing debate over the policy priorities in the post-pandemic economy is often placed in the context of rapid technological change (De Propris & Bailey, 2020; De Propris & Bellandi, 2021) and a twin transition defined by potential synergies occurring across innovation in environmental and digital technologies (Cicerone et al., 2023; Veugelers et al., 2023). However, keeping regional policy anchored solely on technology-based approaches risks aggravating spatial imbalances and regional divides (Bailey et al., 2019; Hassink & Gong, 2019). This approach does not sufficiently recognise that the geography of innovation (solutions) can differ substantially from the geography of problems (Cappellano et al., 2022; Flanagan et al., 2023), nor differences in local institutional capabilities (Martin et al., 2022; Schrock & Lowe, 2021). Accordingly, in the wake of the COVID-19 crisis, scholars have increasingly called for a more comprehensive conceptualisation of spatial policy and rethinking the scope for policy to include place-based interventions on social innovation and the foundational economy, social infrastructure, as well as well-being and belonging (Coenen & Morgan, 2020; Mackinnon et al., 2022; Martin et al., 2022). These perspectives are similarly discussed in contributions on the role of regional policy in tackling grand societal challenges (Flanagan et al., 2023; Tödtling et al., 2022).

This article contributes to current policy debates by stressing the need to widen the scope of policy action

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beyond technology-led development strategies (Isaksen et al., 2022; Mackinnon et al., 2019; Tödtling et al., 2022) and by reflecting on the fundamental shifts in the spatial relationships between places, new spatiality of workplaces and structural changes in labour markets defined by the increase in remote, flexible and hybrid working (Mariotti et al., 2024) following the COVID-19 pandemic within a context of polycrisis characterised by technological, ecological and demographic transitions.

Against this complex background, we argue challenges are increasingly tangled and cannot be addressed independently, calling for more holistic and multi-scalar approaches in regional policy where interventions are defined not only over a broader set of policy domains but increasingly at their intersection. This requires moving beyond individual strategies that separately address each aspect of challenges through fragmented initiatives. By highlighting the interwoven connections across these elements, we make a case for place-based interventions that enable horizontal links to effectively co-integrate regional industrial, skills and social policies. From a policy perspective, we argue that this approach may support the design of more flexible and tailored place-based strategies, as diverse regions and diverse localities within each region pursue synergies and interventions at the intersection of different policy areas to leverage a more heterogeneous set of opportunities and localised comparative advantages while overcoming an equally heterogeneous set of challenges.

In the remainder of the article, we start with a review of the different challenges and opportunities provided by *digital* and *green transitions* at the intersection with growing *environmental* and *demographic crises*, as identified in the recent focus by scholars and policymakers reflected in the European Green Deal and the European Pillar of Social Rights (Petmesidou & Guillén, 2022; Speck et al., 2019). In this context, we critically review and bridge these recent streams of research to advocate for a more integrated approach to regional policy and reflect on the implications of these trends and dynamics for lagging regions. We support our argument with specific examples that highlight how holistic policy approaches and targeted instruments can serve as effective and synergistic models of policymaking at the intersection of multiple domains – social, labour, industrial and environmental – addressing various transitions and crises simultaneously. Our examples build upon the new labour market dynamics and spaces that have emerged in the post-COVID landscape, where labour, skills and industrial policies intersect. Specifically, we discuss the examples of coordinated policy efforts in the Emilia-Romagna region of Italy and the key role that new types of workplaces, such as coworking spaces, can play as instruments to facilitate integrated solutions. Indeed, policies leveraging these workplaces can exemplify holistic strategies for addressing overlapping challenges at the intersection of various policy areas, tackling multiple transitions and crises jointly. We conclude by outlining our case for widening the focus from industrial transitions on technological intervention to encompass cross-domain skills and social policy as well as better-integrated labour market interventions.

2. REGIONAL HETEROGENEITY, TRANSITIONS AND POLYCRISIS

The last decades have been defined by growing disparities in the spatial distribution of innovation, skills and overall regional development. Technology and knowledge-intensive activities increasingly concentrate in large cities and agglomerations, where the pool of highly paid, high-skill jobs is widely present (Crescenzi et al., 2020; Kemeny et al., 2022). Conversely, other areas historically defined by traditional manufacturing found themselves stagnating economically as a result of limited investment, low skills provision, constrained path renewal dynamics (Boschma, 2022; Morris et al., 2020) and an increase in automation of routine tasks (Autor, 2019). These trends have impacted both inter - and intra-regional inequalities (Lee & Rodríguez-Pose, 2013). In particular, peripheral areas have experienced a spectrum of lower economic prosperity and less successful industry mix, decreasing quality and quantity of employment, and population loss (Le Petit-Guerin et al., 2023). This has led to different nuances and dynamics of 'left-behindness', ranging from temporary and specific to more lasting and broader regional challenges (Pike et al., 2023).

These insights resonate with established patterns in economic geography. The literature has long evidenced how regional development is shaped by path-dependent processes that are place-specific (Martin & Sunley, 2006), defining evolutionary dynamics in innovation activities, entrepreneurship, new growth paths (Boschma et al., 2015; Corradini & Vanino, 2022; Neffke et al., 2011) and skill sets (Alabdulkareem et al., 2018). In turn, such cumulated capabilities define opportunities for regional branching and transitions towards new industries. Accordingly, growing evidence shows how advanced regions are able to diversify into high-complex activities (Pinheiro et al., 2022), whilst lagging regions are more likely to engage in low-complex activities (Balland et al., 2019; Boschma, 2022). Furthermore, the capacity to diversify into new industries is less strong in lagging regions (McCann & Ortega-Argilés, 2015), which may further widen existing disparities. As noted by Boschma (2022), such interregional differences and inequalities bring to the fore the challenge of developing policies that can promote more complex activities in peripheral regions, underpinning higher wages and boosting gross domestic product (GDP) growth (Rigby et al., 2022), to make the objective of smart growth (Smart Specialisation policy) and inclusive growth (Cohesion Policy) coexist (Boschma, 2022).

Considering these dynamics and the ensuing heterogeneity across regional economies have important implications for discussing structural transformations in labour markets, workspaces and their spatiality in the post-COVID economy. Already in early contributions on the post-pandemic recovery, scholars have underlined

that opportunities and challenges are not place-blind (Florida et al., 2023). Knowledge-intensive occupations are likely to remain attracted by large agglomeration economies providing innovation and productivity advantages. Work in these occupations may become more hybrid in nature, but it is bound to remain anchored in sub-urban areas close to core cities, offering access to amenities and networking opportunities (Mariotti et al., 2022). This is reflected in the growing empirical studies on working from home (WFH), which identify higher capacity for remote working in capital city regions (Organisation for Economic Co-operation and Development (OECD), 2020) and significant spatial variation reflecting different occupational geographies (De Fraja et al., 2021), with a marked advantage for employees in high-skilled jobs and highly paid occupations (Bonacini et al., 2021). Thus, while these dynamics also highlight the potential relocation of economic activity from high-density areas to the suburbs (De Fraja et al., 2021), rural areas and lagging regions are likely to experience more subdued changes due to the limited opportunities for remote working within their sectoral composition, such as work in agriculture and traditional manufacturing.

These arguments point to a significant risk for the envisioned opportunities in the post-pandemic recovery to turn into further challenges for regional convergence. Furthermore, these structural changes do not happen in isolation within a static regional context but occur as regions go through a variety of broader transition processes, leading to more complex and markedly heterogeneous dynamics.

From a perspective of *digital and technology-led transitions*, regions would need solid technological capabilities to attract and effectively absorb these new technologies (Balland & Boschma, 2021; De Propris & Bailey, 2021). At the same time, opportunities from these transitions can still be more widespread, as technologies characterised by a lower capital-intensive nature of innovation, such as digital technologies, may have broader applicability across regions (Corradini et al., 2021). This may support recent theories suggesting demand for skilled workers may deconcentrate as breakthrough technologies diffuse (Kemeny & Storper, 2020), at least in the case of digital transitions, leading to a reduction in interregional inequalities. On the one hand, digitalisation positively impacts productivity due to the increased use of high-skilled workers (Acemoglu & Restrepo, 2019); on the other hand, it may trigger job losses for workers performing both manual and cognitive routine tasks (Autor et al., 2003). Overall, the literature suggests opportunities and relevant implications for structural transformations in labour markets. While digitally disadvantaged regions tend to present a labour market that is more vulnerable to recessionary shocks, the presence of digital technology in a region can contribute positively to labour market resilience and technological diversification processes, especially in less-developed regions with low levels of relatedness (Castellacci et al., 2020).

Reflecting the challenge of climate change, a growing strand of research has also focused on *green regional transitions*. Researchers have focused on supply-side dynamics of structural change, offering empirical evidence that a regional propensity to specialise in a certain environmental technology is positively linked with its relatedness to the technologies on which regions are already focused (Montresor & Quatraro, 2020; Santoalha & Boschma, 2021). Similar dynamics have been observed for the entry of innovative green start-ups (Corradini, 2019). Following this approach, Vona et al. (2019) show that green employment tends to spatially cluster with high-tech activities. This is further reinforced by policies for the green transition promoting eco-innovation and adopting new green technologies, which are equally more likely in areas with strong bases of technological knowledge. Once again, these insights point to significant heterogeneity in opportunities related to green technological transitions, with risks of further divergence across regions. Such differences are potentially compounded by the different exposure of places to climate change, as the risks of natural disasters are also differentiated across territories within countries.

Demographic transitions will also further shape the structure of labour markets. In advanced economies, demographic projections indicate an ageing population, slowing population growth and a decline in the growth rate of the working-age population. These trends are expected to remain among the most pressing demographic challenges in the coming decades. For instance, the share of the population aged 65 and over is projected to rise from about 20% today to more than 30% by 2100 in the European Union (EU), while the size of the working-age population is expected to decrease by about 10% over the same period (Eurostat, 2023). These projected demographics in the EU will lead to increasingly tight markets, with significant labour shortages already being felt (OECD, 2022). The impact will be markedly different across EU regions, with about two-thirds of EU regions at the NUTS-3 level projected to have a smaller population in 2050. The population will increase in almost three of five urban regions and decrease in four of five rural regions by 2050 (Eurostat, 2023).

3. COMPLEXITY AND INCLUSIVE REGIONAL DEVELOPMENT

The previous sections have shown how regions need to face a context of increasing complexity and uncertainty. In terms of regional policy, there is no simple and uniform solution to the complex and multiple issues across territories. Furthermore, all transitions (green, digital and demographic) have to be realised simultaneously, carefully avoiding fractures (Pollard, 1981) and leading to one coherent trajectory of change (*the* transition). Therefore, while policymakers must design policies tailored to their region's unique trends and features (Isaksen et al., 2022; McCann & Soete, 2020), they cannot focus only on one specific domain. Instead, regional policy needs to be holistic and multi-scalar, pursuing synergies and interventions

at the intersection of different policy areas, to govern complexity. This is a challenging process: adopting digital infrastructure and technologies is one aspect, but regions should also become more sustainable and ensure inclusive development. Thus, in the context of polycrisis following the post-COVID economy, priority setting for governance and social inclusion becomes crucial. Designing policies jointly can offer a powerful approach towards addressing interlinked societal challenges by leveraging synergies across various domains. When crafting interventions to tackle issues like skills unbalance, digital/green initiatives and demographic concerns individually, there is a risk of fragmented efforts and missed opportunities for holistic solutions. However, policymakers can unlock synergies that lead to more effective outcomes by adopting an integrated action plan that considers these aspects collectively. In the following sections, we examine potential avenues for holistic and multi-scalar policymaking, presenting real-case examples of (1) successful, coordinated policy efforts, such as those implemented in the Emilia-Romagna (ER) region of Italy; and (2) coworking spaces as tangible interventions supporting an integrated action plan. Policies that leverage coworking spaces can serve as exemplars of holistic strategies, addressing intersecting challenges across multiple policy domains, thus supporting the management of concurrent transitions and crises.

3.1. Multiple transitions and cross-domain place-based policies

Addressing skills gaps in tandem with digital and green goals can, for instance, foster 'inclusive innovation' (Doussard & Clark, 2021; Schrock & Lowe, 2021) in sustainable technologies while simultaneously creating job opportunities aligned with evolving market demands. Moreover, integrating demographic considerations ensures policies cater to diverse population needs, enhancing inclusivity and societal resilience.

Both the green and the digital transitions are political priorities of major advanced economies that will shape citizens' long-term future. Green and digital are recognised as being linked and reinforcing each other in many areas, even if not inherently aligned. Hence, most advanced economies, especially across the EU, are taking a proactive and integrative approach to managing these two simultaneous, or 'twin', transitions. However, the focus remains largely on technology and innovation policies. To achieve stronger and more extensive green and digital transitions, the simultaneous consideration of social and skills policy is also important. As argued by Mazzanti and Zecca (2023), these objectives can only be reached through a systemic rethinking of the economic environment as a whole and holistic policy encompassing the economic, fiscal, industrial, labour, innovation and social policy aspects of the transitions. Strengthening economic and social cohesion via, for instance, reinforcing social protection and the welfare state with regional development strategies and investment can also contribute to attaining this goal (Muench et al., 2022). This holistic perspective is underlined in the sustainability literature, which conceptualises and explains broad socio-technical change through the interplay between various social and technological factors, including agency, existing and emerging technologies, policies, institutions, infrastructure and social practices, taking place under sectoral, technological, geographical and societal contexts (Mäkitie & Steen, 2023). Thus, once again, opportunities and threats will differ significantly across regions, requiring a diverse set of strategies and priorities connecting across different policy domains at the regional level.

The need for integrating different regional policy areas can also be observed with respect to the recognised importance of skill training and development for employed and unemployed people in the presence of green (OECD, 2023) and digital transitions (Bak et al., 2019; Dogara et al., 2019). Here, to mitigate the issues arising from demographic dynamics in advanced economies, place-based policy initiatives connecting across different areas of intervention, from education and skills to digital and social policy could help reduce barriers across social groups and equip – through job training – workers of different ages (Vona et al., 2019), with a particular focus on workers aged 55–65 years with basic digital skills. As shown by Falck et al. (2022, p. 18), an elderly workforce with basic digital skills has a higher employment opportunity, earns higher ages and is less likely to be replaced by technology. Indeed, as these authors highlight, digital skills positively impact not only labour market success but also social participation by accessing online commercial and public services. In this sense, they may be increasingly relevant in rural or remote areas and other places where young people tend to move away towards bigger cities.

At the macro level across the EU, there are already initiatives to foster the digital transition, including resources for the deployment of and training in digital technologies, such as the Digital Europe Programme as well as through the Recovery and Resilience Plan. However, these can be particularly effective if applied through a regional development policy perspective, as addressing any digital divide across places – especially in rural areas – is crucial (Lai & Widmar, 2021). In particular, an effective transition may require a more explicit integration between initiatives on digital skills, the specific needs and structure of different localities, and their broader industrial strategy (Corradini et al., 2023).

The ER region in Italy is an example of policymakers successfully embracing a holistic approach to navigate the complexity of modern challenges and unlock the full potential of coordinated efforts. ER has effectively integrated diverse policy domains by engaging stakeholders in the policymaking process, fostering dialogue, sharing information and making decisions collectively (Bianchi et al., 2024; Labory & Bianchi, 2021). This approach ultimately drives sustainable and equitable solutions for the benefit of the socio-economic fabric as a whole. Starting in the period 2014–20, the policy approach has been aimed at the transition of the regional ecosystem. The focus has been primarily on the digital transition in the first period, moving to the twin transition in the

subsequent period (2021–27). The policy has been focused on productive sectors and people. The transition indeed involves the adaptation and upgrading of existing sectors, adopting new technologies and transforming products and production. However, this requires new jobs and new skills, which also transform society and create new social risks, such as leaving behind some people unable to learn new skills, or experiencing labour shortages, especially given the rapid ageing of the population. As a consequence, industrial, innovation, education and social policies have been jointly designed so that all instruments used would together contribute to the transition. Infrastructure has been developed, such as the Big Data Hub for the digital transition (Bianchi & Labory, 2019; Labory & Bianchi, 2021) and education policy has been adapted, where the region has competence and can intervene (for instance, by creating a new master programme – MUNER. Motorvehicle University of Emilia Romagna, a consortium of the regional universities and automotive companies located in the region – aimed at training engineers for the new competencies in the Motor Valley, automotive industry; Labory & Bianchi, 2021). Social policy has focused on helping the most vulnerable people participate in the transition and integrating immigrants, who are important in the context of the ageing population. In addition, ER has adopted a policy to attract talents in the region in 2022. Bianchi et al. (2024) show the framework that was used by the regional government to jointly consider innovation, territorial, social and human capital policies. Various instruments have been used to favour an inclusive twin transition in the region. One example is the 'Clust-ER' (clusters Emilia-Romagna), a new form of clustering created for the purpose of the policy. Clust-ERs are associations, gathering firms and non-firm stakeholders around productive competencies of the region defined as broad thematic areas: five such Clust-ERs were created during the 2014–20 funding period, namely MECH (mechanical engineering and mechatronics), AGRIFOOD (agriculture and food processing), BUILD (building and construction), HEALTH (health and well-being) and CREATE (cultural and creative activities). The associations are coordinated by the Art-ER agency, which operates as the coordinator of the regional ecosystem (Bianchi & Labory, 2019; Labory & Bianchi, 2021). They comprise different value chains, firms (some competitors), suppliers, universities and other education institutions, trade unions and non-governmental organisations (NGOs). The Clust-ERs evaluate the trends and challenges in their broad sectors in the transition and define common needs so that the regional government can design appropriate policy mixes to support their development, including skill development, integration of immigrants, promotion of innovation and access to renewable energy.

3.2. Coworking spaces at the intersection of multiple transitions

The development of new shared working spaces, such as coworking spaces, in contexts that are not necessarily those of creative cities (D'Ovidio & Cossu, 2017), can serve as tangible interventions within an integrated policy framework. These spaces offer an additional tool to leverage greener, more job-quality-oriented (Rodríguez-Modroño, 2021) solutions connected to digital transitions and new spatialities of labour markets. These spaces have shown a 'resilient' endeavour in a post-COVID society, where the displacement and individualisation of work have entrenched its relationship with digital technology (Gandini & Cossu, 2021). Once the domain for independent global digital nomads, the profiles of users populating these spaces have expanded. Shared spaces are increasingly adopted by firms of all sizes, ranging from small companies to large corporations. Working in these spaces benefits flexibility, cost-effectiveness, employee satisfaction and networking opportunities (Akhavan & Mariotti, 2023).

Coworking spaces can provide a fertile ground for its users and the local business community to create connections and collaborate (Fai et al., 2024), fostering more inclusive innovation (Schrock & Lowe, 2021). Previous studies show how coworking could play an important role (Manzini Ceinar et al., 2020) in the local economies by enhancing remote workers' contribution to the local socio-economic environment, as they inject capital and human resources into these areas (Strangler, 2020). Coworking spaces might represent a lifeline for small businesses that operate in the peripheries (Mariotti & Di Matteo, 2020). In areas where entrepreneurial culture is weaker, these hybrid social working environments could function as grassroots accelerators or incubators (Fuzi, 2015), while providing infrastructures of care (Merkel, 2019a, 2019b), training, fostering well-being (Merrell et al., 2021), trust and knowledge exchange in the localised emerging communities of independent workers (Orel & Alonso Almeida, 2019). Thus, coworking spaces have the potential to impact local communities and contexts context (e.g., social street, cultural, charity, recreational and sports events) positively (Akhavan et al., 2018).

The presence of coworking spaces could boost inclusive employment in these areas. These collaborative spaces foster the attraction of highly skilled workers, crucial for the socio-economic growth of a territory, and the retention of equally highly skilled local (young) workers by creating good job opportunities. This is particularly critical in non-urban areas, as it allows those territories to secure skills and good jobs and, in turn, boost their resilience. Coworking spaces might provide support to workers with family or caring responsibilities, for instance, by offering child and elderly care services (e.g., the COWORCare).[1] Some of these spaces also promote intra-generational knowledge transfer, by creating opportunities for young crafters to collaborate with skilled workers or by integrating individuals not in education, employment or training (NEETs)[2] into the workforce, supporting their skill development and employment prospects (Avdikos & Papageorgiou, 2021).

Fostering the development of renewable energy, sustainable transport and digital infrastructures, alongside establishing coworking spaces in remote areas, could

represent an example of a holistic (self-reinforcing) approach that effectively addresses complex problems by jointly improving skills, implementing digital and green-led actions, and tackling demographic issues while connecting these to their regional industrial fabric. In this context, coworking spaces become instrumental in enabling and amplifying policies that span across multiple domains – social, labour, industrial and green – thereby supporting a holistic, equitable, inclusive regional policy framework.

The EU and its members have financed various initiatives aimed at establishing a virtuous cycle by leveraging the presence of coworking spaces. Ireland, particularly the Department of Rural and Community Development, decided to sustain the development of a network of remote working hubs to revitalise town centres to address Ireland's longstanding rural–urban divide. In particular, the Irish Department of Rural and Community Development[3] has introduced a voucher scheme to provide remote workers with free access to local digital hubs, alongside funding for existing working facilities and the development of high-speed digital connectivity, as part of the Digital Connectivity Strategy (Department of the Environment, Climate and Communications). Further initiative, such as Youth Re-Working Rural, 'Cowocat_Rural,' and the TRACES (TRansnational Accelerator for a Cultural and Creative EcoSystem) project in Apulia (Italy) and Western Greece, have been designed to support the growth of youth entrepreneurship and local development by strengthening the creative and cultural small and medium enterprises along with the support of coworking spaces and a hands-on acceleration programme through a special academy to develop managerial and information and communication technology (ICT) skills.

3.3. New spatialities of workplaces and lagging regions

The literature has shown that core regions may more easily leverage the flexibility allowed by remote working (Feldman et al., 2021; Iammarino et al., 2019). Hybrid work is also likely to benefit secondary cities closer to large agglomerations (Florida et al., 2023). Reflecting this, suburban areas for larger agglomerations have exhibited renewed suitability in the post-COVID economy. Whilst looking at the case of the Lombardy region in north-west Italy, Mariotti et al. (2022) provide evidence of how municipalities closer to Milan with a strong broadband connection, a high concentration of knowledge workers and foreign immigrants seem to be more suitable for hosting remote workers; looking at US metro areas, Ramani and Bloom (2021) evidence a shift in activities from central to suburban areas, noting how this decreases with smaller city size.

Although neither a panacea nor a unique solution, digital technologies and new spatialities of labour markets may also offer opportunities at least for some jobs to be performed anywhere, potentially even in remote areas (Jetha et al., 2021) in new working spaces, such as coworking spaces, or other creative spaces (e.g., maker spaces and fab labs) (Micek et al., 2024). The focus for underdeveloped regions should not be on imitating the advantages of agglomeration found in major cities but rather on leveraging the resources available in their own territories, meeting climate goals, improving the quality of jobs, and using social support (instead of amenities) to retain local workers and attract mobile workers, who inject resources into local economies, which – in turn – contribute to regenerating the community and its workforce while triggering innovation and investments.

The literature has shown that networking can be an effective enabling condition as interregional collaboration can provide lagging regions with considerable opportunities for innovation and development (Barzotto et al., 2019; De Noni et al., 2018), developing place-connecting strategies as an avenue for de-risking, extending economic opportunities to vulnerable communities across the urban–rural divide (Lowe & Vinodrai, 2020, p. 331) and reducing spatial inequities. Still, an extra-regional collaborative approach to innovation policy is important but insufficient. Leading regions cannot technologically upgrade lagging regions; conversely, they may potentially extract human capital. Thus, lagging regions would need to identify other complementary 'engines' for development. They can potentially tap into non-urban creativity, which has been shown (Eder, 2019; Eder & Trippl, 2019; Mayer, 2020) to lead towards slow innovation, or – in some cases – even into technology-intensive sectors (Calignano et al., 2018).

Remote peripheries may have the potential to favour grassroots innovation and local solutions to sustainability, including preparedness for the impact of climate change (Smith & Stirling, 2018). To enhance their territorial resilience and respond to regional challenges emerging from these multiple transitions, a holistic intervention that combines regional skills, industrial, digital and social policies could also help shrinking areas to maintain population and life, although their evolution differs widely across space (Haase, 2013). To fully articulate the advantages of digital skills development, policies in these less developed places should support low-skill workers to ensure inclusive growth and untap their human and social capital potential. Education, training and ICT literacy are critical to fostering employment and enabling workers and their labour markets to overcome socio-economic shocks (Di Caro, 2015). Fostering digital skills development could similarly support technological diversification dynamics in lagging regions (Castellacci et al., 2020). Indeed, the possibility to use a space where digital skills synergistically coexist with hands-on 'making' skills could offer opportunities to peripheral areas (Barzotto & De Propris, 2019), enabling mature industrial territories to become resilient by drawing upon their inherited manufacturing know-how and/or providing territories in economic and demographic lag with new industry pathways. In their study of millennial-driven manufacturing in North Carolina's textile and apparel sector, Lowe and Vinodrai (2020) highlight how this type of manufacturing that became essential during COVID-19, carried on within maker

spaces, can act as vital support institutions for local economies (Vinodrai et al., 2021). These spaces also help revitalise manufacturing communities outside major cities by preserving enduring industrial skills, local expertise, networks and physical assets (Eisenburger et al., 2019), which strengthen long-term resilience and foster future economic or industrial specialisation. Through targeted industrial preservation efforts, these regions could reposition themselves as centres of ethical sourcing, transforming non-urban economies from 'left behind' to forward-looking hubs (Lowe & Vinodrai, 2020).

Still, issues in one policy sector may be best tackled by reforms in another. Tilley et al. (2023) emphasise the importance of social policy in fostering entrepreneurship and job quality, as it could allow cross-sector place-based policymaking to exploit the positive feedback loops between social policy and economic development by leveraging four drivers of productivity (entrepreneurship and employment; skills; investment and innovation; and transport infrastructure). Considering the infrastructure investments and access to ICT infrastructure (particularly broadband internet) is crucial in developing digital skills within a region's system. Without such an enabling condition, the necessary adaptation and transition towards digital technologies cannot occur (Falck et al., 2021). Hence, it is important to reduce the 'digital divide' by providing Internet access to those who are socially disadvantaged or live in remote areas (Zuo, 2021).

Advancing these technologies could enhance remote working opportunities, but only through coordinated investment in transport infrastructure, long-life learning education programmes, shared spaces and social policy (e.g., services for families, community life). Such combined efforts could encourage remote workers to relocate to peripheral areas, helping to mitigate the risk of increasing regional disparities. Indeed, for workers homed in lagging regions to effectively embrace the employment opportunities of digital transitions (e.g., Acemoglu & Restrepo, 2020), the expansion of broadband Internet access would need to be in concert with the provision of continuous training, both for older employees less digitally savvy and younger counterparts. This would endow workers with the skill set encompassing digital skills, social skills (Deming, 2017), basic competencies (Hanushek & Woessmann, 2008), non-cognitive skills (Almlund et al., 2011) and transversal skills (Whittemore, 2018) needed in the labour market (Falck et al., 2021, p. 15). The development of these local capabilities strengthens long-term growth, as the presence of digital capital seems to play a bigger role in predicting labour market resilience at the regional level in the EU compared with human capital or research and development (R&D) expenditure (Reveiu et al., 2022).

3.4. Local institutional capacity and cross-domain policy opportunities

One last critical aspect of regional policy for complex transitions and polycrisis is that comprehensive, integrated and coherent policies require institutional capacity (Martin et al., 2022). This is essential for effective participative governance as well as the design and implementation of complex policies or, better, policy processes that unfold over long periods of time. Developing institutional capacity should be a priority in lagging regions, particularly through education and training. Here once more, the example of the ER region is interesting. This region has provided training and policy mentoring to the Apuglia region, a less developed region in the South of Italy, especially within the Interreg ADRION programme; one instrument is called 'Partecipazione' and aims at making participative governance processes feasible and effective. This long-time collaboration seems to have been fruitful since the Apuglia region has improved performance and has become the most dynamic of the Italian lagging regions (Cassa Deposito Prestiti, 2021; Viesti, 2022). The Apuglia region has increased institutional capacity and has started implementing integrated policies, with important industrial and innovation parts, as well as social policies aimed at inclusion (Blasutig et al., 2021).

The integrated interventions implemented to tackle the multifaceted crisis in the ER–Apulia example go beyond traditional approaches that only consider the regional socio-economic system. Instead, they focus on defining integrated policies that consider social, technological and industrial aspects and how they jointly affect each other. Hence, targeting to address the polycrisis means developing a bundle of policies *coordinated* among themselves and, accordingly, among regions within the country system. For this purpose, regional policy (and coherent national policy) should co-integrate industrial, skills and social policy interventions by providing enabling conditions, which Bianchi and Labory (2019) argue to be of four kinds: (1) infrastructure (transport, renewable energy, digital); (2) capabilities (e.g., skills for workers, research and development capacity for firms in the transitions); (3) networking so that synergies are exploited within and outside the region; and (4) governance, in particular participative governance that promotes the mobilisation of all individuals and organisations towards the chosen objectives – and development path – of the policy. By developing such integrated policies, policymakers could turn the challenges and differences between regions into potential opportunities.

Complementary to the discussion on institutional capacity, the design of place-based strategies in a tangled polycrisis context requires social inclusion and local leadership. This is a critical precondition for reducing inequalities and building more cohesive, balanced, resilient communities since the most vulnerable citizens – those with low income and education levels – are most affected by both short- and long-term crises and transitions, often preventing their participation in the transition. In both developed and lagging regions, such efforts help make the transition more inclusive, provide additional labour in response to negative demographic trends. As Tilley et al. (2023) highlighted, positive economic impacts could be reached by welfare or 'well-being' policies such as back-to-work support, preventative health and stable,

affordable housing. Likewise, more comprehensive childcare or more effective financial support for stay-at-home parents could enhance the contribution of the beneficiaries to the local economy. Policy interventions aimed at social inclusion may strongly support the regions worst affected by the polycrisis in adjusting to the transformations occurring in the labour markets. Social policy interventions could synergically resonate with the opportunities for hybrid working, WFH and the potential for regional restructuring vis-à-vis challenges emerging from the demographic, digital, ecological and economic transitions. In this complex context, social policy acquires an even more crucial role and needs to be integrated along with policy initiatives across different – yet unconnected – domains; notably environmental, digital, industrial, skill and education policies, and labour market reforms for job quality.

4. CONCLUSIONS

In the post-COVID economy, new spatialities in labour markets defined by flexible, hybrid working are converging with digital and green transitions, as well as the effects of Industry 4.0 transformations to create an increasingly complex and uncertain environment of polycrisis for regional development policies. As fundamental shifts in the spatial relationships between places and workplaces emerge at the junction of these multiple transitions, challenges, as well as opportunities, have become further place-specific (Isaksen et al., 2022; McCann & Soete, 2020). Against this background, scholars have stressed how regional policies anchored solely on technology-based approaches risk aggravating entrenched spatial imbalances and regional divides (Bailey et al., 2019; Hassink & Gong, 2019), calling for spatial equity (Lowe & Vinodrai, 2020) and a wider scope in policy interventions also encompassing the foundational economy, social infrastructure and social polarisation, as well as well-being and belonging (Coenen & Morgan, 2020; Hansen, 2022; Mackinnon et al., 2022; Martin et al., 2022).

This article aims to contribute to current debates on a further localised yet broader conceptualisation of regional policy by offering complementary arguments for multi-scalar approaches that may bridge across several inherently integrated domains, from economic dynamics and structural change to social equity, cohesion and the environment. In a complex context where the simultaneous impact of multiple transitions and challenges are increasingly interconnected, so should be the response and place-based policies.

Building on the discussion offered on coworking spaces and coordinated policy effort carried out by ER region – where new spatialities of labour markets, digital and green transitions effectively converge – we provide arguments for setting aside fragmented interventions defined independently across different policy domains, instead recognising and leveraging the growing interaction between economic and social policy (Mackinnon et al., 2022), as well as between regional industrial and skills policy (Corradini et al., 2023). Thus, we argue that interventions that bridge and connect across policy areas may offer a more flexible and effective framework for regional policy. Connecting and integrating various policy actors (Lowe & Wolf-Powers, 2018) and areas would enable regions to enhance synergies across initiatives and improve the effectiveness of policy actions for both industrial development and social inclusion. This involves understanding the challenges that multiple transitions bring for the region vis-à-vis the combination of resources to allocate through place-based integrated strategies linking together skills policy, regional industrial policy and social policy. To this end, regions should engage in a diagnostic exercise built on local leadership and engagement with local communities to identify place-specific problems (Flanagan et al., 2023). Accordingly, we highlight this approach would require more inclusive negotiation and communication, including the involvement of actors often excluded from ordinary economic development processes (Doussard & Clark, 2021). In turn, this process may function as the foundation for cross-domain policies that can offer wider and further tailored opportunities for regional development.

Interventions at the intersection of different policy areas, such as the integration of regional social policy coupled with the new spatialities of work offered by the digital transition, may help manage complexity in a time of polycrisis, by connecting economic development to social inclusivity through more flexible sustainable, equitable place-based strategies (Doussard & Clark, 2021) tailored to the specific needs and opportunities within different regions. This may be particularly useful for peripheral areas to develop place-specific capabilities, strengthen the identity of places, and mobilise all regional stakeholders towards a development strategy better tailored to the place. The digital transition and remote work could represent opportunities for these areas to tap into non-urban creativity, which leads to slow innovation (Eder, 2019; Eder & Trippl, 2019; Mayer, 2020). As illustrated in this article, we suggest that developing and nourishing shared working spaces in peripheral areas may play a role in this encompassing policy strategy. More broadly, as emphasised in the present work, initiatives for regional social policy connected to the opportunities from new spatialities of work result of new hybrid, flexible working trend may also foster inclusivity, social support and better working conditions that could be leveraged to strengthen the competitive advantages for remote and less urbanised areas. This requires going beyond purely economic concerns (Doussard & Clark, 2021) and spatial imaginaries of regions as either core or global city-regions as opposed to 'left behind places' to acknowledge 'the differentiated issues and pathways for different kinds of places' (Pike et al., 2023, p. 10).

Further research remains necessary to offer more details on possible applications of the policy insights outlined in this article. In part, this relates to differences in the evolution and application of new technologies and emerging spatialities of labour markets, which, as noted, may differ substantially in both challenges but also opportunities they may create across different localities. In this sense, the approach we propose should not be seen as providing an alternative strategy that may replace the central

role of agglomeration externalities for regional development. Instead, it is intended to offer a complementary policy response to manage multiple transitions and mitigate at least in part the risk of further regional divergence. As such, while potentially applicable to all regions, it may be particularly relevant for peripheral and rural areas.

Finally, the approach we outline in this article does not necessarily imply more resources or significant changes to the institutional setting, and the scope for cross-policy synergies may offer opportunities in a complex context for fiscal policy. Yet, fiscal constraints could also affect implementation, especially in regions with more limited capabilities in terms of fiscal and institutional coordination resources required at the level of policy design. In this sense, while our suggestion for cross-policy domain interventions may offer a more flexible toolkit in various locations accounting for place-specific issues and potential opportunities, it also implies a sufficient level of regional institutional assets and leadership or may require strengthening further institutional capacity. However, institutional capabilities remain unbalanced across regions (Rodríguez-Pose, 2013). Such differences have already impacted the implementation of Smart Specialisation policies (Morgan, 2019) and may be exacerbating in the post-COVID economy (Martin et al., 2022). Thus, this brings to the fore the role of regional institutional quality in offsetting or managing multiple transitions, which this article outlines as a critical and outstanding question. Given the increasing complexity defined by polycrises and the significant risk of further regional divergence, a deeper understanding and evidence on interregional collaboration for increasing institutional capacity, similar to recent studies on regional technological capabilities for lagging regions (Barzotto et al., 2019; De Noni et al., 2018), represent an important direction for future research.

NOTES

1. The Alpine Region Preparatory Action Fund (ARPAF) project 'COWORCare. Coworking with Children & Elderly in the Alps', co-funded by the EU, aims to improve the quality of working life in rural and mountain territories of the European Union strategy for the Alpine Region (EUSALP) area by linking coworking and coworkation spaces with private caregiving institutions, such as kindergartens and elderly-care institutions. Thus, more young families and single parents could take part in the local labour market, reducing commuter traffic and establishing a more cooperative and open working culture also in remote Alpine valleys.
2. For instance, the coworking space MakeHUB Licata in Sicily, Italy.
3. This is part of the 'Rural Regeneration and Development Fund and the Town and Village Renewal Scheme'. For further information, see https://www.gov.ie/en/news/3f4a4-new-initiatives-for-remote-working/ (last accessed on 20 February 2024).

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