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ORIGINAL ARTICLE

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Digital transformation of public employment services in the post-pandemic era. Evidence from Italy as a latecomer country

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Abstract

The Next Generation EU (NGEU) economic recovery package has set the conditions for unprecedented investment in policy areas considered of strategic importance by each Member State. This article focusses on the Italian case, characterised by long-lasting weaknesses in active labour market policies and public employment services (PES) to analyse whether, and under what conditions, resources and programming of the magnitude of NGEU may be able to lead toward PES digital transformation. Italy's plan to enact NGEU has allocated 5.4 billion euro to fund a regionally implemented program aimed at reforming Italian PES where digitalisation represents a key objective. Based on interviews with PES officials and document analysis, it is possible to understand the extent to which such massive investments can pave the way for effective digital transformation and consider what (and how) additional factors may further influence such process.

KEYWORDS

digital technology, labour, public administration, social welfare

1 | INTRODUCTION

Institutions in charge of the design and implementation of active labour market policies (ALMP) are today faced with new challenges related to digitalisation. These challenges concern both the services to be delivered and the technological and organisational transformations to be put in place to enable service delivery. The pandemic has induced, in all European

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countries, a forced acceleration in the use of digital technologies to ensure the continuous delivery of public employment services (PES) facing critical socioeconomic circumstances (Cedefop, 2020; OECD, 2021; Scarano & Colfer, 2022).

Moreover, the post-pandemic phase has also been characterised by massive availability of economic resources for investment in such technologies. Governments around the world have taken extraordinary measures not only to respond to the COVID-19 crisis but also to prepare economies for the aftermath of the pandemic. Global fiscal support has reached nearly 14 trillion of dollars as early as the end of 2020 (Gaspar et al., 2021). In this context, in the European Union (EU) the "Next Generation EU" (NGEU) economic recovery package, adopted in late 2020, envisaged a substantial amount of funds—750 billion euro—to finance reforms and investments to be undertaken by Member States until 31 December 2026. Introduced as a response to the economic consequences of the COVID-19 pandemic (Armingeon et al., 2022), NGEU included measures to strengthen social cohesion as well as digitalisation of European societies, also as a means to improve labour market indicators.

In this regard, the aim of this paper was to understand to what extent, and under which conditions, the development of post-pandemic programs characterised by significant investments can influence the digital transformation (DT) of PES. In particular, we want to ascertain whether financial investments alone may be effective, or other enablers are needed, and of which nature. We do so by focussing on the digitalisation of an ALMP umbrella program in Italy, introduced in the framework of NGEU. We decided to focus on the Italian case because of its latecomer condition both in the development of ALMPs and digital public services (Sacchi, 2018; Scarano, 2021). Italy's employment policy model is traditionally geared toward strong employment protection of open-ended workers and "insider-oriented" passive labour market policies (PLMPs), creating "outsiders" groups with very weak attachment to the labour market (Sacchi & Vesan, 2015). In this context, the quality of job placement has always been very inefficient, facilitating poor matching between labour supply and demand and being negatively affected by an overly centralised and bureaucratic system. Despite these weaknesses, the resources allocated to labour policies to tackle these challenges have consistently been very low (OECD, 2019; Sacchi, 2018; Scarano, 2021). Consequently, this underfunding has also meant that the use of data to support monitoring, evaluation and performance management has been underdeveloped.

To access funds from the NGEU initiative, Italy—as well as each EU Member State—had to draw up a detailed plan called National Recovery and Resilience Plan (NRRP).[1] Concerning PES, the Italian NRRP introduced a comprehensive agenda regarding ALMPs, envisaging relevant investments for this sector. Most of the resources provided—5.4 billion euro—have been used to fund the "Workers' Employability Guarantee" (WEG), a new ALMP umbrella program, which includes among its priorities the DT of Italian PES. Once resources are in place, we are allowed to consider what (and how) additional factors may further influence—positively or negatively—a DT process.

The article is structured as follows. The next section introduces the recent debate on the DT of PES, while the following provides a brief account of the Italian ALMP context. Section 4 is devoted to the description of the WEG program, including the methodology adopted. Section 5 explores the findings concerning digitalisation objectives in the context of the regional implementation of the WEG program. The final section concludes.

2 | THE DIGITAL TRANSFORMATION OF PUBLIC EMPLOYMENT SERVICES

Although there is much interest in the public debate about the opportunities arising from digitalisation—for both public and private organisations—practitioners and scholars in the

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field struggle to identify an unambiguous definition of DT (Besson & Rowe, 2012; Vial, 2019). Studying DT in the public sector means studying how the public sector uses digital technologies to enhance service delivery and adapt operational processes as consequence. In this context, researchers aim to understand how and why these initiatives succeed or fail (Mergel et al., 2019). In particular, the debate on the factors to ensure the successful implementation of DT has been going on since the emergence of the e-government field of study as an area of public sector reform over the past two decades (Gronlund & Horan, 2004; Heeks, 2001). Certainly, at the core of DT are the "input-focused" technical preconditions related to the development of the technology infrastructure, including the management of data systems. In this regard, the first issue to consider is that of funding. Indeed, the implementation of digital technologies is an expensive process that requires significant investments especially in the initial stages of digitalisation reforms, while the return on investments will not be rapid (Belyakova, 2021).

However, many scholars agree that the DT of the public sector is a multidimensional phenomenon. It does not merely depend on technical issues but is part of a more articulated socio-technical system composed by humans, technologies, practices, knowledge and values (Castelnovo & Sorrentino, 2018; Dunleavy et al., 2006). Whether investments can return savings in time and money depends on "outcome-focussed" factors, corresponding to all those nontechnical factors that determine support for administrative reforms aimed at digitalisation and maintaining trust in public sector organisations. Such kind of factors, for instance, could be represented by institutional and legal infrastructures, public servants' attitudes and abilities, political or media pressure in the public debate, leadership and strategic thinking in the organisations, digital skill level of the population (Bekkers et al., 2011; Heeks, 2001; Umbach & Tkalec, 2020).

In these respects, a great role is played by institutional and legal infrastructures—institutions and rules that set the limits and incentives that result in the transformation of public services through technologies. What is frequently missing is an understanding of how institutional contexts are linked to technological change in public sector organisations. Concerning PES, different countries (and subnational regions) have established digital strategies with varying levels of commitment regarding the relevant approaches, tools and policies when it comes to their chosen path of digitalisation.

Sacchi and Scarano (2023), through document analysis and interviews, offer an overview of the digital strategies implemented in four European PES: the Netherlands, Austria, Denmark and Belgium. These cases highlight how, notwithstanding a comparable level of PES digitalisation across countries, there could be a "variety" of digital strategies with respect to the objectives and policy choices, ranging from cost-cutting goals (Netherlands) to strategies more oriented toward the needs of businesses (Belgium-Flanders) or maintaining standards of broad participation in social policies (Denmark). Ingold et al. (2024) deploy comparative mixed methods to examine the digitalisation of employment services in the UK and Australia, countries that have been on similar policy trajectories with respect to quasi-markets and increased digitalisation. The survey data analysis suggests considerable similarities in the UK and Australia regarding the drivers of digitalisation and the tasks that were digitalised. Differently, the interview data highlight some differences between the two countries, and point to evolving "varieties of digitalisation", including the persistence of face-to-face delivery in the UK compared with accelerated digitalisation in Australia.

In general, the adoption of digital technologies in public sector organisations has been often associated with reform programs aiming at reducing the inefficiencies generated by bureaucratic burden and improving policy effectiveness (Cordella & Tempini, 2015). In this context, institutions are frequently set up to collect data as performance management (Nunn & Morgan, 2020). The possibility to use data-intensive systems to improve information flow and the potential for monitoring job-search activities is often regarded as the most effective means to reduce unemployment and manage costs. The greater control over jobseekers could include

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a greater surveillance of whether jobseekers meet their obligations, whereas the job-search activity recorded within the digital platform can be used as evidence for sanctions. However, digital tools that are not trusted or regarded as legitimate would face obstacles in achieving their goals and become likely ineffective. When such technologies are implemented, PES must first apply basic data use principles to ensure ownership of clients' data, provide procedural fairness and avoid discrimination (Urquidi & Ortega, 2020). At the same time, in building a culture of data collection and monitoring, new concerns may be raised among both civil society groups and frontline staff about a fundamental re-orientation of professional practices routines and relationships in delivering ALMPs. DT is often embraced as an opportunity to reduce or remove the discretionary freedom of caseworkers (Cheraghi-Sohi & Calnan, 2013) by replacing "subjective criteria" with "objective criteria." Computers are explicitly viewed as "objective" and thus more reliable in contrast to discretion, which is often accused of being subjective and random (Høybye-Mortensen, 2015). This does not exclude that it is possible to see new types of coping strategies emerging among frontline workers as they seek to deal not only with the general pressure and dilemmas of frontline service work but also with the technology (Breit et al., 2020).

Indeed, not all caseworkers or other PES staff are willing or prepared to work with technologies that imply the modification of their working processes and routines, and accommodating their discretion is found to be a complex issue. Considine et al. (2022) examine the potential and limitations of the project to digitalise Australian employment services. The authors point out that the technical and administrative requirements necessary for the digitalisation of services can generate tensions, with an increased need to balance efficiency and inclusiveness, which can make decision making more complex for practitioners. Rather than eclipsing or eliminating discretion, the introduction of standardising technologies in frontline encounters create new tensions and uncertainties in concrete case handling to which new types of discretionary responses are needed. The introduced technologies deliver scripts that frontline practitioners must balance with professional virtues, client-orientation, organisational demands, and societal and political goals in the situation at hand. Ball et al. (2023) analyse the different operational configurations that digitalisation takes in ALMP delivery, drawing on the experience of practitioners and experts in welfare-to-work reforms in three countries: Denmark, Belgium and the UK. The authors identify three discrete modes of digitalisation in welfare- to-work programs, which reshape frontline delivery. Even though algorithmic technologies are not explicitly intended to replace human decision making, the authors highlight that caseworkers might defer to algorithmic outputs in place of exercising their own judgement. Following this perspective, technologies might be seen as strengthening the project of "double activation," such that welfare-to-work reforms involve not only efforts to discipline claimants but also greater attempts to direct the behaviours of frontline delivery agents (Considine et al., 2015; Soss et al., 2011).

In this context, we aim to contribute to the literature on DT by focussing specifically on "outcome-focussed" factors that we believe are underestimated from a necessary multidimensional understanding of this phenomenon. In particular, we decided to focus on the role of institutional infrastructures and human resources of PES, driven by the consideration that these are highly intertwined factors, but frequently treated separately in the preexisting literature.

3 | THE LATECOMER CASE OF ITALY

The governance of PES in Italy as a regionalised state involves the Ministry of Labour and Social Policies (MLPS), together with—between 2015 and early 2024—the National Agency for Active Labour Market Policies (Agenzia Nazionale Politiche Attive del Lavoro—ANPAL) and the 20 Italian regions and two autonomous provinces (henceforth: regions), which govern

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the local employment offices. According to the Italian Constitution, the state shares the policy competence in this area with the regions. The state is endowed with the function of establishing and funding "essential levels of provision" (ELP) that the regions must then implement and guarantee as a standard to all citizens throughout the national territory. Following a multilevel configuration, the MLPS, in cooperation with the regions, identifies strategies, objectives and priorities in this area, setting 3-year strategies and annual objectives on ELPs. Regions are responsible for spatial planning and delivery of ELPs in their territories, ensuring the achievement of ELPs. However, they can and typically do deliver measures in addition to the minimum standards.

ANPAL, endowed with organisational and budgetary autonomy and overseen by MLPS, was established in 2015 with the aim of strengthening the coordination and monitoring of ALMP at the national level. The agency was meant to elaborate common tools and initiatives, to improve the delivery of interventions at the local level; such as: the user profiling methodologies and the development and management of a nation-wide information system. As of March 2024, all these functions were moved back to MLPS.

Financially, the state is committed to securing the necessary resources for ELPs. However, many of the resources used by regions for ELPs are frequently derived from EU resources, particularly the European Social Fund. More generally, in recent years, there have been several measures aimed at strengthening the human, infrastructural and technological resources of employment services. Additional measures targeting PES are contained in the 2021 NRRP implementing the NGEU initiative for Italy. Of these, noteworthy is the WEG program, which as already mentioned is allocated €4.4 billion until 2025 and is based on a national framework that sets targets to be achieved and standards to be guaranteed, and on implementation through regionally designed interventions and actions.

Despite these recent developments, Italy is negatively marked by a long-lasting tradition of poorly performing PES, characterised by under-financed and weakly targeted ALMPs, over-reliant on employment incentives, with underdeveloped counselling services for jobseekers and job-brokering activities (Sacchi & Vesan, 2015; Scarano, 2021). One of the main challenges has been for a long time the lack of sufficient resources for ALMPs and the functioning of PES necessary to better address their matching function and enable mechanisms of conditionality. Comparing Italy with other OECD countries, the share of public spending on ALMPs remains still quite low with respect to that on PLMPs (Figure 1).

A poorly functioning IT system is part of the limitations affecting Italian PES. The reform establishing ANPAL in 2015 entrusted it with the task to develop and operate a new nation-wide "unified information system" of labour policies. This system should serve as the basis for monitoring the activities and effectiveness of the regions and the PES, allowing for better management of ALMP performance. To this new system flows the data on the biographical-occupational personal records already in the availability of the regions. The system was put into operation in 2019[2] precisely to overcome such problems. It allows data from existing regional information systems to be integrated in shared "application cooperation," enabling the various administrations to use data in the availability of other administrations and to exchange data with other organisations (e.g. to provide the national social security authority with information on conditionalities related to activation measures for recipients of benefits, in order to suspend the disbursement of benefits in cases provided for by the law). Employers should also be able to enter not only vacancies but also information regarding hiring and termination of employment.

However, the construction of such system has been sprinkled with obstacles, and bestowal of information from the regions to the unified system has never been a smooth process (Faioli, 2023). Regions treat elementary information differently, with the consequence of hindering cross-sharing of relevant information and data comparability. The presence of previous IT systems in some regions has frequently created technological legacies that

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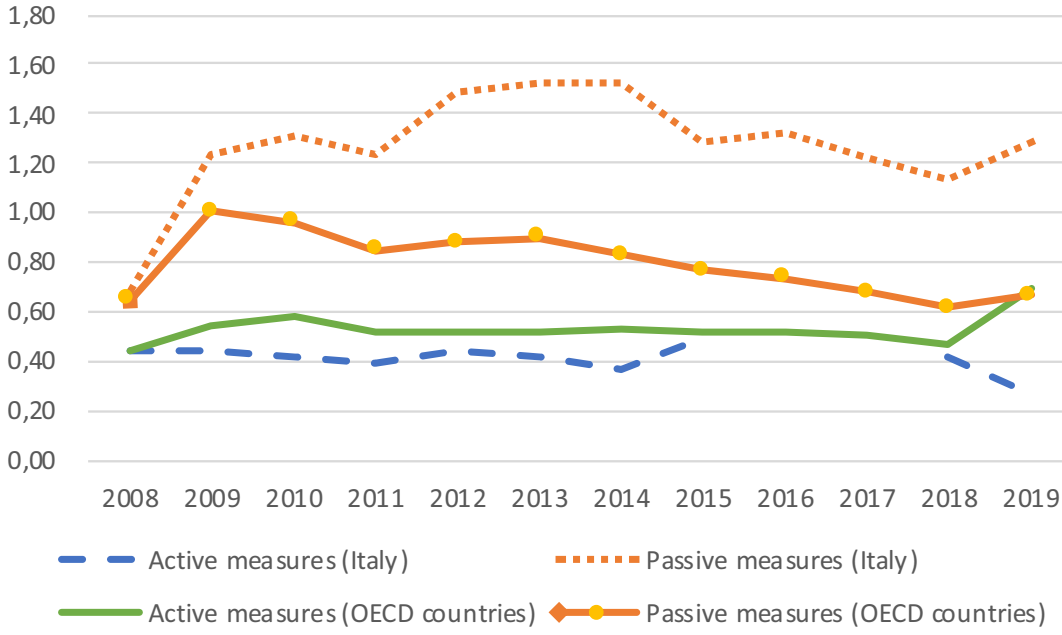

FIGURE 1 Public spending on active and passive labour market policies over time (2008–2019), comparing Italy with OECD average (percentage of GDP). No available data for Active labour market policies in Italy for the years 2016 and 2017.
Source: Own elaboration on OECD data. Public spending on ALMPs refers to "Active programmes without employment maintenance incentives" (code 210) according to the classification provided by OECD.Stat (available at: https://stats.oecd.org//Index.aspx?QueryId=8540#).

significantly increase the opportunity cost of creating new information processes and replacing existing ones.

4 | THE WEG PROGRAM

The WEG program is structured along five activation paths, corresponding to ALMPs delivered by the regions according to the level of assistance intensity needed by the participant.[3] The attribution to a particular activation path depends on a two-pronged profiling system. In particular, the program implemented two new profiling tools, one working on a statistical basis and the other based on a face-to-face structured interview. The statistical tool is accessed online through the platform maintained by ANPAL, generally when applying for unemployment benefits. The output score corresponds to a risk class, based on the probability for the participant of being employed for no more than 90 days within the next year. It is a statistical-predictive approach based on an econometric model developed using administrative data stored by ANPAL on biographical-occupational personal records, declarations of availability to work and "compulsory communications."[4] The variables used are mainly socio-demographic: age, gender, educational qualification, citizenship, duration of unemployment and supported by indications of the economic condition of the territory. This tool aims to provide the caseworker with an initial indication of the participant's level of employability, based as mentioned on the risk of becoming long-term unemployed classified according to three levels (low, medium and high). However, a fundamental issue is that there is no automatic link between the statistical profiling index and the definition of the participant's policies and paths. As a matter of fact, the output of the statistical profiling should be merely considered by the caseworker when carrying

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out a face-to-face interview guided by a multidimensional questionnaire, which renders a profiling score. It is the output of this interview-based profiling, meant to take into account also behavioural factors (expectations, availability and motivations), which leads to the assignment of the participant to one of the paths from 1 to 4 (while Path 5 is geared to those involved in large company restructuring and crises). Thus, when assessing the profile of the participant, the caseworker should consider the result of the statistical tool, but as mentioned, it is the structured interview-based tool to determine the path to which the participant is attributed. Moreover, whenever the final assessment score renders a result the caseworker is not comfortable with, based on their professional judgement, they may make use of their discretion to attribute the participant to another path deemed better corresponding to the level of assistance needed. This however can only be done if the assessment score resulting from the interview-based tool is near the boundary that would entail attribution to the new path. This is a relevant issue, to which we will return later.[5]

In the context of the WEG program, the use of new technologies is among the priorities for the empowerment of employment centres (Italian Government, 2021, p. 204). In this respect, DT of PES is seen as a key objective because of its potential to increase service effectiveness and capacity building. Following the Italian government's formulation of the NRRP, and prior to the launch of the WEG program, we decided to follow a qualitative methodological strategy, based on interviews with PES officials, to assess the state of the digitalisation of Italian PES at the dawn of the envisaged investments.

A number of semi-structured interviews were conducted between April and September 2021, involving 10 PES officials, distributed between the central level of the national agency and Italian regional authorities with policy competence over PES. The selected regional cases were Lombardy, Marche, Apulia and the Autonomous Province of Trento.[6] The selection aimed to take into account a representation of heterogeneous geographical areas in terms of local economic conditions.[7] The PES officials interviewed generally had roles in managing and supervising caseworkers, which allows for a good level of knowledge and experience of frontline dynamics.

After the program was launched, in November 2021, in the first part of 2022, each region drew up its own regional implementation plan, based on the guidance provided by the national agency ANPAL. The program then practically started in mid-2022, when the regions began to take on participants, profile them and provide them with services. Then, after the launch of the program, we decided to conduct a document analysis at both the national and regional levels. At the national level, the program monitoring reports published by ANPAL were considered. At the regional level, we relied on regional implementation plans adopted by regional administrations.[8] This analysis allowed us to confront the evidence previously gathered from the interviews with the plans adopted at the regional level.

The guidelines for the preparation of regional plans required each region to include two specific sections concerning PES digitalisation: "actions for the digitalisation of services"; "actions for strengthening labour market analytical capacity." The document analysis was restricted to these two sections for each regional plan. This provided us with a sufficient comparative basis for our analysis.

In the next paragraphs, we synthesise the evidence on the basis of three main objectives of digitalisation that emerge from the analysis of regional implementation plans: the strengthening of digital service platforms, the standardisation of their profiling based on the national profiling tools and the investment in skill intelligence/forecasting tools. Indeed, each of these areas reflects a particular component of the activation process. Platforms allow for access to the services, remote case management and remote counselling. Data-intensive forms of profiling are promoted to achieve higher accuracy and consistency than caseworkers alone in the diagnosis phase. Skill intelligence/forecasting tools attempt to determine the competences in need, jointly analysing vacancies, local labour market conditions and jobseeker profiles by exploiting the

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massive amount of data collected by employment offices (Faioli, 2023). For each of these areas of intervention, we have taken into account the technical innovations put on the agenda, without disregarding "outcome-focussed" factors highlighted in the previous Paragraph 2.

4.1 | Access and platforms

As already mentioned, the restrictive measures resulting from the COVID-19 pandemic forced PES to move rapidly toward remote service delivery. In particular, restrictive measures triggered and accelerated the use of previously little or not at all used web-based interactive guidance tools and services (including video links with practitioners and interactive online webinars).

Figure 2 shows the share of employment offices in each region that were able to move services traditionally delivered in person to online platforms between 2020 and 2022. Seven regions, mostly in the centre-north of the country, were able to move their most common activities (typically counselling) to online platforms in all their employment offices: Emilia-Romagna, Friuli-Venezia Giulia, Marche, Sardinia, Tuscany, Aosta Valley and Veneto. Low percentages were instead recorded in the south—particularly in Basilicata and Apulia (14.3% of employment offices), Calabria (15.4%) and Campania (22.2%).

Remote service delivery is now perceived as a strategy to improve the quality of services by eliminating free access to employment offices and allowing a better management of the activities in the offices (Interview 3, Interview 4). This is confirmed by the analysis of the regional plans, which highlights that remote service delivery forms are likely to continue. In particular, each region emphasises that a top priority for the digitalisation of services is the promotion of forms of assistance through a virtual environment. For all regions, such "remotisation" of service brings with it positive organisational implications that can improve case management by reducing the pressure on the "physical" desks of the employment offices. Some regions refer to further services such as "e-guidance" (Piedmont), "self-guidance" (Lombardy) or "digital orientation" (Sardinia). However, how these objectives are to be translated into practical implementation is only loosely defined in these regional plans.

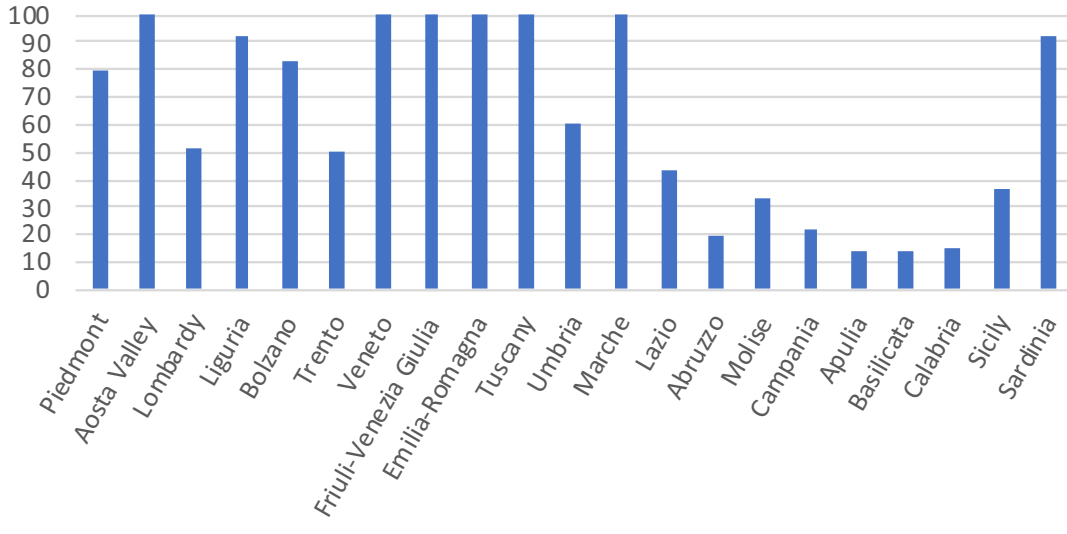

FIGURE 2 Share of employment offices using online platforms for services traditionally delivered in presence, by region, mid-2022 (%).
Source: ANPAL, 2023a.

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More generally, the organisational culture of Italian employment offices is still more focussed on administrative tasks than on client guidance. All processes developed for the purpose of PES digital innovation are designed to be delivered by the caseworker rather than "as an alternative" to the caseworker. At the same time, no platform can automatically gather all client information for the caseworkers or let them monitor client performance and activities (Interview 1). In this respect, the procedure for obtaining the "declaration of availability to work" is a case in point. The client is required to render such declaration online, but then it needs to be validated in person at the employment office by a caseworker. Very often, it is the case that forms completed online by the client are then printed, filled and signed at the office. This activity absorbs most of the staff engaged in frontline activities and caseworkers end up perceiving their tasks as administrative in nature. All interviewees agree that there is a significant duplication of procedures that are merely bureaucratic. This is even more serious when considering that it is not unusual that back office tasks, such as accounting or personnel management are performed by the same officials already acting as caseworkers, further limiting their capacity to provide support and guidance (OECD, 2019). These characteristics of Italian PES are reflected in the approach used to evaluate the WEG program, where the number of individual action plans undersigned by participants is considered a performance indicator per SE, alongside being enrolled in training programmes, without any information on the quality of the services delivered (Interview 1).

4.2 | Diagnosis and profiling

In the period before the introduction of the WEG program, PES profiling methodologies suffered from incoherent regulation (Scarano, 2021). Many attempts to introduce standardised profiling methodologies at the national level often remained unapplied, while region-specific tools were already in place. These tools were heterogeneous both in terms of the results provided and the degrees of discretion accorded to caseworkers.

In 2022, the national agency ANPAL introduced two new profiling tools to determine the level of assistance needed by the program's participants and therefore their assignment to different activation paths. This does not preclude that the tools already existing at local level can still be applied for those PES clients who are not taking part in the WEG program. Indeed, within regional plans, the adoption of the new methodologies is not characterised by significant technological innovations, or even implications. The plans tend to focus on how to integrate the two new profiling tools with respect to practices and procedures already existing in the current organisational configurations of the regional services, without any further reflections on how to leverage on such innovations. From the interviews, it emerges that there is no homogeneity in the visions of the regional officials. Some of them emphasise the need of more objective diagnosis using statistical-predictive methodologies (Interview 5A), while others tend to question the reliability of uniform profiling methods, as they believe that caseworkers should be as unconstrained as possible (Interview 3). Moreover, among the main uncertainties lamented by the regional officials, the transparency of the profiling methodology developed by the national level looms large. These are issues that particularly concern the "explainability" of centrally developed tools, which are consequently presented to the regions as black-box tools (Interview 2). The same issue of explainability come up to an even greater extent as regards justification of outputs to participants (Interview 4).

The issue of the profiling tools used in the WEG program is of considerable import for the assignment of participants to one of the activation paths. Data from the latest available monitoring of the program that allows for decomposition by region— 31 January 2024—seem to indicate a prevalence of participants assigned to Path 1, that intended for work-ready individuals (ANPAL, 2024). Surprisingly, despite the fact that 85.6% of the participants of the WEG

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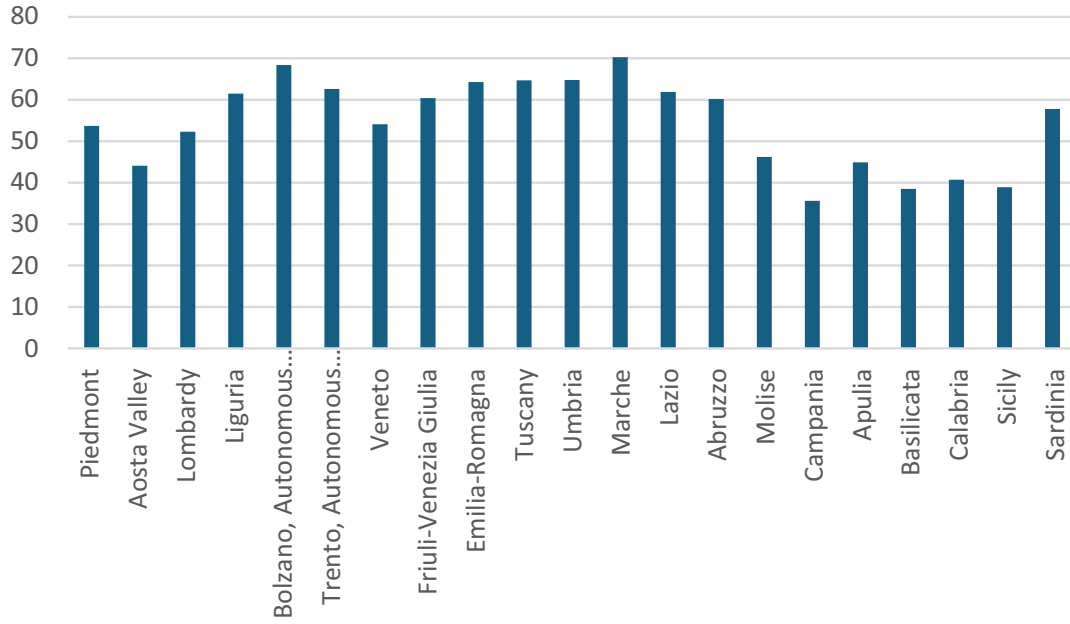

FIGURE 3 Share of participants assigned to Path 1 (work-ready) out of total participants to the WEG program, by region (%).
Source: ANPAL, 2024.

program belong to categories considered particularly vulnerable (women, young people under 30, adults over 55, unemployed for 12 months or more and disabled people), over half of all program beneficiaries (51.3%) have been targeted for Path 1. Figure 3 shows participants assigned to Path 1 in each region, as a percentage of all participants in such region. It can be noticed that the share of participants considered "work-ready" in large southern regions (Campania, Calabria, Apulia, Molise and Sicily) is substantially lower than in most northern and central regions, mirroring both labour demand and supply factors in those areas.

An indirect and admittedly very crude way to gauge the extent to which most vulnerable participants are considered work-ready and thus assigned to low-intensity services, such as those envisaged in Path 1, is to consider the share of recipients of the nation-wide social assistance benefit "Citizens' Income" (CI) participating in the WEG program who are assigned to Path 1 (Figure 4). It is to be considered that, before the launch of the WEG program, only 13.8% of beneficiaries of CI who were considered potentially employable had held a work contract over the previous year (ANPAL, 2023b).

While in Italy as a whole, the share of recipients of the national minimum income scheme assigned to Path 1 out of all recipients of such scheme who take part in the WEG program hovers at 11.8%, such figure should be read in the light of a consideration: This does not include those recipients of CI who draw the scheme as a top-up to standard unemployment benefits, based on labour market attachment via social contributions (for these, the figure of assignment at Path 1 hovers at 51.8%). It is likely that those closer to the labour market draw CI as a top-up to unemployment benefits, while those only eligible to CI are more distant from the labour market: participants who receive welfare benefits, in consideration of a higher level of socioeconomic disadvantage, should be those hardest to place, and naturally be assigned to Path 3 (reskilling) and particularly 4 (work and inclusion). However, some 12% ended up in the path designed for the "work-ready" target, considered easiest to place and with a greater chance of finding a new job autonomously, with little if any support from the PES. In some regions (Bolzano, Emilia-Romagna, Liguria, Marche, Sardinia, Trento, Umbria), such share is higher than 20%. While in

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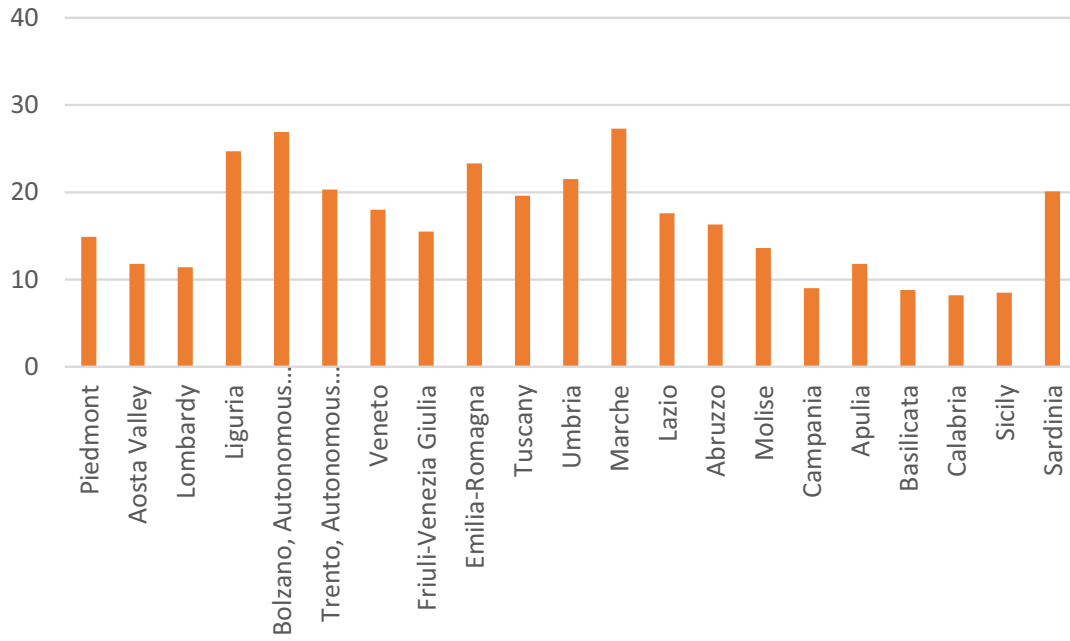

FIGURE 4 Recipients of Citizens Income (social assistance) assigned to Path 1 out of total recipients of *Reddito di cittadinanza* participating in the WEG program, by region (%).
Source: ANPAL, 2024.

this paper, we can only advance some potential explanations based on a yet too limited amount of empirical evidence, it is highly possible that the profiling methodologies developed for the program may end up underestimating some vulnerability characteristics. It is likely that this may occur in the second phase, characterised by the questionnaire-based profiling, as the tool only allows for very limited room for discretion, basically rendering a final score in a rather mechanical fashion. This score is then generally constraining, as in assigning the participant to an activation path, the caseworker is formally allowed to deviate from the result emerging from the questionnaire-based profiling only when the result is somewhat ambiguous. Moreover, it seems that even in such cases, caseworkers tend to adhere to the score rendered by the procedure. In other terms, the procedure makes the result of the structured interview-based profiling highly constraining for the caseworkers, exerting pressure on them to conform their decision to a somewhat standardised output. While this is formally different from the case—studied in the literature—of automated tools, the rationale seems comparable: that of an algorithm, or standardised procedure, deemed more accountable and reliable than caseworker's discretion and thus difficult to deviate from (Considine et al., 2022; Pedersen & Wilkinson, 2018).

4.3 | Skill forecasting and analytical capabilities

WEG program's guidelines requested the regions to envisage specific actions concerning the strengthening of analytical tools for skills intelligence and skill forecasting. The aim should be to implement tools and techniques to analyse the characteristics of PES users and identify skill gaps between demand and supply in the labour market. In these respects, in almost all the regional plans, there are several references to projects concerning specific technologies such as the use of Big data and AI enabling predictive analyses. These projects are frequently conceived either to support the design of training services, or to improve job-matching services.

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On the job-matching side, some regions (Emilia-Romagna, Calabria, Valle d'Aosta and the Autonomous Province of Trento) mention in their plans to have initiated projects—on an experimental basis and not yet fully operational—that should allow semantic matching between a jobseeker's profile and the available vacancies in the local area. In this sense, software should allow the caseworker to analyse the content of job advertisements in real time and quickly extract information on required skills or experience on the basis of which to match potential candidates. Concerning the digital tools to improve on the training services, the Umbria region, in cooperation with the OECD, has recently implemented a system that scans and analyses the territory's demand for skills through the use of Big data and AI, which should then enable the regional administration to align the regional training services with business demand in real time (OECD, 2023).

However, often in the regional plans, the mention of an enabling technology is not followed by any operational plan for its implementation. Similarly, it is not clear what should be the role of caseworkers when faced with innovations that are built on algorithmic technologies. Some interviewees emphasise the caseworker's intervention and discretion and consider with scepticism the possibility that in the near future the caseworker may be completely replaced in executing diagnosis and intermediation operations, especially when dealing with particularly disadvantaged clients (Interviews 3 and 4).

5 | DISCUSSION AND CONCLUSIONS

The NGEU economic recovery package has set the conditions for unprecedented investment in policy areas considered of strategic importance by each Member State. Based on interviews with PES officials and document analysis, we have examined the extent to which such investments can potentially foster effective DT. Certainly, the area that could benefit most from the massive investments of the NRRP is undoubtedly that related to strengthening the technological infrastructure of regional services.

The legacy of the adjustments made during the COVID-19 pandemic might have paved the way for some processes envisaged by the WEG program. This does not necessarily mean that Italian PES have moved toward a fully fledged DT, or are about to do so in the coming years. Remote service delivery requires the definition of organisational designs and processes within the framework of a new conception of the time and space in which PES could operate. On the contrary, in Italian PES, remote case management so far has not per SE entailed any structural transformation of the organisational values, and possibly not even of procedures—as testified by the necessity to validate in person at the local employment office the declaration of availability to work already filled in and signed online. Although there has been a massive amount of learning regarding remote service delivery, the bureaucratic core of PES has remained largely unchanged. As a matter of fact, the PES sector suffers from administrative and legalistic paradigms established in the 20th century, when techniques of dematerialisation and digitalisation of public decision-making processes were far from being imagined (Timo, 2020). This situation can be furtherly exemplified by the evaluation criteria set for the program. The key performance indicators of the program are the number of individual action plans undersigned by participants, as well as participants enrolled in training programmes. If the priority is to enrol the clients in the program, these fulfilments are completed with their assignment to one of the paths provided by the program, possibly entailing training. Then, it is of little relevance for the evaluation of the program if a participant gets assigned to a path, which is not suited to their level of need or remains unemployed for months after participating to the program, because for the caseworkers, the target is reached. This incentive structure stems from the overall rationale of the WEG program, which aims to increase participants' employability, rather than directly targeting employment outcomes.

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As for the introduction of new profiling methodologies, this has resulted in many organisational efforts for the regions to integrate the new methods. Beyond these efforts, however, many doubts remain as to the effectiveness of the process. Our findings point to a potentially large misalignment between the jobseekers' characteristics and their actual allocation to one of the activation paths provided by the WEG program. Although more research is needed in this regard, it seems likely that such misalignment occurs due to the interview-based profiling tool, based on a constraining questionnaire and codebook, and to a procedure that does not allow for real flexibility, except when the results from such profiling tool are ambiguous. Even in such case, however, it seems that the caseworkers tend not to challenge the score—and the ensuing assignment of path—attributed by the questionnaire-based profiling tool. The new tools were not explicitly intended to replace human decision making, but the way the interview-based tool is designed may result in caseworkers being too much constrained by standardised outputs and incapable of exercising their own judgement (Ball et al., 2023). More research is needed about the extent to which this might be framed in the context of a "double activation," with reforms involving efforts to discipline claimants at the same time as they attempt to steer the behaviour of frontline delivery agents (Considine et al., 2015; Soss et al., 2011). These aspects point to the fact that issues related to the soft and technical skills of caseworkers are still being disregarded. The WEG program, at the national level, has not specified any guidelines with respect to the skills (in particular, the digital ones) of the caseworkers. As a matter of fact, the potential increase in the use of digital technologies creates the need for new skills in algorithmic management and supervision. However, when we considered the use of algorithmic technologies for skill intelligence and forecasting, we noted that although some innovations are planned—or have already been adopted—many regional plans are still too vague with respect to how such new technologies should be concretely implemented. The overall taste is one of window dressing with fashionable tools, particularly when considering whether regional administrations do actually have the capabilities to test and implement such innovations, or would have to rely on external consultants.

In addition, technical issues have likely become intertwined with the institutional complexity of the relationship between the national and regional levels, resulting in different technological and institutional capabilities by regional PES. As Figure 2 testifies, the "remotisation" of services remains unevenly implemented throughout the national territory, with southern regions lagging behind. Very different platform systems are likely to present interoperability problems. Interoperability has the function to connect regional platforms with those records generated from the interactions taking place in the field of employment and clients. In this context, ensuring sufficient information flow is a prerequisite for any intervention that relies on future algorithmic technologies and data-intensive tools. In these respects, we should highlight that decentralisation is a common feature in PES governance (Mosley, 2003, 2009) and certainly does not solely concern Italy. In the experience of other countries, such as Denmark and the Netherlands, where municipalities have policy competence over PES, digitalisation is indeed the vehicle to effectively manage multilevel governance through a standardised service model. This is possible to the extent that it is the national level that is the only responsible for the IT backbone and data management (Sacchi & Scarano, 2023), as well as being responsible for benchmarking and training initiatives attentive to artificial intelligence developments.

Our evidence has showed how weaknesses in terms of institutional and organisational contexts can raise several barriers with respect to the DT of PES. We should be allowed to speak of DT only when digital technologies are shaping not only standard operating procedures but also the very identity and "core values" of service organisations (Wessel et al., 2021). Where, as in the Italian case, there is significant investment in technological inputs, but no effective rethinking of key organisational values and processes, it would be better to speak of a mere (IT-enabled) organisational change, which would not exclude the risk of fostering already weak organisational arrangements and preexisting practices (id.).

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The Italian case demonstrates how in PES cases still lagging behind in digitalisation, no matter how significant the resources may be, the technological innovations introduced would end up being seriously undermined when lacking more "outcome-focussed" factors, such as institutional infrastructure and human resources. DT remains an uncertain and non-deterministic process. First, regarding the institutional infrastructure, in PES contexts characterised by multilevel governance, such as the Italian one, DT may represent a crucial solution in overcoming territorial fragmentation only if standardisation of service delivery and effective interoperability is possible. Second, concerning human resources, in the absence of a reconfiguration of their skills, caseworkers will always be committed to the above legalistic paradigm, reproducing the bureaucratic core of PES. While it is hard to relate Italy to a clear model of digital PES, what can be highlighted in Italy is certainly a persistence of face-to-face delivery in a context of very low digitalisation. Although digitalisation in the debate is also emphasised as an opportunity to reduce discretionary freedom of caseworkers (Cheraghi-Sohi & Calnan, 2013), this does not exclude coping strategies among frontline workers (Breit et al., 2020). With few incentives to affect caseworkers' practices and routines, their choice of strategy will be built on what is perceived as legitimate, which in the Italian case still relies on legislation.

To address all these factors is not an easy task. A crucial prerequisite might be the presence of a central steering body that can ensure a strategic vision and sustain actions over time. Nevertheless, in the case examined, there are still many ambiguities in the mission attributed to the Italian national institutions in charge of coordinating regional policies and overseeing programs' implementation, leaving open issues that are currently unresolved.

AUTHOR CONTRIBUTIONS

Stefano Sacchi: Conceptualization; writing – original draft; methodology; supervision; project administration; funding acquisition. **Gianluca Scarano:** Conceptualization; data curation; formal analysis; writing – original draft; methodology; investigation.

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Endnotes

[1] The Italian government submitted its NRRP to the European Commission on 30 April 2021, beginning the review process by the EU bodies, which was concluded in July, when the NRRP was definitely approved by European Council's Executive Decision No. 10160/21.

[2] An important role in the launch of the national system is due to the introduction of "Citizens Income" (*Reddito di Cittadinanza*) in the same period. This was a means-tested social assistance scheme catering to poor households (i.e. a generalized minimum income scheme), operational between mid-2019 and late-2023, when a reform of anti-poverty benefits replaced it with different schemes. Given the significant investment of the Italian Government for this scheme, the simultaneous launch of the "unified information system" should have allowed for stronger monitoring processes aimed primarily at recipients of the new benefit and their activation. However, ALMPs were poorly addressed to Citizens' Income, contributing to criticism that would result in its termination.

[3] The activation paths are ordered by increasing level of intensity: Path 1—"occupational reintegration," mainly comprised of basic counselling measures, for those participants considered "work-ready", that is less distant from the labour market; Paths 2 and 3—"upskilling and reskilling," designed for participants with training needs: "upskilling," meaning

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short-term skill adjustment, or "reskilling," with more intensive skill development aimed at achieving formal qualifications; Path 4—"work and inclusion," for cases in which the need level goes beyond employment problems, as is typically the case for social assistance (i.e. welfare) recipients; Path 5—"collective outplacement," relative to the employment consequences of company crises, as is typically the case for workers involved in short-time work and furlough schemes.

[4] Compulsory communications are employment records that an employer must upload onto a national online registry whenever a new employment relationship is established, or an existing one is extended, transformed or terminated.

[5] The full profiling methodology is detailed by resolution No. 5/2022 of the ANPAL extraordinary commissioner.

[6] The full list of the officials interviewed is reported in Appendix A. Interviews 1 and 2 involved more than one subject at the same time.

[7] The choice of regional authorities to be included was also supported by the first interview with officials from the national agency, where they reported potential regional cases of interest for the digitalisation.

[8] The full list of the regional plans analysed is reported in Appendix B.

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APPENDIX A

List of interviews

Interview number	Administrative body	Position of the interviewee
1	National Agency for Active Labour Market Policies	a. General directorate b. Management of IT system
2	Labour Agency of the Autonomous Province of Trento	a. Presidency b. General directorate c. Public employment services' section for relationship with local businesses
3	Public Employment Services of Marche Region	Head office
4	Public Employment Services of Apulia Region	Official from the management of IT system
5	Department for Education, Training and Employment of Lombardy Region	General directorate
6	Department for Education, Training and Employment of Lombardy Region	Management of active labour market policies, business crisis and welfare benefits unit
7	Department for Education, Training and Employment of Lombardy Region	Management of IT system

APPENDIX B

List of regional implementation plans of the WEG program

Regions	Local dispositions
Piedmont	*r.r.g.*16–5369/2022
Aosta Valley	*r.r.g.*442/2022
Lombardy	*r.r.g.*6427/2022
Liguria	*r.r.g.* 526/2022
Autonomous Province of Bolzano	r.p.g. 464/2022
Autonomous Province of Trento	r.p.g. 1295/2022
Veneto	*r.r.g.*248/2022
Friuli-Venezia Giulia	*r.r.g.*467/2022
Emilia-Romagna	*r.r.g.*81/2022
Tuscany	*r.r.g.*302/2022
Umbria	*r.r.g.*149/2022
Marche	*r.r.g.*195/2022
Lazio	*r.r.g.76/2022*
Abruzzo	*r.r.g.*167/2022
Molise	*r.r.g.*89/2022
Campania	*r.r.g.*281/2022
Apulia	*r.r.g.*261/2022
Basilicata	*r.r.g.*433/2022
Calabria	*r.r.g.*169/2022
Sicily	r.r.g.83/2022
Sardinia	*r.r.g.*19–24/2022

Abbreviations: r.r.g., resolution by regional government; r.p.g., resolution by provincial government.

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