

## Public Employment Services and Vulnerable Youth in the EU: The Case of Rural NEETs

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### Abstract

The Covid-19 pandemic created unprecedented pressure to accelerate public employment services (PES) digitalisation across Europe. In fact, there is now a considerable amount of funding dedicated to that goal in broadband policy packages, such as the Recovery and Resilience Mechanism. This pressure for digitalizing PES presumes that its benefits outweigh the existing risks, regardless of citizens’ singularities, such as vulnerable young people going through the school-to-work transition. Bearing that in mind, and following a bioecological model framework, our article addresses two main goals. Firstly, based on a targeted literature review, we detail the challenges and possibilities posed by PES digitalisation for vulnerable young people in EU countries, which have been widely overlooked in the literature. We specifically argue that despite several practical advantages (e.g., releasing staff from time-consuming administrative tasks), PES digitalisation will only be beneficial for vulnerable young people if three interrelated challenges are taken into account: nurturing trust in institutions and digital tools, supporting digital transformation of PES institutional organization, and adopting a co-design lens for PES digitalisation. Secondly, using a knowledge integration approach, we describe a model for assessing PES capacity to digitally support rural young people not in employment, education, or training to enter the labour market. We conclude that the overemphasis on the expected advances of overall PES digitalisation must be followed by thoughtful consideration of PES digitalisation processes to ensure EU social inclusion targets for the younger generations.

### Keywords

digitalisation; EU; NEET; public employment services; rurality; school to work transition; young people

## 1. Introduction

Becoming a worker has turned into a longer and growingly uncertain process. These key features of the current school-to-work transition (STWT) were first depicted in seminal works in the 2000s (e.g., Walther, 2006) and have been confirmed by some of the most up-to-date scholarship in the field (e.g., Cuzzocrea, 2020; Pastore et al., 2021). Such trends were initially labelled by Walther (2006) as “yo-yo transitions.” Later, Savickas (2012) added the concept of “dejobbing” to highlight that stable, predictable, and decent career pathways are harder to establish in the 21st century, from an early age. More recently, Cuzzocrea (2020) coined the term “pinball youth” to describe those experiencing STWT non-linearity in the form of constant movements between different employment and training statuses.

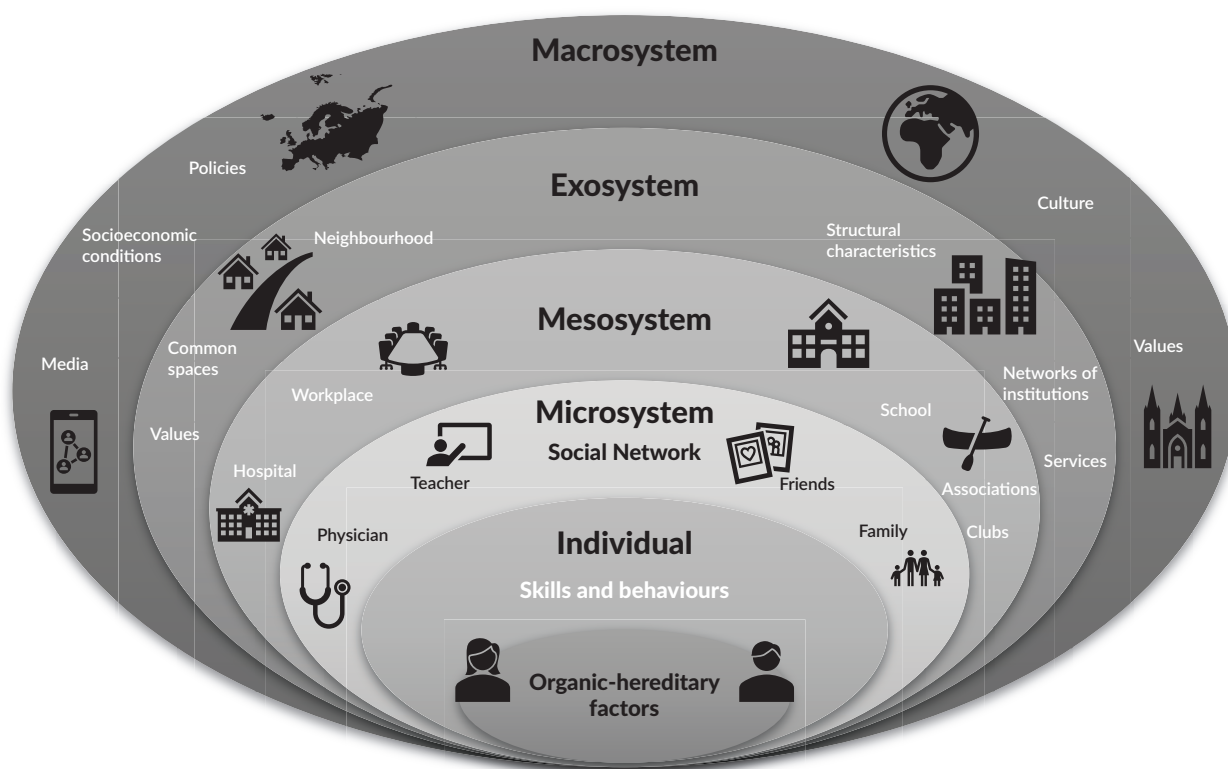
The burden of longer and more uncertain STWT lies mainly on the shoulders of the most vulnerable young people who are often in and out of the not in employment, education, or training (NEET) condition, such as women, low-qualified people, or migrants (Mascherini, 2019). STWT barriers faced by these groups are often tangible, such as the lack of financial resources to access tertiary education. Lower educational capital (Simões et al., 2022), language issues (in the case of non-native speakers; Reinke & Goller, 2022; Walsh, 2020), or social dispositions (e.g., traditional beliefs about men and women’s skills and professional development; Simões et al., 2022) are only a few of STWT non-tangible barriers further affecting these young people’s professional pathways. The manifestation of these barriers varies across territories and is particularly more intense in rural regions compared to (sub)urban areas (Simões et al., 2022). Territorial disparities in the STWT are well illustrated by the fact that, in 2022, the share of NEETs was higher in rural areas (12.60%) than in cities (10.90%). Importantly, this difference was more remarkable in Southern (e.g., Greece) and Eastern European countries (e.g., Romania)—by 10 to 20% points (Eurostat, 2023). Thus, NEET gaps based on the degree of urbanisation constitute one of the structural features of EU countries depicting longer and more complex STWT processes.

Recently, the literature has also been underlining the fact that STWT is increasingly happening outside the public employment services (PES) support framework, particularly in the case of the most vulnerable young people in Europe and most specifically in EU countries (Cuzzocrea, 2020). Three major arguments justify this trend. Firstly, PES service delivery—from outreach to job placement—is often mismatched with vulnerable young people’s skills, needs, and expectations (Shore & Tosun, 2019; Simões & Brito do Rio, 2020). This problem has several layers, including inadequate outreach strategies that are poorly coordinated with community-based organisations (Smoter, 2022), a lack of PES staff autonomy to adjust European (or national) level programmes to local job market constraints (Shore & Tosun, 2019), or training and job offers that fail to combine rising economic sectors with young people’s professional expectations (Simões & Brito do Rio, 2020). Secondly, in many EU countries (e.g., Italy), PES is being centralised or dismantled, especially in the most remote areas (Bello & Cuzzocrea, 2018). Thirdly, informal sources of support, including family, friends, or neighbours are turning into main resources for job searching (Bello & Cuzzocrea, 2018) particularly in EU rural areas (Simões et al., 2022). This creates a paradox at the policy level: PES risks becoming obsolete for those who should benefit the most from their resources. Moreover, as vulnerable young people drift away from PES support and become harder to engage with, PES officers end up giving preference to individuals who are relatively close to the labour market, a practice known as “creaming” (Bonoli & Liechti, 2018).

One of the responses to prevent the potential irrelevance of PES in the EU is the digitalisation of service delivery. By PES digitalisation we mean the adoption of digital (or electronic) service channels (European Union, n.d.) powered by different technologies from web platforms to artificial intelligence (Desiere & Struyven, 2020) to provide services to end-users, across all job search stages (from out-reach to job placement). The acceleration of PES digitalisation demanded by policymakers is, however, driven by an overarching, misleading belief that e-tools suffice to prevent young citizens' disengagement from institutions. Our article is, at first, a theoretical effort to systematize risks and opportunities associated with PES digitalisation for vulnerable young people in the STWT. We list and discuss the leading challenges and opportunities of PES digitalisation for vulnerable younger generations in the EU context using an ecological lens—the bioecological model (Bronfenbrenner & Morris, 2006). Then, we apply our ecological approach by proposing an assessment model of PES support for rural NEETs.

### **1.1. The Bioecological Model**

The bioecological model (Bronfenbrenner & Morris, 2006) aims at reading and understanding which factors and processes can impact people's personal development by considering the environments they are involved in, whether these environments are more proximal or more distant. At the heart of the model, we find the person, considered in terms of individual dispositions, resources, and environmental demands (Brown & Sumner, 2019). Starting from the person (individual level), the model develops into a progression of concentric circles that represent the systems impacting the individual. These are the microsystem (relationships between an individual and others—their social networks, such as family or peers); the mesosystem (the organisations that directly impact a person's life); the exosystem (environments in which an individual does not have direct participation, but, nevertheless, impacts them, such as the working environment of a young person's parents); and the macrosystem (values, public policies and laws, and cultural norms). These systems mutually influence each other and are operationally considered as levels of analysis. For our purposes, the use of the bioecological model has two important advantages. Firstly, it provides an appropriate grid to respond to complex, "wicked" social problems, i.e., those that intersect multiple policy domains, do not conform to linear solutions, and require inter-institutional trust and collaboration to achieve efficient on-the-ground responses (Christensen, 2015). The impact of PES digitalisation on vulnerable young people is a good example of such problems. Secondly, the bioecological model does the groundwork for the use of a comprehensive measurement of variables in interdisciplinary or transdisciplinary research and provides data upon which to develop adequate interventions and policies (Logsdon & Gennaro, 2005; Scales, 1991). Figure 1 summarises the bioecological model:



**Figure 1.** The bioecological model. Source: Adapted from Santinello et al. (2009).

## 2. Methodological Note

Our methodological approach combined a targeted literature review with a knowledge integration approach. We conducted a targeted literature review to address our first research question: How is PES digitalisation in EU countries integrating existing opportunities and challenges for targeting vulnerable young people going through the STWT? A targeted or non-systematic literature review is an informative, rather than wide-ranging, review of the literature on a topic. This type of literature review is appropriate to develop an in-depth analysis of a specific research question, to develop a theoretical or methodological argument or to locate patterns and trends that will support further research efforts. Given its exploratory nature, a non-targeted literature review may or may not follow a research protocol (Gough et al., 2012; Huelin et al., 2015).

We kept our targeted review open, with only three guidelines: (a) include all articles published after the year 2000; (b) include both scientific and policy reports; and (c) consider different disciplinary approaches to the topic (such as those stemming from e-government, public administration, and social sciences literature).

Our second research question was the following: How are those same opportunities and challenges arising from PES digitalisation being addressed in the case of rural NEETs? To tackle this research question, we combined the targeted review analysis with the results stemming from the project TRACK-IN (PES tracking effectiveness in supporting rural NEETs). This project aims to assess the effectiveness of different PES support models (predominantly digital, face-to-face, or mixed) in rural NEETs' employability outcomes. This combination of data requires a knowledge integration approach, meaning the process of synthesizing

multiple knowledge models or knowledge streams into a common model (representation; Linn, 2006). Knowledge integration is commonly needed in interdisciplinary and transdisciplinary research initiatives addressing complex social problems. This ensures that relevant scientific outputs and outcomes can be further exploited in scientific (Rosa et al., 2021) and policy arenas (Kuhmonen & Kuhmonen, 2015). In this case, our approach required the intersection between existing, dispersed knowledge points organised through a narrative literature approach and the empirical findings of a research project focussing on a specific group of vulnerable young people.

### 3. Opportunities and Challenges of PES Digitalisation for Vulnerable Young People

In the following subsections, we present three interrelated arguments supporting our position for a more thoughtful consideration of PES digitalisation aiming at vulnerable young people. Each of these arguments constitutes a specific challenge for the appropriate digitalisation of PES in the context of the STWT situated at specific levels of the bioecological model. We depart from core conceptual definitions which are key to understanding our central argument. Then, we present the opportunities for young people stemming from PES digitalization, before detailing what we see as the unforeseen challenges stated in the heading of each subsection.

#### ***3.1. Individual and Microsystem Levels: PES Digitalisation Aiming at Vulnerable Young People Is not Aiming Enough at Raising Trust in Institutions and Digital Tools***

At the more concentric layers of the bioecological model—the individual and the microsystem levels—we argue that PES digitalization is ignoring the dimensions of trust in institutions and digital tools. Trust is understood as the perception that an agent will help achieve an individual's goals in a situation characterised by uncertainty and vulnerability (Lee & See, 2004). Trust requires, therefore, two elements: accepting vulnerability and benevolent expectations regarding the intentions/behaviour of another (Fledderus et al., 2014). While blind trust can be naive or risky, some degree of trust is a building block for state institutions to migrate from obsolete, bureaucratic governance models, oriented by supervision and control, to new public governance models led by cooperation between citizens and public organisations (Fledderus et al., 2014; Wilson & Mergel, 2022). Trust is, thus, a lubricant enabling societies to function (Arrow, 1975; Putnam, 1993). Moreover, trust reduces uncertainty, and facilitates decentralisation and adaptive behaviour (Lee & See, 2004), while improving public services efficiency (Christensen et al., 2020). In addition, trust produces intrinsic and extrinsic outcomes. The former lies in the improvement of citizens' personal well-being or quality of life and the second lies in the fact that it enables transactions to occur (between persons, network partners, and organizations) with much lower costs than in the case of relationships dominated by mistrust. Finally, trust acts as a basis for stabilizing the expectations of the parties involved (Nooteboom, 2005).

PES digitalisation has been brought forward as a powerful leeway to improve several mechanisms to increase young people's trust. To begin with, outreach to target groups such as NEETs can become more effective, particularly in more remote areas where available PES services are shrinking (International Labour Organization, 2021; Santos-Brien, 2018). Moreover, the use of digital tools has the potential to update language modes and add relevant communication channels (e.g., social media) used more purposefully with young people (from reaching out to job-finding support; Santos-Brien, 2018).

The practical advantages of PES digitalisation for targeting young people are not enough to secure trust at two different levels: institutional trust and trust in automation by young people. Regarding institutional trust, major international surveys, such as the OECD Trust Survey have shown that about half of the citizens trust public services. There is, however, evidence that trust in public institutions varies by type of service (OECD, 2021) and is lower among younger, less educated, and more deprived citizens (Haerpfer et al., 2022). Nevertheless, vulnerable young people's trust in PES across the EU is an irrelevant topic in the literature. There are only a few works indirectly showing how NEETs (e.g., Simões & Brito do Rio, 2020) tend to mistrust these services, as part of a process of generalised institutional disengagement (Cuzzocrea, 2020). The existing alternatives to PES for vulnerable young people are mainly their informal personal networks at the microsystem level of the bioecological model, which often lock them in cycles of precarious, insecure, and low-paid jobs, hampering their access to decent employment (Almeida & Simões, 2020).

Engaging vulnerable young people with PES must account for trust in digitalisation as well. Hoff and Bashir (2015) propose trust in digitalisation as a tridimensional concept encompassing dispositional trust, seen as the individual's overall inclination to trust digitalisation regardless of contexts or specific systems; situational trust, which refers to the variability of trust across contexts; and learned trust, corresponding to an operator's evaluations of a system based on past interactions. All dimensions of trust in digitalisation are challenged by vulnerable young people's skills and access to automated tools in the PES context. Indeed, the share of slow adopters of digital tools in relation to PES is disproportionately higher among vulnerable groups (e.g., migrants, low-skilled, and rural young people; International Labour Organization, 2021). The slow adherence to digital tools by these groups is largely fuelled by digital inequalities affecting the formation of trust in automation (e.g., Pérez-Morote et al., 2020). The levels of dispositional trust in automation among most vulnerable young people are explained by low levels of basic digital skills, in terms of finding, evaluating, using, sharing, and creating content using computers or smartphones (Ebbers et al., 2016). This blocks young people's ability to interact successfully with automated systems, to build their situational trust and, therefore, to accumulate positive experiences leading to learned trust. Concomitantly, institutions fail to explore the most appropriate digital channels to increase these interactions (Ebbers et al., 2016) or to find the right balance between analogue and digital support leading to trustworthy service deliverance in specific domains, such as STWT (International Labour Organization, 2021; Santos-Brien, 2018). Therefore, we must be suspicious of the overwhelming claims that young people are, by definition, more willing to adopt automated solutions in the context of e-government. There are works showing that young people are more inclined to adopt automated solutions (e.g., Zheng & Schachter, 2017), however, other reports claim the opposite (e.g., Pérez-Morote et al., 2020), meaning that the picture is much more nuanced and mediated by the conditions to trust in public services automation.

### ***3.2. Mesosystemic and Exosystemic Levels: Limited Incorporation of a Digital Transformation Perspective in PES Service Delivery for Supporting the School-To-Work Transition***

Despite e-government or public services digitalisation literature recommendations, at the intermediate levels of the bioecological model, the proposed efforts for PES digitalization have seldom been driven by a digital transformation stance (Eom & Lee, 2022; European Union, n.d.). Digital transformation corresponds to an iterative shift of public service delivery driven by the adoption of digital solutions covering artefacts, work processes, and core values (Eom & Lee, 2022). In the case of PES, this means integrating a digital transformation view from outreach to job placement, while allowing young people to shape service delivery.

The digital transformation concept enables us to understand if PES digitalisation significantly changes service delivery models for young people in the STWT. Service delivery models depict how a public service typically organises public encounters, meaning the purposive interaction between citizens and public officials as they communicate to transact matters of some mutual interest (Goodsell, 1981). In the STWT process, these interactions comprise information exchange, counselling, or issues of control or constraint (e.g., unemployment benefits monitoring) tailored by organisational channels, artefacts, and processes (Andersson et al., 2022; Lindgren et al., 2019).

At the service provision level, PES digitalisation efforts have often stressed undeniable efficiency gains, by reducing operative or administrative costs (International Labour Organization, 2021; Santos-Brien, 2018), releasing staff from administrative tasks and, thus, minimizing the time they spend in responding to routine questions, while increasing their availability to be face-to-face with those in greater need (International Labour Organization, 2021). In addition, it is expected that PES digitalisation will be able, in the future, to prevent biases in decision-making stemming from staff intervention. However, that depends on more reliable databases and sources, which in the short-term seems to be unattainable, as well as on an optimal combination of analogue and digital interactions with vulnerable young people (Desiere & Struyven, 2020).

For a long time, public encounters were organised according to a provider-centric model of service delivery. From this bureaucratic, administrative view, the citizens' emotional, cognitive, sensorial, and behavioural experiences when engaging with public services were determined in a unidirectional way by public organisations (Fledderus et al., 2014; Trischler & Trischler, 2021). This vision has been shifting over the past 20 years to more complex conceptualisations involving bidirectional or multidirectional interactions in public encounters. The user-centred perspective envisages that the citizens' experience of public service delivery must be seen as subjective, context-specific, and phenomenologically determined, representing an outcome of their service provision process. Consequently, the service provider responds to multiple stimuli, some of them beyond its control to form citizens' experiences of public encounters (Trischler & Trischler, 2021).

Decades ago, when the provider-centric perspective was the undisputed service delivery model, public encounters were analogue. Beginning in the 1980s and 1990s—the PC era—and with the arrival of Web 1.0, public encounters have increasingly blended analogue and digital interactions along multiple media and channels, across different settings, including in PES (Andersson et al., 2022). Current hybrid public encounters across public services domains are believed to accelerate the adoption of person-centric or service ecosystem perspectives, including in PES. From a bioecological perspective, this means a significant shift from PES detached from young people's direct intervention happening at the exosystem level to direct involvement with service provision, which is a more proximal type of interaction taking place at the so-called mesosystem level. It is, however, uncertain—to say the least—how the listed operational advantages of PES digitalization lead to a more fundamental change, a desired digital transformative perspective that inspires renovated service delivery models which are closer to and tailored to young people's needs. Moreover, there is a risk of generalising the roll-out of recently developed profiling tools powered by artificial intelligence. Profiling tools are very appealing, as they can increase the speedy delivery of services while providing new insights and predictive data about job seekers (Desiere & Struyven, 2020). However, these tools are still far from replacing the benefits of co-developed, user-centred approaches, mainly because they reinforce existing patterns of discrimination, fail to match job seekers with the most adequate programs and, ultimately, propagate standardized views of citizens based solely on their behaviours and attitudes (Sztandar-Sztanderska & Zielińska, 2020).

In a nutshell, information is still missing on if, how, and how much PES digital transformation is driving an explicit agenda to change service delivery models or if it constitutes an implicit principle that is randomly incorporated by PES officers and agencies. Such knowledge is key to understanding the effects of PES digitalisation on vulnerable young people, particularly when taking into account the spreading of powerful profiling tools which are not as sound as they seem.

### ***3.3. Macrosystemic Level: Absence of a Co-Creation Paradigm for Digitally Transforming PES for Vulnerable Young People in the School-To-Work Transition***

The lack of an appropriate collaborative methodology involving all stakeholders hampers vulnerable young people's trust in institutions (Fledderus, 2015; Fledderus et al., 2014) and digital solutions (Jalonen et al., 2021; Mulvale et al., 2018), slowing down PES digital transformation for better supporting STWT (Santos-Brien, 2018). Co-creation is a route to address these gaps by engaging multiple stakeholders—from vulnerable young people to decision-makers—in jointly creating public service value, meaning the intended outcomes delivered by a given service (Jalonen et al., 2021; Trischler & Trischler, 2021). Co-creation constitutes, therefore, a shift in PES culture and values and young people's representation from users or consumers of public services to citizens, fully embodied by duties and rights, including the right to contribute to the development of new institutional responses (Jalonen et al., 2021). Thus, co-creation allows for a change in the conditions of the bioecological model's macrosystem level.

The political and financial macrosystemic conditions seem to favour the spread of co-created PES digitalisation models. The recent health restrictions imposed by the Covid-19 pandemic have led to an unprecedented demand for PES digitalisation across European countries (International Labour Organization, 2021). Subsequently, considerable investments have been announced to speed up PES digitalisation in the upcoming years. A good example of this is the Recovery and Resilience Mechanism put together by the EU to respond to the negative social and economic effects of the Covid-19 crisis. Several national plans approved under this mechanism propose the roll-out of significant funding for PES digitalisation in countries such as Greece, Italy, and Spain (Simões, 2022). For instance, the Italian plan includes €200 million for the reform of PES, including digitalisation priorities such as improving the interoperability of PES at regional and national levels or improving the structure and content of online channels to interact with citizens (Government of Italy, 2021). The Greek plan seeks for a more comprehensive reform of PES, with the creation of a new authority, the Hellenic Manpower Employment Organisation. This broad reform encompasses specific measures for improving the effectiveness of the support offered to young people's transition to the labour market, including the generalisation of PES digital tools (Government of Greece, 2021).

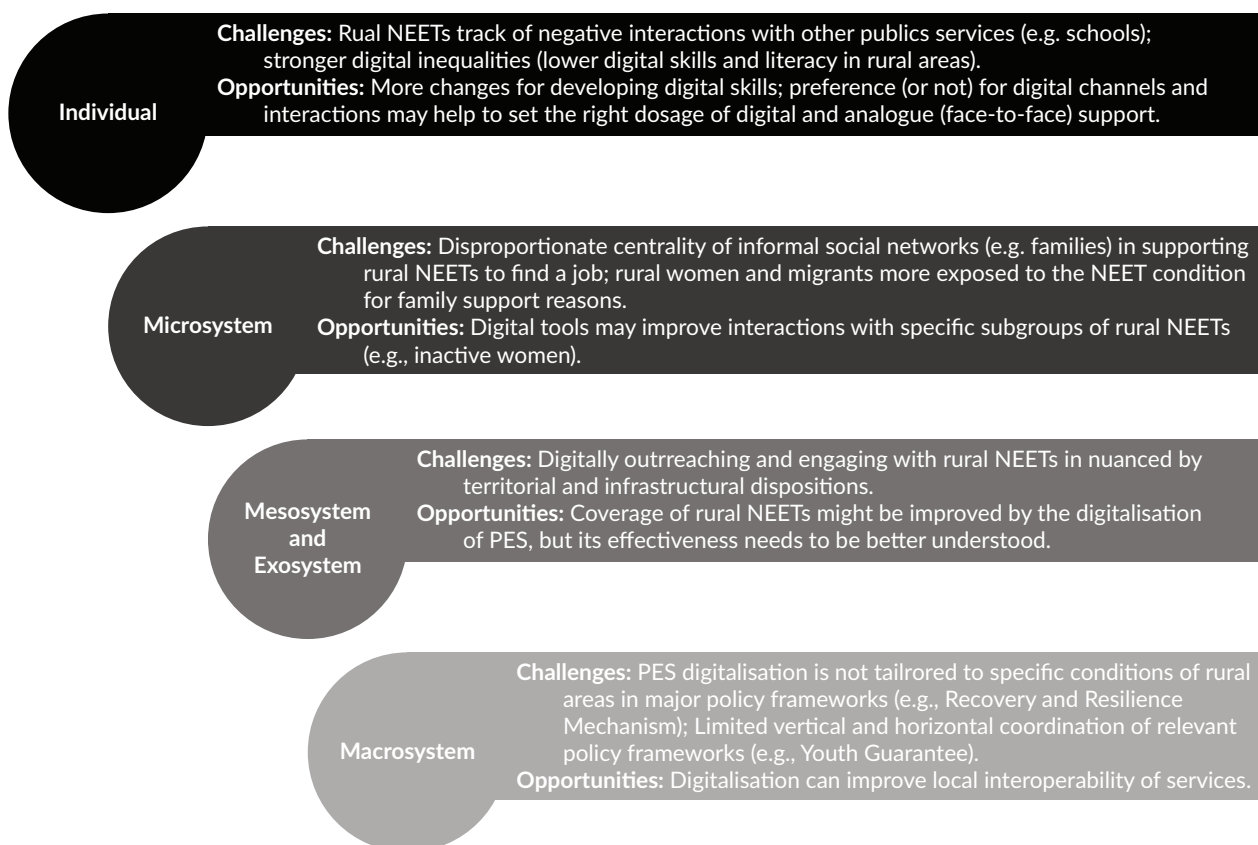
A leading techno-optimism perspective emphasises the immediate gains through PES digitalisation at all levels for vulnerable young people and is supported by a considerable financial envelope. However, beyond these short-term advantages, the opportunity to fully transform PES identities using a co-creation approach involving multiple actors and, most importantly, young people, seems to be missing from EU policy and financial instruments. Thus, what exactly are PES missing for not following a co-creation lens for service development? Co-creation enables the adoption of a strengths-based approach to service design. Instead of interpreting young people's experiences according to norms and practices set by adults, co-creative design efforts focus on their strengths, resources, and opportunities, without ignoring risks and challenges



(Lindgren et al., 2019). Moreover, co-creation conveys a powerful, unusual message: Vulnerable young people can have some degree of control over their own lives and decisions, instead of being driven by fate or luck (Fledderus et al., 2014; Jalonen et al., 2021). In the end, co-creation addresses the very limited implementation of participatory methodologies in designing digitally transformed public institutions (Desiere et al., 2019), including in the PES domain (European Union, n.d.). In sum, digital co-creation has outstanding potential for increasing citizens' intentions to participate in co-design processes, facilitating direct interactions between stakeholders, improving decision-making and power sharing, or helping to find the right balance between analogue and digital tools delivery (Jalonen et al., 2021). Nevertheless, there have been very few attempts (e.g., Jalonen et al., 2021) to test the potential benefits of services digital co-creation with vulnerable young people. This caveat is justified by multiple barriers. These include inadequate co-creation activities that mirror formal decision-making processes or that end up seeking experiences that only confirm the status quo (Jalonen et al., 2021), rigid design protocols following linear steps (Mulvale et al., 2018), or ignoring the power differentials across the co-creation process, particularly in the case of PES, where job seekers are expected to conform to certain rules (Fledderus, 2015).

#### 4. Applying a Model of PES Digitalisation Challenges and Opportunities to Rural NEETs

We believe that the balance between challenges and opportunities in PES digitalisation for young people can be better captured by focusing on an illustrative example. Figure 2 synthesises that sort of interaction for rural NEETs, from a bioecological perspective, adding the specific, relevant factors by the different layers of



**Figure 2.** Key factors for effective PES digitalisation for rural NEETs from a bioecological perspective.

this model that must be accounted for. The presented model inspired by the bioecological framework (Bronfenbrenner & Morris, 2006) is, therefore, relevant to inspire future assessment of PES delivery effectiveness, contributing to informing policies and governance at different levels.

At the individual level, which covers personal characteristics, fostering rural NEETs' trust in PES must be a major tenet of the successful digitalisation of these services. In the countryside, there are specific nuances shaping trust in public institutions. Overall, younger generations are raised in communities tightly connected by very strong informal ties. Thus, their personal decisions and behaviours, including those associated with training and employment, are often driven by dominant, collectivistic beliefs. According to these beliefs, institutions are frequently seen as outsiders and their support raises scepticism (Simões et al., 2022). Moreover, many vulnerable young people in these communities, particularly rural NEETs, have a record of negative interactions with other public institutions due to school failure or compulsory monitoring by welfare services (e.g., child protection committees; Simões & Brito do Rio, 2020). Adding to this, rural young people show limited digital skills and literacy (Neagu et al., 2021), especially when compared with their urban counterparts (Tomczyk, 2024). All these specific individual challenges posed to digital interactions from PES with rural NEETs can be tempered by other individual features, such as enhanced opportunities for younger generations to interact and learn digital skills or even their preference for digital means for establishing first contact with services. Nevertheless, this trend is not uniform. Indeed, evidence from Poland shows that young people in rural areas use internet services less frequently compared to young people living in urban areas (Tomczyk, 2024). As some policy reports have previously shown (e.g., International Labour Organization, 2021), these discrepancies in the use of digital tools flag that attuning to the individual features of rural NEETs is more a matter of the dosage of digital and analogue support used in service delivery rather than a question of using digital tools or not. In other words, looking for the right blend between digital and analogue support in PES may constitute, therefore, an opportunity for delivering person-centred services at the individual level.

At the exosystem level, it is important to state that such informal ties (parents, peers) have a disproportionate centrality in supporting rural NEETs in finding a job. Indeed, there is evidence that support provided by these sources is more relevant in territories where there is a shortage of institutional support for the STWT, such as rural areas, in countries such as Italy (Cuzzocrea, 2020). Moreover, these relationships also play a pivotal part in strengthening important psychological dimensions of, for instance, Portuguese rural NEETs' employability, such as self-efficacy (Simões et al., 2017) or hope (in terms of personal agency and setting goals; Simões, 2023). The existent risk here is a generational perpetuation of precariousness and low-quality jobs, as many of the most relevant social ties from rural NEETs already come from disadvantaged backgrounds. These effects might also intersect with gender, with larger shares of young women in rural areas, often with a migrant background, fitting into the inactive NEETs' profiles, compared to urban areas, mostly to undertake care duties within families (O'Higgins & Brockie, 2024). Interestingly, at least one report shows that inactive rural NEETs during the pandemic acknowledged a greater increase in hope levels due to PES support, compared to unemployed rural NEETs (Simões, 2023). This result might imply that digital tools can, in part, play a role in tailoring service delivery to subgroups of rural NEETs who are more constrained in the transition to the labour market by strong social ties or family duties, such as inactive women or migrants.

At the mesosystem and exosystem levels, PES digitalisation poses several challenges regarding how public encounters in rural areas might be shaped by digitalisation, starting with access to services. Access to PES is

deemed essential by rural NEETs, being associated with proxy measures of employability, such as satisfaction with life (Mazzochi et al., 2024). Here, it is important to highlight that access to PES in rural areas is an issue from early on, in the process of supporting the transition to the labour market, when services try to reach and engage with young people, as evidenced in Poland (Smoter, 2022). Digitalisation may further complicate the initial approaches to rural NEETs, as services might confuse greater coverage, which is indeed an add-on of using a digital approach in PES, with engaging and enrolling rural NEETs in counselling, job matching, and/or training activities. Moreover, digital coverage of PES will differ from region to region, based on the existing infrastructure (e.g., Wi-Fi quality) as well as on access to good quality digital equipment. These specific features demand more nuanced approaches to the issues of coverage of, outreaching to, and engaging with rural NEETs, including (a) outreaching programmes blending PES and the third sector efforts (Smoter, 2022), (b) balanced use of digital and analogue support (International Labour Organization, 2021), or (c) tailoring approaches to different profiles of vulnerable groups (e.g., migrants; European Commission, 2019). Altogether, these lines of development will uphold a true digital transformation of PES in rural areas, one that elevates service delivery from an old-fashioned bureaucratic approach to a service ecosystem person-centred perspective (Trischler & Trischler, 2021). This also means that from a bioecological perspective, rural NEETs' interactions with PES will occur more often at the mesosystem level, where individuals are engaged with a given service, than at the exosystem, where services affect personal lives without direct interactions.

At the macrosystem level, there are specific governance and policy issues which may influence the effectiveness of PES digitalisation for rural NEETs. Major policy instruments, such as the national plans under the Recovery and Resilience Mechanism include important reforms and investments dedicated to the digitalisation of PES in countries with high rural NEETs rates (e.g., Greece). However, these reforms and investments are not being territorialised, meaning that PES digitalisation is not being tailored according to the needs and features of different EU regions, including rural ones (Simões, 2022). Moreover, guidelines for PES digitalisation must be streamed into the major EU active labour market policies' framework, such as the Youth Guarantee and coordinated with the respective national plans. This type of vertical coordination is still far from being achieved (Shore & Tosun, 2019), not to mention horizontal coordination between different branches of public governance that intersect with the transition to the labour market (e.g., education, welfare, etc.). Still, digitalisation policies may contribute to a more purposive (horizontal) interoperability of public services and shape more effective interventions at the local level, although this raises concerns regarding personal data protection.

## 5. Conclusions

Public policies and services must adapt to the growing complexity of STWT, to avoid inefficiencies or irrelevance. PES illustrate well the mismatch between service provision and citizens' needs. The digitalisation of services, particularly from PES, may constitute one of the pathways to respond to young people's job market inclusion needs, thus, counteracting their growing withdrawal from institutional support (Cuzzocrea, 2020). By adopting a bioecological lens, we have discussed how PES digitalisation encompasses challenges and opportunities at the individual, organisational, and structural (meaning policies and culture) levels that need to be properly addressed and balanced. At the individual and microsystemic levels, nurturing young people's trust in PES and digital tools is an important building block for PES transition to fully digitalised services. Simply relying on the belief that younger generations are more inclined to use digital tools and channels (e.g., social media) than older people as if they were all ready for digitalised PES, is only wishful

thinking. While young people do make greater use of digital tools and channels when approaching PES, it is also clear that the most vulnerable young people face greater constraints, such as stable Wi-Fi connections or show lower digital literacy (International Labour Organization, 2021), particularly in rural areas (Tomczyk, 2024). At the organisational level, encompassing the exosystemic and mesosystemic layers of the bioecological model, it is important to notice how PES digitalisation has the potential to release staff from administrative, time-consuming tasks and improve their availability for those needing more attention. However, freeing up staff from bureaucratic duties must come with guarantees that services will not simply be downsized; that the quality of public encounters is improved by finding the proper balance between digital and face-to-face interactions (Desiere et al., 2019); and that the staff is prepared to deal in greater depth with the complex social and psychological needs of vulnerable people (European Commission, 2019). All of these requirements are particularly significant in rural areas, where PES are at perennial risk of being shut down and staff call for greater autonomy to adjust service provision to rural young people's needs (Shore & Tosun, 2019). At the macrosystemic level, a new culture of co-creation is needed to ensure PES digitalisation design and delivery reflect young people's participation and views. Only such an approach will leverage the current outstanding EU political ambitions and financial investments being channelled through instruments such as the Recovery and Resilience Mechanism with a sound PES digitalisation that meets social inclusion requirements (Jalonen et al., 2021). Moreover, in the case of rural NEETs' STWT, it is fundamental that important EU policy frameworks, such as the reinforced Youth Guarantee and the Recovery and Resilience Mechanism, define more targeted active labour market policies, including those involving PES digitalisation, for rural areas. That is not the case in Southern countries showing stronger urban/rural asymmetries in labour market integration (Cefalo & Scandurra, 2021; Simões, 2022).

In sum, an excessive techno-optimism on PES digitalisation improved efficacy and results proclaimed by political discourses must be tempered with a more thoughtful consideration of the processes leading to greater and more appropriate coverage of these services for vulnerable groups of young people, while avoiding important, negative side-effects (e.g., institutional mistrust). Only this approach, based on an ecological consideration of multiple interfering factors on PES digitalisation will ensure EU social inclusion targets.

This position article is an exploratory effort with inherent limitations. We followed a targeted literature review approach, which is appropriate for proposing new theoretical and research advances. However, targeted literature reviews are more prone to self-selection bias. Moreover, we have not discussed how PES digitalisation affects different processes (e.g., reach-out) or staff tasks (e.g., providing information) when addressing vulnerable young people. Although these lines of inquiry were outside this article's scope, it is important that future reports offer a more nuanced discussion on how PES digitalisation affects distinct levels of service provision.

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### **Conflict of Interests**

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