NEETs and Youth Guarantee Registration: Examining the Link to Past Undeclared Work

Rocca, Antonella; Agahi, Omeed; Beilmann, Mai; Bettencourt, Leonor; Edisherashvili, Natalia; Marta, Elena; Mazzocchi, Paolo; O'Higgins, Niall; Pizzolante, Federica; Prieto-Flores, Òscar; Rodrigues, Ricardo Borges; Rosa, Miriam; Simões, Francisco

ARTICLE

NEETs and Youth Guarantee Registration: Examining the Link to Past Undeclared Work

Antonella Rocca [1], Omeed Agahi [2], Mai Beilmann [3], Leonor Bettencourt [4],
Natalia Edisherashvili [5], Elena Marta [6], Paolo Mazzocchi [1], Niall O'Higgins [7,8],
Federica Pizzolante [1], Òscar Prieto-Flores [2], Ricardo Borges Rodrigues [4],
Miriam Rosa [4], and Francisco Simões [4]

[1] Department of Management and Quantitative Studies, University of Naples "Parthenope," Italy
[2] Department of Pedagogy, University of Girona, Spain
[3] Institute of Social Studies, University of Tartu, Estonia
[4] Instituto Universitário de Lisboa (ISCTE), CIS-Iscte, Lisboa, Portugal
[5] Institute of Education, University of Tartu, Estonia
[6] Research Centre on Community Development and Organisational Quality of Life (CERISVICO), Università Cattolica del Sacro Cuore, Italy
[7] International Labour Organization, Switzerland
[8] Department of Economics and Statistics, University of Salerno, Italy

Correspondence: Antonella Rocca (antonella.rocca@uniparthenope.it)

Abstract

A myriad of factors influence young people's vulnerability and the likelihood of becoming NEET. Moreover, the share of young NEETs in European countries is very high. Institutional and governmental initiatives aiming to promote the inclusion of young people in the labour market are of paramount importance. However, the socio-economic conditions and the level of vulnerability alongside other socio-demographic characteristics are likely to influence the extent to which young people ultimately engage with such programmes. The current study ascertains whether previous experience of informal work increases young people's propensity to participate in programmes offered by public employment services, such as the Youth Guarantee Programme. Indeed, we hypothesise that the experience of working without a contract makes young people more aware and concerned about the risk of remaining trapped in a spiral of vulnerable jobs. To test this, we used data from a survey of 4,273 NEETs and focused on Italy, Portugal, and Spain. The study's findings contribute to a better understanding of the relationship between past experience in the informal economy and engagement with the Youth Guarantee. Besides contributing to the literature, the study can also contribute to policy making and practitioners' assessment of the relative efficacy of Youth Guarantee initiatives among different subgroups of young NEET and tailor the interventions accordingly.

In other words, the outcomes of this study should signal to governments that greater efforts should be made to implement initiatives reaching out to young people, as well as acting to reduce the precariousness in job contracts, which negatively impacts their quality of life.

1. Introduction

Although unemployment has fallen considerably since the pandemic in many European countries, the share of young people not in employment, nor in education or training (the NEET rate) is still high, especially in Mediterranean countries (Eurostat, 2023). The causes of young people's higher vulnerability are manifold (Caroleo et al., 2020; Pastore, 2015), including the lack of work experience, and translate into limited job opportunities and access to welfare benefits. To those who do find a job, usually, the work conditions are worse compared to those of older individuals (Pastore, 2023, p. 1; Shehu & Nilsson, 2014, p. iii; United Nations Department of Economic and Social Affairs, 2003, p. 3). This is also because they lack experience in the labour market, which makes it more difficult to select the best job opportunities. Therefore, younger people have a higher probability of entering the job market via the informal economy, as a means of rapidly gaining the experience and the skills typically required from employees. According to the International Labour Organization's (2023b, p. 13) definition, informal employment "refers to working arrangements that are de facto or de jure not subject to national labour legislation, income taxation, or entitlement to social protection or certain other employment benefits (e.g., advance notice of dismissal, severance pay, paid annual or sick leave, and so on)." The informal economy is a complex reality and involves many types of activities, workers, and firms, such as subsistence activities, illegal activities, and legal activities with evasion from formal regulation. For the purposes of this article, we will refer to informal employment as jobs not regulated by formal contracts, following the definition provided by Ohnsorge and Yu (2022).

In some Eastern and Mediterranean countries, the prevalence of informal work is still high in comparison to Northern and Central European countries (Hazans, 2011). This might be partially explained by companies' deciding to escape the bureaucratic burden and the high costs of formality (de Soto, 1989; Ohnsorge & Yu, 2022). Sometimes, however, this is also the result of low-paid workers wanting to increase their income in the short term (Anselmo et al., 2020; Jütting & de Laiglesia, 2009).

Accepting work without a contract might imply a lack of trust in institutions, as it means waiving social security and other recognised worker rights. The strong link between the NEET condition and the lack of trust in institutions is well established in the economic literature (Alfieri et al., 2005; Caroleo et al., 2020). Building trust in institutions is essential for the legitimacy of governance institutions and a functioning democratic system.

Among the institutional and governmental initiatives aiming to promote the inclusion of young people in the labour market, while addressing the specific problem of young people in a NEET situation, the Youth Guarantee (YG) is certainly one of the most important programmes at the European level. Introduced in 2014 in all the EU countries with a regional youth unemployment rate higher than 25%, it consists of a set of active labour market policies aiming to support young people in finding a job or to offer training and other

related services to improve their skills (Escudero & López Mourelo, 2017). YG aims to offer a smoother transition from school to work, to support labour market integration, and to make sure that no young person is left behind. The scheme should ensure that all young people under the age of 25 receive a quality offer of employment, continued education, apprenticeship, or traineeship within four months of losing a job or leaving formal education. The YG initiatives extend to young people with past experience of informal employment or, more generally, to those with low-quality jobs searching for decent job opportunities. Indeed, these young people might show a higher proclivity to engage with YG, as they are likely more aware of the difficulties of overcoming a spiral of vulnerable jobs. The deployment of active labour market policies, specifically under the YG, has been significant in recent years. Even so, their implementation has not proceeded at the same pace across EU countries (Cabasés Piqué et al., 2016; Escudero & López Mourelo, 2017). Specifically, the number of policies and instruments has been increasing to a greater extent in some countries than others, further widening the gap between the most advanced countries and the less so within the EU (Pesquera Alonso et al., 2021).

Previous studies assessing the efficacy of youth active labour market policies have observed positive results in some countries, such as Sweden and Norway (Carling & Larsson, 2005; Hall & Liljeberg, 2011), and for specific groups of young people in Italy (O'Higgins & Pica, 2020). In particular, the contribution from O'Higgins and Pica (2020) found that the YG in Italy significantly increased temporary hires, primarily of young women. However, Effie et al. (2023) highlighted that the disparities and outcomes of the YG are not solely due to institutional or operational misapplications but are also influenced by regional economic conditions, and more specifically the status of welfare state regimes (Tosun et al., 2019). Nordic countries have typically developed more instruments than post-communist and Southern countries (Walther, 2006).

In any case, despite all the other reforms and active labour market policies, the YG is among those focussing specifically on young people with the aim of supporting them in finding a job. This includes education, training, and job opportunities and is the only one coordinated at the EU level (Caliendo & Schmidl, 2016).

In this article, we hypothesise that having previous work experience without a contract followed by unemployment may induce young people to ask for help from institutions (Simões et al., 2022). Accordingly, we expect young people in such a condition to be more motivated to engage with and register for the YG offered by public employment services (PES).

Since 2014, more than 3.5 million young people have registered in the YG each year and accepted an offer (European Parliament, 2023). Many of the efficacy assessments of the YG included young people under the age of 25, as the first YG programmes in some countries only targeted 16–24-year-olds. However, in 2020, to tackle the effects of the socio-economic crisis stemming from the Covid-19 pandemic, the European Commission developed a new programme: the Reinforced YG, which aimed to reach all young people under the age of 30. This new programme also reinforced the adoption of tailored and individualised approaches, providing young people with the appropriate levels of guidance (European Commission, 2023). Thus, with the new framework of the Reinforced YG (European Union, 2020) and the extension of the YG to 25–29-year-olds, there is the need to further examine the impact of such interventions on these older youth and explore possible differences between age groups. Furthermore, the assessments carried out to date have taken into account whether registered young people have found a job or participated in any intervention offered by PES (see Cabasés Piqué et al., 2016; Escudero & López Mourelo, 2017; Pesquera

Alonso et al., 2021). However, there are no up-to-date studies that are aware of providing evidence on the specific characteristics of youth who are more likely to enrol in the YG programme, specifically regarding a previous working experience within the informal economy. Our study thus aims to address this gap and test the hypothesis that prior NEET involvement in the informal economy is associated with a higher propensity to join *ad hoc* programmes, such as those under the YG.

2. Data

Data for the analysis was gathered through a survey realised within the activities of the EEA Grant project TRACK-IN—Public Employment Services Tracking Effectiveness in Supporting Rural NEETs. The project started in 2021 and involved Bulgaria, Estonia, Italy, Lithuania, Portugal, and Spain. The survey was conducted between November 2022 and January 2023. Although the target population was initially represented only by rural NEETs aged between 25 and 29 years old, it was subsequently extended to include young people living in urban areas of the same age. The questionnaire administration was organised with the help of the PES and through social networks. It involved, therefore, mainly those registered with the PES. The questionnaire was administrated through the internet using Qualtrics software. Before starting with the survey, respondents gave their consent to the treatment of the data provided. The anonymisation of the responses was ensured by the project statistical team conducting the survey. Personal information useful in the identification of the respondents was removed from the dataset and replaced by a progressive number.

In total, 4,273 NEETs participated. Almost all of them were registered with the PES (96%), but those registered for the YG were only 39% of the whole sample, without significant differences between rural and non-rural NEETs. The majority of them (81%) were from Spain, 12% from Portugal, 4% from Italy, and the remaining 3% from other countries (Bulgaria, Lithuania, and Estonia). Due to the low share of respondents from Bulgaria, Estonia, and Lithuania, we decided to focus our analysis only on the Mediterranean countries of Italy, Spain, and Portugal, more homogeneous regarding the labour market characteristics and welfare regimes. The countries included in the analysis all had a significant share of NEETs and people working in the informal economy. According to Eurostat (2023), in 2022 the EU-27 share of NEETs was 11.7%. In Spain, it was 12.7% and in Portugal 8.4%, while in Italy it reached 19.0%, the highest rate after Romania, with 19.8%. As for the share of the informal economy, according to the International Labour Organization (2023a), in 2021 (the most recent information), in Italy this proportion was 11.2%, in Portugal 9.7%, and in Spain 6.2%. From our sample, the share of respondents declaring they had worked in the past without a contract was 9% among all young people with previous job experience. However, there were relevant differences between the countries, as this share was 23.5% in Italy, 8.5% in Spain, and 6.6% in Portugal. In contrast, the percentage in other countries was notably lower. For example, in Germany, it stood at 3.8%, and in Sweden it was even lower at 3.2%. Considering all the NEETs in the sample, 90% had previous job experience. We decided to focus on these young people in the NEET condition who had worked in the past to compare those who worked without a contract with those who worked with one (temporary or indefinite). In the questionnaire, we explicitly asked for previous job experience as an employee, but without a contract. For more than six out of 10 respondents, their previous job experience ended less than six months before the interview and only in 24% of the cases did it end more than one year before. As for qualifications, 54% occupied a worker position, 12% were clerks, 17% were managers of professionals, and only 17% declared "other qualification." The comparison concerned their attitude when deciding to register for the

YG programme. The aspect we wanted to assess was whether the experience of working without a contract increased the perceived importance of the programmes implemented to help young people find a job.

The variables introduced in the model expected to be connected to the propensity to work without a contract were gender, level of education (low: 0–2 ISCED levels, medium: 3–4 ISCED levels, high: 5–8 ISCED levels; Schneider, 2021); mother's level of education (with the same classification as for the respondent), father's professional qualifications (high: manager or professional; not high: otherwise; OECD & International Labour Organization, 2019), degree of urbanisation of the place of residence (urban area or non-urban area, i.e., town or rural, according to the Eurostat, 2018; Goujon et al., 2021), cohabitants (living alone or with others), migration background, the specific reason for being a NEET (unemployed, caregiver, for health reasons), the families' economic condition, and the country of residence. We chose Italy as the reference category, as it was the country with the highest share of young people working without a contract (International Labour Organization, 2023c, for 2021 data).

3. Methodology

In order to verify if a relationship exists between work experience without a contract and the decision to participate in the YG programme, propensity score analysis was used. Propensity score analysis is commonly applied in medical studies and in other areas where the aim is to compare two subgroups of individuals, where one receives a specific treatment, while the other does not (Li, 2013). The objective is to determine if the different outcomes observed between the two groups were due to the fact that only one received the treatment or due to different characteristics between the two groups. In recent years, this technique has expanded and is used across various topics, including the gender gap in the labour market and assessing the effectiveness of labour market policies (Meara et al., 2020; Rocca et al., 2022). One of the main advantages of this technique stems from its semi-parametric nature. Even if it is based on logistic regression, compared to the traditional regression models it offers several advantages to control for confounding variables in observational studies, given that it estimates the treatment effect while considering confounders and treatment assignment relationships (Kahlert et al., 2017). There are no limits on the number of events, making this technique applicable in scenarios with many confounding factors or a limited number of outcomes.

In our study, we employed propensity score analysis to estimate the effect of working without a contract on registration for the YG. The treatment variable was identified as the condition of having worked without a contract. The sample was divided into two groups: respondents who had worked without a contract and respondents who had worked with a contract. The technique involves selecting a control group from the untreated group with similar characteristics to those in the treated group. The method thus estimates the counterfactual distribution, aiming to understand what would happen if the non-treated group had received the treatment. In the first phase, through a logit model, we estimated the probability of having worked without a contract as conditional to a number of personal characteristics (w):

$$Pr(\text{no contract} \mid h(w)) = \exp(h(w)'\gamma)/[1 + \exp(h(w)'\gamma)] \tag{1}$$

where $h(w)$ is a linear function, w is the vector of covariates affecting the probability of receiving the treatment, and γ is a coefficient vector.

In the second phase, the matching algorithm compared people in the treatment group with people not included in the treatment group, but whose other variables indicated a high likelihood of being in the treatment group. Next, we determined if a significant statistical difference occurred in the outcome variable (registration for the YG) between the groups of those with and without a contract sharing the same observed characteristics.

For this purpose, the technique estimated a linear model for the outcome Y on a set of covariates X and the residuals from the binary model (previously estimated) describing the treatment.

Let t denote the random treatment process so that t^i is the treatment received by the ith individual, $t = 1$ is the treatment level, and $t = 0$ is the control level (those who did not receive the treatment). The treatment assignment process is:

$$t = 1 \quad \text{if } w_i' \gamma + \eta_i > 0, \quad 0 \text{ otherwise}$$

where η_i is an unobservable error term unrelated to X and w.

Successively, we estimated the outcome Y as conditional to several covariates supposed to influence it, including the error component of the previous model. This allowed us to calculate the following two measures:

$$\text{ATE} = E(Y_{1i} - Y_{0i}) \tag{2}$$
$$\text{ATET} = E(Y_{1i} - Y_{0i} \mid t = 1) \tag{3}$$

The average treatment effect (ATE) is the difference in the expected outcome between the treated and untreated groups and represents the average effect of the treatment in the sample.

The average treatment effect for the treated (ATET) measures the difference between the treated group's average outcome and the control group's average theoretical outcome in the hypothesis that the latter received the treatment. In other words, the latter is the outcome for respondents who have worked with a contract with the same characteristics as those with no contract, in the hypothesis that they would not have one. It is, therefore, the part of ATE based only on the participants observed in the control group that remains unexplained and, therefore, due to unobservable characteristics (Oberman et al., 2021).

Consequently, the ATET/ATE ratio measures the part of the difference in the outcome between the treated and the untreated groups. This is not due to the observable characteristics but only to the effect of being in the treated or in the untreated group. In our case, it represents the part of the gap in the share of those registered for the YG not due to the observable characteristics but only to the effect of being in the treated or untreated group (having worked with or without a contract).

Matching approaches are well-equipped to deal with heterogeneity issues (Meara et al., 2020). Compared to parametric approaches, they rely on less restrictive assumptions, which do not tend to overestimate the component of the gap due to individuals' characteristics (Ñopo, 2008) and overcome the heterogeneity of the groups compared (Oberman et al., 2021).

According to Ho et al. (2007) and Rosenbaum and Rubin (1985), through the propensity score, it is also possible to verify the unbalance in the distribution of the outcome variable between the treated and the untreated

groups, controlling for all the observable characteristics. To compare the extent of balancing between the samples of the treated and untreated, the statistical measure allowing for verifying the differences in the compared samples is:

$$\text{Standardised percentage bias} = \frac{\overline{Y}_{\text{treated}} - \overline{Y}_{\text{control}}}{\sqrt{\frac{\sigma^2_{\text{treated}} + \sigma^2_{\text{control}}}{2}}} \times 100$$

Unlike the *t*-tests and other statistical hypothesis tests, this difference is not influenced by sample size and is a standardised measure. It is useful and increasingly applied to compare balance in baseline covariates between treated and untreated participants in the propensity-score matched sample.

4. Results

Among those declaring previous work experience, 9% stated they had worked without a contract, 27% with an indefinite contract, and 64% with a temporary contract.

The results show that, in line with our prediction, the share of those who register for the YG increases as the level of precariousness related to past working conditions increases. Overall, 39.0% of those who have worked in the past declared they had registered for the YG, but among those who worked without a contract, this share reached 46.8%. It is only 28.1%, however, among those who have worked with an indefinite contract, and 42.5% for a temporary contract (Table 1).

As to the relationship between working without a contract and other potential covariates, the results show this is associated with a low personal level of education: 24.0% of these individuals are low educated, while in the whole sample, the equivalent share is 20.6%. Interestingly, and concerning parental background, those who have worked in the past without a contract are more likely to have a father with a high professional qualification (15.6% against an overall share of 13.8%). As for the degree of urbanisation, no relevant differences as to the type of contract were found between individuals living in urban and rural areas.

These preliminary results justify the application of the propensity score technique, which is useful to verify if and to what extent the evidence of different outcomes observed in the two groups is attributable to different personal characteristics or instead to the treatment condition (for examples of propensity score applications, see Meara et al., 2020; Ñopo, 2008; Rocca et al., 2022). Therefore, the treatment is, in this case, identified in the experience of having worked without (treated group) or with (untreated group) a contract. The outcome is the decision to register for the YG programme or not.

The logit model for the propensity to work without a contract is reported in Table 2. Results show that living in Portugal or Spain is associated with a lower likelihood of working without a contract. However, being in a condition of "pure" NEET status, in other words, when the reason for being NEET is not linked to health problems or care needs, is associated with a higher likelihood of having worked without a contract. Figure 1 shows the distribution of the propensity scores among the treated and untreated groups, after controlling for the observed factors (variables introduced in the logit model). The results confirm that the likelihood of having registered for the YG is significantly higher among those who indicate they have worked without a contract (see Table 3).

Table 1. Descriptive statistics.

Variables	Type of contract in the previous job			Total
	Indefinite	Temporary	No contract	
Registration for the YG programme				
No	71.9	57.5	53.2	61.0
Yes	28.1	42.5	46.8	39.0
Gender				
Male	44.7	39.6	43.8	41.4
Female	55.3	60.4	56.2	58.6
Level of education				
Low	18.9	20.9	24.0	20.6
Medium	40.8	35.4	31.8	36.5
High	40.4	43.7	44.2	42.9
Mother's level of education (ref. tertiary education)				
Low	56.6	59.4	57.8	58.5
Medium	28.8	27.6	29.5	28.1
High	14.6	13.0	12.7	13.4
Father's professional qualification				
Low	85.1	84.4	84.4	86.2
High	14.9	13.0	15.6	13.8
Degree of urbanisation of the place of residence (0 = *urban*, 1 = *town and rural*)				
Rural	48.3	50.1	50.2	49.6
Urban	51.7	49.9	49.8	50.4
Living alone	2.6	2.4	2.5	2.5
Migration background (0 = *born in the host country*, 1 = *abroad*)	23.9	18.2	24.7	20.3
Country of residence (ref. Italy)				
Portugal	14.5	8.9	7.8	10.4
Spain	82.3	88.5	83.4	86.4
Italy	3.2	2.6	8.9	3.3
Specific reason for being NEET				
Pure NEET (declaring simply not working or studying)	79.6	78.6	74.7	78.5
Caregiver or no paid work	17.0	18.8	22.4	18.6
For health reasons	3.4	2.7	2.9	2.9
Living in bad economic conditions*	78.9	75.9	76.7	76.8

Notes: * indicates economic deprivation; it is equal to 1 in the case of the respondent declaring a level 3 or 4 on a scale from 0 (*not at all*) to 4 (*a lot*) for the difficulties related to at least one of the options (to pay the mortgage, to face an unexpected expense of 500 euros or equivalent, to pay for a one week holiday in a year).

Table 2. Logistic regression model.

Having worked without a contract	Coeff.	SE	z	P > |z|	95% CI	
Gender (0 = *male*, 1 = *female*)	0.449	0.284	1.58	0.11	−0.107	1.006
Level of education (ref. tertiary education)						
Low	0.260	0.358	0.73	0.47	−0.442	0.963
Medium	−0.181	0.301	−0.60	0.55	−0.771	0.409
Mother's level of education (ref. tertiary education)						
Low	0.016	0.398	0.04	0.97	−0.765	0.796
Medium	−0.203	0.403	−0.50	0.61	−0.992	0.586
Father's professional qualifications (ref. low)	0.516	0.365	1.41	0.16	−0.200	1.232
Degree of urbanisation of the place of residence (0 = *urban*, 1 = *town and rural*)	0.011	0.261	0.04	0.97	−0.500	0.523
Living alone (1 = *alone*, 0 = *with other people*)	0.450	0.712	0.63	0.53	−0.946	1.845
Migration background (0 = *born in the host country*, 1 = *abroad*)	0.438	0.299	1.46	0.14	−0.148	1.025
Country of residence (ref. Italy)						
Portugal	−2.085	0.496	−4.20	0.00	−3.057	−1.113
Spain	−2.091	0.434	−4.82	0.00	−2.942	−1.240
Specific reason for being NEET (ref. caregiver or no-paid work)						
Pure NEET (declaring simply not working or studying)	0.605	0.342	1.77	0.08	−0.065	1.275
For health reasons	0.155	1.084	0.14	0.89	−1.970	2.280
Familiar economic condition (0 = *medium-high*, 1 = *low*)	−0.110	0.319	−0.35	0.729	−0.735	0.514
Constant	−1.529	0.665	−2.30	0.02	−2.831	−0.226
Pseudo R^2	0.06					
LR chi^2(15)	29.40					
N	1,071					
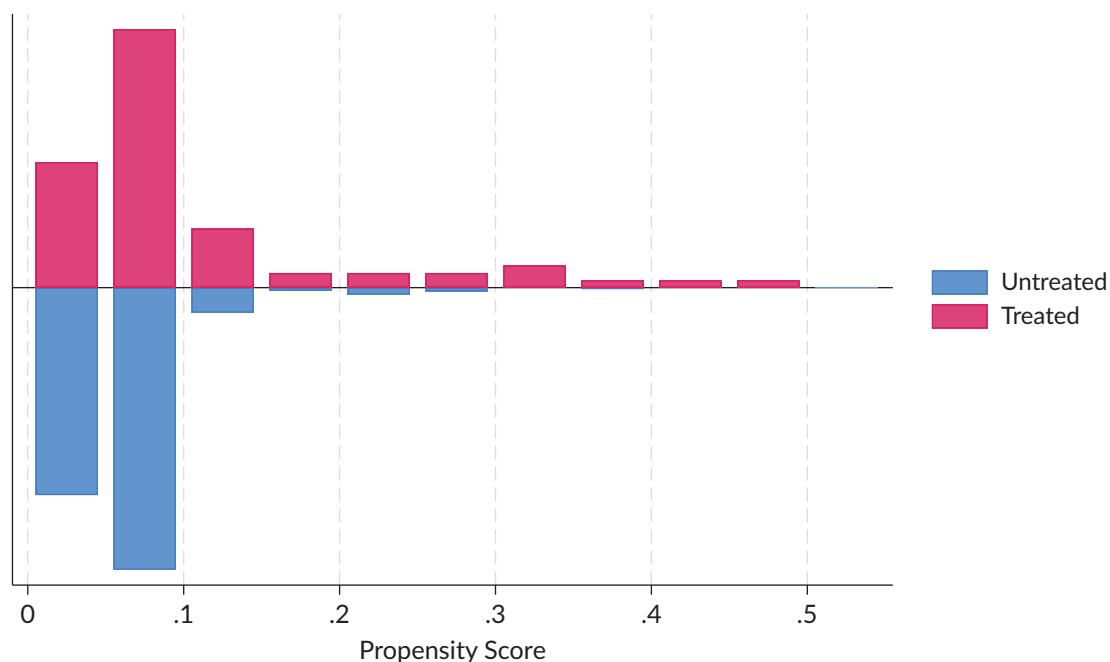
**Figure 1.** Mirrored histogram showing the propensity score distribution and overlapping samples in the treatment.

Table 3. Propensity scores' results of having worked without a contract for having registered for the YG.

YG	AI robust					
	Coeff.	*SE*	*z*	*P > |z|*	95% CI	
ATE Worked without a contract (Yes vs. no)	0.215	0.084	2.55	0.011	0.050	0.381
ATET Worked without a contract (Yes vs. no)	0.163	0.076	2.14	0.032	0.014	0.313

Table 3 reports the ATE and the ATET scores. The first one is 0.215 and represents the difference in the probabilities of registering for the YG between those who have worked without and with a contract. Very high, 0.16, is the ATET. It indicates the difference in the probability of registering for the YG between the treated and the untreated if they received the treatment. This means that the two groups have identical observed characteristics and differ only in the treatment received or not.

Therefore, the ratio between the ATET and the ATE shows the part of the difference in the proportion of those registered for the YG due only to the effect of being in the treated or untreated group (having worked with or without a contract). It is 0.758, indicating a substantially different behaviour between those who have worked with and without a contract in the decision to register for the YG.

Finally, Figure 2 shows the standardised percentage bias for the variables analysed between the treated and untreated groups (Austin, 2009). This graph presents the extent of covariate imbalance regarding standardised percentage differences.
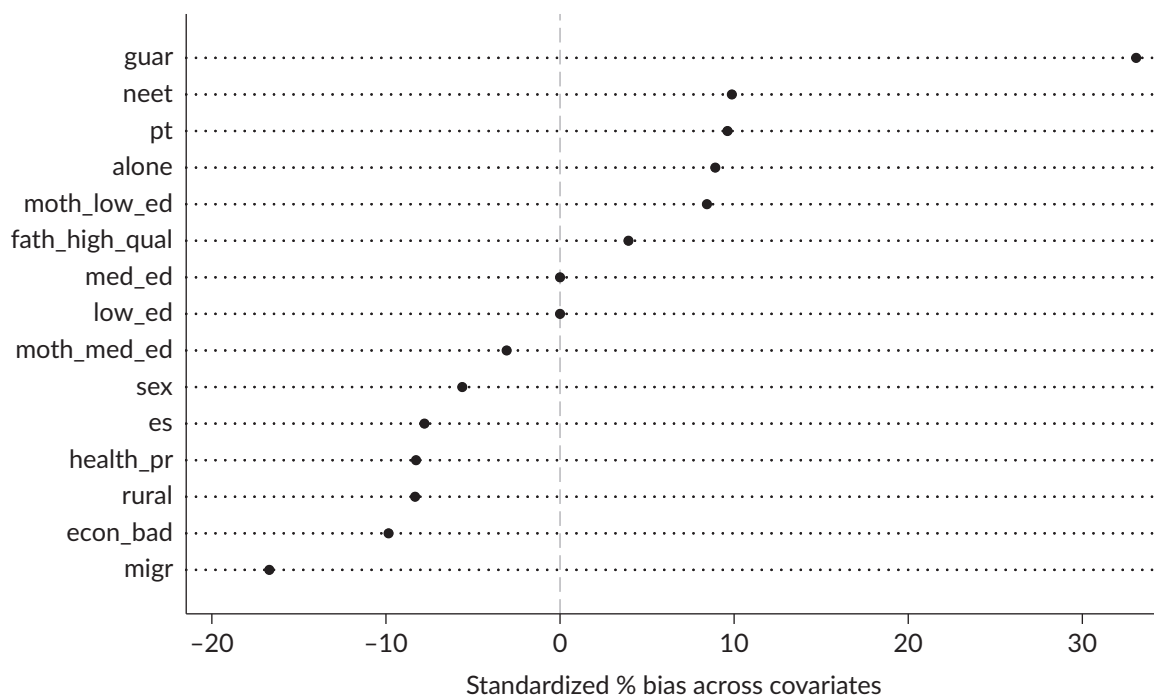
Figure 2. Standardised percentage bias across covariates.

In this figure, the variables are all dichotomous; 1 is associated with the following conditions:

- guar: YG registration;
- neet: Not in employment, education, or training when the motivation is not linked to health problems or care needs;
- pt: Living in Portugal;
- alone: For respondents living alone;
- moth_low_ed: Mother with a 0–2 ISCED level of education;
- fath_high_qual: Father with a high professional qualification;
- med_ed: 3–4 ISCED personal level of education;
- low_ed: 0–2 ISCED personal level of education;
- moth_med_ed: Mother with a 3–4 ISCED level of education;
- sex: Female;
- es: Living in Spain;
- health_pr: Health problems as a specific cause of being a NEET;
- rural: Living in a rural area;
- econ_bad: Having at least one condition of economic deprivation as shown in the note under Table 1;
- migr: Having a migration background.

It highlights a significant unbalance in the sample for the decision of registering for the YG between the two groups, even confirmed by the pstest, whose p-value is 0.044.

5. Discussion

The present study focuses on young people in NEET conditions living in Spain, Portugal, and Italy, aged between 25 and 29 years old, and aims to examine if the experience of having worked without a contract increases the likelihood of registering for YG programmes. The study also examines and controls for the role of a set of socio-demographic characteristics that might be associated with the experience of having worked with a contract (e. g. level of education). The analysis was carried out through a propensity score methodology.

The first important finding is that about one-tenth of the young people participating in our study reported having worked without a contract. The descriptive analysis shows that this experience has a higher incidence among young people with an immigration background (24.7% vs. 20.3%) and lower education level (24.0% vs. 20.6%). These results are in line with previous empirical studies (e.g., Hazans, 2011; McDowell et al., 2009). The diffusion of this phenomenon could be even higher, considering the low propensity of people to declare it.

To better understand these findings, it is important to consider the country where the participant was residing and the respective welfare conditions. Indeed, Spain, Portugal, and Italy are all Mediterranean countries, with a sub-protective welfare regime, characterised by scarce active labour market policies, a higher-than-average practice to work without a formal contract, and underdeveloped institutional support, including that provided by PES. The registration rates of young people in PES are low in these countries and the channels young people more frequently use to find a job are still the informal ones, such as friends and relatives (Buligescu et al., 2022; Pastore, 2015). In this challenging context, the YG promised and offered an unprecedented opportunity in terms of access to services and job opportunities.

Furthermore, and confirming the main hypothesis of the study, our findings show that young people who have been previously engaged in informal work are more likely to register for the YG programmes offered by PES. To the best of our knowledge, this is the first study to examine and confirm the relationship between young NEET involvement in the informal economy and their participation in the YG. As proposed before, this relationship possibly reflects a greater willingness in young people who are informally employed to acquire work-related skills and/or want to avoid being in a precarious and insecure situation again in the future, worse off compared to workers covered by a formal contract and with access to social security mechanisms (OECD & International Labour Organization, 2019).

It is important to note that this relationship was observed while controlling for a set of relevant socio-demographic characteristics. Some of these socio-demographic variables were indeed associated with the experience of having worked without a contract, having a lower level of education, being a woman, and having an immigration background (Baganha, 1998; Deidda et al., 2015; Williams & Horodnic, 2017).

To underline the robustness of our study findings, the analysis was reproduced considering as a treatment group those who worked without a contract and with a temporary one, in opposition to those who worked with a permanent contract. Results are not reported here for the sake of brevity but are fully in line with our main findings.

In addition, we also found that an experience of working without a contract was significantly associated with being in what is defined as a "pure" NEET, meaning someone who is in such a condition for reasons that do not include taking care of others in the family or health problems. This finding does not demonstrate that the decision to work without a contract mainly connects to those whose NEET status is only due to the unavailability of jobs, which is in line with few contributions in literature on this topic (see, for example, Jütting & de Laiglesia, 2009; Williams et al., 2015). Conversely, when the reasons for the NEET status are connected to the provision of care or poor health status, people are less likely to work without a contract.

For this reason, it has been suggested that the policy-making and programmes targeting young NEET people must navigate between European, national, regional, and local levels to determine what policies work with a particular target group under specific circumstances (Hooghe & Marks, 2003; Hudson et al., 2019; Paabort & Beilmann, 2021; Petrescu et al., 2022; Sergi et al., 2018).

Although our results are relevant to the literature and can inform policymaking, a number of limitations need to be mentioned. Firstly, the participants were not selected based on a probabilistic procedure and presented an unbalanced distribution by country, namely a higher share of young people from Spain. Secondly, we did not control for the time that passed since the reported experience of working without a contract and the decision to register for YG. Future studies should consider larger and more representative samples and consider a wide range of European countries in order to determine the generability of our findings across different national support systems and structures. Furthermore, future surveys should include questions that allow a more fine-grained characterisation of young people's work experience in the informal economy, namely concerning the duration and the time between this experience and the decision to register for YG. Finally, our analysis would greatly benefit from a qualitative inquiry, to understand in depth young people's motivations to work without a contract and to register for YG programmes. Indeed, the motivations for working within the informal economy can vary widely, encompassing different employment situations—namely, in terms of exploitation and degree of vulnerability—such as being an employee, employer, own-account worker, or contributing family worker. It is evident that the propensity to register for programmes such as YG might change depending on these different motivations.

In conclusion, we can say that the success of the YG programme has been recently studied from different angles. For example, Pesquera Alonso et al. (2021) addressed the question of whether the YG should be regarded as a success or a failure within the context of a sustainable policy framework. They emphasised the importance of a proper evaluation to adequately inform policymaking, which is advantageous for both researchers and policymakers.

Labour precarity, characterised by temporary and unstable employment, is a significant concern, and it might condition the YG's impact. Our study showed that when the NEET status is not the result of familial caregiving responsibilities or personal health-related issues, young workers with a past experience of working without a contract are indeed more likely to engage with PES and the YG in particular. The study also compared those who have worked without a contract or with a temporary contract with those who have had a permanent contract. The results confirmed that experiencing a situation of precariousness increases the propensity to register for the YG. These results underscore an important point, namely that initiatives like the YG are essential for young people, as they might involve not only financial support but also an opportunity to build a more sustainable, stable, and certain future from an employment standpoint.

These findings should signal to governments that greater efforts should be made to implement similar initiatives reaching out to young people, as well as acting to reduce the precariousness in job contracts, which negatively impacts their quality of life. Further progress along this line of research could involve verifying the typologies of NEETs without work experience who decided to apply for the YG and compare them with those who did not.

Acknowledgments

Conflict of Interests

The authors declare no conflict of interests.

References

Alfieri, S., Rosina, A., Sironi, E., Marta, E., & Marzana, D. (2015). Who are Italian "NEETs"? Trust in institutions, political engagement, willingness to be activated and attitudes toward the future in a group at risk for social exclusion. *Rivista Internazionale di Scienze Sociali*, *123*(3), 285–306.

Anselmo, M., Morlicchio, E., & Pugliese, E. (2020, March 19). "Poveri e imbroglioni." Dentro il RDC. *il Mulino*. https://www.rivistailmulino.it/a/poveri-e-imbroglioni-dentro-il-reddito-di-cittadinanza

Austin, P. C. (2009). Balance diagnostics for comparing the distribution of baseline covariates between treatment groups in propensity-score matched samples. *Statistics in Medicine*, *28*(25), 3083–3107.

Baganha, M. I. (1998). Immigrant involvement in the informal economy: The Portuguese case. *Journal of Ethnic and Migration Studies*, *24*(2), 367–385. https://doi.org/10.1080/1369183x.1998.9976638

Buligescu, B., Smoter, M., Pizzolante, F., Rocca, A., & Neagu, G. (2022). The impact of youth guarantee for rural NEETs—Who participates in public employment services and with what effects? A study on Italy, Poland, and Romania. In *Conference proceedings 1st International Conference Rural Youth and New Youth Guarantee* (pp. 157–159). COST Action.

Cabasés Piqué, M. À., Pardell Veà, A., & Strecker, T. (2016). The EU Youth Guarantee—A critical analysis of its implementation in Spain. *Journal of Youth Studies*, *19*(5), 684–704. https://doi.org/10.1080/13676261.2015.1098777

Caliendo, M., & Schmidl, R. (2016). Youth unemployment and active labor market policies in Europe. *IZA Journal of Labor Policy*, *5*, Article 1. https://doi.org/10.1186/s40173-016-0057-x

Carling, K., & Larsson, L. (2005). Does early intervention help the unemployed youth? *Labour Economics*, *12*(3), 301–319.

Caroleo, F. E., Rocca, A., Mazzocchi, P., & Quintano, C. (2020). Being NEET in Europe before and after the economic crisis: An analysis of the micro and macro determinants. *Social Indicators Research*, *149*, 991–1024. https://doi.org/10.1007/s11205-020-02270-6

Deidda, M., Di Liberto, A., Foddi, M., & Sulis, G. (2015). Employment subsidies, informal economy and women's transition into work in a depressed area: Evidence from a matching approach. *IZA Journal of Labor Policy*, *4*, Article 7. https://doi.org/10.1186/s40173-015-0034-9

de Soto, H. (1989). *The other path: The invisible revolution in the third world*. Harper Row.

Effie, E., Chatzichristos, G., Herod, A., & Gialis, S. (2023). In what way a "Guarantee for youth"? NEETs

entrapped by labour market policies in the European Union. *Journal of Youth Studies*. Advance online publication. https://doi.org/10.1080/13676261.2023.2211943

Escudero, V., & López Mourelo, E. (2017). *The European Youth Guarantee: A systematic review of its implementation across countries* (Working Paper No. 21). International Labour Office. https://www.ilo.org/wcmsp5/groups/public/---dgreports/---inst/documents/publication/wcms_572465.pdf

European Commission. (2023). *The reinforced Youth Guarantee*. https://ec.europa.eu/social/main.jsp?catId=1079&langId=en

European Parliament. (2023). *Reinforcing the Youth Guarantee—Q2 2020*. https://www.europarl.europa.eu/legislative-train/carriage/reinforcing-the-youth-guarantee/report?sid=7301

European Union. (2020). Council recommendation of 30 October 2020 on a bridge to jobs—Reinforcing the youth guarantee and replacing the Council recommendation of 22 April 2013 on establishing a youth guarantee. *Official Journal of the European Union*, *2020*(C 372/01). https://eur-lex.europa.eu/legal-content/EN/TXT/?toc=OJ%3AC%3A2020%3A372%3ATOC&uri=uriserv%3AOJ.C_.2020.372.01.0001.01.ENG

Eurostat. (2018). *Methodological manual on territorial typologies*. Publications Office of the European Union.

Eurostat. (2023). *Database* [Data set]. https://ec.europa.eu/eurostat/data/database

Goujon, A., Natale, F., Ghio, D., & Conte, A. (2021). Demographic and territorial characteristics of Covid-19 cases and excess mortality in the European Union during the first wave. *Journal of Population Research*, *39*, 533–556. https://doi.org/10.1007/s12546-021-09263-3

Hall, C., & Liljeberg, L. (2011). *En jobgaranti för ungdomar? Om Arbetsförmedlingens ungdomsinsatser* (IFAU Report 2011:1). Institute for Evaluation of Labour Market and Education Policy. https://www.ifau.se/Forskning/Publikationer/Rapporter/2011/En-jobbgaranti-for-ungdomar-Om-Arbetsformedlingens-ungdomsinsatser

Hazans, M. (2011). *Informal workers across Europe: Evidence from 30 countries* (IZA Discussion Paper No. 5871). Institute for the Study of Labor. https://docs.iza.org/dp5871.pdf

Ho, D. E., Imai, K., King, G., & Stuart, E. A. (2007). Matching as nonparametric preprocessing for reducing model dependence in parametric causal inference. *Political Analysis*, *15*(3), 199–236. https://doi.org/10.1093/pan/mpl013

Hooghe, L., & Marks, G. (2003). Unravelling the central state, but how? Types of multi-level governance. *American Political Science Review*, *97*(2), 233–243. https://doi.org/10.1017/S0003055403000649

Hudson, B., Hunter, D., & Peckham, S. (2019). Policy failure and the policy-implementation gap: Can policy support programs help? *Policy Design and Practice*, *2*(1), 1–14. https://doi.org/10.1080/25741292.2018.1540378

International Labour Organization. (2023a). *SDG indicator 8.5.2—Unemployment rate: Annual* [Data set]. https://www.ilo.org/shinyapps/bulkexplorer7

International Labour Organization. (2023b). *Women and men in the informal economy: A statistical update*. https://www.ilo.org/global/topics/employment-promotion/informal-economy/publications/WCMS_869188/lang--en/index.htm

International Labour Organization. (2023c). *Statistics on the informal economy* [Data set]. https://ilostat.ilo.org/topics/informality

Jütting, J., & de Laiglesia, J. R. (2009). *Is informal normal? Towards more and better jobs in developing countries*. OECD Development Centre Studies. https://doi.org/10.1787/9789264059245-en

Kahlert, J., Gribsholt, S. B., Gammelager, H., Dekkers, O. M., & Luta, G. (2017). Control of confounding in the analysis phase—An overview for clinicians. *Clinical Epidemiology*, *9*, 195–204. https://doi.org/10.2147/CLEP.S129886

Li, M. (2013). Using the propensity score method to estimate causal effects: A review and practical guide. *Organizational Research Methods*, *16*(2), 188–226. https://doi.org/10.1177/1094428112447816

McDowell, L., Batnitzky, A., & Dyer, S. (2009). Precarious work and economic migration: Emerging immigrant divisions of labour in Greater London's service sector. *International Journal of Urban and Regional Research*, *33*(1), 3–25.

Meara, K., Pastore, F., & Webster, A. (2020). The gender pay gap in the USA: A matching study. *Journal of Population Economics*, *33*, 271–305.

Ñopo, H. (2008). Matching as a tool to decompose wage gaps. *Review of Economics and Statistics*, *90*(2), 290–299.

Obermann, G., Hoang Oanh, N., & Hong Ngoc. N. (2021). Gender pay gap in Vietnam: a propensity score matching analysis. *J. Econom. Develop.*, 23(3), 238-253.

OECD, & International Labour Organization. (2019). *Tackling vulnerability in the informal economy*. https://doi.org/10.1787/939b7bcd-en

O'Higgins, N., & Pica, G. (2020). Complementarities between labour market institutions and their causal impact on youth labour market outcomes. *The B.E. Journal of Economic Analysis and Policy*, *20*(3). https://doi.org/10.1515/bejeap-2018-0165

Ohnsorge, F., & Yu, S. (Eds.). (2022). *The long shadow of informality: Challenges and policies*. World Bank Group.

Paabort, H., & Beilmann, M. (2021). State level agreed-upon factors contributing to more effective policymaking for public sector services for effective local-level work with NEETs. *Revista Calitatea Vieții*, *32*(4), 398–420. https://doi.org/10.46841/RCV.2021.04.04

Pastore, F. (2015). *The youth experience gap: Explaining national differences in the school-to-work transition*. Springer.

Pastore, F. (2023). *Covid-19 and the youth-to-adult unemployment gap*. IZA World of Labor. https://wol.iza.org/articles/covid-19-and-the-youth-to-adult-unemployment-gap/long

Pesquera Alonso, C., Muñoz Sánchez, P., & Iniesta Martínez, A. (2021). Youth Guarantee: Looking for explanations. *Sustainability*, *13*(10), 5561–5513. https://doi.org/10.3390/su13105561

Petrescu, C., Ellena, A. M., Fernandes-Jesus, M., & Marta, E. (2022). Using evidence in policies addressing rural NEETs: Common patterns and differences in various EU countries. *Youth & Society*, *54*(2), 69–88. https://doi.org/10.1177/0044118X211056361

Rocca, A., Mazzocchi, P., De Luca, G., Castellano, R., & Quintano, C. (2022). How did the Covid-19 pandemic affect the gender pay gap in EU countries? In A. Balzanella, M. Bini, C. Cavicchia, & R. Verde (Eds.), *Book of the short papers of the 2022 Italian Statistical Association Conference* (pp. 272–283). Pearson.

Rosenbaum, P. R., & Rubin, D. B. (1985). Constructing a control group using multivariate matched sampling methods that incorporate the propensity score. *The American Statistician*, *39*(1), 33–38.

Schneider, S. L. (2021). The classification of education in surveys: A generalized framework for ex-post harmonization. *Quality & Quantity*, *56*, 1829–1866. https://doi.org/10.1007/s11135-021-01101-1

Sergi, V., Cefalo, R., & Kazepov, Y. (2018). Young people's disadvantages on the labour market in Italy: Reframing the NEET category. *Journal of Modern Italian Studies*, *23*(1), 41–60. https://doi.org/10.1080/1354571X.2017.1409529

Shehu, E., & Nilsson, B. (2014). *Informal employment among youth: Evidence from 20 school-to-work transition surveys* (Work4Youth Publication No. 8). International Labour Office. https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/publication/wcms_234911.pdf

Simões, F., Fernandes-Jesus, M., & Marta, E. (2022). NEETs civic and political participation in outermost islands: The mediating roles of sense of community and agency. *Journal of Community & Applied Social Psychology*, *32*(5), 799–813. https://doi.org/10.1002/casp.2609

Tosun, J., Treib, O., & De Francesco, F. (2019). The impact of the European Youth Guarantee on active labour market policies: A convergence analysis. *International Journal of Social Welfare*, *28*, 358–368.

United Nations Department of Economic and Social Affairs. (2003). *Youth employment: Youth perspectives on the pursuit of decent work in changing times*. https://www.un.org/esa/socdev/unyin/documents/wyr11/summaryreport.pdf

Walther, A. (2006). Regimes of youth transitions: Choice, flexibility and security in young people's experiences across different European contexts. *Young*, *14*(2), 119–132. https://doi.org/10.1177/1103308806062737

Williams, C. C., & Horodnic, I. A. (2017). Evaluating the relationship between social exclusion and participation in the informal sector in the European Union. *International Journal of Manpower*, *38*(3), 489–503. https://doi.org/10.1108/IJM-10-2015-0179

Williams, C. C., Horodnic, I. A., & Windebank, J. (2015). Explaining participation in the informal economy: An institutional incongruence perspective. *International Sociology*, *30*(3), 294–313. https://doi.org/10.1177/0268580915578745

About the Authors

Antonella Rocca is an associate professor in Economic Statistics at the University of Naples "Parthenope," Italy. She holds a PhD in Spatial Statistics. She is the author of more than 80 publications in peer-reviewed journals and books on topics related to the labour market, NEETs, youth unemployment, gender gap, education, and digitalisation. She is also a member of COST Action CA18213 Rural NEET Youth Network and WP3 leader of the EEA Grant Project TRACK-IN—Tracking Public Employment Services Tracking Effectiveness in Supporting Rural NEETs.

Omeed Agahi is a junior researcher at the Department of Education and Psychology at the University of Girona, Spain. He received a bachelor's degree in Chemistry from Bangor University, UK, and a master's degree in Leadership for Sustainable Development from Queen's University Belfast, UK. His academic interests include scientific educational research and all facets of sustainable development.

Mai Beilmann is an associate professor of empirical sociology at the Institute of Social Studies, University of Tartu, Estonia. Her research focuses mainly on children and youth studies, particularly child/adolescent vulnerability in the education system, youth civic and political participation, values, and social capital. Since 2018, she has served as the president of the Estonian Association of Sociologists.

Leonor Bettencourt is a researcher at the Center for Psychological Research and Social Intervention at the ISCTE—University Institute of Lisbon, and holds a PhD in Social Psychology. Her research interests cover themes such as people–place relationships, acceptance and impact of new laws and public policies implementation, inclusive education, and youth employment. She is a member of the project TRACK-IN—Public Employment Services Tracking Effectiveness to Support Rural NEETs, funded by the EEA and Norway Grants Fund for Youth Employment.

Natalia Edisherashvili (PhD) is a researcher at the Institute of Education, University of Tartu. Her recent research activities have been related to exploring the interventions that contribute to technology-enhanced teaching and learning. She has participated in the elaboration of the online courses for country-wide teacher professional development. The courses include a focus on ICT skill integration in the instruction process in Georgia. Natalia has also been actively involved in consultancy work for international funding agencies such as UNICEF, Millennium Challenge Corporation, Asian Development Bank, and the United States Agency for International Development, which resulted in policy recommendations to the Ministry of Education and Science of Georgia.

Elena Marta is a full professor in social and community psychology at Università Cattolica del Sacro Cuore Milano-Brescia, where she is also director of the Research Centre on Community Development and Organisational Quality of Life (CERISVICO). Her research interests lie in the field of community and applied social psychology, with a focus on the social relationship of adolescents and young adults, NEET, volunteerism and risk behaviors, community development, and participatory action research.

Paolo Mazzocchi is an associate professor of economic statistics at the Department of Management and Quantitative Studies, University of Naples "Parthenope." His expertise refers to undeclared work, the informal sector, the status of being NEETs, and performance evaluations. He is an experienced researcher in project management in the labour market, law, and entrepreneurship, by managing and matching large datasets.

Niall O'Higgins (PhD, European University Institute, Florence) is a senior research specialist in the International Labour Organization's Employment Analysis Unit. He is one of the main authors of the International Labour Organization's biennial *Global Employment Trends for Youth*. Other recent publications include books on internship and youth employment policy, a chapter on NEETs in the International Labour Organization's *Global Employment Policy Review 2023: Macroeconomic Policies for Recovery and Structural Transformation*, and articles in the *European Economic Review*, the *Cambridge Journal of Economics*, the *Journal of Institutional Economics*, and the *B.E. Journal of Economic Analysis & Policy*.

Federica Pizzolante obtained a PhD in Economics, Statistics and Sustainability in 2022 at the University of Naples "Parthenope." Her dissertation on the road transport sector involved the analysis of CO_2 emission time series in Siena. She obtained her master's degree in Economics, with a focus on environmental economics and sustainable development (2018). She is part of the Parthenope research team for the TRACK-IN project.

Òscar Prieto-Flores is an associate professor at the School of Education and Psychology, University of Girona. He holds a PhD in Sociology from the University of Barcelona and has been a visiting scholar of the Center for Migration and Development at Princeton University and of the Center for Comparative Studies in Race and Ethnicity at Stanford University. Professor Òscar Prieto-Flores also coordinates the master's programme of Migration Movements at the 21st Century at the same university and is chair of the Department of Education (Pedagogy).

Ricardo Borges Rodrigues is an invited lecturer at ISCTE—University Institute of Lisbon (since 2012) and an integrated researcher at the Center for Psychological Research and Social Intervention. With a PhD in Social and Organisational Psychology, he conducts research and intervention on intergroup relations in childhood and adolescence, focusing on processes of racial-, ethnic-, and gender-based inclusion and exclusion in educational contexts. He is the director of the master's programme in Psychology of Intercultural Relations (since 2013), and also serves as local academic co-coordinator of the Erasmus Mundus Global Mobility, Inclusion and Diversity in Society (Global-MINDS) programme.

Miriam Rosa (PhD in Social and Organisational Psychology) is a researcher and professor at the Center for Psychological Research and Social Intervention at the ISCTE—University Institute of Lisbon. Her research includes diversity and inclusion at work, with a focus on disadvantaged groups in current and future job opportunities. She has been awarded grants through competitive calls, collaborates with (inter)national research scholars and industries, has published in high-impact journals, and has trained young researchers. She is a team member of the project TRACK-IN.

Francisco Simões is an assistant researcher and a full member of the Center for Psychological Research and Social Intervention at the ISCTE—University Institute of Lisbon. He is also the chair of the COST Action Rural NEET Youth Network funded by the European Commission and principal investigator of the TRACK-IN project funded by the EEA and Norway Grants. His research focuses on adolescents' social development and well-being, social support, and rural NEETs' psychosocial profile. He has (co)authored several international peer-reviewed articles on these issues.