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Keywords: unemployment, low-skilled youths, active labor market policy, Public Employment Service, counseling intensity, case management

JEL classification: J64, J68

1. Introduction

Many European countries are facing the important challenge of addressing youth unemployment. Young people are less closely connected to the labor market than adults and are at higher risk of unemployment for several reasons. At the beginning of their careers, during the transition from education to work, many of them explore their skills, preferences, and opportunities in the labor market through "job shopping". This is associated with higher turnover and more frequent periods of nonemployment. Moreover, they are less experienced in the job search and less likely to have a suitable network. As new entrants to the labor market, young people also lack work experience, which requires companies to invest in training and can therefore discourage them from hiring. In the event of downsizing, young people are more likely to lose their jobs than older members of the workforce, as they have had less time to build up firm-specific human capital (Bell & Blanchflower, 2010; Caliendo & Schmidl, 2016).

As seen in the financial market and economic crisis of 2008/2009, young people who have only just entered the labor market, or have not yet entered it at all, are particularly hard hit by economic down-turns. Due to their limited work experience and brief job tenure, they are among those "marginalized" employees who are the first to lose their jobs in a crisis ("last-in first-out") and suffer disproportionately from a decline in demand for labor. The current COVID-19 crisis is also continuously and severely af-fecting young people. The International Labor Organization (ILO) speaks of a "triple shock" inflicted on young people by the pandemic, with jobs and incomes lost concurrently and young people facing major obstacles to entering the workforce, changing jobs and gaining access to education and training (ILO, 2020).

A poor start to professional life in the form of prolonged or repeated unemployment or precarious em-ployment carries the risk of negative long-term consequences for further employment integration, in-come and well-being ("scarring effects", Caliendo & Schmidl, 2016). Those particularly at risk of long-term exclusion are young people with low levels of formal education, including a significant percentage of those with a migrant background (Bell & Blanchflower, 2010). In addition to individual effects, youth

unemployment has negative effects on society as a whole and, as a result, on public budgets (Caliendo & Schmidl, 2016).

In many countries, active labor market policies are designed to facilitate the transition from education to work, prevent prolonged periods of unemployment, prevent a complete withdrawal from the labor market, and promote a good start in stable employment or, as an intermediate step, in education and training. Young people are typically overrepresented in active labor market policy (ALMP) measures and considerable budgetary resources are spent on such policies, but the effectiveness of ALMP in combating youth unemployment is still insufficiently researched. This is especially true for (longer-term) effects on education and job quality.

The available empirical evidence suggests that young people tend to benefit less from participation in such measures than adults in terms of employment integration (Kluve et al., 2002; Kluve 2010, 2014; Card et al., 2010, 2018; Caliendo & Schmidl, 2016; Maguire, 2020), and it is often a challenge for labor market policy to reach young people and convince them to participate in measures (cf. Steiner et al., 2016). A particular challenge that remains for policymakers is to design labor market programs that effectively support unemployed youth with low skills (Escudero, 2018).

A potentially important but as yet underexposed parameter of labor market policy is the intensity of counseling provided by the Public Employment Service (PES). More intensive counseling could play a relevant role, because this is a core intervention of ALMPs; the more time and resources there are for clarifying problems, tailoring support, monitoring an unemployed person's job search efforts, and assisting with job-placement, the more effective the counseling should be.

The available evidence suggests that lower caseloads and more frequent meetings between the unemployed clients and the PES counselors do indeed have positive effects on the success of the job search (Behaghel et al., 2014; Hainmueller et al., 2016; Hofmann et al., 2010, 2012; Fertig, 2014; Koning, 2009; Maibom et al., 2017; Schiel et al., 2008; Böheim et al., 2017). However, there is still a lack of empirical evidence. This is especially true regarding the effects of more intensive counseling in the case of highly disadvantaged youth.

Against this background, the PES Vienna ("Arbeitsmarktservice", AMS) developed and tested a new model of intensified counseling ("case management") specifically aimed at the target group of 15-to-21-year-old unemployed persons having only a compulsory formal education and drawing on social assistance (i.e., no or insufficient unemployment benefit levels), a higher percentage of whom are persons entitled to asylum or subsidiary protection. The case management was piloted in the counseling zone of the Regional Office for Youth from November 2018 to March 2020. It primarily consisted of intensified counseling that reduced the interval of meetings and increased the time available for the initial meeting with the clients. Ten additional positions for PES caseworkers were established to provide this more intensive counseling.

The primary objective was not to shorten unemployment through a rapid transition to employment. Instead, the PES pursued the goals of preventing withdrawal from the labor market and sustainably improving the clients' longer-term labor market opportunities. This strategy included encouraging the youths to increasingly pursue education and training instead of quickly placing them in a random unskilled job.

Based on the pilot project and a propensity score matching approach, we analyze the effects of intensified counseling through a staff increase for disadvantaged unemployed youths in the three years following their access to case management. First, we consider the effects on the counseling and placement process using the following indicators: the frequency of meetings between PES caseworkers and unemployed clients, the number of job proposals, participation in ALMP measures, and the occurrence of PES sanctions due to non-compliance with job search requirements. Second, we examine effects on labor force integration, including training, education, and employment, as well as receipt of unemployment benefits and social assistance. As a measure of post-unemployment job quality, we demonstrate the effects on monthly wages.

We find that the increase in PES-staff significantly increased the intensity of the counseling. It resulted in more frequent meetings between caseworkers and unemployed clients. This was accompanied by significantly higher placement activity. The increase in staff led to more placement proposals for the

unemployed clients, more assignments to active labor market programs, especially to qualification measures, and further, to more frequent sanctions in the form of suspension of benefit payments due to failure to keep appointments with the caseworker. In line with the goal of the case management introduced, more of the young people were encouraged to take up apprenticeships or participate in training, instead of being immediately placed in any form of unskilled labor. However, in the observation period of three years, the intensified support did not (yet) have a significant effect on the overall extent of integration into employment relationships. Regarding post-unemployment job quality, we find no effects on wages at the start of a job.

2. Institutional background

2.1 PES structure

The Austrian PES acts as a one-stop-shop for the unemployed: it administers unemployment benefits and unemployment assistance, offers counseling and placement services, and is responsible for the implementation of training, along with several other ALMP measures.

The PES comprises a federal office and nine provincial offices – one for each of Austria's nine federal states – as well as 98 regional employment offices (REOs), twelve of which are located in the Austrian capital Vienna. Central coordination is carried out by the federal office, which is responsible for management, controlling, evaluation, analysis and strategic planning. The REOs are coordinated by the provincial offices; these provide information, advice, support and labor market assistance tailored to the regional environment. Unemployed people are assigned to the REOs according to the postal code of their place of residence, because this is generally the nearest REO. Until recently (during the period under review), the PES Vienna bundled its special offers and competencies for young people under the age of 21 in a separate Youth Employment Service (YES).

Each of the REOs has three zones for the purpose of customer segmentation: an information zone, a service zone, and a counseling zone. The information zone provides general – anonymous – labor

market information to the public, including many self-service options. The service zone is primarily for newly registered unemployed clients and those considered "ready for work" with little need for assistance. Here, applications for unemployment benefits are processed, and the unemployed receive counseling and job offers. The counseling zone is designed to assist unemployed persons who have been unemployed for at least 6 months or who are difficult to place for other reasons. They receive more intensive counseling and support here than in the service zone.

2.2 The pilot project

The PES Vienna developed and tested a new model of intensified support ("case management") in the counseling zone of its YES from November 2018 to March 2020. The target group consisted of low-skilled, 15-to-21-year-old unemployed young people receiving social assistance. Ten additional positions were established to implement case management, eight of which were established directly in the counseling zone. Two positions were created to expand capacity in the areas of services for companies and the "labor market promotion and career information centers" connected to YES.

Initially the pilot project was set-up as a randomized controlled trial (RCT). To allow a comparison between intensified counseling and the status quo, case management was only introduced in two of the three departments in the counseling zone of the YES, while the third department continued with the previously existing method of counseling. The three departments had identical tasks. Before the start of the pilot project, clients were assigned to departments on the basis of their date of birth: Department 1 was responsible for clients born between January 1 and May 10, Department 2 for those born between May 11 and September 14, and Department 3 for those born between September 15 and December 31. Persons entitled to asylum or subsidiary protection[d], who could not provide information on their date of birth when they entered the Austrian social security system were cared for in Department 3.

The case management was set up in Departments 1 and 2, starting from November 2018 for all target group persons, i.e., clients who met the clearly defined target group criteria. Three case management desks were created in each of the two departments. All customers assigned to Department 3 continued

to be served by the eleven existing counters in this department, where the service remained unchanged. The target group clients in this department served as the reference group in the pilot project. Since their counseling did not change, their histories could be used as a reference and as a counterfactual result in the hypothetical case of unchanged counseling.

The case management consisted primarily of intensified counseling. In Departments 1 and 2, the aim was to reduce the meeting intervals from around six to eight weeks to around two weeks. In addition, the initial meeting with the clients was to be extended, lasting 50 minutes instead of the usual 15 to 20 minutes. The counseling additionally included detailed anamnesis based on an anamnesis form, a support folder and an agreement form. All documents were collected in a support folder and the topics discussed were recorded on the agreement sheet; all of this was aimed at supporting the commitment, structure and organization of the young people. Further elements of the case management included additional feedback from clients after scheduled appointments and workshops via tablet, regular supervision and moderated case discussions for the caseworkers, as well as same-day support for spontaneous client contact.

The target group consisted of young people between 15 and 21 years of age drawing on social assistance (exclusively or in addition to unemployment benefits from the PES), who either did not have a compulsory school-leaving certificate or had a compulsory school-leaving certificate and had already been registered as unemployed or had been looking for an apprenticeship for more than three months. A few groups were considered exceptions to the pilot's target group and continued to be served at their own counters, regardless of their date of birth: (1) health-impaired persons who had been assigned to a specific rehabilitation desk, (2) pregnant women, (3) men with a draft order, and (4) persons eligible for asylum and subsidiary protection aged 18-21 who were not being served at the YES but rather at the PES central counseling center for persons granted asylum and subsidiary protection in Vienna.

If, as of November 2018, YES clients met the target group criteria and were assigned to Department 1 or 2 based on their date of birth, they were assigned to a case management desk. For those already in care before the beginning of November, the case management criteria had been reviewed in the two

weeks prior. If a person served in Department 1 or 2 did not meet the target group criteria immediately upon his or her first appearance at the YES, but only later, he or she was assigned to case management accordingly. Once clients were assigned to case management, they remained in their departments, even if they temporarily left unemployment or no longer met the target group criteria (e.g., by obtaining an apprenticeship diploma or ending their social assistance receipt).

The increase in staff was intended to create more time for mentoring and supporting the young people, i.e., for motivation, vocational orientation and the selection of a suitable support program. Part of the strategy was to provide more continuous support for low-skilled young people in the PES program and, where sensible and possible, to offer them more training instead of quickly placing them in an unskilled job – in the hope that this would improve their longer-term employment prospects.

The case managers knew they were participating in the pilot project. They received extra coaching and training in case management. The treated clients should also have been aware that they were participating in a pilot project. However, the clients in the reference group, for whom nothing changed, did not know about it.

The pilot project was implemented by AMS Vienna, jointly financed with AMS Austria and accompanied by a project steering group, which consisted of representatives of the provincial management (AMS Vienna), the management of the regional office (YES), the federal office (AMS Austria), as well as experts and works council of the REO. The group networked with the department of the City of Vienna responsible for social affairs, social and health law ("Magistratsabteilung 40") and drew on the expertise of other in-house experts.

The AMS itself commissioned the evaluation of the pilot project by an independent research institution in order to examine the effects of the case management and to learn from the experience for the large-scale project "U25" to be created in 2021 (after the study period): a joint service center of AMS Vienna and the City of Vienna, which offers all young people under 25 all services related to work, education and social issues as a "one-stop shop". We undertook this evaluation and in the course of it we found

that the intended randomization was not achieved and that we therefore need to adjust for selection bias with non-experimental methods.

3. Empirical research design

3.1 Data, sample, and comparison groups

To evaluate the impact of intensified counseling on the placement process and labor market integration of the youths served, we primarily use two sources of linked individual administrative data: the Austrian unemployment register (AUR) and the Austrian Social Security database (ASSD). The AUR contains detailed information on individual characteristics of the unemployed, such as age, gender, formal education, health constraints or care responsibilities, which may affect individual labor supply. We use daily information on unemployment episodes, receipt of unemployment benefits, PES caseworkers' interventions such as client-meetings, job offers and benefit sanctions for non-compliance with job search requirements, as well as information on participation in active measures. In addition, all persons registered with the PES are provided with monthly information on their receipt of social assistance. We compare this information on social assistance recipients with data from the social welfare office in Vienna. The ASSD is a matched employer-employee-dataset, which provides a full record of labor market histories and earnings of all private-sector workers in Austria on a daily basis from 1972 onwards.

Our evaluation sample includes individuals who benefited from case management or were part of the reference group in the period from November 2018 to March 2019.[e]

We compare target group individuals with case management during this period ("treatment group") and target group individuals without case management ("control group"). Since case management was set up in Departments 1 and 2, all jobseekers assigned to these departments are considered treated. Similarly, all clients assigned to Department 3 – for whom the service did not change – belong to our control group.

The treated are monitored in the three years after the month of entry into case management, and the controls are monitored in the three years after the month in which they first entered Department 3 and met the target group criteria. For the effects on the placement process, we focus on the first year, since many of the clients were no longer registered as unemployed and thus no longer exposed to treatment later on. Labor market effects are examined over a period of three years. Average wages are an exception. We measure this indicator of post-unemployment job quality in two time periods: (1) in the calendar years 2019 and 2020 and (2) in the two years following the month of pilot project entry. Both the duration of the follow-up period and the definition of outcomes are exactly the same for all jobseekers in the treatment and the control group.

Each person is included in the evaluation only once, from the time of its first appearance in the pilot project. For reasons of data availability, all persons considered must have been registered with the PES and must still have met the target group criteria at the end of the month in which they joined the pilot. We exclude the extremely few participants who were over the age limit of 21 years at the end of the month, as well as one individual who died during the first year. Our final sample consists of a total of 1,811 individuals, 977 (54.0%) of whom were in the treatment group and 834 (46.1%) in the control group. About three quarters of them (73.7%) entered the case management or reference group as early as November 2018, with relatively few joining in subsequent months.[f]

3.2 Empirical method

Our objective is to estimate the average treatment effect of intensified counseling by comparing outcomes between the treatment and the control group. If randomization had been successful in the pilot project, the two groups would have been directly comparable in their relevant outcome characteristics, and average causal effects could have been determined in an unbiased way by a simple mean comparison of outcomes (cf. Imbens & Wooldridge, 2009; Angrist & Pischke, 2009; Harrison & List, 2004; Levitt & List, 2009; List, 2011; List & Rasul, 2011). However, we observe systematic pre-treatment differences between the two groups in relevant characteristics at the time of entry into the pilot project. This would lead to a "selection bias" in a simple mean comparison of outcomes.

To be clear, randomization based on the month of birth is a promising approach. In a field experiment in Austria with an increase in counseling staff for adults, this randomization mechanism achieved complete random assignment (see Böheim et al., 2017). One reason for the incomplete randomization in the present case is the systematic assignment of all persons granted asylum and subsidiary protection without a date of birth upon entry into the social security system to Department 3 (control group). However, this is obviously not the only cause. The observed differences are more diverse. They relate to personal characteristics such as gender, nationality, education level and residence status, as well as to employment histories and past welfare receipt. Treatment and control group differ significantly in most of the observed characteristics (see Table 7 in the Appendix). Therefore, the problem cannot be solved by simply excluding certain subgroups.

The differences in pre-treatment characteristics must be controlled for using appropriate empirical methods in order to establish the ex-post comparability of the groups and ensure causal interpretability of the results. For this purpose, we combine 4-to-1 propensity score matching (Rosenbaum & Rubin, 1983) within a caliper of 0.1 with exact covariate matching on residence status, social assistance receipt and last economic activity. Thus, we estimate a propensity score by way of a logit model with a very large number of individual characteristics (see Table 8 for the estimates[9]). Using the obtained propensity score, we compare participant outcomes with the outcomes of up to four non-participant "statistical twins" who are as similar as possible to the participants with respect to relevant observable characteristics. To ensure similarity between the two groups, pairs in which the distance between the propensity scores exceeds the tolerance threshold set with the caliper are excluded.

By means of exact matching, we only compare persons with the same status of residence: asylum, subsidiary protection, or no asylum status. In addition, we condition on whether individuals had partial receipt of social assistance as a non-single person at the month-end cutoff date and were last employed in the public sector. With this matching approach, we achieve an extremely good balance of covariates, at an acceptable loss of 49 persons to common support. After matching, treatment and control group do

not differ significantly on average in any of the 78 control variables used (see Table 7 for balancing indicators[h]).[i]

The similarity of the matched groups ensured by the matching procedure refers to a wealth of characteristics that potentially have an influence on the probability of case management, the placement process and labor market integration. First, these include numerous personal characteristics: gender, age, education, presence of health impairment, nationality, naturalization, asylum status, and German language skills. Second, we match on previous unemployment duration (distinguishing between registered unemployment, training periods, and the search for apprenticeship), time elapsed since last employment, industry, occupation, and earnings in last employment, the employment status at the cut-off dates one year, half a year, and three months ago, as well as detailed indicators of the five-year labor market history (sum of days in different employment statuses, namely unsubsidized employment, different forms of subsidized employment, apprenticeships, temporary absence for reasons such as child care, elderly care or education, registered unemployment, periods of PES training, apprenticeship search or other unemployment statuses). In addition, we take into account sickness benefits received during unemployment. Third, we control for past participation in various ALMP measures, for PES contacts and job offers received in the last two years. Fourth, we adjust for differences in the specific employment status and in the receipt of unemployment benefits and social assistance immediately on the day before the month under consideration.[j]

We estimate the average treatment effect on the treated (ATT). This corresponds to the difference between the actual outcomes of the treated and the hypothetical outcomes they would have achieved if they had not benefited from intensified counseling. Regarding the variance of the matching estimator, we provide heteroskedasticity-consistent analytical standard errors proposed by Abadie & Imbens (2006).[k]

3.3   Outcome measures

We compare a variety of outcomes on the counseling and placement process on the one hand and the integration into training, education and employment on the other across the up to three-year observation period after the (individual-specific) pilot entry month.

First, we examine effects on the counseling and job placement process using the share of unemployed clients having at least one meeting with a PES caseworker in the one-year observation period, the number of meetings (including individuals without a single meeting), and the interval of meetings (number of days in registered unemployment or looking for an apprenticeship between meetings). Only one meeting is counted per day. In addition to face-to-face visits, online meetings are included. Second, we compare the share receiving at least one job offer through the PES and the overall number of job offers in the one-year period. Third, we look at the share receiving at least one sanction. We also distinguish between a suspension of unemployment benefits due to a failure to accept a job or participate in training and a suspension of benefits due to a failure to meet a PES appointment.

Furthermore, we look at the share of unemployed young people with at least one entry into an active labor market policy measure during the year of interest. With regard to employment measures, we separately identify three types that are most common among the target group: two forms of direct job creation in the public or non-profit sector, namely socio-economic enterprises (SEEs) and non-profit employment projects (NEPs), and non-profit personnel leasing. Other employment measures such as integration subsidies, wage top-up systems and short-time work are included in the total but are not presented separately because they hardly ever occur. Similarly, for training measures, we only present specific effects for selected instruments, namely vocational orientation, basic training, training and further education provided by external educational institutions, PES subsidies for company-based apprenticeships, supra-company apprenticeship training, as well as extended apprenticeships or partial qualifications (EAPQ) for young people with disadvantages or personal placement obstacles who cannot complete a conventional apprenticeship. For other measures, such as course cost subsidies for participation in the free education market and labor foundations, we refrain from presenting these separately due to their

lack of significance. In addition to employment and training measures, labor-market-related counseling and support provided by external institutions (BBEs) round out the list.

We examine labor market effects by looking at (1) the sum of days spent by youth in different labor market positions during the three-year period after entry into case management and (2) the shares in each labor market position at the cut-off date after three years. Since part of the objective was to increase the number of young people in apprenticeships or other training, we make a basic distinction between apprenticeships and other forms of employment. In addition, (3) we compare the duration of unemployment and the receipt of benefits from unemployment insurance and social assistance remaining after the pilot project entry month in the three-year period. Finally, as an indicator of post-unemployment job quality, we choose average monthly earnings during employment, in a first variant in the two years following the pilot project entry month and in a second variant in the calendar years 2019 and 2020. In each case, we only consider months with an average income above the low-income threshold (€ 446.81 in 2019).

4. Empirical results

4.1 Effects on the job placement process

The increase in staff in Departments 1 and 2, and the subsequent implementation of the case management, resulted in a significant intensification of support for target group persons, which can be seen in more frequent meetings between PES caseworkers and unemployed clients. This was accompanied by a significant increase in placement activities. It led to more job proposals from the PES, more assignments to active labor market programs, in particular to qualification measures, and to more frequent sanctions in the form of suspension of benefit payments due to a failure to meet PES appointments.

Table 1: Ø Effects of intensified counseling on meetings, job offers, and benefit sanctions in the year after entry into case management

	Treated	Controls	Difference	
	Case management	No case management	ATT	
	Share in % / Percentage point change		Absolute (SE)	Relative
Meetings				
Share with meeting (%)	85.0	80.7	4.3(2.5) *	5.3
Number of meetings	6.0	3.9	2.1(0.3) ***	53.6
Meeting interval	19.1	31.6	-12.6(1.7) ***	-39.7
Job offers				
Share with job offer (%)	54.3	43.7	10.6(3.4) ***	24.2
Number of job offers	4.1	2.5	1.6(0.3) ***	63.9
Benefit sanctions				
Share with sanction (%)	6.9	4.8	2.0(1.5) *	42.2
Job or ALMP refusal	2.7	2.1	0.6(1.1)	28.8
Missed Appointment	6.1	4.1	2.1(1.4) *	50.3

Source: AUR, ASSD. – ALMP: active labor market policy. ATT: average treatment effect on the treated. Relative: difference in outcomes between treated and controls as percentage of the controls' outcomes. SE: heteroskedasticity-consistent analytical standard errors as proposed by Abadie & Imbens (2006) in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

The proportion of persons having at least one meeting increased by 4.3 percentage points or 5.3% from 80.7% to 85.0%, and the average number of meetings increased by a good 50% from 3.9 to 6.0 (+2.1 contacts, +53.6%) in the year under review. If all days of registered unemployment or apprenticeship search are taken into account, the meeting interval decreased, on average, by a good third from around 32 to 19 days (-12.6 days or -39.7%), i.e., on average, persons from the treatment group had a meeting approximately every three weeks instead of once a month.

The greater intensity of support was accompanied by an increase in job proposals: the share of clients who received at least one job proposal from PES in the year under review increased by around +24% from 43.7% to 54.3% (+10.6 percentage points or +24.2%) as a result of the increase in PES counseling staff. The average number of job proposals, taking into account persons without a single proposal, increased by almost two thirds from 2.5 to 4.1 proposals (+1.6 job proposals or +63.9%).

With more counseling staff, more time becomes available, not just for counseling, but also for monitoring clients' compliance with benefit obligations, particularly their willingness to accept available work or participate in active measures. Additionally, when more appointments are arranged, there is a higher chance that appointments will not be kept (without a good reason), which can result in benefit suspensions. Both of these aspects are possible explanations for why sanctions were imposed more frequently as a result of the introduction of the case management. In the year under review, benefit sanctions were imposed among 6.1% of the individuals in the treatment group due to a failure to meet an appointment, compared to 4.1% in the control group. This corresponds to an increase of +2.1 percentage points or +50.3%. The case management had no effect on sanctions due to refusal to accept a job or participate in active measures.

Table 2: Ø Effects of intensified counseling on entries into ALMP measures in the year after entry into the case management

	Treated	Controls	Difference	
	Case management	No case management	ATT	
	Share in % / Percentage point change		Absolute	Relative
Total	85.1	84.4	0.7(2.7)	0.9
Employment measures	9.3	6.8	2.4(1.7) *	35.6
Direct job creation in SEEs	5.1	3.3	1.8(1.3) *	52.8
Direct job creation in NEPs	2.0	1.3	0.7(1.1)	56.1
Non-profit personnel leasing	1.9	1.8	0.1(1.0)	5.9
Qualification measures	81.6	78.8	2.8(3.1)	3.5
Vocational orientation	28.4	26.0	2.5(3.2)	9.5
Basic training	46.3	35.6	10.7(3.1) ***	30.0
Training and further education	6.9	5.8	1.1(1.9)	18.7
PES subsidies to apprenticeships	7.0	4.3	2.7(1.6) *	63.5
Supra-company apprenticeship training	13.5	15.4	-1.9(2.6)	-12.3
EAPQ	6.9	7.9	-1.0(1.8)	-12.4
External counseling	40.3	42.4	-2.1(3.6)	-5.0

Source: AUR, ASSD. – SEEs: socio-economic enterprises. NEPs: non-profit employment projects. EAPQ: extended apprenticeship or partial qualification. ATT: average treatment effect on the treated. Relative: difference in outcomes between treated and controls as percentage of the controls' outcomes. Heteroskedasticity-consistent analytical standard errors as proposed by Abadie & Imbens (2006) in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Intensifying counseling led to more frequent participation in employment and qualification measures (see Table 2). The percentage of persons participating in at least one active measure hardly changed (treated 85.1%, controls 84.4%). However, 46.3% of those treated started basic training. This represents an increase of 30%, from an already high starting level (control group 35.6%; +10.7 percentage points). Basic training plays the most prominent role in the target group. Here, general basic qualifications are taught in order to create the basic conditions for entry into the labor market or participation in further education or training. Typical examples are German courses, literacy courses, courses for catching up on compulsory school-leaving competencies, and basic IT courses. As a further result of intensified counseling, the share of those with in-company apprenticeship support (PES subsidies to support companies and training establishments, which offer training slots to certain target groups) increased by 2.7 percentage points or 63.5% (treated 7.0%, controls 4.3%). In addition, there was a significant increase in the number of persons entering a socio-economic enterprise (5.1% versus 3.3%; +1.8 percentage points or +52.8%).

One year after entering the pilot project, 55.2% of the young people in case management were (still) taking part in an ALMP measure, compared to 46.9% in the control group. Significant differences exist in the placement in basic training, training and further education, company-based apprenticeship support, and direct job creation in SEEs and NEPs.[l]

4.2 Effects on labor market integration

Turning to effects on direct labor market integration, we find that the partial goal pursued within the pilot project was achieved, i.e., to encourage more of the low-skilled young people to take up training and further education instead of being quickly placed in some form of "unskilled job". As a consequence of intensified counseling, in the three years following access to the pilot, the young people were more frequently taking part in a (subsidized) apprenticeship and training measures provided by the PES. At the same time, they were less likely to be engaged in other employment (except apprenticeship) as (low-skilled) workers, i.e., in "unskilled jobs".

Table 3: Ø Effects of intensified counseling on the sum of days in different labor market positions in the three years after entry into case management

	Treated	Controls	Difference		
	Case management	No case management	ATT		
			Absolute		Relative
	In days		In days		in %
Employed	422	426	-4(25)		-0.9
Dependent employed	419	419	0(25)		0.1
Active dependent employed	394	408	-14(25)		-3.4
Apprenticeship	237	230	7(27)		3.0
Unsubsidized	37	42	-5(12)		-12.7
Subsidized in companies	42	26	16(9)	*	60.3
Supra-company apprenticeship training	96	103	-7(18)		-7.2
EAPQ	63	59	4(18)		6.7
Other employment	157	178	-21(18)	*	-11.7
1st labor market	137	165	-28(17)	*	-17.0
Workers	90	120	-29(15)	*	-24.6
Employees	39	37	1(9)		4.0
2nd labor market (SEEs/NEPs)	20	13	7(4)	*	53.9
Self-employed	2	6	-4(6)		-65.4
Registered unemployed	171	190	-19(16)	*	-10.1
PES Training	245	205	39(13)	**	19.1
Apprenticeship search	100	113	-13(11)	*	-11.5
Other unemployment status	16	15	1(3)		6.3
Economically inactive	138	141	-4(15)		-2.5

Source: AUR, ASSD. – Active dependent employment excludes, on the one hand, military and civilian service and, on the other hand, temporary absence from employment for reasons such as childcare, care and education. The first labor market includes employment in the regular labor market supported by integration subsidies and wage top-up granted by the PES. However, these subsidies play a marginal role in the target group. SEEs: socio-economic enterprises. NEPs: non-profit employment projects. ATT: average treatment effect on the treated. Relative: difference in outcomes between treated and controls as percentage of the controls' outcomes. Heteroskedasticity-consistent analytical standard errors as proposed by Abadie & Imbens (2006) in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Thus, in the three years following access to case management, those treated spent an average of 237 days in apprenticeships. This is not significantly more than in the control group (230 days). However, they spent 42 days and thus +16 days more in subsidized company-based apprenticeships. This

represents a significant increase of 60.3%. They spent an average of 245 days in PES training instead of 205, an increase of +39 days or +19.1%. Conversely, they spent an average of 157 days instead of 178 – i.e., 21 days or 11.7% – less in other employment (except apprenticeship). The decisive factor here is that they spent fewer days as (low-skilled) workers in the primary labor market, namely 90 instead of 120 days (–29 days or –24.6%) (cf. Table 3).

After three years, 21.3% of those treated were enrolled in an apprenticeship. This is +4.3 percentage points or a quarter (+25.2%) higher than in the control group (17.0%). 14.2% of the treated were in PES training, which is +2.5 percentage points or +21.7% more than in the control group (11.7%). A total of 23.4% of the treated were in other employment (no apprenticeship). This is significantly less than in the control group at 28.5% (–5.1 percentage points or –18.0%). Those in the treatment group were significantly less likely to be employed as workers in the first labor market (treatment group 13.9%, control group 17.1%, difference of 3.2 percentage points or 18.8%) (see Table 4).

The main reason for the higher share in an apprenticeship after three years was an increase in apprenticeship participation subsidized by the PES: treated persons were more often in subsidized company-based apprenticeships (3.7% instead of 2.3%; +1.4 percentage points or +61,3%) and in extended apprenticeship or partial qualification (EAPQ) for young people with disadvantages or personal placement obstacles who cannot complete a conventional apprenticeship (4.6% instead of 3.0%; +1.7 percentage points or +56.8%). Unsubsidized apprenticeships were relatively rare in both groups, reflecting the special problems of the young people studied.

If all forms of employment, including apprenticeships, are combined, no effect of intensified counseling on integration into employment can be observed in the three years after entry into case management. Individuals from the treatment group spent an average of 422 days in employment, of which 419 days were spent in dependent employment. Thus, they did not differ significantly from the control group (426 days of employment, of which 419 were dependent employment). Three years after pilot project access, 49.1% of the treated were employed. This is not significantly more than in the control group (48.5%).

Both groups were extremely rarely self-employed, and they were equally rarely in subsidized employment in SEEs or NEPs in the so-called "2nd labor market" three years after pilot entry. Moreover, we find no effect on labor force participation. As shown in Table 4, the difference in the share of economically inactive persons after three years did not differ significantly between treatment group (16.7%) and control group (15.9%).

Table 4: Ø Effects of intensified counseling on the labor market position after 3 years

	Treated	Controls	Difference	
	Case management	No case management	ATT	
	Share in % / percentage point change		Absolute	Relative
Employed	49.1	48.5	0.7(3.4)	1.4
Dependent employed	48.5	46.7	1.7(3.5)	3.7
Active dependent employed	44.7	45.6	-0.8(3.5)	-1.8
Apprenticeship	21.3	17.0	4.3(2.4) *	25.2
Unsubsidized	5.8	4.9	0.9(1.4)	17.6
Subsidized in companies	3.7	2.3	1.4(0.9) *	61.3
Supra-company apprenticeship training	7.2	6.9	0.4(1.9)	5.2
EAPQ	4.6	3.0	1.7(1.1) *	56.8
Other employment	23.4	28.5	-5.1(2.9) *	-18.0
1st labor market	21.8	26.9	-5.1(2.9) *	-18.9
Workers	13.9	17.1	-3.2(2.5) *	-18.8
Employees	6.1	6.9	-0.7(1.8)	-10.5
2nd labor market (SEEs/NEPs)	1.6	1.7	-0.1(0.8)	-3.2
Self-employed	0.6	1.7	-1.1(1.2)	-62.5
Registered unemployed	14.2	16.9	-2.7(2.9)	-15.9
PES training	14.2	11.7	2.5(2.2) *	21.7
Apprenticeship search	3.8	4.8	-1.0(1.7)	-20.9
Other unemployment status	1.5	2.0	-0.5(1.0)	-23.3
Economically inactive	16.7	15.9	0.8(2.6)	5.3

Source: AUR, ASSD. – Active dependent employment on the one hand excludes military and civilian service and, on the other hand, temporary absence from employment for reasons such as childcare and education. The first labor market includes employment in the regular labor market supported by integration subsidies and wage top-ups granted by the PES. However, these subsidies play a marginal role in the target group. SEEs: socio-economic enterprises. NEPs: non-profit employment projects. ATT: average treatment effect on the treated. Relative: difference in outcomes between treated and controls as percentage of the controls' outcomes. Heteroskedasticity-consistent analytical standard errors as proposed by Abadie & Imbens (2006) in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 5: Ø Effects of intensified counseling on unemployment duration, benefit receipt duration, benefit receipt after 3 years and average post-unemployment monthly earnings

	Treated	Controls	Difference	
	Case management	No case management	ATT	
			Absolute	Relative
In days				
Remaining unemployment duration	530	515	15(32)	2.9
Unemployment insurance benefit duration				
Unemployment benefit	48	42	5(6)	12.9
Unemployment assistance	68	65	2(12)	3.3
Other unemployment insurance benefits	200	175	25(12) **	14.4
Subsistence allowance scheme	162	137	25(11) **	18.5
Travel expenses	37	38	-1(5)	-1.4
Share in % / Percentage point change				
Benefit receipt after 1 year				
Unemployment insurance benefits				
Unemployment benefit	8.6	8.7	-0.1(2.6)	-0.8
Unemployment assistance	7.2	7.7	-0.4(2.3)	-5.7
Other unemployment insurance benefits	8.3	9.4	-1.1(2.0)	-11.5
None	75.9	74.3	1.6(3.2)	2.1
Social assistance	27.3	27.4	-0.1(3.4)	-0.4
Full receipt	10.0	11.1	-1.1(2.2)	-9.6
Partial receipt	17.2	16.3	1.0(3.0)	5.9
In €				
Average monthly wage				
2 years after pilot entry	1,041	1,064	-23(33)	-2.1
Calendar years 2019 and 2020	1,047	1,069	-22(26)	-2.1

Source: AUR, ASSD. – Social assistance receipt according to AMS. Full receipt: no parallel benefit from unemployment insurance. Partial receipt: Top-up of unemployment insurance benefits with social assistance. Remaining unemployment duration and unemployment insurance benefit duration censored at three years. ATT: average treatment effect on the treated. Relative: difference in outcomes between treated and controls as percentage of the controls' outcomes. Heteroskedasticity-consistent analytical standard errors as proposed by Abadie & Imbens (2006) in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

As seen in Table 5, intensified counseling had no effect on the average remaining duration of unemployment in the three years under review (treated 530 days, controls 515 days). Nor did it change the average number of days during which the treated received unemployment benefit or unemployment assistance. The target group under consideration generally rarely received these benefits, presumably because they did not meet the eligibility requirements. However, case management resulted in a more

frequent receipt of subsistence allowance: on average, the treated received this benefit for 162 days, compared to 137 days for the controls (+25 days or +18.5%). This is due to more frequent participation in subsidized apprenticeships and PES training. The subsistence allowance is paid during participation in such ALMP measures.

Finally, with regard to post-unemployment job quality, we find that the young people who received intensified counseling after participating in case management had a similarly high monthly income as comparable young people who did not receive case management, once they were in employment (covered by social insurance). In both groups, the average was slightly above 1,000 €.

5. Robustness checks

Robustness tests show that the measured effects (shown by employment integration after three years) are robust to variations of our sample (see Table 6). They change little (1) if persons not meeting the target group criteria at the end of the month are not excluded, (2) if the few persons over 21 years old at the end of the month are included, (3) if previous unemployment duration (distinguishing between different unemployment statuses) is not controlled for, (4) if only the pilot participants with access in November 2018 and not the pilot accesses in the following months (December 2018 to March 2019) are considered, (5) if the population is restricted to all persons receiving social assistance in the reference month according to data from both the PES and the social welfare office in Vienna (instead of only controlling for this information via matching), and (6) if only persons with at least one PES meeting in the first six months after pilot access are examined. Even (7) if we restrict our population to persons who have been (co-)insured in the Austrian Social Insurance for a maximum of five years and have been active in the labor market for a maximum of three years, the results remain largely unchanged. The only deviation is that this group, which consists even more of persons granted asylum or subsidiary protection than the target group as a whole, is not significantly more likely to be in PES training after three years.[m]

Table 6 also shows how the results differ when differences in the initial characteristics of the treatment compared to the control group are not adjusted at all or adjusted using simple regressions ("least

squares method", OLS) instead of matching. Hence, the correction does make a difference, at least in detail, whether it is done by OLS or matching.

Table 6: **Robustness of effects to sample and method variation**

Ø Effects of intensified counseling on the labor market position after 3 years, ATT, in percentage points

| | Matching | | | | | | | | OLS | |
	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	No corr.	Corr.
Employed	0.7(3.4)	0.1(3.3)	0.7(3.3)	-0.3(3.6)	-2.2(4.4)	-0.5(3.8)	0.3(4.3)	0.3(5.2)	-5.1(2.4)**	-1.3(2.7)
Dep. emp.	1.7(3.5)	0.7(3.3)	1.7(3.4)	0.7(3.6)	-1.9(4.5)	1.5(4.0)	1.4(4.1)	0.3(5.2)	-5.3(2.4)**	-1.2(2.7)
Active dep. emp.	-0.8(3.5)	-0.9(3.3)	-1.0(3.4)	-2.0(3.6)	-5.2(4.5)*	-0.9(3.9)	-0.8(4.1)	-1.1(5.2)	-6.9(2.4)***	-2.4(2.7)
Reg. unemp.	-2.7(2.9)	-3.2(3.0)*	-3.1(2.8)*	-3.1(3.1)*	-0.5(3.0)	-3.2(3.3)	-5.3(3.8)*	1.6(2.8)	0.7(1.7)	-2.1(1.8)**
PES training	2.5(2.2)*	2.8(2.1)*	3.2(2.0)*	2.8(2.2)*	0.7(3.0)	3.0(2.2)*	2.6(2.5)*	-0.8(3.8)	0.9(1.6)	1.4(1.9)
Apprent. search	-1.0(1.7)	-1.0(1.4)	-0.8(1.7)	-0.5(1.6)	-1.3(2.1)	-0.6(1.5)	0.0(1.7)	-1.6(2.1)	0.3(0.9)	-0.3(1.0)
Other unemp. status	-0.5(1.0)	-1.1(1.1)	-0.5(1.0)	-0.4(1.0)	0.4(0.9)	-0.4(0.8)	-0.8(1.3)	0.0(0.9)	-0.1(0.6)	-0.3(0.7)
Econ. inactive	0.8(2.6)	2.5(2.8)	0.6(2.7)	1.7(2.5)	2.8(3.1)	1.6(2.6)	3.5(3.1)*	0.5(3.1)	3.3(1.7)**	2.8(2)

Source: AUR, ASSD. – ATT: average treatment effect on the treated. Matching: 4-to-1 Propensity score matching within caliper of 0.1, combined with exact covariate matching on residence status, social assistance receipt and last economic activity. OLS: ordinary least squares. No corr.: without control variables. Corr.: with control variables from matching. (0): chosen sample. (1): Not excluding persons who did not meet the target group criteria at the end of the month. (2): Not excluding persons who were over 21 years old at the end of the month. (3): Excluding controls for previous unemployment duration (distinguishing between different unemployment statuses). (4): considering only the experiment participants with access in November 2018 and not the experiment accesses in the following months (December 2018 to March 2019), (5): restricting the population to all persons receiving social assistance in the reference month according to both the PES and the social welfare office Vienna. (6): only persons with at least one PES contact in the first half of the year. (7): only persons who were (co-)insured in Austria for a maximum of five years and active on the labor market for a maximum of three years. Standard errors in parentheses, in case of matching heteroskedasticity-consistent analytical standard errors as proposed by Abadie and Imbens (2006). *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

6. Conclusions

The Austrian PES tested a new model of intensified support ("case management") in the Regional Office for Youth for the target group of unemployed young people who had little formal education and were drawing on social assistance. Shortening unemployment through rapid integration into employment is often not realistic for this target group of disadvantaged unemployed youth and is also not an immediate

goal of labor market policy interventions. According to international studies, young people generally benefit less from labor market policy measures than do adults. In particular, training programs and other active measures may often not lead to employment in the short term, while improving labor market integration in the long term. In view of the increased risk of clients withdrawing completely from the labor market in response to unemployment – thus being neither in employment, in an education program, nor in training – even a stabilization of labor market and education participation must be considered a success.

In this sense, the primary goal of the PES pilot project was not to shorten unemployment through rapid employment. Rather, the objective was to provide more resources for more intensive support, thereby preventing labor market exits, keeping the youth in continuous counseling, and improving their long-term labor market opportunities. Part of the strategy was to encourage more of these individuals to pursue education and training, rather than quickly placing them in often unstable "unskilled" jobs – in the hope that this would better promote their longer-term employment prospects.

This strategy was successfully implemented: in the three-year follow-up period, intensified counseling led to less frequent employment as "unskilled" workers and to a more frequent take-up of (subsidized) apprenticeships and increased participation in qualification measures, particularly in basic training. These empirical results are in line with feedback from PES caseworkers, who state that more meetings with clients makes it easier to motivate them to take part in training. It signifies a shift in emphasis away from a "work first" strategy, where the focus is on ending unemployment as quickly as possible through placement, even in jobs with poor longer-term employment prospects, toward a "train-first" strategy, which aims at strengthening employability in the long term by investing in "human capital".

Looking at the three-year period following entry into case management, we find no impact on the extent of overall integration into employment, that is, integration into apprenticeships and other employment relationships. One possible reason for this result may be that it takes even longer than three years for the investment in education and training to translate into greater labor market success. Basic training could be followed by further education and only then by employment. A one-fifth higher share in PES

training could indicate that "lock-in effects" (van Ours, 2004) are still at work. However, after three years, no improvement in employment integration is evident. The results thus confirm earlier findings that improving the labor market integration of disadvantaged unemployed youth is a major challenge.

Regarding post-unemployment job quality, we find no effects on wages when starting a job. Nor do we find any effect on labor force participation in the three years after entry into case management. This may be the result of two opposing effects that balance each other out: on the one hand, more intensive counseling and support may have promoted retention in the labor force; on the other hand, withdrawal reactions to increased monitoring and pressure through more frequent meetings with the caseworker and more job proposals, assignments to active labor market policy measures, and sanctions are conceivable.

Finally, it can be concluded that the increase in PES-staff has given a decisive boost to the counseling and placement process. It has led to a significant intensification of counseling, which in turn has resulted in more job offers, more participation in active measures, and more frequent sanctions in the form of benefit suspensions for failure to meet PES appointments.

Thus, more staff for more intensive counseling has an effect on the behavior of clients. However, the impetus it creates can be channeled in different directions. In another recent Austrian pilot project, additional counseling staff in the PES shortened the average unemployment period of an adult target group through faster job acceptance and more withdrawals from the labor market by less motivated customers (Böheim – Eppel – Mahringer, 2017). By contrast, in the present trial for youth, an important goal was to get more young people into training in order to increase their chances of employment in the long term. Thus, when setting up case management, it is not only the extent to which counseling is intensified that is a key parameter, but also, particularly, the strategic orientation of the additional resources.

7. List of abbreviations

Abbreviation	Full Description
ALMP	Active labor market policy
AMS	Arbeitsmarktservice
ASSD	Austrian Social Security database
ATT	Average treatment effect on the treated
AUR	Austrian unemployment register
BBEs	External counseling and support facilities
EAPQ	Extended apprenticeship or partial qualification
ILO	International Labor Organization
NEPs	Non-profit employment projects
OLS	Ordinary least squares
PES	Public Employment Service
REOs	Regional employment offices
SEEs	Socio-economic enterprises
YES	Youth Employment Service

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9. Appendix

Table 7: **Covariate balance before and after matching**

	Before matching					After matching				
	Mean				t-test	Mean				t-test
	Treated	Controls	Diff.		p>|t|	Treated	Controls	Diff.		p>|t|
Female	0.389	0.296	0.093	***	0.00	0.383	0.387	-0.005		0.84
Age (in years)	18.147	18.595	-0.448	***	0.00	18.131	18.178	-0.047		0.47
At least compulsory school	0.582	0.513	0.069	***	0.00	0.574	0.604	-0.029		0.20
Health-related placement restriction[1]	0.042	0.010	0.032	***	0.00	0.032	0.024	0.008		0.28
Nationality										
Austria	0.275	0.194	0.081	***	0.00	0.267	0.280	-0.013		0.54
Turkey, former Yugoslavia	0.064	0.049	0.015		0.16	0.066	0.057	0.008		0.45
Naturalized	0.093	0.068	0.025	*	0.06	0.095	0.105	-0.010		0.47
Asylum status										
Eligible for asylum (convention refugee)	0.468	0.416	0.052	**	0.03	0.470	0.470	0.000		1.00
Subsidiary protection	0.142	0.299	-0.156	***	0.00	0.147	0.147	0.000		1.00
German language level A	0.231	0.294	-0.062	***	0.00	0.242	0.219	0.023		0.24
German language level B	0.533	0.490	0.043	*	0.07	0.531	0.551	-0.020		0.39
Status at end of previous month										
Registered unemployed	0.170	0.229	-0.059	***	0.00	0.167	0.165	0.002		0.92
Looking for an apprenticeship	0.197	0.193	0.003		0.85	0.202	0.199	0.003		0.89
In PES training	0.483	0.456	0.027		0.24	0.485	0.477	0.008		0.73
In employment	0.143	0.086	0.057	***	0.00	0.131	0.135	-0.003		0.84
Out of the labor force	0.063	0.149	-0.085	***	0.00	0.061	0.051	0.010		0.34
In basic qualification	0.280	0.331	-0.050	**	0.02	0.293	0.283	0.010		0.65
In vocational orientation	0.068	0.048	0.020	*	0.08	0.069	0.071	-0.002		0.84
In external counseling	0.221	0.201	0.020		0.31	0.225	0.252	-0.027		0.18
Social assistance full receipt[2]	0.478	0.356	0.122	***	0.00	0.475	0.472	0.003		0.90
Social assistance partial receipt[2]	0.434	0.332	0.102	***	0.00	0.432	0.434	-0.002		0.94
Unemployment assistance receipt	0.055	0.043	0.012		0.24	0.047	0.034	0.014		0.13
Previous unemployment duration (days)	519.010	455.550	63.460	***	0.00	508.550	510.210	-1.660		0.92
Days in registered unemployment	63.205	74.537	-11.332	**	0.02	63.004	64.348	-1.344		0.77
Days in PES training	282.860	267.020	15.840		0.19	279.210	280.190	-0.980		0.93
Days looking for an apprenticeship	116.710	72.450	44.260	***	0.00	111.630	110.330	1.300		0.80
No previous dependent employment	0.729	0.722	0.007		0.74	0.747	0.759	-0.012		0.54
Last income >1,000 €	0.058	0.109	-0.051	***	0.00	0.061	0.057	0.005		0.66
Employment history: days in last 5 years[3]										
Active unsubsidized dep. employment Apprenticeship	21.858	24.516	-2.658		0.60	21.268	18.799	2.469		0.58
Active subsidized dep. employment 1st lm	2.765	2.899	-0.135		0.91	2.566	3.634	-1.068		0.35
Active subsidized dep. employment 2nd lm	73.487	48.354	25.133	***	0.00	66.018	69.442	-3.424		0.68
Temporary absence	3.398	3.477	-0.079		0.97	3.282	4.205	-0.922		0.65
Self-employment	1.116	0.429	0.686		0.38	1.040	0.228	0.812		0.26

Registered unemployment	79.867	82.482	-2.615		0.64	79.366	84.708	-5.342	0.36
PES training	271.240	250.450	20.790	*	0.05	270.990	267.210	3.780	0.72
Apprenticeship search	172.750	98.060	74.690	***	0.00	164.100	156.340	7.760	0.22
Other unemployment status	19.657	13.224	6.433	***	0.00	19.673	21.651	-1.978	0.39
Employment history: days in last 2 years[3]									
Active unsubsidized dep. employment	12.942	13.596	-0.654		0.82	12.400	9.717	2.683	0.28
Active subsidized dep. employment 2nd lm	52.850	36.675	16.175	***	0.01	49.288	52.080	-2.792	0.66
Employment history: days in last year[3]									
Active unsubsidized dep. employment	5.743	7.148	-1.404		0.31	5.529	5.185	0.345	0.77
Apprenticeship	1.840	1.606	0.235		0.77	1.936	1.798	0.139	0.86
Active subsidized dep. employment 2nd lm	35.341	23.806	11.535	***	0.00	32.820	35.113	-2.293	0.59
Registered unemployment	65.062	71.601	-6.539		0.17	64.420	70.614	-6.194	0.21
PES training	223.310	221.630	1.680		0.85	226.590	223.230	3.360	0.70
Apprenticeship search	118.000	67.393	50.607	***	0.00	113.360	108.800	4.560	0.33
1 year ago employed	0.105	0.090	0.015		0.27	0.097	0.101	-0.004	0.75
1 year ago unemployed	0.603	0.543	0.060	**	0.01	0.602	0.595	0.007	0.75
6 months ago employed	0.118	0.098	0.019		0.19	0.110	0.110	0.000	0.99
6 months ago unemployed	0.680	0.603	0.077	***	0.00	0.682	0.689	-0.007	0.76
3 months ago employed	0.107	0.065	0.043	***	0.00	0.099	0.113	-0.014	0.33
3 months ago unemployed	0.766	0.727	0.039	*	0.06	0.775	0.774	0.001	0.96
1 year ago social assistance full receipt	0.303	0.236	0.067	***	0.00	0.307	0.301	0.006	0.78
1 year ago social assistance partial receipt	0.175	0.210	-0.035	*	0.06	0.170	0.149	0.021	0.22
Sickness benefit (unemployed) in last 2 years	0.245	0.210	0.035	*	0.08	0.231	0.265	-0.035	0.08
ALMP participation in last 2 years									
Active job search	0.124	0.065	0.059	***	0.00	0.117	0.126	-0.009	0.57
Basic qualification	0.666	0.681	-0.015		0.51	0.671	0.650	0.022	0.32
Vocational orientation	0.470	0.394	0.075	***	0.00	0.457	0.476	-0.020	0.40
Training and further education	0.134	0.078	0.056	***	0.00	0.123	0.120	0.003	0.84
Supra-company apprenticeship training	0.141	0.095	0.047	***	0.00	0.125	0.120	0.005	0.73
EAPQ	0.070	0.044	0.025	**	0.02	0.065	0.084	-0.019	0.11
External counseling	0.633	0.598	0.034		0.14	0.636	0.639	-0.003	0.89
Nr. PES contacts in last 6 months	2.664	2.237	0.427	***	0.00	2.613	2.593	0.020	0.86
Nr. PES contacts in last 2 years	7.142	5.844	1.298	***	0.00	6.894	6.952	-0.058	0.82
Nr. PES placement offers in last 6 months	1.688	1.970	-0.282		0.12	1.669	1.828	-0.159	0.33
Nr. PES placement offers in last 2 years	3.309	4.149	-0.840	**	0.02	3.275	3.697	-0.422	0.15
Last profession									
Simple/basic services	0.070	0.058	0.012		0.30	0.067	0.064	0.002	0.83
Accomodation, food service	0.052	0.044	0.008		0.44	0.051	0.056	-0.005	0.61
Law	0.064	0.029	0.036	***	0.00	0.063	0.062	0.001	0.94
Production	0.514	0.517	-0.003		0.90	0.523	0.530	-0.008	0.74
Trade and sales	0.186	0.157	0.029		0.10	0.182	0.172	0.010	0.58
Last employment in the public sector	0.211	0.134	0.077	***	0.00	0.176	0.176	0.000	1.00
Unemployment insurance benefit daily rate									
≤5 €	0.084	0.096	-0.012		0.37	0.086	0.087	-0.001	0.94
≤ 15 €	0.166	0.150	0.016		0.36	0.165	0.150	0.015	0.37
≤ 20 €	0.090	0.119	-0.029	**	0.05	0.094	0.088	0.005	0.69
Social assistance receipt[3]									

Full receipt, single	0.100	0.097	0.003		0.82	0.101	0.094	0.007	0.61
Full receipt, no single	0.032	0.030	0.002		0.83	0.032	0.044	-0.011	0.21
Partial receipt, single	0.289	0.359	-0.070	***	0.00	0.281	0.285	-0.004	0.84
Partial receipt, no single	0.494	0.349	0.145	***	0.00	0.501	0.501	0.000	1.00

Balancing indicators

	Pseudo R^2	$P > \chi2$	Median bias
Before matching	0.245	0.000	10.4
After matching	0.022	0.977	2.1

Source: AUR, ASSD. – Notes: 1: According to PES, other than legal disability status. 2: According to PES. 3: Active dependent employment: excluding persons with a valid employment relationship who are temporarily absent for reasons such as parental leave. 4 According to the city of Vienna. 1st and 2nd lm: 1st and 2nd labor market. EAPQ: extended apprenticeship or partial qualification. After matching all variables statistically insignificant. *** p<0.01, ** p<0.05, * p<0.1. Balancing indicators: Pseudo R^2 from logit estimation on raw and matched samples. P-value of the likelihood-ratio test of the joint significance of all regressors. Median absolute standardized bias: % difference of the sample means in the treated and non-treated subsamples as a percentage of the square root of the average of the sample variances in the treated and non-treated groups.

Table 8: **Logit estimates of the propensity scores**

	Odds Ratio (SE)		
Female	1.472	***	(0.198)
Age (in years)	0.567	***	(0.040)
At least compulsory school	1.117		(0.171)
Health-related placement restriction[1]	5.032	***	(2.453)
Nationality			
Austria	1.854		(0.685)
Turkey, former Yugoslavia	0.778		(0.302)
Naturalized	0.621	*	(0.173)
Asylum status			
Eligible for asylum (convention refugee)	1.015		(0.315)
Subsidiary protection	0.655		(0.221)
German language level A	2.023	**	(0.531)
German language level B	1.974	***	(0.451)
Status at end of previous month			
Registered unemployed	0.481	**	(0.135)
Looking for an apprenticeship	0.377	***	(0.108)
In PES training	0.611	*	(0.179)
In employment	0.997		(0.407)
Out of the labor force	0.532	**	(0.159)
In basic qualification	0.509	**	(0.153)
In vocational orientation	0.751		(0.276)
In external counseling	1.449	*	(0.270)
Social assistance full receipt[2]	3.777	***	(0.704)
Social assistance partial receipt[2]	6.120	***	(1.355)
Unemployment assistance receipt	0.848		(0.360)
Previous unemployment duration (days)	1.001		(0.001)
Days in registered unemployment	0.997		(0.002)
Days in PES training	0.999		(0.002)
Days looking for an apprenticeship	0.998		(0.002)
No previous dependent employment	1.208		(0.259)
Last income >1,000 €	0.624		(0.185)
Employment history: days in last 5 years[3]			
Active unsubsidized dependent employment	1.000		(0.003)
Apprenticeship	0.999		(0.003)
Active subsidized dependent employment 1st labor market	0.998		(0.003)
Active subsidized dependent employment 2nd labor market	1.001		(0.001)
Temporary absence	1.000		(0.001)
Self-employment	1.007		(0.007)
Registered unemployment	1.008	***	(0.002)
PES training	1.001		(0.001)
Apprenticeship search	1.003	***	(0.001)
Other unemployment status	1.002		(0.002)
Employment history: days in last 2 years[3]			
Active unsubsidized dependent employment	1.005	*	(0.003)

Active subsidized dependent employment 2nd labor market	1.000		(0.002)
Registered unemployment	0.996	*	(0.002)
PES training	0.999		(0.001)
Apprenticeship search	1.004	**	(0.002)
Employment history: days in last year[3]			
Active unsubsidized dependent employment	0.999		(0.005)
Apprenticeship	0.995		(0.006)
Active subsidized dependent employment 2nd labor market	0.999		(0.003)
1 year ago employed	0.974		(0.401)
1 year ago unemployed	1.064		(0.206)
6 months ago employed	0.561		(0.266)
6 months ago unemployed	1.188		(0.222)
3 months ago employed	2.227	*	(0.985)
3 months ago unemployed	0.858		(0.175)
1 year ago social assistance full receipt	1.187		(0.193)
1 year ago social assistance partial receipt	0.686	**	(0.128)
Sickness benefit (unemployed) in last 2 years	0.870		(0.143)
Active labor market policy participation in last 2 years			
Active job search	1.748	**	(0.433)
Basic qualification	1.610	**	(0.305)
Vocational orientation	1.008		(0.152)
Training and further education	1.612	**	(0.354)
Supra-company apprenticeship training	1.137		(0.424)
EAPQ	0.759		(0.318)
External counseling	0.850		(0.127)
Nr. PES contacts in last 6 months	1.130	**	(0.051)
Nr. PES contacts in last 2 years	0.966		(0.027)
Nr. PES placement offers in last 6 months	1.003		(0.026)
Nr. PES placement offers in last 2 years	0.921	***	(0.014)
Last profession			
Simple/basic services	1.823	*	(0.526)
Accommodation, food service	1.397		(0.433)
Law	2.619	**	(0.890)
Production	1.318		(0.233)
Trade and sales	1.303		(0.285)
Last employment in the public sector	1.264		(0.394)
Unemployment insurance benefit daily rate			
≤5 €	0.901		(0.281)
≤ 15 €	0.619	*	(0.157)
≤ 20 €	1.110		(0.284)
Social assistance receipt[4]			
Full receipt, single	1.354		(0.368)
Full receipt, no single	0.887		(0.336)
Partial receipt, single	1.533	*	(0.340)
Partial receipt, no single	1.422	*	(0.297)
Constant	1545.793	***	(2044.712)

Source: AUR, ASSD. – Notes: Dependent variable: treated. 1: According to PES, other than legal disability status. 2: According to PES. 3: Active dependent employment: excluding persons with a valid employment relationship who are temporarily absent for reasons such as parental leave. EAPQ: extended apprenticeship or partial qualification. 4 According to the city of Vienna. Standard errors in parentheses. Statistical significance based on Z statistics. *** p<0.01, ** p<0.05, * p<0.1.

Table 9: **Comparison of matching algorithms**

	(1)	(2)	(3)
% loss to common support	5.0	7.5	2.1
Logit Pseudo-R^2, after[1]	0.022	0.024	0.026
$P > \chi^2$, after[2]	0.977	0.937	0.782
Median bias, after[3]	2.1	2.2	2.7
ATT (SE), employed	0.7(3.4)	1.6(3.5)	-1.4(3.5)
ATT (SE), dependent employed	1.7(3.5)	2.5(3.6)	-0.5(3.5)
ATT (SE), active dependent employed	-0.8(3.5)	-0.2(3.5)	-2.7(3.5)
ATT (SE), registered unemployed	-2.7(2.9)	-2.7(3.5)	-1.0(2.4)
ATT (SE), PES training	2.5(2.2) *	1.5(2.7)	2.3(2.4)
ATT (SE), apprenticeship search	-1.0(1.7)	-1.0(1.6)	-1.0(1.3)
ATT (SE), other unemployment status	-0.5(1.0)	-0.6(1.4)	-0.7(0.9)
ATT (SE), economically inactive	0.8(2.6)	1.1(2.6)	1.9(2.4)

Source: AUR, ASSD. – Notes: (1) 4-to-1 Propensity score matching within caliper of 0.1, combined with exact covariate matching on residence status, social assistance receipt and last economic activity. (2) Additional exact matching on gender. (3) Kernel matching with epanechnikov kernel and bandwidth 0.1. Proportion of treated lost to common support. Pseudo R^2 from the logit estimation on the matched samples. P-value of the likelihood-ratio test of the joint significance of all regressors after matching. Median absolute standardized bias after matching: % difference of the sample means in the matched treated and matched non-treated subsamples as a percentage of the square root of the average of the sample variances in the treated and non-treated groups. ATT: Absolute average treatment effect on the treated (in percentage points) on the labor market position after 3 years. Standard errors in parentheses, in case of (1) and (2) heteroskedasticity-consistent analytical standard errors as proposed by Abadie & Imbens (2006).

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[d] Asylumseekers whose application for asylum is rejected must be granted subsidiary protection if there is a threat of violation of the ban against torture or the prohibition of inhuman or degrading punishment or treatment or the right to life or a serious danger to body and life in conflict situations. In contrast to asylum, a right of residence is limited to one year, which upon request can be prolonged by two years.

[e] In the subsequent period from April to October 2019, no new persons were admitted to case management, only once again starting in November 2019.

[f] The reason for this high proportion lies in the definition of the target group: In the following months, only persons joined who (1) were either newly unemployed and did not have a compulsory school-leaving certificate or (2) had a compulsory school-leaving certificate and only then exceeded the threshold of 3 months of unemployment or apprenticeship search. A large proportion of the pilot participants were already registered with the PES in November 2018, and if young people had been looking for a job or apprenticeship for longer than three months, this was generally already the case at the start of the pilot project and not in the months thereafter.

[g] According to the logit estimation, personal characteristics such as gender, age and health have a significant influence, as do previous unemployment duration, numerous aspects of previous employment history, and employment status and benefit receipt at the time of entry into the pilot project. Previous participation in labor market policy measures and contact with the PES in the last two years are also relevant.

[h] The median absolute standardized bias, determined according to Rosenbaum & Rubin (1983), is 2.1% in the main estimate after matching. According to T-tests, there are no significant differences in the mean values between the treatment and the control group in any of the 78 control variables after matching. The pseudo-R^2 of the logit estimate of the propensity score for the matched populations is 0.022. The p-value of the likelihood-ratio test of the joint significance of all regressors in the logit model after matching is 0.977.

Separate estimates are needed for outcome measures that cannot be considered for the entire population. For example, average monthly earnings can only be examined for those with employment in the relevant period. In these other cases, the chosen matching procedure also balances the contribution of covariates very well.

[i] In order to achieve an optimal balance of covariates, we test different matching algorithms. Full balance of the covariates is also achieved with kernel matching, and results are robust. However, propensity score matching with more than one neighbor (oversampling) in combination with exact covariate matching results in the best matching quality (see Table 9 in the Appendix for a comparison). Moreover, this is the only way to ensure that we only compare individuals with the same residence status. As Table 9 shows, the results hardly change, if we additionally match exactly on gender.

[j] Most characteristics (labor market history and current employment, subsidy, and benefit receipt status) are measured at the end of the previous month, i.e., immediately before the month of pilot access. Only for personal characteristics and previous unemployment duration does the status at the end of the pilot access month have to be used for consistency, as our sample by definition is to be unemployed and meet the target group criteria on this cut-off date.

[k] We use the following conditional variance formula Abadie and Imbens (2006) propose for the case of matching with replacement with a fixed number of matches: $\hat{\sigma}^2(X_i, W_i) = \frac{J}{J+1}\left(Y_i - \frac{1}{J}\sum_{m=1}^{J} Y_{l_j(i)}\right)^2$.

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[l] These results are available upon request from the authors.

[m] It is not possible to examine further differences in effects between subgroups of the population with sufficient reliability, as the population would then become too small, and it would hardly be possible to compare persons with case management with an adequate number of comparable persons without case management. This also applies to an exclusion of persons granted asylum or subsidiary protection with missing dates of birth when they entered the social security system.