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# Empirical evaluation of professional traineeships for young people up to 30 years of age

**ABSTRACT:** *In this article, we evaluate ‘Professional traineeships for young people up to 30 years’, an active labour market policy measure implemented in the Czech Republic. Professional traineeships were one of the possibilities for suitable offer to young people within Youth Guarantee in the Czech Republic in 2014 and 2015. First, we conducted a process evaluation (document analysis and interviews) to uncover the design and implementation aspects of the program. Next, we followed the counterfactual impact evaluation approach towards the estimate of returns to unemployment (competing risk analysis) based on individual administration data from public employment services. We have found that professional traineeships were successful in attracting the interest of both young people and employers. Mainly young people with middle and high level education have entered the program. Most of them have been provided with on-the-job subsidies in the private sector. When considering the impact of the program on the unemployment of participants and a control group, it was shown that after two years, the measure was effective only for young people with long pre-program Employment Office registration. When we consider the reasons for leaving Employment Office registration, the measure seems to be more effective, since many young people in the control group left the Employment Office register in favour of options that were outside of the labour market.*

**KEYWORDS:** professional traineeship, the Czech Republic, young people, Youth Guarantee.

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## INTRODUCTION

Across Europe, governments are implementing social policy measures supporting the school to work transition of young people with the aim of helping them to integrate into the labour market. All EU countries have also committed to the implementation of the Youth Guarantee in a Council Recommendation of April 2013. The Youth Guarantee aims to offer a good continued education, apprenticeship, training or employment opportunity to all unemployed young people within four months of their leaving employment or education (Escudero & López Mourelo, 2015). It represents a good opportunity, in particular, for some countries, to rethink and reorganise active labour market policies targeting young people. Furthermore, its design and implementation can also help identify the linkages between the labour market and education systems, as well as between the labour market and welfare systems, which need to be improved in order to ensure smoother transitions into the labour market (Bussi, 2014).

In this article, we discuss the planning, implementation and impact evaluation of the active labour market policy (ALMP) measure ‘Professional Traineeships for Young People up to 30 years’,<sup>2</sup> realised in the Czech Republic. To our knowledge, this is the first attempt to evaluate this program, which in the Czech context is a rather important ALMP measure for young people. In the official documents, this project was used as a prime example of projects realised within the Youth Guarantee (YG; Employment Office, 2014a, 2015a, European Commission, 2014). Employment Office directive No. 24/2014 about the realisation of YG mentioned professional traineeships as one of possibilities for suitable offer to young people. A response to the YG monitoring questionnaire (the Member States’ response to 2013 Council Recommendation on establishing YG) stated:

‘Within the YG scheme, the Professional traineeship plays an important role, as it represents an offer, i.e., an activity with many parameters of “quality offer”, where the participant gains work skills and is remunerated for them, and the mentor performs the training.’ (MLSA, 2016b: 9).

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<sup>2</sup> In the Czech language, the measure is called ‘Odborné praxe pro mladé do 30 let’.

The Ministry of Labour and Social Affairs stated that professional traineeships helped a total of 11,000 young people gain their first work experience through financial support for their employers (MLSA, 2016a). There is also the follow-up project ‘Guarantee for Youth’, implemented in the period 2016–2020 (for specific conditions, see Employment Office directive No. 17/2015).

We addressed the two following research questions in this article:

‘How were professional traineeships planned and implemented in 2014–2015?’

‘What impacts did the professional traineeships have on Employment Office registration of participants enlisted in the program in 2014?’

The first question covers information about the program goals, plans and its implementation. The second question covers the outcomes of the program, which we measure as the state and duration of the Employment Office registration and declared reasons for leaving the Employment Office register. We used the counterfactual impact evaluation approach to estimate the level of leaving and returning to the Employment Office register (competing risk analysis). The most obvious limitation of our analysis is that we have data only from the Employment Office registers and cannot track the subsequent employment or wages of the program participants, or those of the control group. Such data exist but are not available to us due to the strict legal limitations set in the Czech Republic for the protection of data.

To answer the above-defined questions, we combined methods typical for monitoring/process evaluation with methods typical for impact evaluation. This approach is in coherence with the perspective proposed by Rossi et al. (2004) that process evaluation is an indispensable adjunct to impact assessment so as to avoid the problem of ‘black box evaluation’. We assessed the project with information from various sources, including publicly available press reports and evaluation reports, aggregate data provided by the Ministry of Labour and Social Affairs, data from internal monitoring reports provided by the regional Employment Offices, and the administrative individualised data of jobseekers provided by a national data provider (OKSystem company). We also quote some reflections on the program from interviews with Employment Office workers at both the national and local levels.

The rest of the article is organized into the following sections: first, on the basis of the theoretical arguments and previous empirical evidence, we discuss the effects of ALMPs for young people, especially the effects of subsidised workplaces in the private sector. Then, we provide information about professional traineeships, including the description of project goals, targeting and activities, information about how the project was implemented, and feedback from Employment Office staff. Next, we briefly discuss the impact evaluation methodology and present its results.

## **THEORETICAL DISCUSSION AND REVIEW OF PREVIOUS FINDINGS ABOUT THE FUNCTIONING OF SUBSIDIES IN THE PRIVATE SECTOR AND IMPACTS OF ALMP MEASURES FOR YOUNG PEOPLE**

We understand professional traineeship as a specific sub-type of the active labour market policy program that is aimed at young people and combines subsidy in the private sector with training on the job. Zimmermann et al. (2013) describe other similar programs in Germany and Spain. The key aspect of the program is the pay subsidy. The goals and functions identified in connection to the subsidies in private sector employment may include the following (Betcherman, Olivas, & Dar, 2004; Brown & Koettl, 2012; Kuddo, 2009; Martin & Grubb, 2001):

- helping to match young people to jobs; motivating employers to create (additional) jobs
- helping individuals to enter the labour market and to keep in contact with the work world; raising their future chances on the labour market (transition effect)
- enhancing the motivation and skills of the participants; allowing them to gain work experience
- supporting the disadvantaged and long-term unemployed with jobs, even at the expense of the less disadvantaged (short-term) unemployed
- possibly temporarily enhancing the wage and job quality in the initial phase of employment (which may enhance motivation to take such a job)
- possibly reducing work on the informal labour market

Measures such as professional traineeships may be particularly useful in the countries of Central and Eastern Europe, where many places of dual vocational training have in the last thirty years been replaced with general education or school-based vocational training. This has also been caused by the low acceptance of vocational education by young people and their parents (see Zimmermann et al. 2013). Professional traineeships should provide young people with systematic training, work praxis, and allow for the shifting of employer preferences towards recent graduates rather than older young workers.

According to Caliendo, Künn, and Schmidl (2011), Card, Kluge, and Weber (2015), Kluge (2006), and Vooren, Haelermans, Groot, & Maassen van den Brink (2017), there are private subsidies in the group of more effective ALMP programs. In the Czech Republic, Kopečná (2016) evaluated another similar measure of the Czech Youth Guarantee: ‘Internships for young job seekers’. Students (mostly from universities) participated in these internships, which were organised in the Czech Republic by the Fund of Further Education and usually lasted for 2–4 months. Kopečná (2016) found positive impacts of these internships on the economic state and incomes of former participants one and a half years after their registration in the program.

Nevertheless, it is supposed that programs such as professional traineeships might have substantial dead weight<sup>3</sup> or substitution effect, with only a small net gain in employment (Martin & Grubb, 2001; van Ours, 2004). Wunsch and Lechner (2007) argue that the program participants’ prospects are the key factors for explaining program effectiveness, because of the different risks of lock-in effect in interaction with different job prospects of program participants that would be possible without the program. Labour market conditions influence the effects of the program. The lock-in effect is not of much relevance for the young participants of professional traineeships, because staying for at least some time at the workplace where the job was subsidized is a preferred characteristic of the program. The efficiency of invested money is not the main consideration here (see e.g. Brown & Koettl, 2012). Caliendo et al. (2011) and Wunsch and Lechner (2007) have found that the positive effect of subsidised jobs is that participants largely remain in the job even after the program ends. However, this effect may decline over time (see Potluka et al. 2016). It is important to see whether the participants returned to the Employment Office register after the end of the subsidized job.

The question of program targeting is very specific for professional traineeships, because there are almost no *a priori* targeting restrictions (except age and unemployment criteria), and self-selection by participants or employers is a probable condition of program placement. While the impact of the program may be dependent on the selection of the program participants, there may be a trade-off between improving the program impact through stricter targeting, on the one hand, and stigmatising participants, on the other, which may reduce the employers’ willingness to participate in the program (Martin & Grubb, 2001). When the program participation is voluntary, the attractiveness of taking part in the program for the prospective participants may be dependent on the characteristics of the program compared to that of the other options available. The conditions in professional traineeships were more favourable than in the other ALMP measures implemented in the Czech Republic (see below).

The literature considering the impacts of ALMP measures *targeted at young people*, including both training and job subsidies, shows that such programs have generally been ineffective, or less effective (e.g., when comparing to older cohorts), or that only some of the programs have been effective (see Betcherman et al., 2004; Calmfors, Forslund, & Hemström, 2002; Card et al., 2009, 2015; Kluge, 2006; Martin & Grubb, 2001; a notable exception is Caliendo et al., 2011). However, we still lack a plausible explanation for such less effective results. One explanation may lie in the targeting of the program (length of unemployment, level of education, or various disadvantages of the young participants) – the participants may be in too good or too bad a situation to benefit. Another explanation is that young people have a less stable situation and tend to experience higher labour market mobility (Caliendo & Schmidl, 2016).

## DESIGN OF PROFESSIONAL TRAINEESHIPS: GOALS, TARGETING AND MAIN PROJECT ACTIVITIES

Employment Office headquarters was the principle agent in establishing professional traineeships. The social problem that the project addressed was the lack of experience of the young people, which was perceived as a crucial barrier to labour market integration

<sup>3</sup> Deadweight effect occurs when ALMPs subsidise jobs that would have been realised even in the absence of the program (Martin & Grubb, 2001; van Ours, 2004). From another perspective, we can define it indirectly as a situation where an ALMP subsidy is provided to someone who would have found a job without the help of the program (Brown & Koettl, 2012).

(Employment Office, 2014b). The goal of the project was the inclusion of young people into the labour market. It was supposed to be implemented through the support of a stable job, which would prevent the participant from returning to the Employment Office register. Some designers of the measures expected that a proportion of the employers would continue to employ the young people even after the end of the project (ESF, 2014). At the individual level, the project should also help the young people through activation and motivation (e.g., with counselling) and in supporting their employability by improving their knowledge and competences. The activities should have been tailored to the needs of the young people. The Employment Office considered this project to be a good option especially in the period of culminating economic recession (in 2012), when the project was planned (information from an interview at the Employment Office headquarters).

Many concrete conditions for the realisation of the project were defined in the directives of the General Manager of the Employment Office No. 11/2013 and No. 16/2014 (Employment Office 2013b, 2014e). The documentation for all 14 regional individual projects defined the main goals in a similar way; however, some of the conditions of these projects could have been different within the space pre-defined by the directives.

The project was targeted at young people (primary target group) and employers. The primary target group was defined as young people up to 30 years old who had been registered at the Employment Office for at least four months (some exceptions were possible) and had less than two years of work experience since finishing their formal education. At the initial phase of the project, those people with longer Employment Office registration were preferred (see Employment Office directive No. 11/2013). In the later phase, the length of registration was no longer relevant for participation in the project (Employment Office directive No. 16/2014, Employment Office, 2014d). There were no limits on the level of education of the young people (Employment Office, 2015d).

The employers of the professional traineeship participants could have been any organisation, including those in the non-profit sector. According to the Employment Office directive No. 16/2014, more than 50% of the subsidised jobs should have been implemented in private or for-profit organisations. State institutions and organisations owned by the state were excluded from taking part, due to the Czech employment law (Employment Office, 2016b). Employers could seek support for their own candidates or they could accept candidates provided by the Employment Office. A specific Employment Office committee was to have assessed the young candidates to decide whether they should be given the option of taking part in traineeship and/or mentorship.

Employment Office directive No. 11/2013 broadly defined the possible project activities. The following descriptions of the activities refer to the general model of the projects – the specific conditions in the projects could have been and were different, depending on the decisions of the Employment Office officials in the local contexts.

**Individual, group and career counselling:** These activities included work orientation, activation program, work diagnostics and career counselling (including activities aimed at encouraging a return to education).

**Training:** Requalification training was possible within the professional traineeships when there was a special need for it and it was beneficial for both contracting sides (Employment Office, 2014c). Training was to be realised before the placement of the young worker to prepare him/her for the position.

**Creation of traineeships (subsidised jobs):** This was the most important activity in the project. The measure was to provide jobs for young people and training on the job. Usually full-time work positions were to be created; part-time employment was possible in specific cases (e.g., for those with parental responsibilities), but not less than 20 hours a week. The definition in the Employment Office directives No. 11/2013, No. 16/2014 and No. 17/2015 requiring a correlation between the job and the previous education of the young person was rather vague: ‘Job seekers participating in professional traineeships must be placed in workplaces with at least minimal potential of career development and with a specific employer that corresponds to the level of their achieved education.’

Both fixed-term and permanent contracts were possible, but work positions with work contracts of unlimited duration were preferred (Employment Office, 2014b). The financial support for young people was provided for a minimum of 6 to a maximum of 12 months (usually it should have been 12 months). The minimum duration was reduced to three months in 2015 (the last year of the project). The maximum level of support was 24,000 Czech crowns (CZK) per person per month, including the employer’s contributions for social insurance. After the end of the training, the employers were to provide trainees with a certificate of traineeship. In the case that the trainees were not intending to stay with the company, the current employers were also to provide recommendations for other prospective employers.

**Mentorship:** The role of the mentor was seen in the idea of easing the young people into the job according to a training plan. Mentors had to be stable employees of private firms (beneficiaries) who had worked in the firm for at least 3 months. The mentor could have been paid from the project for a minimum of four to a maximum of seven months, according to the appropriate

proportion of the normal salary and the time spent on the project. The greatest effort of the mentor was expected in the first three months of the program (Employment Office directive 11/2013; Employment Office 2013a, 2014b).

Work on trial (defined by the Employment Office directive 15/2014) was used only in the Ústecký Region. The goal of this measure is to assess the readiness of young people to work in a subsidised job. It was for a maximum of three months and with different (lower) financing conditions from the other subsidised jobs.

Support activities: The projects could cover travel costs, health screening fees before job placement and payment for food during project activities (Employment Office, 2016b, 2016c).

## IMPLEMENTATION OF THE PROJECT

The professional traineeship project was financed from ESF (Operational Programme Human Resources and Employment) and co-financed from the national budget (Employment Office, 2014b). Although the main stakeholder in the project was the Employment Office, there were sub-contracted partners in some regions, e.g., for diagnostics of skills and training activities for the participants. The program was mainly implemented as ‘Regional individual projects’, which meant that 14 regional branches of the Employment Office realised 14 separate projects (MLSA, 2014). Not all such activities were mandatory, nor were they systematically used in all regions. Some of them were used in only one region (see Employment Office, 2016c, 2016e, 2016g and Table 1).

The numbers of project participants and money allocations were very different in the regions because of the various populations and scope of youth unemployment. Most of the participants were from regions that have the most severe economic problems, such as Ústecký, Jihomoravský and Moravskoslezský. The enormous interest of both young people and employers led to a gradual but great increase in the magnitude of the project in all regions (Employment Office, 2016g; MLSA, 2015). Data from the Pardubický Region showed that mainly small business employers and self-employed (free-lance) people participated in the project (Employment Office, 2015b).<sup>4</sup>

Available data from the regional Employment Offices showed that participants from the target group often had a secondary or tertiary education (Employment Office, 2015b, 2016h). According to the information from some of the Employment Office reports, the participants were actually often graduates from high schools or universities in economics, business, trade, management, electro-technology, IT, pedagogy, construction, engineering and social sciences (Employment Office, 2014b, 2015b). Since Kopečná (2016) found similar targeting in ‘Internships for young job seekers’, we can conclude that these results of targeting were not an exception within the Czech Youth Guarantee measures. Data about the real correspondence of fields of jobs to previous fields of education confirm that there was the expected correspondence between the level and field of education and the internship position.<sup>5</sup>

We provide an overview of the implemented project activities based on the aggregate statistics of the regional Employment Offices in Table 1. Despite the lack of data (and some uncertainty about the methodological consistency of data from various data sources), we can conclude that the projects were implemented quite differently from region to region. The differences were mainly in the voluntary activities – this reflects the different strategies of the regional Employment Offices, as well as the different reflections of the needs of the participants.

Training courses and mentorship agreements were (much) less used than was initially expected, due to the low interest of young people and employers. Training was rather rare in most of the projects (see Employment Office, 2016c; Table 1). According to the information from an interview at the Employment Office headquarters, a mentor was contracted in about 30% of traineeships, depending on how demanding the job was. This corresponds to available data. Low interest in mentorship agreements reflected the immediate need of employers for already qualified workers and their perception that there was a low level of mentorship remuneration compared to the administrative demands it entailed (Employment Office, 2016i – Plzeňský, Praha, Vysočina, Liberec and Pardubický regions). The maximum hourly wage (including social contributions) of the mentor was raised from the initial 151 CZK per hour to 165 CZK in 2014 and then 176 CZK in 2015. There was a set maximum number of hours per week resulting in the reimbursement of around CZK 5000 per month (Employment Office, 2016c, Employment Office, 2016i).

<sup>4</sup> According to the evaluation report from the Pardubický Region, of 479 project participants, 87 entered the project via group information meetings and 392 entered through the direct choice of the employer (Employment Office, 2015b).

<sup>5</sup> Unfortunately, such data are available for only one-quarter of our sample.

**Tab. 1:** Project activities in 'Professional traineeships for young people up to 30 years'.

Regions	Participants (Men)	Diagnostics	Individual Counselling	Group counselling	Career counselling
Prague	356 (173)	n. d.	see note*	n. d.	n. d.
Středočeský	634 (275)	n. d.	634 (total)		n. d.
Jihočeský	438 (173)	n. d.	437 (total)		n. d.
Plzeňský	822 (356)	n. d.	n. d.	n. d.	n. d.
Karlovarský	339 (174)	n. d.	338	326	n. d.
Ústecký	2 194 (1018)	680	see note**	1 016	196
Liberecký	989 (443)	n. d.	968	n. d.	n. d.
Pardubický	479 (237)	n. d.	479	n. d.	n. d.
Královehradecký	384 (155)	n. d.	n. d.	123	n. d.
Vysočina	478 (191)	n. d.	478	n. d.	n. d.
Jihomoravský	1 336 (602)	300	1 336	49	n. d.
Olomoucký	551 (216)	n. d.	547	550	n. d.
Zlínský	994 (384)	12	991	979	5
Moravskoslezský	1 027 (424)	n. d.	n. d.	n. d.	n. d.
Regions	Training	Specific activities	Workplaces (traineeships)	Maximum support (CZK)	Mentor agreements
Prague	10	n. d.	356	n. d.	n. d.
Středočeský	3	n. d.	531	24,000	89
Jihočeský	101	n. d.	316	n. d.	124
Plzeňský	33	n. d.	434	24,000	n. d.
Karlovarský	37	n. d.	269	24,000	119
Ústecký	21	†10	1 741	20,000	350
Liberecký	57	††90	555	n. d.	266
Pardubický	15	††††464	383	17,500/20,000 <sup>[1]</sup>	190
Královehradecký	56	n. d.	325	24,000	n. d.
Vysočina	0	†††225	447	n. d.	4
Jihomoravský	150	n. d.	1 019	16,080–20,100 <sup>[2]</sup>	176
Olomoucký	548	n. d.	527	n. d.	250
Zlínský	61	n. d.	815	20,000	249
Moravskoslezský	4	n. d.	1 019	24,000	536

Sources: Employment Office (2015c, 2015d, 2016c, 2016d, 2016f, 2016g, 2016h, 2016i and project web pages of the Employment Offices)

Note 1: \* Total 1,780 hours of counselling, \*\* 4,583 activities of individual counselling.

Note 2: † Work on trial, †† Motivation activities, ††† Activisation program, †††† Counselling program.

Notes: [1] Depends on level of education of trainee. [2] Normally lower value but depends on assessment of the specific case.

The provision of traineeships was a key and the most widespread activity in the project (Employment Office, 2016c, 2016e). The subsidised jobs were implemented mainly in 2014 (the key year of the project). According to a national report of the Employment Office (Employment Office, 2016a), the project created 8,580 traineeship agreements and 2,374 agreements on mentorship. Basic information about the scope of traineeships (at the regional level) is provided in Table 1. In rare cases, some participants were supported twice when they were not satisfied with their first job and ended it prematurely (Employment Office, 2016e). The actual maximum amounts of financial support offered to the employers by the Employment Office varied from region to region (see Table 1). Employment Office workers at the regional level confirmed in interviews that the financial support in professional traineeships was substantially higher than the level of support in similar national projects (13,000 CZK).

The real duration of internship was usually up to one year. It was prolonged in some cases to allow the employers to become better acquainted with the particular young people and to prevent the participants from returning to Employment Office registration (Employment Office, 2016i). The overall share of traineeship participants who did not finish the planned duration of the traineeship was estimated to be 15–25%: 18% in Středočeský region, 20.7% in Plzeňský region, 22.8% in Královéhradecký region and 18% in Vysočina region for people with a 12-month long traineeship (Employment Office, 2016i).<sup>6</sup> The money that was unintentionally ‘saved’ due to the premature ending of internships or mentorships was partially used to support other internships, or not spent (Employment Office, 2016i).

According to a representative of Employment Office Headquarters, the professional traineeship program was considered a successful project. This was explained in the following statements: A) The project has included some innovative elements like mentoring and a more systematic and complex approach to young unemployed people. B) There were positive effects evidenced in providing job experience opportunities for the young (in particular, during the times of recession, when it was otherwise difficult to find work) and in building their skills and motivation. C) There was growing interest from the start of the project from employers as well as the young people. While these statements are presented here just as opinions, A and C are in correspondence with the data presented in this article.

However, there were also problems. In some of the regions, sometimes it was difficult to find suitable, capable and motivated participants (Employment Office, 2016i – Moravskoslezský region). During the interviews, Employment Office workers at both national and local levels recognised another important problem: ‘the offer’ (in this case, mainly a subsidised job) was not sufficient for some of the participants to overcome their cumulated handicaps and various personal, life and labour market problems. These young people often prematurely ended the ALMP programs of their own accord, even though not fulfilling the obligations during the program could be classified as ‘thwarting of cooperation’ and could be sanctioned by expulsion from the Employment Office register. This was because they, for example, found it difficult to regularly go to work, or the job demands were too high for them. An estimated 10% of participants fall into this category for the professional traineeship project.

## METHODOLOGY OF IMPACT EVALUATION FOR PROFESSIONAL TRAINEESHIPS

We used individualised administrative data and applied a quasi-experimental approach to assess the short- (up to 12 month) and medium-term (12–24 months) impacts of the project (as defined by Card et al., 2009). We did multiple imputations to fill the missing data; we used propensity score matching to solve the contra factual question and then we used the cumulative incidence function for the presentation of our results. For calculations of propensity score matching, we used a ‘PSMatching’ plug-in for IBM SPSS, developed by Felix Thoemmes et al. (2012). For the cumulative incidence function, we used the R program and ‘cmprsk’ package (Gray, 2015), with a plug-in by Scrucca, Santucci & Aversa (2007).

First, because we had some missing data in the database, we used multiple imputations to estimate the missing values of variables by using the other variables included in the model. We had three variables with some missing data (e, h and i – see below), 5.5% of missing values in these three variables and 15% of cases that have at least some missing data. As ‘PSMatching’ is unable to deal with missing data, we solved the problem by using Thoemmes’ (2012) recommended multiple imputation. Hill (2004) and Mitra and

<sup>6</sup> The main reasons for the premature ending of internships included finding another job (i.e. in more than half of premature endings), dissatisfaction of the young people with the internships, and failure of the participants to meet the conditions (e.g., absence at work), in which case, the employers terminated the internship. Other less numerous reasons included returning to school, health problems, and moving to another region (Employment Office, 2016i – Středočeský region).

Reiter (2012) describe the rationale behind the combination of multiple imputation and propensity score matching, and define two possible approaches ('within' and 'across'). Using the 'within' approach, we could match all 10 imputed datasets one by one and then later, average the results.

Next, we have also done propensity score matching (see e.g. Rodríguez-Planas & Jacob, 2010) to create a control group of young people who were not program participants. We implemented the nearest neighbour matching without replacement, with a random matching order and a 0.15 calliper of standard deviation of the logit of the propensity score. We have chosen nearest neighbour matching because it suits our large dataset well and allows for easy combination with exact matching of specific variables. We used a calliper to avoid poor matches and random matching order to avoid the dependence of estimates on the order in which observations are matched (see Caliendo & Kopeinig, 2005; Stuart, 2010). The dependability of results on concrete cases was further diminished by often matching the concrete case in a treatment group within our 10 models with different cases in the control group. The average differences in outcomes between these ten models are minimal.

We used the standardised differences approach (Thoemmes, 2012) and performed joint Hotelling T-squared tests as balancing tests. After matching, none of these diagnostics showed any substantial differences in either of the groups of paired data (see matching quality diagnostics in the appendix).

## DATA AND VARIABLES

We used data about the program participants from the Czech Republic employment services (provided by the OKSystem data manager). Only those program participants who started the professional traineeship program in 2014 have been included in this evaluation. Young people in the control group were drawn from a pool of about 321,000 jobseekers in the same age category (15–30 years) as the program participants, who were in the Employment Office register but did not take part in any ALMP measure in 2014. Data about the Employment Office are saved in the system as specific dates of participation. We used these data about program outcomes in both continuous and discrete form, including the fact of being listed in the Employment Office register after certain fixed times and spells of Employment Office registration. We then combined this information with declared reasons for leaving the Employment Office register. We measured the impacts of the program on participants from the first day they took part in the program and the corresponding length of the pre-event Employment Office registration in the case of the non-project control group. For the paired professional traineeship participants and the control group, the status was tracked for 2014, 2015, 2016 and the first quarter of 2017 (for a minimum of 750 days). For descriptive data about the outcomes of the first unemployment spell, see Table 2. We used the following variables for propensity score matching computation:

a) regions of the Employment Office at the regional level; b) unemployment rate at the local level; c) number of job offers available at the local level; d) gender; e) age; f) health status; g) education level; h) field of education; i) ISCO class of preferred employment; j) length of previous Employment Office registration (former unemployment history); k) length of employment in the last three years before the start of the first registration in 2014; and l) previous self-employment status. Additionally, we used exact matching on m) categorised period of starting the first registration continuing until 2014; n) elapsed duration of previous unemployment spell: from Employment Office registration to the start of the program (or corresponding time point). We considered the inclusion of interaction and quadratic terms.

The basic characteristics of all (before matching) and paired (after matching) program participants and young people in the control group are provided in Table 2. There are insignificant differences between the groups. We are not estimating the average treatment effect on the treated (ATT), but the partial effect of the measure on the paired cases (73.2% of all participants who started professional traineeships in 2014).

**Tab. 2:** Information about the professional traineeship participants who started the program in 2014 and the control group.

		ALL PTYP CASES	PAIRED PTYP CASES	CONTROL CASES	
Average age		23.16 years	23.04 years	23.11 years	
Gender	Men	42.7%	43.5%	43.6%	
Education	Primary	5%	5.1%	5.4%	
	Secondary without abitur †	17.2%	18.1%	18.2%	
	Secondary with abitur †	45.2%	45.7%	45.2%	
	Tertiary	32.6%	30.7%	31.5%	
Registration at employment office	Since 2014	4.8%	5.0%		
	Since 2013	44.3%	42.2%		
	Since 2012	5.3%	5.6%		
	2011 and before	2.4%	2.2%		
TOTAL (mean for 10 imputed datasets)		4,865	3,558.4		
Outcome	PTYP N duration		Control N duration		
	Found work	620.2	139.1	1834.6	171.6
	Personal and other reason	18	231.1	282.4	153.5
	Expulsion	108.5	207.4	531.3	223.3
	Unknown	52.6	184.4	489.7	220.3
	Subsidised workplace	2743.8	61.9	307.8	366.7
	Stayed in register	15.3	950.9	53.7	1031.4

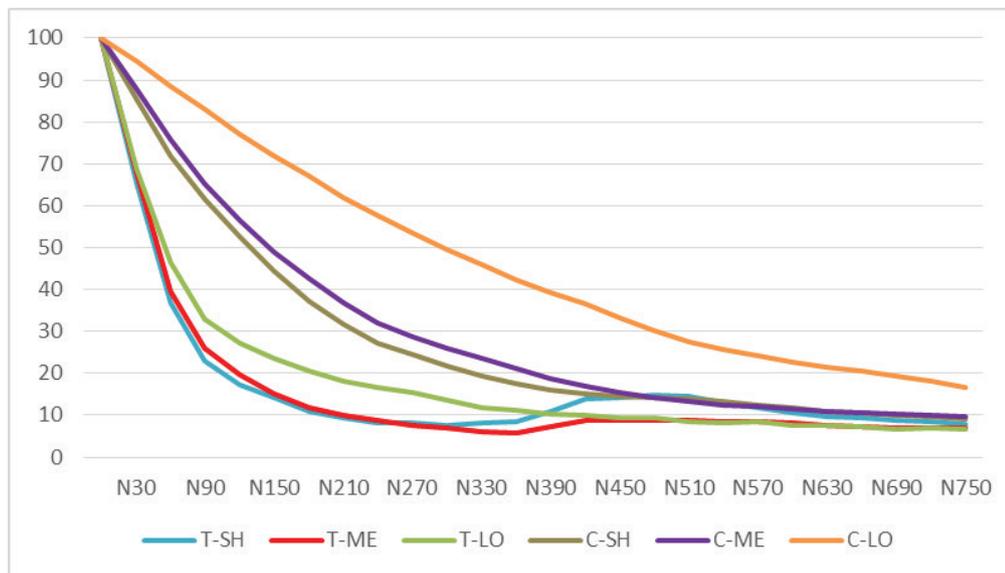
Source: Data 'OKPráce' for 2014

Note: † State prescribed secondary school-leaving examination

## PROFESSIONAL TRAINEESHIPS RESULTS BASED ON 'OKPRÁCE' DATA

In this section, we provide results of the professional traineeship program. According to OKPráce data, most program participants completed the professional traineeship program. However, 13.2% ended earlier to go to unsubsidised employment; 3.3% of the total were not able to finish the program, or they ended prematurely for reasons other than employment. Graph 1 shows the occurrence of program participants and young people in the control group in the Employment Office register in 30-day intervals for 750 days after the start of the program. Program participants often ended their Employment Office registration within a period of three months of the start of the program. Some project participants gained employment without needing subsidised jobs (see below). These results are valid for all three groups of program participants with different lengths of pre-program Employment Office registration (i.e., short-, medium-, long-term unemployment). Most of the young people stayed off the Employment Office register after the subsidy ended (with the subsidy not usually being longer than 12 months). The young people in the control group with a short- and medium-length pre-program Employment Office registration were also able to leave the Employment Office register within 750 days. There is only a very small difference in the presence in the Employment Office register between the participants and control group (the initial difference due to the subsidy almost disappeared within 2 years). For the previously long-term unemployed, there is a more substantial difference in their occurrence in the Employment Office register during the observed period.

**Graph 1:** Occurrence in employment register for professional traineeships and control group for three lengths of previous EO registration.



Source: data 'OKPráce' (2014-2017).

Notes: T – professional traineeships participants; C – control group; SH – pre-control event registration 0-90 days; ME – pre-control event registration 91-365 days; LO – pre-control event registration 366+ days.

Data provided in Table 3 show the main reasons for leaving the Employment Office register during the program. A total of 77.1% of the program participants left the Employment Office register to go to a subsidized workplace and 17.4% on average found work without a subsidy. The regions varied in the share of professional traineeship participants who found a job without a subsidy (over 30% in Liberecký, Plzeňský and Jihomoravský regions). Regional Employment Offices used different placement strategies, for example, in the Plzeňský region, right from the start, 133 people were employed outside the key activity subsidised workplace (Employment Office, 2014e). A little more than 50% of the young people in the control group found a job without a subsidy. About 10% of the people in the control group entered a subsidized workplace in the following years (2015–2017); 14.9% were expelled from the EO register; 13.8% left for unknown reasons; and 7.9% left for personal reasons.

We used competing risk analysis (cumulative incidence function) to see the developments of the hazards of leaving the Employment Office register in time. Graph 2 (for the first measured Employment Office registration) shows that exits from the Employment Office register quickly cumulate during the first year after the start of the program. While 94.5% of program participants went from the first Employment Office registration to a job or subsidized employment, in the control group, it was merely 61.7% who were certain to leave for a job. This can mean that even young people in the control group (e.g., within the Czech context, those with a very good level of education) may be subject to various 'Yo-yo' transitions (see Walther 2006 for an explanation of the term). When considering the reasons for leaving the Employment Office register, the results of those involved in the professional traineeships seem to be more promising than those based only on the Employment Office registration.

The results in Table 4 show that during the 750 days, over 95% of young people left the Employment Office register in both the participant and control groups. In addition, there were very similar shares of people from among the professional traineeship participants (25.8%) and in the control group (23.3%) who returned to the Employment Office register. There were higher rates of program participants returning to the Employment Office register in the initial phase of the program (when possibly there was some problem from the start of the participation at the subsidised workplace) and in the 12<sup>th</sup> and 13<sup>th</sup> months of the program (probably immediately or soon after the financial subsidy ended). Aggregate data provided by the Employment Offices of some regions confirmed that about 15% of the participants returned to the Employment Office register immediately after the end of the subsidy. The share of young people who stayed with the same employer after the end of the subsidy varied greatly from region to region: between one-third and three-quarters (see Employment Office 2015c, 2015d, 2016d, 2016i).

**Tab. 3:** Reasons for ending Employment Office registration after the start of the professional traineeship program (in %).

	Found work	Personal and other reasons (return to school)	Expulsion (sanction)	Unknown (request of young person)	Subsidised workplace	Stayed in Employment Office register	Total (N) = 100%
Reasons for leaving first registration (by regions and total)							
Prague (capital city)	25.3	0	0	5.9	68.8	0	340
Středočeský	13.7	0	1.3	1.7	83.3	0	1,331
Jihočeský	23.7	0.9	3.6	0.7	71	0	2,110
Plzeňský	29.9	0.5	3.7	4.4	61.1	0.4	2,978
Karlovarský	12.1	0	4.2	0.4	83	0.3	1,779
Ústecký	13.2	0.3	5.5	1.5	78.7	0.8	8,980
Liberecký	34.2	1.4	5.0	2.2	56.1	1.2	3,110
Královéhradecký	11.3	0	0	0.5	87.5	0.8	1,326
Pardubický	12.6	0	1.1	0.6	85.7	0	1,408
Vysočina	12.6	0	0.6	0.1	86.7	0	1,605
Jihomoravský	43.7	2.9	4.2	3.5	45.6	0	2,170
Olomoucký	5	0.1	1.2	0	93.7	0	2,018
Zlínský	6.9	0.1	0.2	1.2	91.6	0	2,899
Moravskoslezský	8.5	0	0.3	0.1	90.6	0.5	3,530
Professional traineeship participants (total)	17.4	0.5	3	1.5	77.1	0.4	35,584
Control group	51.6	7.9	14.9	13.8	10.3	1.5	35,584
Reasons for leaving second registration							
Professional traineeship participants (total)	63	1.9	8.8	7.7	10.1	8.5	10,921
Control group	53.8	4.2	12.1	10.4	8.2	11.4	9,606

Source: data 'OKPráce' (2014–2017).

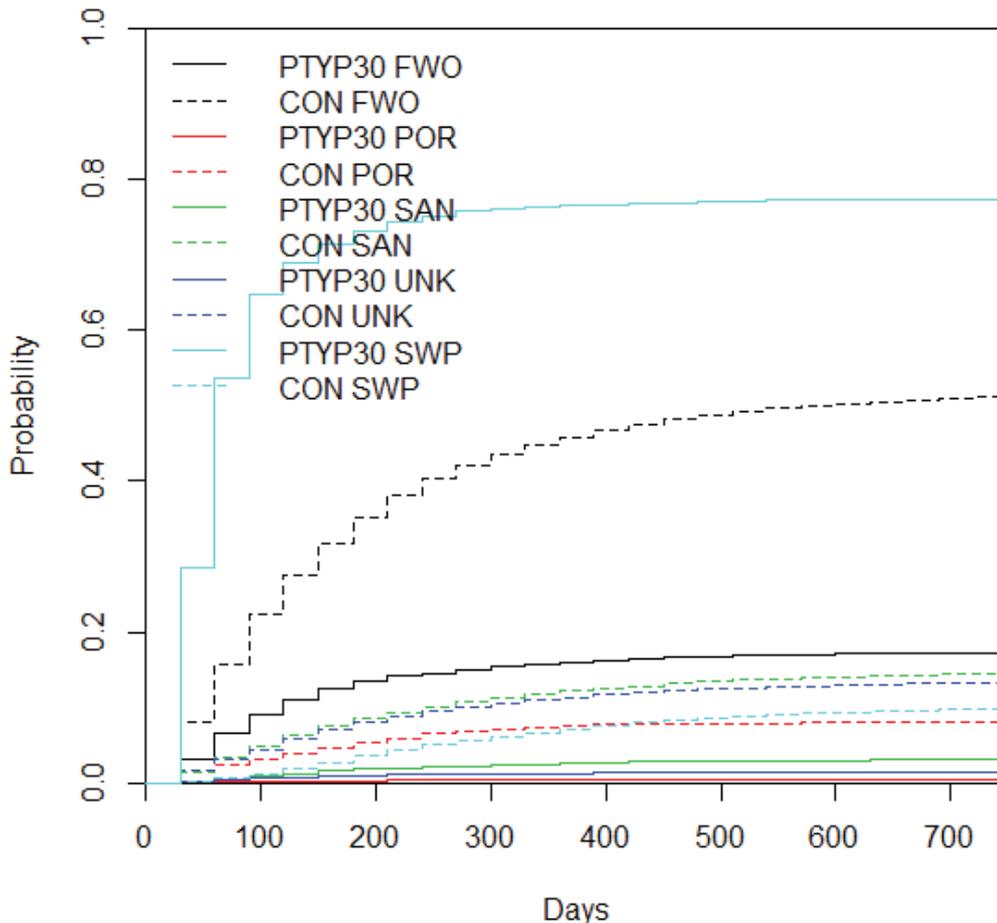
**Tab. 4:** Transitions of professional traineeships participants and young people in the control group from the Employment Office register and back within 720 days.

	150 days		300 days		450 days		600 days		750 days	
	LEFT	RET	LEFT	RET	LEFT	RET	LEFT	RET	LEFT	RET
PTYP <sub>30</sub>	86.1	2.7	95	6.1	97.7	16.2	98.8	21.8	99.3	25.8
CONTROL	52.6	3.4	77.4	8.5	88.2	14.1	93.1	19.6	95.7	23.3

Source: Data 'OKPráce' (2014–2017)

Notes: PTYP<sub>30</sub> – participants in professional traineeships, RET – returned.

Graph 2: Competing risks analysis of reasons for leaving first employment office registration.

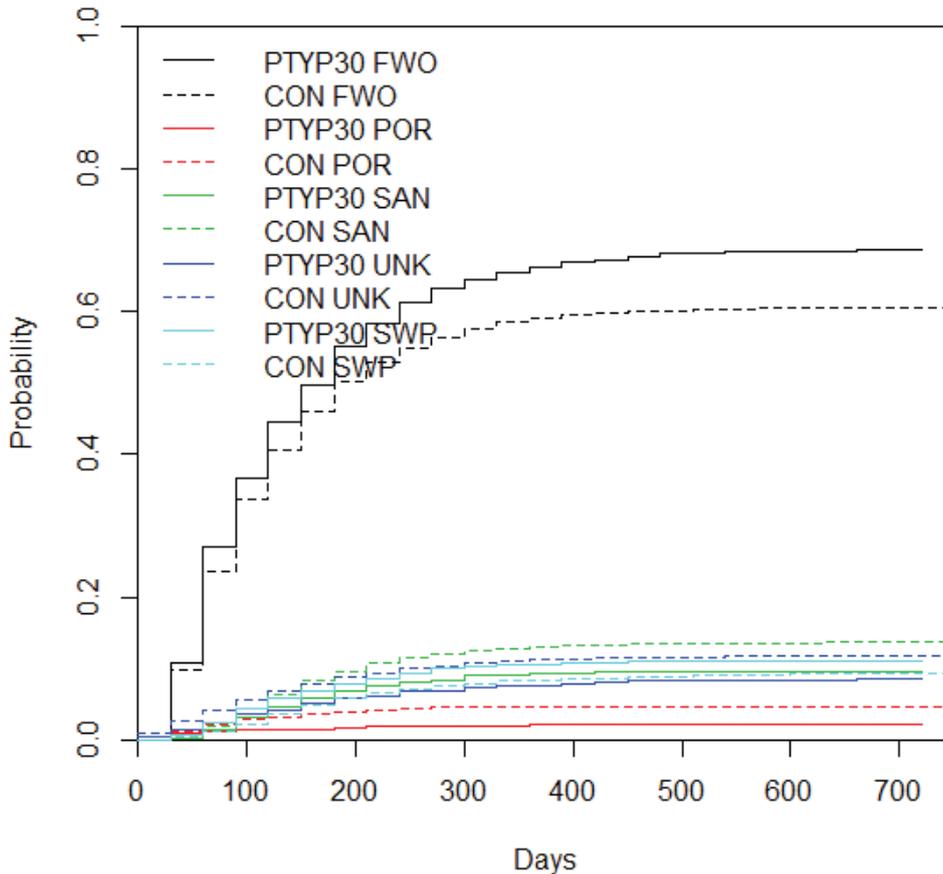


Source: data 'OKPráce' (2014-2017).

Notes: PTYP<sub>30</sub> – professional traineeships participants; CON – control group; FWO – Found work; POR – Personal and other reasons (return to school); SAN – Expulsion (sanction); UNK – Unknown (request of young person); SWP – Subsidised workplace.

We wondered what happened to the young people after they first returned to the Employment Office registration after the start of the project (pre-control event) – these are the people in the even-numbered columns of Table 4. The results for the second Employment Office registration (see Table 3) showed that 63% of program participants left for unsubsidized job, compared to 53.8% in the control group. There are other reasons that are more prevalent in the control group, such as expulsion and unknown reasons for leaving the Employment Office register. We also show this result in Graph 3. The program participants were more often able to leave the Employment Office register for unsubsidized employment. The placement of program participants in subsidized workplaces during the second unemployment spell (about 10% of cases) included both repeated placements (when the first placement was not successful), which occurred more often, and less often, placements of people who had previously found jobs without a subsidy, but relatively quickly returned to the Employment Office register.

Graph 3: Competing risks analysis of reasons for leaving second employment office registration.



Source: data 'OKPráce' (2014-2017).

Notes: see Graph 2

## DISCUSSION

Results of our study are consistent with the results of studies presented in the review of the previous findings above. The study showed substantial differences between the effects measured with two different outcomes: a) 'Employment Office registration' and b) 'reasons for leaving Employment Office registration'. When taking Employment Office registration as the main indicator, it seems that the impact of the program was very small (except for long-term unemployment). It is well-known that 'deadweight effects' can plague the impact of private employment subsidies. Subsidies are not always needed for people with good *a priori* job prospects because many of them would quickly enter the labour market even without assistance (OECD, 2005). This can be accelerated by good economic conditions (as was the case in the Czech Republic in 2015 and 2016), which may increase the interest of employers in employing young people even without a subsidy. This is why ALMP programs tend to have better effects in economic recessions (Card et al. 2015; Forslund, Fredriksson, & Vikström, 2011). Nevertheless, when we take the outcome 'reasons for leaving Employment Office registration' into account, the effects of the professional traineeship measure on the employment of young people seem to be more positive. The main potential gain of the measure can be in avoiding yo-yo transitions at the beginning of the work career.

Our assumptions about the effects are based on micro-economic evaluation. We cannot evaluate the macro-economic impacts of professional traineeships. Nevertheless, we can be somewhat optimistic here, because macro-economic evaluations of ALMPs often show positive effects on reducing unemployment (Martin, 2015). Furthermore, we cannot prove or falsify the complete non-existence of spill-over and social interaction effects (see OECD, 2005). However, the implementation of traineeships due to low scope of program probably did not harm the work chances of the young people in the control group.

## CONCLUSION

In this article, we have assessed one of the important measures of Youth Guarantee in the Czech Republic: ‘Professional traineeships for young people up to 30 years’. The aim of the measure, which was part of Youth Guarantee, was to provide a ‘good quality offer’ relatively quickly after the Employment Office registration and provide work experience to young people. The measure was able to activate and motivate young people to work, even at the cost of some self-selection of participants into the program. Most of the young people who participated in professional traineeships:

- have been able to gain a foothold in the labour market
- have gained work experience
- have escaped long-term unemployment at the start of their careers

The avoidance of long-term unemployment spells at the start is very important, because they can be especially detrimental for the prospects of young people (Caliendo & Schmidl, 2016). Although the Employment Office registration seems to be similar at first glance, it is obvious that the pathways of the young people in the control group were different (including more cases of economic inactivity and unknown fates). Targeting young long-term unemployed or those who are in some other way disadvantaged may further improve the impacts of the program. Nevertheless, there is the substantial risk that the program would not be able to overcome all the potential problems of multi-disadvantaged participants.

The further research of professional traineeships can include measuring long-term impacts and regional differences in impacts, measuring impacts with better data from social security registers and provide insight into the macro-economic effects of the program.

## ACKNOWLEDGMENTS

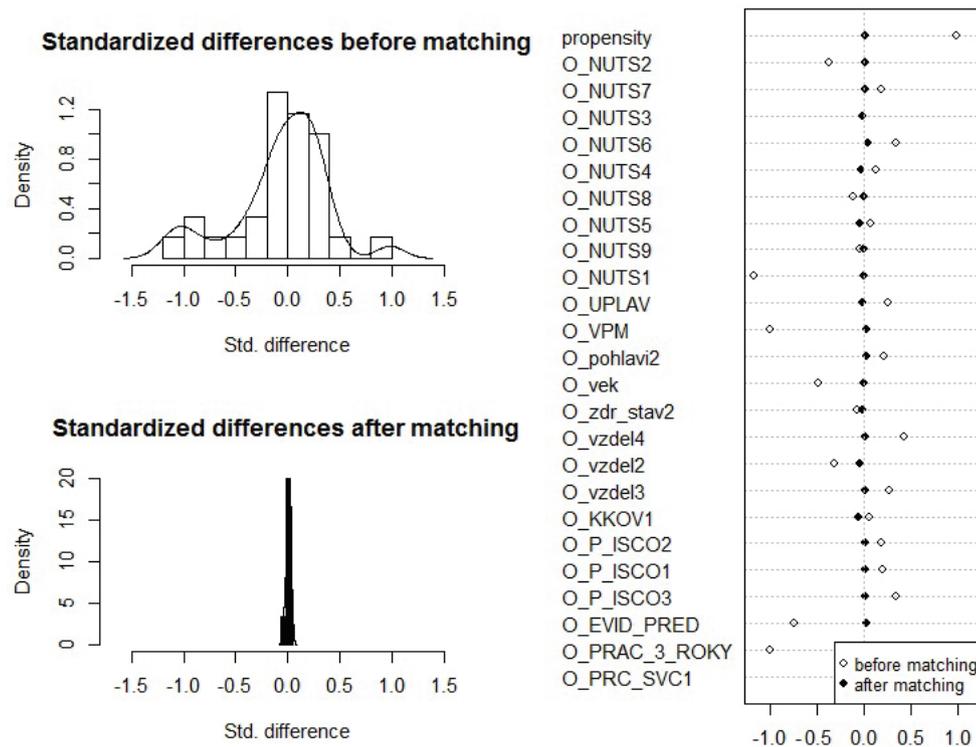
This study has received funding from the European Union (EU), Horizon 2020 research and innovation programme within the ‘NEGOTIATE’ project, under grant agreement No. 649395. Impact evaluation with OKPráce data was supported by the ESF OPZ project ‘Vyhodnocování účinnosti a efektivit realizace APZ’ (CZ.03.1.54/0.0/0.0/15\_122/0006089). We would like to thank Tomáš Sirovátka, Markéta Horáková and Miroslav Suchanec for their comments and other research contributions to the previous texts that we have used in revised form to write this article.

## APPENDIX

Tab. 5: Results of Hotelling T-squared balancing test for joint equality of means.

Model	T <sup>2</sup>	F	DF1	DF2	Sig.
IMP1	21.4007	0.761	28	7143	0.811
IMP2	17.7933	0.633	28	7083	0.933
IMP3	22.9385	0.816	28	7101	0.740
IMP4	20.6889	0.736	28	7115	0.841
IMP5	21.9751	0.782	28	7145	0.786
IMP6	25.8998	0.921	28	7085	0.584
IMP7	13.4076	0.477	28	7073	0.991
IMP8	22.4867	0.800	28	7161	0.762
IMP9	21.7702	0.775	28	6995	0.795
IMP10	19.9398	0.709	28	6977	0.869

Graph 4: Diagnostic plots for assessment of achieved balance.



Notes: left part: Histograms show standardised differences of all terms before and after matching; right part: Dotplot shows the magnitude of standardized differences before and after matching.

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