Active Labour Market Policies in Flanders. Evaluation of the ESF "Work Experience for Young Persons" programme

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DRAFT

Abstract

The aim of this paper is to evaluate the "Work Experience for Young Persons" or 'WIJ!' program, implemented in Flanders for three years starting from June 2015 and funded through the European Social Fund (ESF). The WIJ program is targeted at unqualified young people between 18 and 25 years old with the aim of facilitating their entrance in the labour market, through an intensive guiding trajectory which includes labour market orientation and coaching, and possibly competence strengthening activities. The analysis is based on administrative data sources from the Flemish Public Employment Service.[1] Using detailed information on the past labour market histories of youth, we employ matching approaches to evaluate the impact of WIJ on employability of young jobseekers. The estimated ATT points to no statically significant effect of the intervention on the employability of participants at three or six months after the completion of the intervention. Additional research with a longer post intervention period will be performed.

Keywords: Policy Evaluation, Labour Market Policy, Training, Internship, Administrative Data, Matching

JEL codes: C31, H43, J18, J24

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1. Introduction

Active labour market policies (ALMP) targeting specifically youth became particularly widespread in the last three decades. Northern European countries as first activated several programs for young people in the 1980s and the 1990s. Among the national initiatives, the widest ones were the English New Deal for Young People (NDYP), the Danish Youth Unemployment Program (YUP) and the German Jugend mit Perspektive (JUMP).

Most recently, in 2013, the European Council created the Youth Employment Initiative (YEI) package in order to provide financial support to the regions mostly hit by youth unemployment. This was launched primarily to support the implementation of the Youth Guarantee (YG). This latter targets young people not in employment, education or training (NEETs), including long-term unemployed youngsters or those not registered as job-seekers, younger than 25 or 29 years, depending on the labour market conditions of the Member States recipients of the European Funds. The YG is by law addressed to regions experiencing youth unemployment rates above 25%. Sweden was one the pioneer country in terms of implementation of the YG, since launched it in 1984, followed by Norway in 1993, and Denmark and Finland in 1996. The measures generally activated under the YEI and the YG include apprenticeships, traineeships, job placements and further education leading to a qualification. Although the literature on the effectiveness of the YG programs is still in progress due to the recent introduction, several studies examined its implementation at country level (Cabases 2016, Pastore 2015, Escudero Mourelo 2015).

More in general, the effectiveness of ALMP targeting youth has been, instead, extensively documented in the empirical literature (see among other the reviews by: Caliendo and Schmidl 2016, Kluve 2010 and Card et al. 2010). The evidence on some policies, such as training programs and private sector incentives, is however mixed, since their impact varies over time. In their meta-analysis, Card, Kluve and Weber (2018) point out that these particular measures have in fact larger average effects in the medium (approximately 2 years after intervention) and longer run (approximately 3 years after the intervention). The absence of positive impact in the short-run may be attributed to the "lock-in" effects, as defined, among others, by Ham and Lalonde (1996). Unemployed participating in these programs may drastically reduce their employment opportunities in the period immediately following the program, namely in the short term, since they often reduce or suspend their normal job search efforts during the participation.

The aim of this paper is to contribute to the evidence on the effectiveness of ALPM targeting youth, by focusing on the "Work Experience for Young Persons" (Werkinleving Jongeren, WIJ) program, implemented in Flanders for the second time in June 2015 by the Flemish division of the European Social Fund. The project focuses on unqualified youth between 18 and 25 years old with a distance to the labour market. The WIJ program consists of two main phases; the first phase is focused on labour market orientation and ends with an action plan, the second phase consists of further coaching plus competence strengthening activities, aimed at facilitating the entrance in the labour market of unqualified young unemployed. Important to mention is that the WIJ intervention is not the only one available to the target group. The regional PES provides several employment services to unemployed youth. The WIJ trajectory, however, ought to be more individualised with explicit attention for a personal action plan and labour market orientation, after which additional competence strengthening training and internships can be provided. Considering the latter, this

research not only examines the effectiveness of the WIJ intervention, but also looks at the added value of the WIJ program compared to the other available labour market services provided by the Flemish PES (VDAB, Vlaamse Dienst voor Arbeidsbemiddeling en Beroepsopleiding -Service for Employment and Vocational Training).

We perform the analysis using administrative data sources from the VDAB, which provide detailed information on the past labour market histories of youth. We exploit this longitudinal information by means of matching approaches, in order to evaluate the impact of WIJ on employability of young jobseekers.

2. "Work Experience for Young Persons" program

2.1 Youth and the labour market in Flanders

Leaving school unqualified has detrimental social and economic consequences. Future labour market performance is one of those heavily affected domains. Having good starting qualifications and acquired competences play a main role for successful labour market entrance. Continued use and application of competences are also necessary to maintain and preserve them. Increasingly, it is also highly important to expand and update the already acquired competences to stay in the market once entered (Sels, Vansteenkiste, & Knipprath, 2017).

In Flanders, the unqualified exit of youngsters between 18 and 24 years old is relatively low compared to the European situation. Since 2010 the exit rate of unqualified youngsters is declining in Flanders (Steunpunt Werk, 2018)[2]. The numbers of 2016, the main period during which the intervention was implemented, show that in Flanders 6,8% of this population group stops education without a secondary school certificate, whereas the European average is 10,7%. Flanders aims to reduce the percentage to 4,35% by 2020 (Steunpunt Werk, 2018); a goal which is not yet reached.

Albeit the lower unqualified exit, the unemployment rate of people between 15 and 24 years old in Flanders is considerably high in 2016. After a periodical peak in 2013 when it reached 16,6%, the rate settled on 14,1% in 2016 (Steunpunt Werk, 2018). Although the average rate in Flanders is still lower than the European rate (18,7%), it is still on a higher level compared to pre-recession periods higher than in pre-recession periods; in 2008 the 15-24 unemployment rate was 10,5% in Flanders. The youth unemployment rate is also lower in neighbouring countries such as Germany (7,0%) and the Netherlands (10,8%). Considering the same age group, young men especially seem to be at risk for unemployment (16,6%) compared to young women (11,1%). Note as well that the average employment rate of this age group in Flanders (76%) in 2016 strongly differs across educational levels. While higher educated (ISCED 5-8) young people show an employment rate of 83,3%, lower educated people (ISCED 0-2) are much less likely to work with an employment rate of 49,3% (difference of 34 percentage points).

Given the need to be qualified and to maintain competences up to date, looking into the number of youth not in education, employment or training (NEET) provides an interesting picture on those individuals certainly at risk of being alienated from the labour market. The Flemish numbers show that in 2016 7,5% of the youth between 15 and 24 years old was in a NEET-situation, which is under the Belgian goal of 8,2% in 2020 (Steunpunt Werk, 2018). This percentage has been going down since the peak of 10,5% reached in 2013 because of the recession. This way, Flanders obtains a better result than the European average of 10,5% and neighbouring country France (11,9%), but performs worse than the Netherlands (4,6%) and Germany (6,6%).

Periods of long term unemployment are often moments in which skills and competences are not further developed. In Flanders, 71,2% of the young unemployed people under 25 was less than one year unemployed in 2017 (VDAB, 2018). However, there was a considerable group among then who

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was already unemployed between 1 and 2 years (17,5%) , and even over 2 years (11,3%). Again the population of young unemployed people: of those unemployed young individuals who are between 1 and 2 years of unemployment approximately 65% in lower educated, and of those over 2 years of unemployment 74% in lower educated.

Although the rate of unqualified school exit in rather low in Flanders, employment and unemployment rates point to several obstacles, especially for lower educated people. The difference in employment rates between higher and lower educated young individuals is considerable. International variation also shows there is room for improvement.

2.2 Work experience for young people (WIJ!)

I) Background

The WIJ!-intervention finds its origin in an earlier ESF-call (number 166) on 'work ateliers for young unemployed' set up in 2010. This latter intervention was the result of an agreement between the Flemish government and its social partners (employers and employee organisation) to address the youth unemployment during the recession. The call offered a work experience to young people under 25 years who were unemployed for more than one year, but with a rather attractive labour market profile in terms of qualifications. The aim was preventing these unemployed people from ending up in a situation of long term employment because of the recession. The intervention consisted of intake and orientation, competence strengthening activities (such as a group project, a short internship, and guidance), job hunting, job interview support, and possibly additional actions related to training or guidance.

During the evaluation of call 166, it was decided to redirect the focus to unqualified younger individuals for whom the regular PES actions would not be sufficient to foster the entrance in the regular labour market without reverting more specialised guidance techniques (such as the ones that exist for individuals with a work disability). As such, the WIJ!-calls came into being as intensive work experience and competence strengthening intervention for a target group that is usually less attractive for employers. The goal was to find work for the individual or to improve the technical or practical qualification to make the young individual more attractive to the labour market. The ESF prescribed that the intervention should contain individual guidance and orientation, job hunting and mediation, the possibility of an internship, aftercare (counselling, coaching and follow-up) when the person finds work, plus competence strengthening training and guidance activities. Individuals were allocated to the intervention by the case workers of the regional PES. The intervention itself was performed by third-party partners, selected according to the project proposal and methodology based on the general call proposal of the ESF. The first call (number 259) was launched in 2012 with interventions starting from February 2013 to July 2014. The standard trajectory lasted 12 months, but could be prolonged to 18 months after agreement between all the partners. Per intervention participant, the executors received a maximum of 4000 euro. 60% of this total was transferred for effort when the intervention was completed (or started but stopped prematurely), while another 40% was transferred when the prescribed goals (qualifying training or work) were obtained.

II) Current call

The focus in this study lies on the second call (number 312) which was launched in February 2015. The call is part of the Operational Program of the ESF for 2014-2020 under investment priority 9i 'Directing socially vulnerable groups to labour market integration via, among others, social participation'.

Allocations of participants into WIJ activities started on 1 June 2015 and ended on 31 August 2017. Compared to the first one, the second WIJ!-call was formulated in more concrete terms and prerequisites. Two main criteria were formulated to determine whether a person is eligible for participation in the intervention: age and educational qualification. First, in order to be admitted to the intervention, the person needs to be at least 18 years old and maximum 25 years old at the moment of the admission. Second, as regards the qualification, the person may maximally have obtained a certificate of special needs secondary education (ISCED 2 level), a certificate of upper secondary general, technical or arts education (second grade of secondary education in Belgium – ISCED 3) or a certificate of upper secondary (part-time) vocational education (third grade in secondary education in Belgium - ISCED 3). While the age criterium is strict, 5% of the unemployed admitted into WIJ can deviate from the qualification criterium if the guidance is also relevant for them. Individuals can participate in the intervention after allocation by the regional PES or after recruitment from the network of the third party executors whose intervention proposal was accepted by the ESF. As in the other call, third party executors submitted their project proposals and their specific intervention description based on the ESF call.

In this second call, the ESF proposal defines two main parts: 1) orientation with action plan and 2) coaching and guidance. The evaluation of the first WIJ-call (259) clearly described the need of the target group for orientation and insight in one's own competences and possibilities, since the group of young unemployed is often characterized by learning fatigue, negative schooling and job experiences and shows difficulties to formulate realistic job targets and aspirations. As such, the first part was made explicit to provide the participants with more insight into their competencies and skills, their possibilities in the labour market and the barriers they may encounter to enter it. This part consists of a prescribed orienting phase where the PES caseworkers make an explicit analysis of participant's situation and needs at the beginning of the intervention. In addition, in this first action, the young unemployed registered at the PES improve their knowledge of the labour market and gain insight into possible jobs, sectors and relevant labour market actors, so as to facilitate their job search and help them enter the labour market successfully. A short summary of the specific intervention projects of the third party executors can be found in Appendix (see part 8.1).

After the preparatory phase, the second one aims to provide the participants with an intensive guidance trajectory for work and competence strengthening. In this phase, the needs for (additional) qualification are met by providing shorter trainings, educational internships, job-hunting, job interview support, and other instruments. When the participant would find a job during the intervention, it is demanded the executors still provide guidance in what is called the 'aftercare' period. If possible, the participation within specific trainings and internships is registered in a central PES database and documented by a certificate. The specific policy instruments used within the guidance may differ from participant to participant, as the trajectory is made to measure and depends on the participants' needs.

The intervention is seen as successful by the ESF when one of the following three results are obtained: 1) finding work (with a minimum of three months), or 2) starting a qualifying education (which is a officially recognized vocational training organised by the PES, the centre for adult education or the general educational sector), or alternatively 3) completely executing the intervention with all the prescribed activities formulated in the project proposal of the third party executor.

This call is financed for the 60% by national funds and for the remaining 40% by ESF. As in the previous call, it was opted for a result based financial management. The executors receive a maximum of 600 euro per completed action plan and additionally another 2000 euro per guidance trajectory that obtains at least one of the three results above. If the intervention is prolonged with an additional six months, the latter amount can be increased up to 3300 euro.

3. Data

3.1 Description of the different datasets

The analysis is based on administrative data coming from the registries of the Public Employment Service (PES, "Vlaamse Dienst voor Arbeidsbemiddeling en Beroepsopleiding", VDAB), i.e. the Flemish Service for Employment and Vocational Training.[3] In particular we had access to the following data sets, which can be linked with each other by a unique individual identifier:

- *Catwz* (PES information): complete unemployment trajectories of all registered unemployed (both treated and control units) as recorded by the PES on monthly basis. In Flanders, all persons who are unemployed are obliged to register at the PES at the start of the unemployment spell. This implies that the dataset consists of (nearly) all people who are unemployed within a certain period. Conversely, people who are studying or are employed can register voluntarily. Once registered, the PES keeps on updating their unemployment trajectory. The typologies of spells present more than 30 different categories. We group them into narrower categories, defining the following four states: 1) "Non-working job seekers", 2) "In education", 3) "Employed", including also working job seekers, and 4) "Inactive", including also unemployed individuals under social assistance. An overview of the groups within the states can be found in Appendix (section 8.3).
- *Dimona* (Déclaration IMmédiate/ONmiddellijke Aangifte: work contracts information): system whereby all employers are required to immediately register a new employee electronically with the National Office for Social Security (Rijksdienst voor Sociale Zekerheid, RSZ). As such, Dimona records the complete work history for all individuals (both treated and control units) since they started working, including information about the contract start and end dates, and the typology, whether interim, temporary or not. The collected information is valid on monthly basis.
- *WIJ_deelnemers* (WIJ treated units): information about the WIJ treated group. This dataset includes all individuals who were channelled into the intervention. The collected information contains demographic characteristics, such as gender, date of birth, nationality and level of education, province of domicile, in addition to the ESF criteria (migrant background, disability and limited knowledge of the Dutch language=. Finally, details about the ESF intervention, as start and end date, allow to identify months when unemployed where engaged in ESF activities. This database also includes people (i) who have started the trajectory but stopped, (ii) those who were channelled into the intervention but never started, and (iii) those who cancelled.
- *Controlegroep* (control units): information about all the individuals who were not treated and were therefore selected to construct the control group. This dataset contains all the individuals born between 1987 and 1998, who appears at least once in the unemployment registry in the period between 01/06/2015 and 30/09/2017. The data contain the same demographic characteristics contained in the treated group file.
- *Trajecten, werkplekleren and opleidingen* (PES activities): information on activities coordinated by the PES (for both treated and controls units), including different kinds of

[3] We would like to thank the ESF Department of the Flemish Ministry of Employment and Social Economy for granting access to and collecting the data from the Public Employment Service of Belgium used for this evaluation.

training and workplace learning (internships). The Internship datasets (*werkplekleren*) allows to distinguish among 16 different kinds of activities, which we grouped into the two major and most frequent categories: "Competence strengthening internship (building skills)" and "Orienting internship". This main distinction was based on the categorisation of the PES (VDAB, 2018). The training dataset (*opleidingen*) allows distinguishing among four possible types of training: "Orienting training", "Job specific training", "Dutch for foreign", and "General training". Finally, the third dataset (*trajecten*) indicates whether the individual is followed by the PES. For all activities the exact start and end dates (e.g. 11 March 2016) are recorded. In addition, for the activities recorded in *werkplekleren* and *opleidingen* it is possible to retrieve whether these are "executed", "stopped" or "ongoing".[4]

3.2 Data cleaning and creation of labor market trajectory

By merging the information from the different datasets we are able to reconstruct an individual file on a monthly basis, in order to assess the individual status in each month and reconstruct the sequences of events of each labour market trajectory, distinguishing whether an individual was either working, or participating in the WIJ intervention, or in unemployment, etc.

The information from all the data sources is combined by correcting for possible contrasting information in the same month for a given individual, as follows.

- For each month we create the individual variable "status" starting from the PES information provided in the Catwz dataset;
- for those months for which there is no information recorded in Catwz, but information on work contracts is recorded in Dimona, we update the status to "employed" for the corresponding months;
- finally, we update the status with the activities undertaken, based on the information provided in the WIJ and PES activities database. When, according to the WIJ file an individual is engaged in the ESF intervention, his/her status is updated to "ESF intervention".
  Note that in the months when they are not participating in the ESF intervention, treated individuals can also participate in the other activities offered by the PES.

While within the ESF intervention we distinguish among internships, trainings and trajectories, in order to build reasonable sequences of events, for the general labour market status we group all these activities into one single category, i.e. "PES activities".

The resulting values that the variable "status" can take are hence the following:

1. ESF intervention;
2. PES activities;
3. Employed;
4. In education;
5. Inactive;
6. Non-working job seeker.

[4] In case of overlapping different activities in a given month (for instance, "Orienting internship" and "Competence strengthening internship"), we keep the activity with a "better" status, favoring executed over ongoing and ongoing over stopped.

3.3 Sample selection of the treated group

The interventions started on 1 June 2015. Each participant could start at the chosen data and follow the activities part of first and second phase. In this evaluation, firstly, we restrict the sample of treated individuals to those who started the first phase in the period 01/06/2015 – 30/06/2016. Basing the analysis on data updated up to 30/09/2017, this selection allows to observe at least three months of post-intervention period also for those who started it most recently (on 30/06/2016).

Secondly, we only consider treated individuals who completed the trajectory and exclude from the analysis (ii) those who were assigned but did not start the program, and (ii) those who started but did not complete the intervention.

We also exclude from the analysis individuals starting the intervention after the age of 26 and individuals participating in multiple valid interventions (for example, individuals undertaking an intervention in 2016 and another one starting in 2017).

Hence, out of the foreseen 6200 participants, we focus on 2913 treated individuals.

The potential group of control is composed of all individuals (i) appearing at least once in the unemployment registry between 01/06/2015 and 30/06/2017, (ii) who were born between 1987 and 1998. This potential control group counts more than 248,000 individuals.

4. Empirical strategy

4.1 Matching methods

Given the huge number of available potential controls and the amount of information available both on socio-demographic characteristics and past working experiences, we build our empirical strategy on matching procedures.

Using this approach, we aim at maximizing the balance of individual characteristics and past labour market outcomes in the two groups, by selecting as controls only those individuals who are very similar to the treated. This way, the matching approach allows to identify and analyse the driving factors of the selection into the intervention which finally will enable us to get rid of the selection bias and to clearly assess whether the WIJ program made the difference for participants or not.

In particular, we implement a two-step procedure in which we first select a preliminary control group by using Coarsened Exact Matching (CEM). Second, we perform Propensity Score Matching on this group. The final objective is to single out those individuals that best resemble treated in terms of past labour market outcomes and time-invariant socio-demographic characteristics.

Coarsened Exact Matching (Iacus, King, and Porro 2008) matches units by first coarsening observable attributes into groups. Indeed, the logic of CEM consists in (i) temporarily coarsening each variable into substantively meaningful groups, (ii) exact matching on these coarsened data, and then (iii) only retaining the original (un-coarsened) values of the matched data. In this way, the CEM refines the standard exact matching procedure, by creating strata for the variables, and avoiding the limitation of few matches due to curse-of-dimensionality issues.

The CEM peculiarity, which differentiates it from other matching procedures such as Propensity Score Matching (PSM), is that the balance between the treated and the control groups is chosen ex-ante. Therefore, this prevents the need to check the covariate balance after the matching, as in PSM. The check on the validity of the common support assumption is not needed since the CEM automatically restricts the matched data to areas of common empirical support (King and Zeng, 2006). The key property of CEM is, in fact, that it belongs to the class of matching methods called Monotonic Imbalance Bounding (MIB). These MIB methods bound the maximum imbalance in some feature of the empirical distributions through an ex ante choice by the user (Iacus, King and Porro, 2008).

We implement CEM on two variables, namely the registration at PES and the starting date of the most recent activity. Since treated and control individuals have intermittent working careers with uncontinuous spells of employment, they may enter and exit the PES registry multiple times depending on the succession of spells of unemployment/employment. Since the intervention targets unemployed and we are interested on those individuals who are in a status of unemployment at the time of the intervention, we consider the last date of subscription into the PES unemployment registry. As regards the starting date of the activity, we consider WIJ activities for treated units and standard PES activities for control units. Hereinafter, for the totality of both treated and control units we refer to activity.

For example, given a treated person who last subscribed into the PES registry in December 2014 and started the WIJ activities in June 2015, the matching algorithm will retain only those controls that

share the exact characteristics, that is, the paired control units will be those who both lastly subscribed into PES in December 2014 and started an activity in June 2015. What differentiates the matched units is only the fact that the treated attended the WIJ activities including personalised guidance while the controls attended canonical PES activities.

In order to better understand the choice of the variables on which the first matching is implemented, recall that the aim of this study is to evaluate the added value of the WIJ program compared to the standard labour market services provided by the Flemish PES. Hence, we aim to check the effectiveness of the orientation, coaching and guidance measures, which precede the standard training and internships and which are the peculiarity of WIJ. These measures could, for instance, also help the participant to better choose the kind of activities, i.e. the type of training and internships and the order to follow them with. In this respect, the presence of different sequences of activities for treated and control units could be itself an intermediate result of WIJ. Also the length of the sequences could differ between treated and controls as a result of receiving or not some advice regarding the most suitable activities to attend.

Individuals who start the sequence of activities exactly at the same time can be considered very similar, since potentially they face the same opportunities in terms of availability of training courses or internships they can attend.

This is the main reason for considering the perfect potential control an individual who starts his first activity exactly at the same time as the treated one. Both can indeed choose among the same portfolio of activities, the only difference being that treated units are guided in the choice. In addition, during the intensive guidance trajectory the third party might organise specific and targeted activities. For the treated individual the first activity could consist either in general guidance trajectory, or training or internships, while for the control individual only standard PES guidance is foreseen.

Following a similar reasoning, it is essential to condition on the timing of registration at the unemployment registry, to make sure that the unemployed individuals we focus on face similar working patterns and similar trends in the labour market.

After the CEM, we are left with 1710 treated and almost 23.000 controls.

After conditioning on the timing of activities and of registration at the unemployment registry by means of CEM, we need to take into account also additional possible pre-existing differences between treated and controls before the start of the intervention, which can affect the probability of participating in the intervention and their employability. The literature on labour market highlights that socio-demographic characteristics play an important role in shaping employability as well as past labour market stories since the latter can be used as proxies for individual ability.

As a consequence, we perform an additional matching on some time-invariant individual characteristics – namely, gender, nationality, province of residence, education, year of birth (all of them grouped in categories) – and on the probability of being employed in each month prior to the starting of PES/ESF activity. The reference sample for this matching approach is the one selected through the CEM.

For this second matching procedure we rely on the Propensity Score Matching (PSM) (Rosenbaum and Rubin, 1983), which is based as preliminary step on the estimation of a so-called balancing score. This score is estimated as a function of the relevant observed covariates, such that the conditional distribution of covariates given the balancing score is independent of assignment into treatment. The use of a balancing score allows solving the 'curse of dimensionality' arising from the need to condition on a high dimensional vector of relevant covariates. The Propensity Score is estimated as the probability of participating in a programme given observed individual characteristics.

All matching approaches described above are based on the assumption that the selection into treatment is solely based on observable characteristics and that all variables that influence treatment assignment and potential outcomes simultaneously are observed. This is referred in the literature as Conditional Independence Assumption (CIA) or Unconfoundedness assumption and implies that, given a set of observable covariates which are not affected by the treatment, potential outcomes are independent of treatment assignment (Caliendo and Kopeinig, 2008). The validity of this assumption depends on the number of individual variables which can be observed in the data, i.e. on the richness of the data used in the matching procedures.

The PSM is also based on the Common Support assumption. This requires overlap between the estimated probability of participating for treated and control units. It ensures that persons with the same values of covariates have a positive probability of being both participants and non-participants (Heckman, LaLonde, and Smith, 1999).

By means of PSM, we estimate the average treatment effect for the treated (ATT) (Imbens, 2004). The ATT is the average effect of treatment on those subjects who ultimately received the treatment. Being defined only for those who receive the treatment, the ATT differs from the average treatment effect (ATE), which, instead, corresponds to the average effect at the population level.

As a robustness check, we exploited the detailed information on the past labour market histories of youth by means of Sequence Analysis (Abbott, 1995). In particular, we implemented the Optimal Matching approach on the sequences of employment status (non-working job seeker, employed, inactive, in education) occurring in the working histories of treated and control units up to the month preceding the month of start of the first activity. This matching was performed after matching treated and controls on the timing of activities and of registration at the unemployment registry and on the time-invariant individual characteristics used above – namely, gender, nationality, province of residence, education, year of birth. In general, since the working trajectories of unemployed are very fragmented, controlling for them can help taking into account differences between individuals and addressing possible selection bias into the intervention. However, we saw that after controlling for the time of activities start for the reasons discussed above, the Optimal matching on the past working history sequences does not further improve the matching performance in terms of balance obtained by the CEM.

4.2 Descriptive statistics

I) WIJ sequences

In the following we provide some descriptions of the intervention trajectories that individuals can undertake within the WIJ.

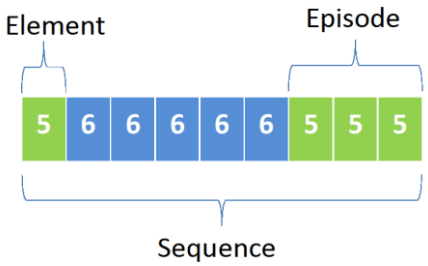
Since the WIJ - ESF intervention consists of multiple activities which can take place in a time interval lasting up to 18 months, we examine the sequences of activities which compose it by means of sequence analysis. Namely, we explore the activities performed by the treated individuals in the months they participated in the ESF intervention, in the time period recorded in the 'WIJ_deelnemers', according to the 'Trajecten, werkplekleren and opleidingen' files.

In particular, in the sequence analysis literature (Abbott, 1995) a sequence is defined as an ordered list of elements. The elements are the possible states that can be observed in each month. In the case of WIJ - ESF intervention, there are seven possible states. General guidance trajectory (5) is the baseline status corresponding to being in the intervention with the executor. The activities that can be performed on top include four possible trainings (1-4), and two internships (6-7):

1. Dutch for foreign
2. General training
3. Job specific training
4. Orienting training
5. General guidance trajectory (without other activities registered)
6. Competence strengthening internship (building skills)
7. Orienting internship

In the sequence analysis framework, each sequence is represented by a string of characters. In our case, the trajectory of an unemployed person can contain the numbers going from one to seven, referring to the seven possible states. An example of a sequence is shown in Figure 1:

Figure 1: Example of sequence

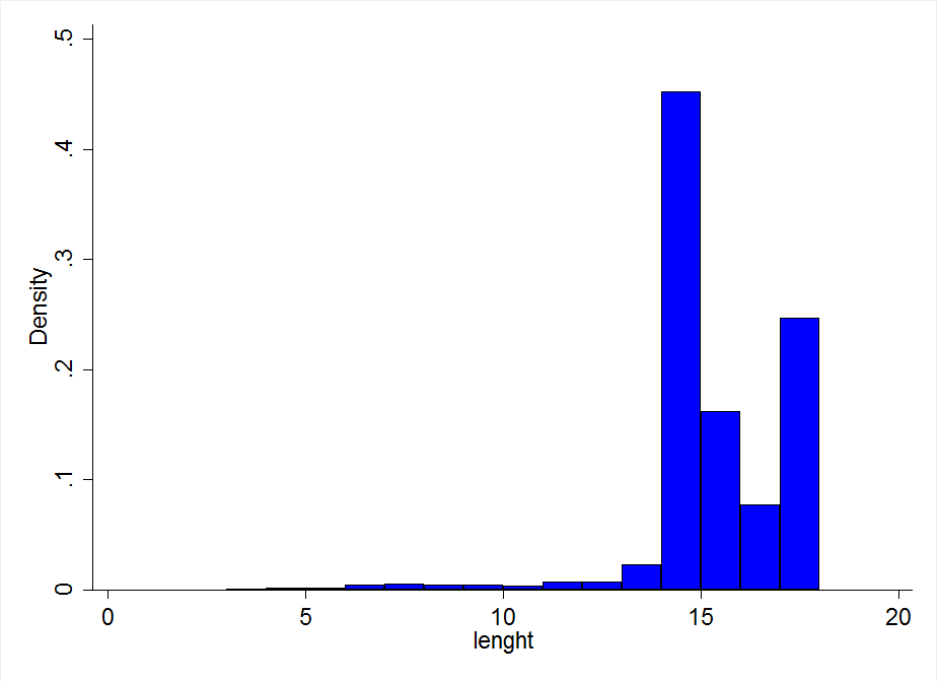


The **sequence** is a list of **elements** which are ordered chronologically. Sub-sequences of identical successive elements in the sequence define an **episode**, irrespective of the number of elements and of the resulting length.

The sequence above shows an individual history of 9 months and contains three episodes defined by the following activities: general guidance trajectory (1 month), competence strengthening internship (5 months), and general guidance trajectory (3 months).

The Figure 2 below shows the distribution of the length of the ESF intervention, defined by the PES as the number of months each individual participated in at least one activity. It can be observed that the most frequent length is 14 months, followed by 18 months.[5]

Figure 2: Distributions of the length of the ESF intervention



In the sample of the treated individuals under analysis, the length of the ESF intervention ranges from 3 to 18 months. The mean length is 15 months, while the median is 14 months. The length between the 5th and 95th percentile of the sequences goes from 13 to 18 months.

The Table 1 below shows the trajectories most frequently observed among the treated individuals. The calculations are based not on the single elements, but on the episodes, defined on the basis of the order of states. This means that two sequences with the same episodes will be considered as equal although the numbers of elements in each episode are different (for instance, the sequences '7 7 7 6 6 6 6 6 7 7 7' and '7 6 6 6 6 6 6 7 7' will be both represented as 7-6-7). This allows reducing the number of possible combinations of sequences, otherwise too large and not representable.

[5] Following the administrative rules, ESF sequences must last at maximum 18 months. Accordingly, we truncated at month 18 – included – all sequences longer than 18 months. In the vast majority of the cases, sequences that are longer than expected are the result of misreporting.

Table 1: Sequences of episodes in the ESF intervention

Sequence	Freq.	Percent	Cum.
5	2,114	72.57	72.57
565	275	9.44	82.01
575	159	5.46	87.47
535	52	1.79	89.26
56	45	1.54	90.8
5365	32	1.1	91.9
5765	20	0.69	92.58
53	13	0.45	93.03
57575	13	0.45	93.48
536	12	0.41	93.89
53635	12	0.41	94.3
545	12	0.41	94.71
25	9	0.31	95.02
56565	7	0.24	95.26
65	7	0.24	95.5
52	6	0.21	95.71
57565	6	0.21	95.91
2625	5	0.17	96.09
2725	4	0.14	96.22
45	4	0.14	96.36
515	4	0.14	96.5
…	…	…	…
676	1	0.03	100
Total	2,913	100	

The pattern occurring most frequently is represented by the episode 5 (72.57% of the sequences, for 2114 individuals), which means that an individual is following the general guidance trajectory of the third party executor without participating in any particular activity registered by the PES. The second most frequent pattern (9.44 % of the sequences, for 275 individuals) includes the general trajectory, then following a competence strengthening internship, and finally again the general trajectory.[6] Table 2 offers another way to interpret the information contained in Table 1.

[6] Note that we omitted from the Table some of the least frequent sequences in the data, i.e. the sequences observed for less than 3 individuals.

Table 2. Sequences concentration

Observations	Sequences	% of observed	Cum.
1	54	1.853759	1.853759
2	12	0.4119464	2.265706
3	8	0.274631	2.540336
4	3	0.1029866	2.643323
5	1	0.0343289	2.677652
6	2	0.0686577	2.74631
7	2	0.0686577	2.814967
9	1	0.0343289	2.849296
12	3	0.1029866	2.952283
13	2	0.0686577	3.020941
20	1	0.0343289	3.055269
32	1	0.0343289	3.089598
45	1	0.0343289	3.123927
52	1	0.0343289	3.158256
159	1	0.0343289	3.192585
275	1	0.0343289	3.226914
2114	1	0.0343289	3.261243
Total	95	3.261243	

From the last row of Table 2 we can see that there are 2114 individuals sharing the same sequence (as can be noted in the previous table, this is sequence consisting of episode "5"), while from the first row we can note that the number of unique sequences, i.e. sequences shared by one person only, is 54.

Given the information in the table, we can compute the sequence concentration index. A concentration index equal to zero means that we have maximum concentration with all observed sequences identical to each other; on the other hand, concentration is at the minimum – with concentration index equal to 1 - if all observed sequences are unique. In our case the level of concentration is high since the index takes value 3.26%, pointing to the fact that a lot of individuals share the same activity pattern.

II) WIJ promotors

In the following we exploit the information on the third-party executors which implemented the WIJ intervention. First, Table 3 shows the distribution of participants across executors. We can notice that SBS Skill BuilderS is the one gathering the highest number of participants (56%), followed by VORMINGS- EN OPLEIDINGSKANSEN (19%).

Table 3: Division of participants across executors

	Frequences	Percentage
ARGOS	117	4.02
GROEP INTRO VZW	71	2.44

RANDSTAD BELGIUM	171	5.87
SBS Skill BuilderS	1,638	56.23
T-GROEP	228	7.83
VORMINGS- EN OPLEIDINGSKANSEN	562	19.29
WONEN EN WERKEN OPLEIDING	126	4.33
Total	2,913	100

Second, Table 4 shows the distribution of activities within executors, to inspect whether and to what extent the educational paths offered by each executor are different.

Table 4: Distribution of activities within executors

	ARGOS	GROEP INTRO VZW	RANDSTAD BELGIUM	SBS Skill BuilderS	T-GROEP	VORMINGS- EN OPLEIDINGSKANSEN	WONEN EN WERKEN OPLEIDING	Total
Dutch for foreign	0	0	0.1	0.1	0	0.0	0.9	0.1
General training	0	0	0	0.9	0.1	0.1	0.1	0.5
Job specific training	1.2	0.1	1.9	0.9	2.2	1.1	2.0	1.2
Orienting training	0.3	0	0.4	0.2	0.2	0.2	2.1	0.3
General guidance trajectory	93.4	90.0	91.2	92.0	94.6	95.4	81.5	92.3
Competence strengthening internship	4.7	9.8	4.5	4.6	2.8	3.2	13.2	4.7
Orienting internship	0.4	0.1	1.8	1.3	0.1	0.1	0.3	0.9
Total	100	100	100	100	100	100	100	100

One common feature in the educational path offered by all executors is that the general guidance trajectory is the predominant activity for all of them. For all executors the second activity is the competence strengthening internship, although there are some differences in the frequencies. For instance, after the general guidance trajectory, WONEN EN WERKEN OPLEIDING is the one with the highest proportion of competence strengthening internship activities offered, and is the only executor, together with SBS Skill BuilderS, offering all types of activities.

III) Treated and controls

In this section we provide descriptive evidence on the selected sample of WIJ participants and not-participants, before applying the matching procedures. Descriptive statistics are reported separately for the treated and the control group. Descriptive evidence on the matched treated and control groups is shown in the next section.

Table 5: Descriptive statistics on dates of registration at PES and activities start, before the implementation of CEM

	Controls		Treated	
VARIABLES	N	mean	N	mean

Year of registration at the PES				
Before 2011	53,097	0.00412	2,913	0.0106
2012	53,097	0.00614	2,913	0.0288
2013	53,097	0.0128	2,913	0.0587
2014	53,097	0.0454	2,913	0.183
2015	53,097	0.384	2,913	0.606
2016	53,097	0.465	2,913	0.113
2017	53,097	0.0823	2,913	0
Starting date of activities				
Between 06/2015 and 12/2015	53,097	0.383	2,913	0.536
Between 12/2015 and 06/2016	53,097	0.0473	2,913	0.464
Between 06/2016 and 12/2016	53,097	0.446	2,913	0
After 12/2016	53,097	0.123	2,913	0

The table 5 contains descriptive statistics for the variables used in the CEM, namely the last date of subscription into the PES unemployment registry and the starting date of the most recent activity. The date of registration at PES is defined on yearly base, while for the starting date of activities we consider semesters after the official start of WIJ. All the differences in means are statistically different from 0. While the majority of treated units registered for the last time at PES in 2015 (60%), the majority of control units registered for the last time more recently, that is in 2016 (46.5%). By sample selection, there are no treated units who registered for the last time at PES in 2017, since these were excluded from the analysis.

After the CEM implementation, we are left with 1.710 treated and 22.859 controls. Table 6 informs us about the main socio-demographic characteristics of these individuals.

Table 6: Descriptive statistics on socio demographic characteristics at the moment of the last registration in the PES register

	Controls		Treated	
VARIABLES	N	mean	N	mean
Female	22,859	0.446	1,710	0.405
Birth between 1987 and 1990	22,859	0.251	1,710	0.0673
Birth between 1991 and 1994	22,859	0.507	1,710	0.523
Birth between 1995 and 1998	22,859	0.242	1,710	0.410
Antwerpen	22,859	0.286	1,710	0.423
Limburg	22,859	0.00127	1,710	0.000585
Oost-Vlaanderen	22,859	0.160	1,710	0.113
Vlaams-Brabant	22,859	0.227	1,710	0.233
West-Vlaanderen	22,859	0.163	1,710	0.0637
Belgian	22,859	0.872	1,710	0.825
EU	22,859	0.0586	1,710	0.0585
Not EU	22,859	0.0696	1,710	0.117
Low educated	22,859	0.297	1,710	0.801
Medium educated	22,859	0.473	1,710	0.198
Highly educated	22,859	0.230	1,710	0.00175

As determined by the access guidelines, 80% of the participants have a lower educational degree, and 20% are classified within the medium educational group. For the control units, instead, the medium educational group is the most numerous one (47%).

52% of the participants were born between 1991 and 1994, which means they were between 23 and 26 years old in 2017. 41% of the participants were between 18 and 22 years old in 2017. A bit less than 7% were older than 26 years old when they were last registered, even though the age criterion of the call targets the intervention to young people. For control units as well, half of them were between 23 and 26 years old in 2017. However, also the class of people older than 26 years is quite numerous (25%), meaning that control units were lightly older than treated units at the moment of the last registration at PES.

Interestingly, it appears that more men are allocated to the intervention. Approximately 40 % of the participants are women, while 60% are men. 82% of the participants has the Belgian nationality, 6% has a nationality of another European country, while 12% of the participants has a non-EU nationality. The distribution across gender and nationality is similar in the control group, with a slightly higher percentage of Belgian with respect to the treated group.

Looking at the geographical spread, 42% of the treated group resides in Antwerp, 23% in Vlaams-Brabant, followed by Oost-Vlaanderen (11%) and West-Vlaanderen (6%). The participation in Limburg is very limited. Conversely, in the control group, after Antwerp (29%) and Vlaams-Brabant (23%), the province with the highest number of units is West-Vlaanderen (16%).

5. Results

5.1 CEM

The two tables below show global and unidimensional measures of imbalance between the treated and control group. These measures are calculated both before and after the implementation of the CEM, in order to assess whether and to what extent the matching procedure succeeds in balancing the distribution of covariates in the two groups of treated and controls.

The L1 statistic is a comprehensive measure of global imbalance, based on the difference between the multidimensional histogram of all pre-treatment covariates in the treated group and the same in the control group (Iacus, King, and Porro, 2008). It is an overall measure of imbalance with respect to the full joint distribution, including all interactions, of the covariates. L1 can assume values in the range [0,1], where L1=0 corresponds to perfect global balance, and larger values indicate larger imbalance between the groups. The maximum value of L1, L1 = 1, indicates complete separation, i.e. imbalance between the treated and control groups. The value of L1 is informative to compare the results of different matching solutions. A good matching solution should result in a reduction in the value of L1. The overall L1 measure is very informative because even if the marginal distribution of every variable is perfectly balanced, this does not guarantee the perfect balance of the joint distribution.

In our case, the value 0.6976 is a baseline reference for the unmatched data. By comparing this value with the L1 statistic resulting for the matched data, 0.299765, we can observe an increase in balance of covariates of treated and controls, i.e. a reduction in total imbalance of 56.95%.

The table below also contains unidimensional measures of imbalance computed for each variable separately. These are: L1, the difference in means, and the difference in the empirical quantiles of the distributions of the two groups for the 0th (min), 25th, 50th, 75th, and 100th (max) percentiles for each variable. In addition to the balancing for the means between the treated and the control groups, values referred to different percentiles allow assessing also the balance in the rest of the distribution. The values below show an increase in the balance of the two covariates following the CEM.

Table 7 Imbalance of covariates before CEM

Multivariate L1 distance	0.69641565						
	L1	mean	min	25%	50%	75%	max
Year of registration at the PES	0.49449	-10.597	51	-8	-10	-11	-12
Starting date of activities	0.58904	-5.6087	0	0	-8	-8	-14

Table 8 Imbalance of covariates after CEM

56,95% reduction in total imbalance

Multivariate L1 distance	0.299765						
	L1	mean	min	25%	50%	75%	max
Date of registration at the PES	0.16395	-0.57836	3	-1	-2	-1	-1

Date of start of PES activities	0.12438	0.02166	0	0	0	0	-1

	Controls	Treated
All	53097	2913
Matched	25099	1721
Unmatched	27998	1192

5.2 PSM

In the following we will present the results of several tests conducted after implementing the PSM in order to assess the comparability of the treated group with the control group selected through the matching.

Table 9 shows global measures of imbalance between the treated and control group, before and after the implementation of the PSM.

Table 9 Imbalance of covariates before and after PSM

Sample	Ps R2	LR chi2	p>chi2	MeanBias	MedBias	B	R
Unmatched	0.217	2690.32	0	19.3	13.2	140.9	0.26
Matched	0.004	18.83	0.943	3.5	2.2	14.8	0.93

Pseudo R2 is the value resulting from the probit estimation of the propensity score on all the covariates, calculated both before and after matching, i.e. on the raw sample and on the matched sample of treated and controls. The pseudo-R2 is a measure of how well the covariates explain the probability of participating in the intervention. After implementing the PSM, the two matched groups of treated and control should show no systematic differences in the distribution of covariates. Hence, the pseudo-R2 should be fairly low in the matched sample. In our case, the covariate balance between the treated and control group achieved through PSM is confirmed by the reduction of the Pseudo R2 value in the matched sample.The two figures below allow a graphical inspection of matching performance, where the extent of covariate imbalance is represented in terms of standardised percentage differences.

Figure 3 contains a dot chart for a graphical summary of covariate imbalance. For each covariate one can observe the standardised percentage bias before and after matching. The bias is calculated as the difference of the mean values in the treated and control group and is therefore a measure of imbalance between the groups. The covariates are ordered according to the values of standardised percentage bias before matching. As we can see from the comparison of the standardised percentage bias, after matching treated and control units by means of PSM the bias values align along the 0 line. This reduction in the bias takes place for all covariates.

Figure 3 Reduction of standardized % bias across covariates after PSM, by covariate

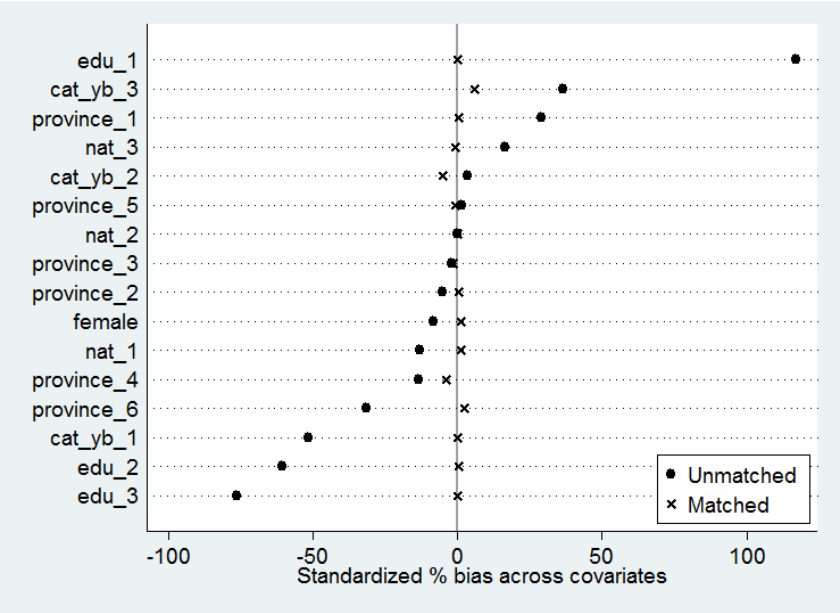


Figure 4 displays two histograms, showing the distribution of the standardised percentage bias across covariates both before and after matching. We can see that in the matched sample, the distribution of bias is more concentrated around 0 values.

Figure 4 Reduction of standardized % bias across covariates after PSM, overall

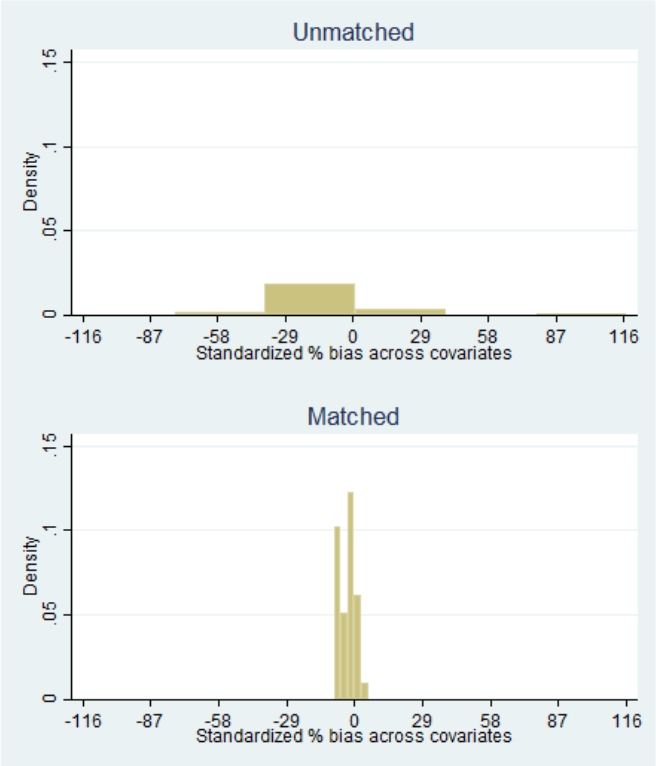


Figure 5 allows assessing the overlap between the distributions of the estimated propensity score in the treated and the selected control group, so as to check if the common support requirement is satisfied. We can see that for all values of propensity score of treated units there are control units with the same corresponding value of the probability of participating. This ensures that persons with the same covariates have a positive probability of being both in the treated and in the control group.

Figure 5: Common support after PSM

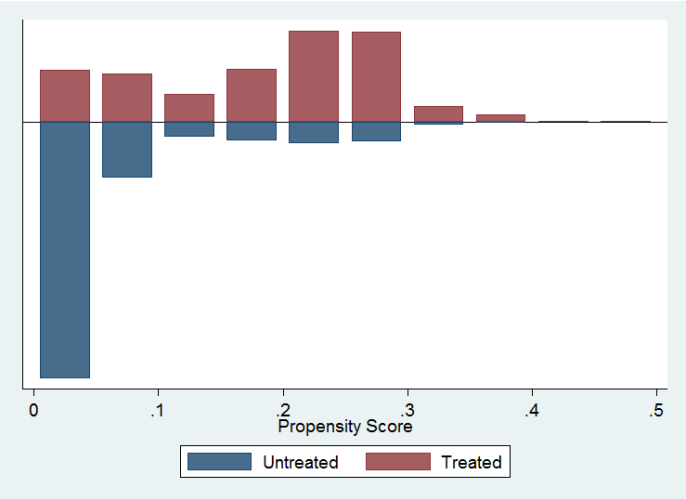


Table 10 shows the ATT estimated by looking at the outcome of participants and controls at specific points in time. As first outcome, we look at the probability of being employed.

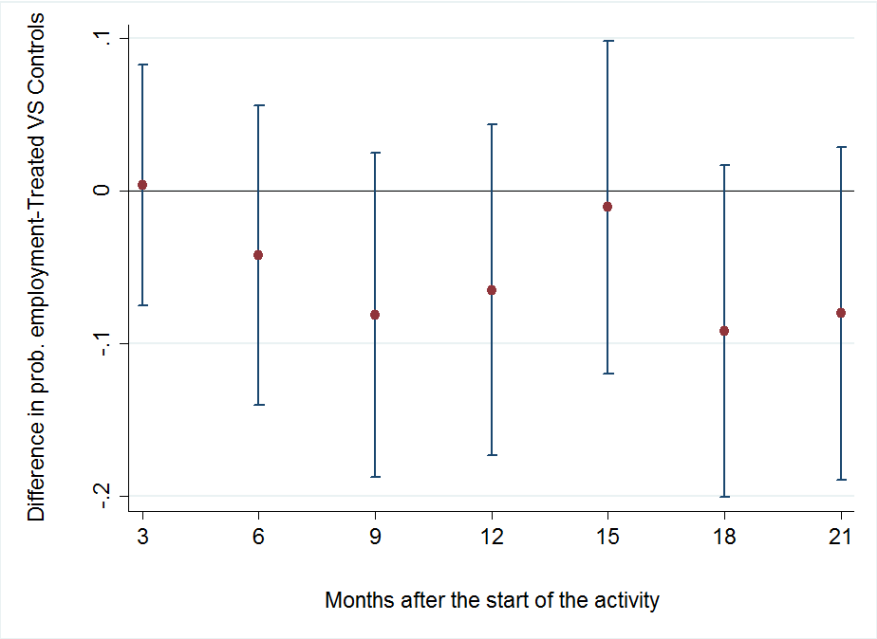
Table 10: PSM results in terms of probability of being employed: ATT 3, 6, 9, 12, 15, 18 months after starting activities

Variable	Sample	Treated	Controls	Difference	S.E.	T-stat
post_3	Unmatched	0.128655	0.22249	-0.093834954	0.010299615	-9.11
	ATT	0.128655	0.124561	0.004093567	0.040261266	0.1
post_6	Unmatched	0.2116959	0.370904	-0.159208246	0.011990615	-13.28
	ATT	0.2116959	0.253801	-0.042105263	0.050156545	-0.84
post_9	Unmatched	0.2789474	0.468635	-0.189687641	0.012427672	-15.26
	ATT	0.2789474	0.360234	-0.08128655	0.054217297	-1.5
post_12	Unmatched	0.3385965	0.531759	-0.193162752	0.012467234	-15.49
	ATT	0.3385965	0.403509	-0.064912281	0.055315173	-1.17
post_15	Unmatched	0.3730994	0.537717	-0.164617424	0.012475	-13.2
	ATT	0.3730994	0.383626	-0.010526316	0.055604945	-0.19
post_18	Unmatched	0.3690058	0.526152	-0.157146246	0.012490451	-12.58
	ATT	0.3690058	0.460819	-0.091812865	0.055521041	-1.65

As explained before, the matching approach is based, in addition to time of registration at the PES, on the starting date of activities. This allows conditioning on the fact the paired treated and control units started attending ESF and PES organised activities, respectively, exactly at the same time. Namely, they have in common the first month of activity. After having imposed this condition, from the second month onwards, the status of treated and control individuals can be compared to see how and to what extent their paths differ, i.e. if they are still following some activities, if they started working, if the treated are still under guidance, etc. For the treated units, looking at the status only after the official end of the WIJ sequence becomes irrelevant since finding a job during the WIJ sequence too can be considered as a positive outcome. This result can be assessed following the units from the second month of activities onwards without conditioning or imposing constraints on the duration or end on the intervention. The comparison between treated and controls can be done either each month or on wider time interval. In our case the outcome of treated and control units is compared on a three month time interval, i.e. three , six, nine, twelve, fifteen and eighteen months after the activities start.

As we can see from the values of the estimated ATT, for all points in time the difference between the average outcome values in the treated and in the control group is not statistically significant from zero. This means that the ATT is not statistically different from 0. This points to no statically significant effect of the intervention on the employability of participants.

Figure 6: Graphical representation of PSM results in terms of probability of being employed: ATT 3, 6, 9, 12, 15, 18 months after starting activities



Since the WIJ intervention is considered as successful by the ESF also if participants start a qualifying education, in the following we also assess the impact of WIJ on a second outcome, which is the probability of being in education at specific points in time.

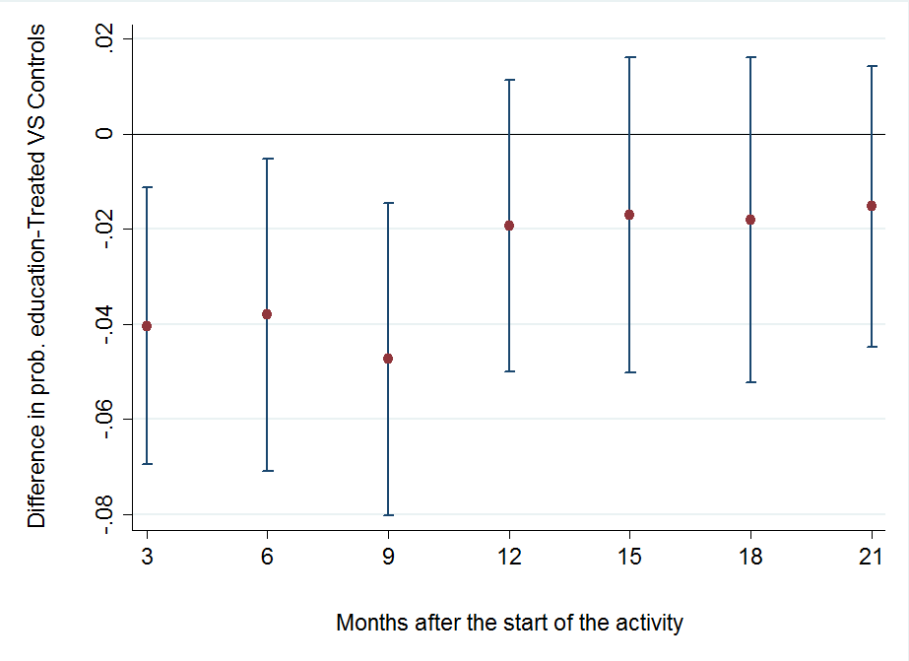
Table 11: PSM results in terms of probability of being in education: ATT 3, 6, 9, 12, 15, 18, 21 months after starting activities

Variable	Sample	Treated	Controls	Difference	S.E.	T-stat
postedu_3	Unmatched	0.007018	0.040739	-0.03372	0.004813	-7.01
	ATT	0.007018	0.047368	-0.04035	0.014836	-2.72
postedu_6	Unmatched	0.012281	0.042798	-0.03052	0.004949	-6.17
	ATT	0.012281	0.050292	-0.03801	0.016752	-2.27
postedu_9	Unmatched	0.014035	0.044682	-0.03065	0.005057	-6.06
	ATT	0.014035	0.061404	-0.04737	0.016782	-2.82
postedu_12	Unmatched	0.017544	0.045339	-0.0278	0.005106	-5.44
	ATT	0.017544	0.036842	-0.0193	0.015664	-1.23
postedu_15	Unmatched	0.021053	0.044025	-0.02297	0.005051	-4.55
	ATT	0.021053	0.038012	-0.01696	0.0169	-1
postedu_18	Unmatched	0.021053	0.040608	-0.01956	0.004867	-4.02
	ATT	0.021053	0.039181	-0.01813	0.017454	-1.04
postedu_21	Unmatched	0.019298	0.037804	-0.01851	0.004701	-3.94

ATT	0.019298	0.034503	-0.0152	0.01507	-1.01

The estimated values of the ATT point that the difference between treated and controls is statistically significant for 3, 6 and 9 months after the start of the activities. It is in favour of controls, that is, in those months controls have a higher probability of being in education with respect to treated units.

Figure 7: Graphical representation of PSM results in terms of probability of being in education: ATT 3, 6, 9, 12, 15, 18, 21 months after starting activities



5.3 Heterogeneous effects

In the following we show the box plots for the estimated ATT by subpopulations of individuals. Results are shown for the probability of being employed only, given the low number of treated units who enter education after the WIJ intervention.

Figure 8: PSM results on probability of employment. Heterogeneity with respect to gender. Male individuals.

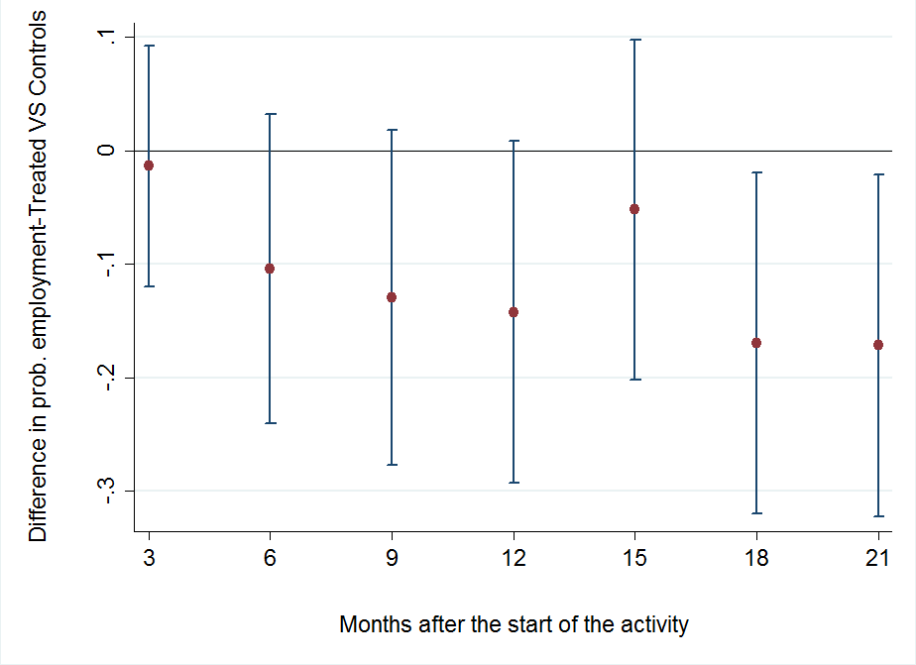
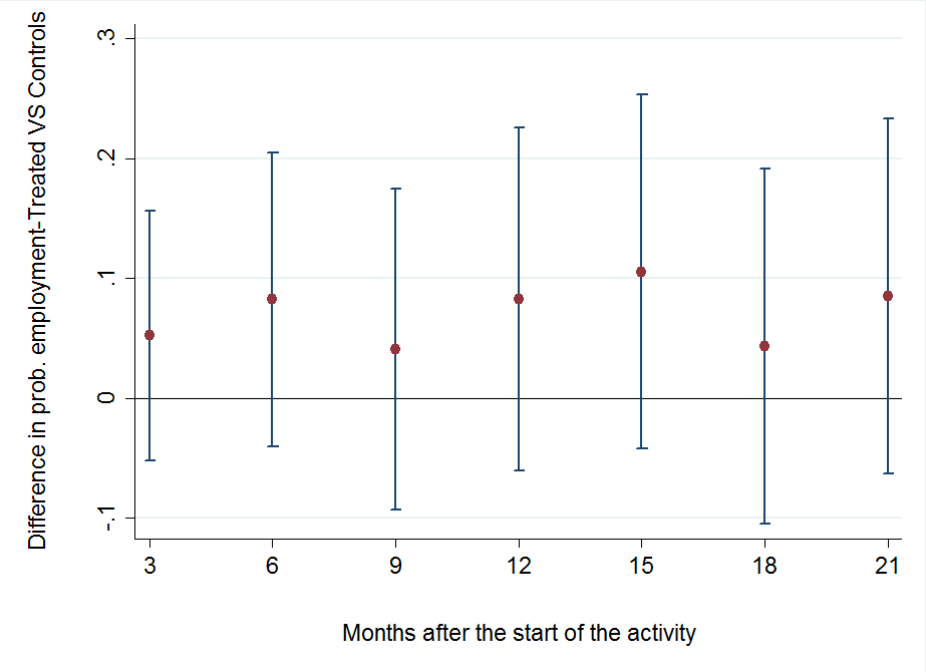


Figure 9: PSM results on probability of employment. Heterogeneity with respect to gender. Female individuals.



The graphs above indicate that, although not statistically significant, the ATT estimates differ by gender and that the negative effects estimated on male participants are compensated by positive estimates estimated on female participants.

Figure 10: PSM results on probability of employment. Heterogeneity with respect to nationality. Belgian individuals.

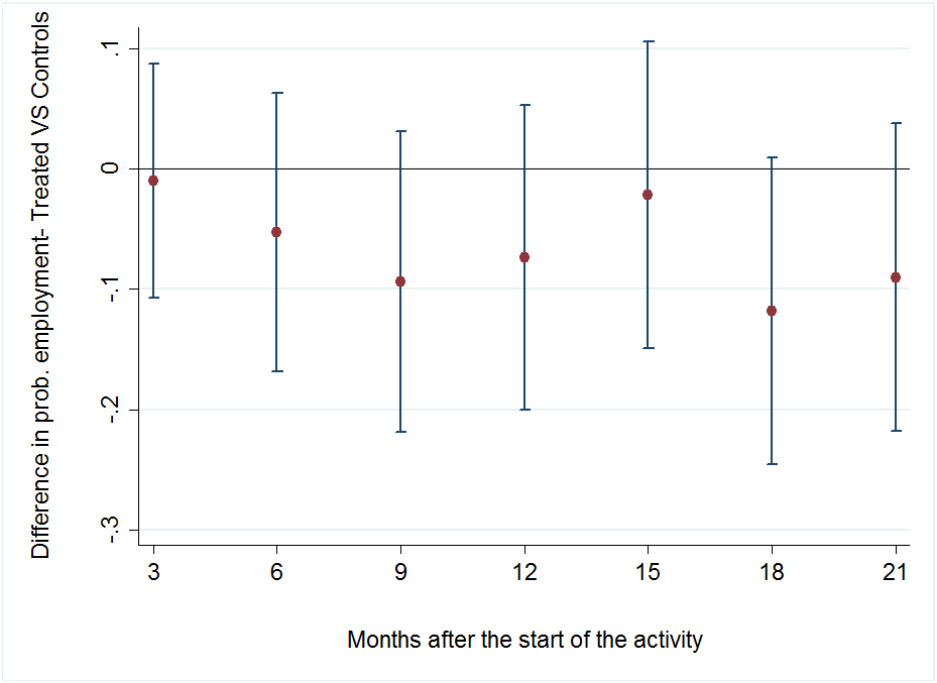


Figure 11: PSM results on probability of employment. Heterogeneity with respect to nationality. EU individuals.

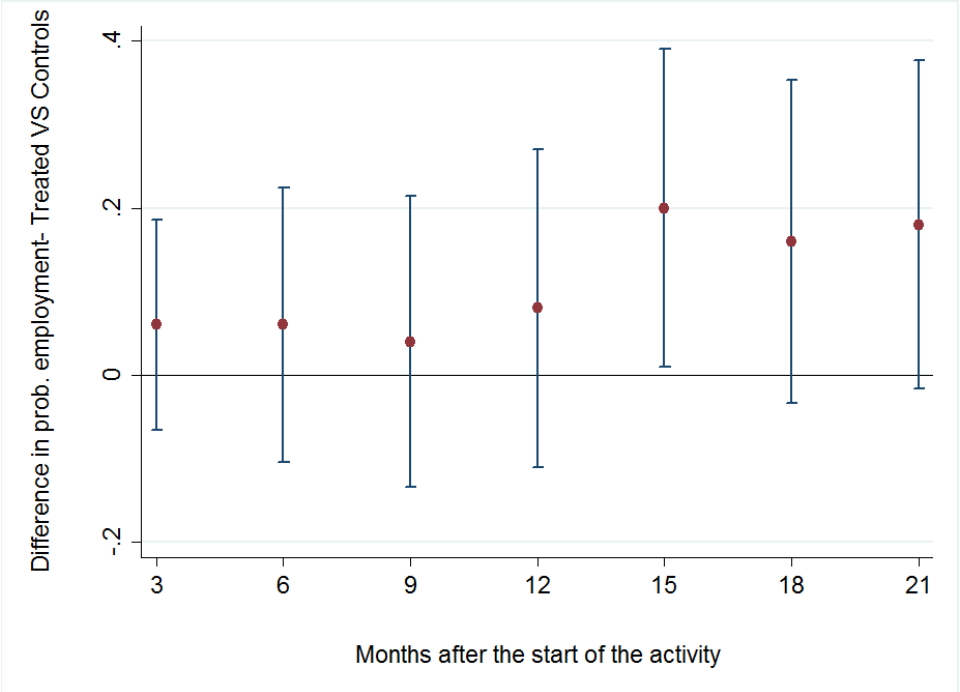
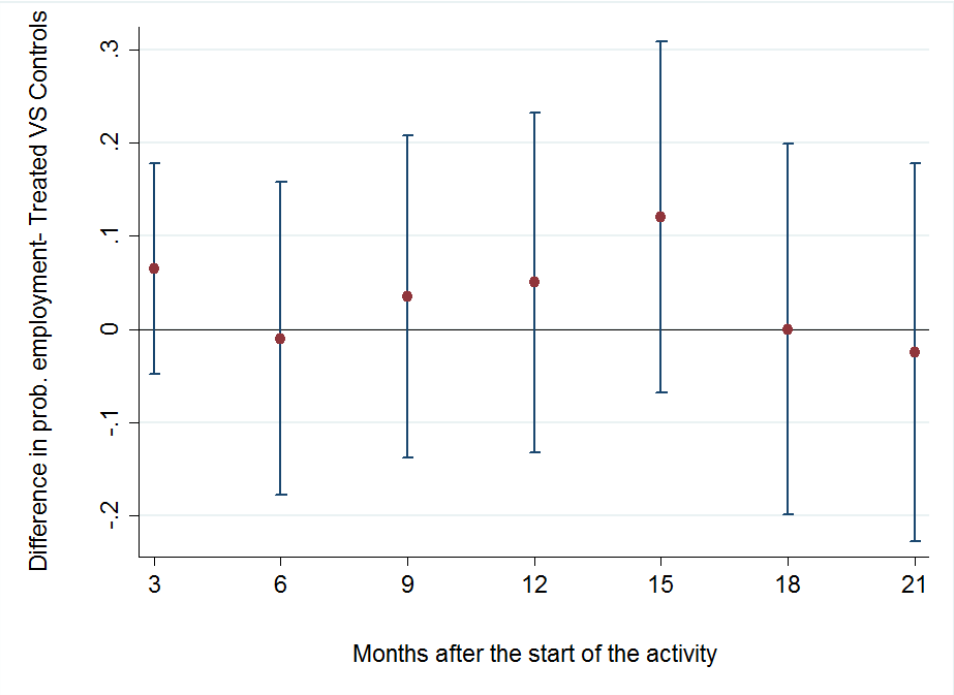


Figure 12: PSM results on probability of employment. Heterogeneity with respect to nationality. Non-EU individuals.



When looking at heterogeneous effects by migration background we can notice that, while for Belgian the estimated ATT are always negative, the estimated values for EU and not EU unemployed are positive for almost all points in time. However, for all nationalities the results are statistically not significant for almost all points in time.

6. Conclusions and policy implications

The aim of this paper was to evaluate the impact in terms of labour market effects of the "Work Experience for Young People" intervention (Werkinleving Jongeren, WIJ), implemented in Flanders for the second time in June 2015 by the Flemish division of the European Social Fund. Being part of the Operational Program of the ESF for 2014-2020, the WIJ intervention is directed to increasing the labour market integration of lower educated youths.

More generally, this evaluation contributes to the evidence on the effectiveness of Active Labour Market Programs (ALMPs) targeting youth. Since the general shift in government priorities from passive income support to activation and social investment (Kersbergen & Hemerijck, 2013), an abundance of activation forms and instruments exists (Eichhorst, Konle-seidl, & Eichhorst, 2008; Marchal & van Mechelen, 2017). Instrument oriented classifications of activation often make a distinction between two main approaches: measures focusing on ending benefit dependency via labour market integration on the one hand, and measures putting human capital formation through social investment-oriented, or enabling, policies (Marchal & Vanmechelen, 2017). While the former focus on inducing behavioural change through offering financial and non-financial stimuli such as time limits and lower benefits, the latter promote employability through education and vocational formation.

The WIJ has to be approached as an activation measure for unqualified young people between 28 and 25 years old, foremost focusing on orientation within the labour market and human capital formation. Leaving school unqualified can have detrimental social and economic consequences. Future labour market performance is one of those heavily affected domains. The intervention consists of two main phases: the first phase is focused on labour market orientation and ends with an action plan; the second phase consists of further coaching plus competence strengthening activities, aimed at facilitating the entrance in the labour market of unqualified young unemployed. Within the ESF, the WIJ was deemed successful when the participant found paid work for at least three months, entered a qualifying training or completed the guidance trajectory as planned.

Important to mention is that within the Flemish context, the WIJ intervention is not the only one available to the target group of young unemployed. The regional PES provides several employment services to unemployed and inactive youth. The WIJ trajectory, however, ought to be more individualised with explicit attention for a personal action plan and labour market orientation, after which additional competence strengthening training and internships can be provided. Considering the latter, the evaluation question of this report looked at the added value of the WIJ program compared to the other available labour market services provided by the Flemish PES.

In light of research recommendations and future calls, we highlight and discuss the main findings of the analyses based on the administrative data sources of the PES.

In terms of employment probabilities over time, the WIJ participants do not significantly differ from the control group. Over time, the probabilities for both groups seem to increase. In other words, the WIJ participants are not more or less likely to be employed at any time interval after starting their activities than the matched, but non-participating, young people. As such, based on the available

data span, the ESF intervention does not have an added value compared to the other PES activities. However, this finding is not unusual, and in line with the conclusion of other ALMP evaluations regarding human capital focused interventions. In their meta-analysis of recent ALMPs, Card, Kluve & Weber (2018), not only conclude that the average impacts of ALMPs are close to zero in the short run (effects after approximately one year), but also that the time period of the impact is dependent on the type of ALMP. While 'work first'- job assistance programs (including sanctions) tend to have similar impact in the short and long run, trainings tend to have larger average effects in the medium run (after approximately two years) and longer run (after three years). To be able to conclude on the labour market impact of the WIJ and the added value compared to other activities, it is necessary to repeat the evaluation activities with a longer post-intervention period. Within the current dataset, the longest post-intervention period (i.e. after the conclusion of ESF activities, which can last up to 18 months) that is available is approximately 6 months, for those who started the intervention at the start of the ESF call.

Within the ALMP evaluation literature, the absence of a positive impact in the short-run is often associated with a "lock-in" effect, as defined by Ham and Lalonde (1996). Unemployed participating in ALMP programs may drastically reduce their employment opportunities in the period immediately following the program, namely in the short term, since they often reduce or suspend their normal job search efforts during the participation. In this case, given the centrality of the PES activities within the Flemish labour, we cannot disregard that unemployed not participating in the intervention under analysis, are participating in any case in standard PES activities. Therefore, we compare WIJ participants with not-participants who attended PES activities, and we base our identification strategy comparing WIJ participants with not participants who have with similar registration into the PES system and similar activity start dates. In this respect, possibly, is it more precise to say that the WIJ-intervention does not lead to additional lock-in effects, or not to a larger lock-in effect than other PES activities.

Regarding the probability of being in education, we observed that the matched controls have a higher chance of being in education three, six and nine months after the groups started their activities. At twelve months and later, the probabilities for both groups are similar and increasing over time. To the extent it is possible to speak of lock-in, the WIJ intervention, which tends to focus foremost on guidance and orienting in the first months, seems to delay the step toward education as employed within this study. Again, however, it might be feasible to repeat these analyses with a longer post-intervention period.

Based on the available PES data, it was noticeable that most of the WIJ-trajectories were longer than one year and focus foremost on providing guidance. The most common intervention trajectory did not include any other registered competence strengthening activities. As it was not possible for this intervention to look into the peculiarities of the provided guidance, it is highly recommended to examine the characteristics and quality of the guidance provided under the WIJ-intervention. Considering the profile of the WIJ participants, the long orientation and guidance phase might also be feasible and necessary before the group can start other activities. In this situation, the needs of the target group would explain the pattern. Nevertheless, more research based on complementary forms of data is demanded to examine this hypothesis.

Moreover, given the non-significant effects, it is not only necessary to understand why the interventions follow the guidance-centred pattern, but also how the WIJ guidance differs, or does not differ, from the other PES coordinated guidance in terms of methodology, underpinning psychological and pedagogical models and intensity. As such information is not available within administrative data, this recommendation would require case study research. Interesting research options could be, for instance, comparing the pedagogical methodology used within WIJ and other tenders, not only among the executors, but also within one executor.

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8. Appendix

8.1 Notes on the WIJ program

Intervention executors

As mentioned above, the WIJ intervention is executed by third-party executors of which the project proposal was approved by the ESF Flanders. Below we give a short overview of the different projects based on the two main phases in the intervention.

- **Groep Intro vzw**

  Orientation

  During a period of 3 weeks, the participants take part in 7 communal work moments and 4 hours of individual guidance.

  Guidance

  During this phase there should minimally be 2 contacts per week, of which one should be at least a physical meeting. Every two weeks there is an individual contact with the mentor. The mentor foresees a wide range of activities suited for the participant. Dependent on the need, possibilities and effort of the participation, they plan at least two of the listed activities a week:

  - Individual guidance
  - Job interview training
  - Job hunting, jobmatching and mediation
  - Person strengthening activities/training
  - Competence strengthening

- **Argos vzw**

  Orientation

  During a period of 3 weeks, the participants receive 8 lessons of a half day. 4 hours of individual guidance is also provided.

  Guidance

  During this phase, there should minimally be 2 contacts a week. In addition, a weekly individual meeting is also scheduled. Next to the individual conversations, they also provide a job interview atelier (f.e. a job interview room, training of job interview skills, exploration of job interview channels, introduction to the 'my career' application of the PES), and diverse workshops (f.e. company visits, guest lecturers, job fairs, work ateliers, in-depth orientation, …)

- **SBS Skillbuilders**

  Orientation

During a period of 4 weeks, 8 group meetings are organized. Additionally, the individual guidance meetings vary from 1 to 3 moments a week.

Guidance

During this phase, the individual meetings are reduced to 1 meeting a moment. There is a strong focus on the group activities. The trajectory is characterized by a large degree of flexibility. The group activities are mainly workshops that are provided on a regular basis. Examples of the workshops are attitude training, internships, job interview training, job coaching and hunting.

- **Vokans**

Orientation

During a period of 8 weeks, one weekly guidance session is organized. They try to provide an interchange of individual meetings (1 hour) and group sessions (3.5 hours). When this is not possible in reality, they provide more participant specific guidance and organize more individual meetings.

Guidance

Also in this phase, they alternate individual meetings with group meetings on a weekly basis. The group sessions can include the following aspects: job interview training, job huntings, company visits, guest lecturers, visiting a job fair, on-the-job training, … In this phase, they mainly focus on labour market specific competence strengthening and the allocation to work holds a central position. When possible they provide certificates of trainings that have been followed.

- **Randstad**

Orientation

During 5 weeks, they focus on a self-analysis of the participant by means of 3 individual meetings and additional collective orienting sessions. They focus on work history and experience, a competence analysis and description of job target. The orienting collective sessions, given in 8 sessions of 3 hours, provide additional insight for what the participants want and like to do.

Guidance

In the second phase, they provide a standard guidance approach that is adapted to the specific needs based on the action plan. In the first 6 months, they organize 4 monthly workshops, a weekly job atelier, 2 individual contacts per month and additional group strengthening activities. After 3 and 6 months there is an evaluation moment. After the 6th month, they can decide to prolong the followed approach. The workshops include job

interview training, more general education, communication and assertiveness, work attitudes, diversity and discrimination. The job ateliers are more connected to work: job fairs, company visits, jobdates, jobhunting.

- **T-groep**

  Orientation

  During 3 months, the project works on the labour market orientation of the participant. They combine individual with collection guidance moments. Additionally ask the participant to make home work to reflect on the different aspects. In the weekly collective moments (2 half days a week), the aim is to increase the knowledge and employability of the participants via life course analysis, workshops on the public employment system, job hunting, information on different jobs and kinds of internships. There are 6 individual meetings to reflect on the group meetings and provide additional coaching.

  Guidance

  This phase focuses on further competence strengthening and/or job search. Again individual meetings and collective sessions are interchanged. Next to the mentor, this project also works with a job hunter. At least twice a month, the participant and the latter meet. The workshops presented in this phase elaborate on the orientation. Among other they organize a job interview boot camp of three days, psychotechnical test training and training on contact with employers.

- **Wonen & werken**

  Orientation

  In this project, the orienting phase is estimated to last for 2 months. It consists of individual meetings with the mentor during which the motivation and experience of the participant are discussed and highlighted. Additionally, this project organizes a collective assessment phase of 16 half days of 4 hours. In these assessments, the focus lies on developing key competences (f.e. independence, flexibility, stress management, cooperation, communication, accuracy, …) but the concrete project and topic are decided bottom-up by the group. The aim is to provide a better screening and analysis of the competence profile of the participant, based on the activities and self-evaluation.

  Guidance

  After the preparation with the mentor, the participant is brought into contact with the job hunter. During the start of this phase, the focus lies on gaining experience internships, evaluation of action points and possible competence strengthening activities when necessary. In a first internship, the project would organize a job orienting internship or educational internship. The aim is to provide a first well organized internship as a step towards competence strengthening and a second internship in the regular labour market. After the second internship the attention goes to job finding, for example at the company of the internship.

8.2 PSM balance

In the following table we can observe several statistics calculated before and after the PSM for each variable used in matching approach.

In the last column t-tests are shown. The t-test values are calculated to test the hypothesis that the mean value of each variable is the same in the treatment group and the control group. If p>0.1, the null hypothesis cannot be rejected on the 10% significance level.

In addition, in columns fourth and fifth the bias before and after matching is shown, together with its relative change. The "bias" is calculated as the difference of the mean values of the treatment group and the control group, divided by the square root of the average sample variance in the treatment group and the control group group.

Table xxx Balancing of socio-demographic covariates before and after PSM

	Unmatched	Mean			%reduct	t-test	
Variable	Matched	Treated	Control	%bias	bias	t	p>t
cat_yb_1	U	.06725	.25079	-51.8		-17.29	0.000
	M	.06725	.06784	-0.2	99.7	-0.07	0.946
cat_yb_2	U	.52281	.50692	3.2		1.27	0.205
	M	.52281	.54912	-5.3	-65.7	-1.54	0.123
cat_yb_3	U	.40994	.24229	36.3		15.44	0.000
	M	.40994	.38304	5.8	84	1.61	0.108
province_1	U	.42339	.28667	28.9		11.98	0.000
	M	.42339	.42222	0.2	99.1	0.07	0.945
province_3	U	.00058	.00127	-2.3		-0.78	0.434
	M	.00058	.00117	-1.9	14.7	-0.58	0.564
province_4	U	.11287	.16002	-13.8		-5.18	0.000
	M	.11287	.1269	-4.1	70.2	-1.26	0.207
province_5	U	.23275	.227	1.4		0.55	0.585
	M	.23275	.23626	-0.8	38.9	-0.24	0.809
province_6	U	.06374	.16318	-31.7		-10.95	0.000
	M	.06374	.05731	2.1	93.5	0.79	0.430
nat_1	U	.82456	.87196	-13.2		-5.60	0.000
	M	.82456	.82164	0.8	93.8	0.22	0.823
nat_2	U	.05848	.05857	0		-0.02	0.988
	M	.05848	.05906	-0.2	-557.9	-0.07	0.942

nat_3	U	.11696	.06948	16.4		7.30 0.000
	M	.11696	.1193	-0.8	95.1	-0.21 0.832
edu_1	U	.80058	.297	117.3		44.32 0.000
	M	.80058	.80117	-0.1	99.9	-0.04 0.966
edu_2	U	.19766	.47284	-60.9		-22.27 0.000
	M	.19766	.19649	0.3	99.6	0.09 0.932
edu_3	U	.00175	.23016	-76.4		-22.43 0.000
	M	.00175	.00234	-0.2	99.7	-0.38 0.705
female	U	.40468	.44581	-8.3		-3.30 0.001
	M	.40468	.39942	1.1	87.2	0.31 0.754

Table xxx Balancing of past labour market variables before and after PSM

	Unmatched	Mean			%reduct	t-test
Variable	Matched	Treated	Control	%bias	bias	t p>t
pre_1	U	.00819	.05016	-25.1		-7.90 0.000
	M	.00819	.0076	0.4	98.6	0.19 0.847
pre_2	U	.03743	.10452	-26.4		-8.94 0.000
	M	.03743	.04094	-1.4	94.8	-0.53 0.597
pre_3	U	.07427	.14745	-23.5		-8.37 0.000
	M	.07427	.07836	-1.3	94.4	-0.45 0.652
pre_4	U	.10643	.17382	-19.5		-7.18 0.000
	M	.10643	.10877	-0.7	96.5	-0.22 0.825
pre_5	U	.13158	.18793	-15.4		-5.80 0.000
	M	.13158	.13977	-2.2	85.5	-0.70 0.485
pre_6	U	.14211	.19726	-14.7		-5.57 0.000
	M	.14211	.15848	-4.4	70.3	-1.34 0.180
pre_7	U	.14854	.20089	-13.8		-5.25 0.000
	M	.14854	.1731	-6.5	53.1	-1.96 0.051
pre_8	U	.16023	.20168	-10.8		-4.14 0.000
	M	.16023	.18713	-7	35.1	-2.08 0.038
pre_9	U	.16316	.19756	-9		-3.46 0.001
	M	.16316	.18889	-6.7	25.2	-1.98 0.048
pre_10	U	.17778	.19778	-5.1		-2.01 0.045
	M	.17778	.19942	-5.5	-8.2	-1.62 0.106
pre_11	U	.1848	.19818	-3.4		-1.34 0.180
	M	.1848	.20292	-4.6	-35.5	-1.34 0.180
pre_12	U	.19474	.19914	-1.1		-0.44 0.660
	M	.19474	.22222	-6.9	-524	-1.98 0.048
pre_13	U	.18655	.19524	-2.2		-0.88 0.381
	M	.18655	.21754	-7.9	-256.5	-2.26 0.024

pre_14	U	.1883	.19117	-0.7		-0.29 0.771
	M	.1883	.21345	-6.4	-777.8	-1.84 0.067
pre_15	U	.19006	.18766	0.6		0.24 0.807
	M	.19006	.21579	-6.6	-974.7	-1.87 0.061
pre_16	U	.17602	.18057	-1.2		-0.47 0.637
	M	.17602	.20877	-8.6	-620.6	-2.43 0.015
pre_17	U	.16842	.17479	-1.7		-0.67 0.503
	M	.16842	.19532	-7.1	-322.7	-2.04 0.041
pre_18	U	.16374	.17137	-2		-0.81 0.419
	M	.16374	.19474	-8.3	-306.4	-2.36 0.018

8.3 Division of categories of catwz dataset

Sub-category	Original category	Original category english translation
Employed	AFSCHRIJVING WEGENS WERK	out of unemployment because they are working
Employed	DERDE ARBEIDSCIRCUIT - VOLTIJDS	individual working whose wage is subsidized 100% by the government
Employed	VRIJWILLIG INGESCHREVEN WERKNEMER PWA	voluntarily registered, employee of PWA (local employment agency).
Employed	DERDE ARBEIDSCIRCUIT - DEELTIJDS	wage subsidy partime
Employed	DEELTIJDS WERKENDE WZ MET UITKERING	working part time. Still looking for a full time job, receiving additional unemployment benefits.
Employed	DEELTIJDS WERKENDE WZ TIJDENS WACHTTIJD	working part time, looking for full time job, in the waiting period one year after graduation.
Employed	WZ IN INDIVIDUELE BEROEPSOPLEIDING	searching for work, but within individual vocational training.
Employed	WZ WERKEND IN EEN BESCHUTTE WERKPLAATS	searching for work, but currently working in protected work place/ social economy. Sheltered workshop.
Employed	UITZENDKRACHT OP REGELMATIGE BASIS	interim(temporary agency) work on a regular basis
Employed	VOLTIJDS WERKENDE VRIJ INGESCHREVEN WZ	working full time, voluntary registered , and looking for job.
Employed	WERKENDE DEELTIJDS LERENDE WZ	working part time, looking for job, and in training
Non-working job seekers	TIJDELIJKE VERPLICHT INGESCHREVEN WZ	Looking for work, temporarily
Employed	DEELT. WERKENDE VRIJ INGESCHREVEN WZ	part time working, voluntarily register, looking for work. Not receiveing benefits
In education	WZ IN DEELTIJDS ONDERWIJS	looking for work, but in part time education.
In education	CAMPUSINSCHRIJVING	registered in some kind of training or education.
In education	JOBSTUDENT	someone who is studying.
In education	AFSCHRIJVING WEGENS HERVATTING STUDIE	out of unemployment because they resumed study
In education	VRIJSTELLING OM STUDIEREDENEN	exempted from work because you are studying
Inactive	GEPLAATST	mental institution

Inactive	AFSCHRIJVING WEGENS ZIEKTE	out of unemployment because of sickness, receving sickness insurance
Inactive	AFSCHRIJVING ONBEKENDE REDENEN	out of unemployment t because of unknown reasons
Inactive	VRIJSTELLING OUDERE WERKNEMER	older
Inactive	VRIJSTELLING FAMILIALE,SOCIALE REDENEN	exempted for work, due to family or social reasons (
Inactive	TEN LASTE RIZIV VOORBER. TEWERKSTELLING	dependence on sickness social insurance, not working. Receiving sickness benefits and want to get them back to emoployment.
Inactive	(KANDIDAAT) ARBEIDSZORGMEDEWERKER	subsidied employment in the not regular economy (social economy)
Non-working job seekers	WZ MET WERKLOOSHEIDSUITKERINGSAANVRAAG	job-seekers, with claim for benefit submitted (not approved yet)
Non-working job seekers	OUDERE WZ IN AANGEPASTE BESCHIKBAARHEID	older person looking for work, without the obligation to look for a job
Non-working job seekers	WZ TIJDENS BEROEPSINSCHAKELINGSTIJD	looking for jobs , after school, one year after graduation, before you can claim anything. (1 year time)
Non-working job seekers	VRIJ INGESCHREVEN NIET-WERKENDE WZ	voluntary registered, not working, job-seeker.
Non-working job seekers	WERKZOEKENDE TEN LASTE VAN O.C.M.W.	looking for work, and he is dependent from social assistance (not unemployment benefits) do not have the right for unemployment insurance
Non-working job seekers	PERSOON MET EEN ARBEIDSHANDICAP	not working, looking for work, with a disability (we dont know if they receive benefits).
Non-working job seekers	VAN RECHT OP UITKERING UITGESLOTEN WZ	looking for work, doesn't have any right for benefits.