ONLINE SUPPLEMENTARY MATERIALS

Appendix A: Description of variables used in Propensity score matching

This appendix provides a detailed discussion of the variables used in the dynamic propensity score matching models. An overview of all matching results can be found in Appendix C. The matching variables can be divided into five main domains. First, in line with qualitative results indicating that *jobseekers’ skills and credentials* play an important role (AUTHORS), the following variables are used in the matching models:

* **Level of education**: A categorical variable distinguishing “Low” (i.e. ISCED 0-2), “Medium” (i.e. ISCED 3-4), and “High” (i.e. ISCED 5-6), from “Unknown”.
* **Field of education**: A categorical variable distinguishing “Generic programmes and qualifications”, “Education”, “Arts and humanities”, “Social sciences, journalism and information”, “Business, administration and law”, “Natural sciences, mathematics and statistics”, “ICT”, “Engineering, manufacturing and construction”, “Agriculture, forestry, fisheries and veterinary”, “Health and welfare”, “Services”, and “Unknown”
* **Proficiency in Dutch**: A categorical variable distinguishing “No registered knowledge” from “Little knowledge”, “Good knowledge”, and “Very good knowledge”.
* **Proficiency in French**: A categorical variable distinguishing “No registered knowledge” from “Little knowledge”, “Good knowledge”, and “Very good knowledge”.
* **Proficiency in English**: A categorical variable distinguishing “No registered knowledge” from “Little knowledge”, “Good knowledge”, and “Very good knowledge”.
* **Proficiency in German**: A categorical variable distinguishing “No registered knowledge” from “Little knowledge”, “Good knowledge”, and “Very good knowledge”.
* **Driver’s licenses**: A categorical variable distinguishing “No registered license” from “License to drive a moped/motorcycle”, and “license to drive car or larger vehicle”

Second, in line with the qualitative finding that caseworkers consider various dimensions of *previous labour force participation* to decide whether training is preferred over continued job search (AUTHORS), the following variables are used in the matching models:

* **Order of the unemployment spell**: A variable which is calculated by counting the number of unemployment spells an individual experiences during the observation period and identifying the rank of the current unemployment spell. This is a continuous linear indicator.
* **Number of quarters of observed cumulative work experience**: A variable which is calculated by summing all previous observed quarters spent in regular employment, excluding work experience as a part of ALMP programmes. This is a continuous linear indicator.
* **Last regular working hours**: Amongst respondents with regular work experience within the observation period, last working hours can be retrieved, distinguishing “none”, “< 50% of a FT contract”, “50-75% of a FT contract”, “80-100% of a FT contract”, and “self-employed”.
* **Last wage level**: Amongst respondents with any regular work experience within the observation period, last monthly wage level[[1]](#footnote-1) after taxes can be retrieved, distinguishing “no registered wage”, “< 500 EUR”, “500-1500 EUR”, “> 1500 EUR”, and “self-employed”.
* **Worked in subsidised employment**: This dummy variable indicates whether a jobseeker has ever worked in low-skilled subsidised employment.
* **Worked for service vouchers**: This dummy variable indicates whether a jobseeker has ever worked in the subsidised system of service vouchers.
* **Unemployment benefits**: We include both a dummy variable indicating whether an individual receives any unemployment benefits, as well as a continuous linear indicator for the benefit level[[2]](#footnote-2).

Third, consistent with the qualitative finding that an unemployed jobseeker’s *employment preferences* play an important part in the selection of training programs – both by jobseekers themselves, as well as through the interaction with the caseworker (AUTHORS) - we use the following matching variables:

* **Jobseekers’ preferred working hours**: A categorical variable distinguishing “Part-time work”, “Full-time work”, “Part-time or Full-time work”, and “No registered preference”.
* **Jobseekers’ preferred working regimes**: We include a set of dummies indicating whether jobseekers would be willing to be employed in “Daytime work”, “Night-time work”, “Shiftwork”, “Weekend work”, and “Other non-standard work” (i.e. service voucher system, partly employed and self-employed).
* **The Number of online preference fields used**: A maximum of three fields can be used in the EO’s online platform with respect to working hours and regimes. This number of fields used, is included as a proxy for motivation as a continuous linear indicator.
* **Number of manual vacancy notifications by the caseworker**: This variable is calculated by summing all the manual vacancy notifications in the current unemployment spell and is included as a continuous linear indicator.
* **Number of automatic vacancy notifications by the caseworker**: This variable is calculated by summing all the automatic vacancy notifications in the current unemployment spell and is included as a continuous linear indicator.
* **Number of mandatory job interviews imposed by caseworker:** This variable is calculated by summing all the mandatory job interviews in the current unemployment spell and is included as a continuous linear indicator.
* **Number of sanctions by the caseworker**:This variable is calculated by summing all the transmissions of the jobseekers file for reconsideration of unemployment benefits as a potential sanction by the caseworker in the current unemployment spell and is included as a continuous linear indicator.

Fourth, as recent participation in ALMP in the current unemployment spell, as well as past participation in previous unemployment spells is also likely to affect both the likelihood of starting a training programme as well as subsequent employment probabilities (AUTHORS), we include the following indicators in the matching models:

* **Participation in JSA during spell**:This variable indicates whether an individual has started JSA during the current unemployment spell.
* **Participation in JSA preceding spell**:This variable is calculated by summing the quarters of participation in JSA preceding the current unemployment spell within the observation window and is included as a continuous linear indicator.
* **Participation in GCT preceding spell**:This variable is calculated by summing the quarters of participation in GCT preceding the current unemployment spell within the observation window and is included as a continuous linear indicator.
* **Participation in OCT preceding spell**:This variable is calculated by summing the quarters of participation in OCT preceding the current unemployment spell within the observation window and is included as a continuous linear indicator.
* **Participation in CWT preceding spell**:This variable is calculated by summing the quarters of participation in CWT preceding the current unemployment spell within the observation window and is included as a continuous linear indicator.
* **Participation in NCWT preceding spell**:This variable is calculated by summing the quarters of participation in NCWT preceding the current unemployment spell within the observation window and is included as a continuous linear indicator.
* **Manual vacancy notifications preceding spell**:This variable is calculated by summing the number of manual vacancy notifications preceding the current unemployment spell within the observation window and is included as a continuous linear indicator.
* **Automatic vacancy notifications preceding spell**:This variable is calculated by summing the number of manual vacancy notifications preceding the current unemployment spell within the observation window and is included as a continuous linear indicator.
* **Mandatory job interviews preceding spell**:This variable is calculated by summing the number of mandatory job interviews preceding the current unemployment spell within the observation window and is included as a continuous linear indicator.
* **Sanctions preceding spell**:This variable is calculated by summing the number of sanctions preceding the current unemployment spell within the observation window and is included as a continuous linear indicator.

Finally, as previous research indicates that the *demographic and family context* also function as determinants of ALMP uptake (AUTHORS), the matching procedure also includes the following indicators in the matching models:

* **Gender**: A dummy variable indicating 1 for women and 0 for men.
* **Age**:This variable is included as a continuous linear indicator.
* **Calendar year**: This variable is included as a continuous linear indicator.
* **Migration background**: Distinguishing between “no migration background”, “European 1st generation” (i.e. born in a European foreign country), “European 2nd generation” (i.e. born in Belgium and at least one parent is born in a European foreign country), “Non-European 1st generation” (i.e. born in a Non-European foreign country), “Non-European 2nd generation” (i.e. born in Belgium and at least one parent is born in a Non-European foreign country).
* **Parity**:Distinguishing “No children”, from “1 child”, “2 children”, or “3 or more children”.
* **Presence of children under three in household**: A dummy variable indicating 1 whenever at least one child aged under three is present in the household.
* **Partnering status**: Distinguishing “No partner”, “Non-employed partner”, “Employed low wage partner”, and “Employed high wage partner”.
* **Physical limitations**: A dummy variable indicating 1 in case an individual has any history of officially registered mental or physical limitations hampering employment within the observation window.

Appendix B: Results of Propensity score matching for Training in general

**Table 3:** Categorical (%), Dummy (%) and Linear (Mean) Characteristics of treated, unmatched control, and matched control jobseekers, regarding participation in ALMP training as treatment, Flanders 2005-2016.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Treated | unmatched control | diff (sig.) | matched control | diff (sig.) |
| **Jobseekers’ skills and credentials** |
| **Educational level** (categorical) |  |  |  |  |  |
| . Low | 49.54 | 53.41 | \*\*\* | 48.68 |  |
| . Medium | 37.16 | 34.16 |  | 37.48 |  |
| . High | 11.21 | 10.88 |  | 11.49 |  |
| . Unknown | 2.08 | 1.55 |  | 2.34 |  |
| **Educational field** (categorical) |  |  |  |  |  |
| . Generic programmes and qualifications | 22.17 | 25.92 | \*\*\* | 22.33 |  |
| . Education | 0.62 | 1.16 | \*\*\* | 0.63 |  |
| . Arts and humanities | 5.46 | 5.29 |  | 5.31 |  |
| . Social sciences, journalism and information | 1.48 | 1.34 |  | 1.52 |  |
| . Business, administration and law | 18.26 | 17.58 |  | 17.84 |  |
| . Natural sciences, mathematics and statistics | 0.82 | 0.80 |  | 1.09 |  |
| . Information and communication technology | 1.00 | 0.61 |  | 0.89 |  |
| . Engineering, manufacturing and construction | 26.34 | 25.43 |  | 25.41 |  |
| . Agriculture, forestry, fisheries and veterinary | 0.46 | 0.35 |  | 0.46 |  |
| . Health and welfare | 7.53 | 7.68 |  | 7.94 |  |
| . Services | 10.87 | 9.74 |  | 11.25 |  |
| . Unknown | 4.98 | 4.09 |  | 5.33 |  |
| **Language: Dutch** (categorical) |  |  |  |  |  |
| . No registered knowledge | 2.99 | 2.77 |  | 2.42 |  |
| . Little knowledge | 12.23 | 14.58 | \*\*\* | 11.47 |  |
| . Good knowledge | 31.91 | 31.96 |  | 32.08 |  |
| . Very good knowledge | 52.88 | 50.70 |  | 54.03 |  |
| **Language: French** (categorical) |  |  |  |  |  |
| . No registered | 38.38 | 36.93 |  | 36.77 |  |
| . Little knowledge | 26.50 | 26.50 |  | 27.04 |  |
| . Good knowledge | 21.38 | 21.35 |  | 22.74 |  |
| . Very good knowledge | 13.75 | 15.21 | \*\*\* | 13.44 |  |
| **Language: English** (categorical) |  |  |  |  |  |
| . No registered knowledge | 36.77 | 39.40 | \*\*\* | 34.93 |  |
| . Little knowledge | 23.72 | 23.84 |  | 23.50 |  |
| . Good knowledge | 27.36 | 25.94 |  | 28.81 |  |
| . Very good knowledge | 12.15 | 10.82 |  | 12.75 |  |
| **Language: German** (categorical) |  |  |  |  |  |
| . No registered knowledge | 81.42 | 82.10 |  | 80.55 |  |
| . Little knowledge | 14.31 | 13.62 |  | 14.75 |  |
| . Good knowledge | 3.61 | 3.54 |  | 4.04 |  |
| . Very good knowledge | 0.66 | 0.75 |  | 0.66 |  |
| **Driver's license** (categorical) |  |  |  |  |  |
| . No registered knowledge | 33.31 | 31.09 |  | 32.10 |  |
| . Moped/motorcycle | 5.78 | 9.12 | \*\*\* | 5.44 |  |
| . Car or larger vehicle | 60.91 | 59.79 |  | 62.47 |  |
| **Jobseekers’ labour force participation** |
| **Order of the unemployment spell** (linear) | 2.09 | 2.41 |  | 2.16 |  |
| **Cumulative quarters regular work** (linear) | 26.72 | 30.00 | \*\*\* | 26.85 |  |
| **Last working hours**  (categorical) |  |  |  |  |  |
| . No registered working hours | 19.30 | 14.58 |  | 18.69 |  |
| . < 50% of a full-time contract | 4.35 | 5.26 | \*\*\* | 4.52 |  |
| . 5-75% of a full-time contract | 10.02 | 11.85 | \*\*\* | 9.81 |  |
| . 80-100% of a full-time contract | 63.96 | 65.29 | \*\* | 64.88 |  |
| . Self-employed | 2.37 | 3.01 | \*\* | 2.10 |  |
| **Last wage level**  (categorical) |  |  |  |  |  |
| . No registered wages | 25.65 | 22.40 |  | 24.27 |  |
| . < 500 | 20.39 | 20.42 |  | 21.36 |  |
| . 500-1500 | 29.61 | 32.38 | \*\*\* | 30.65 |  |
| . > 1500 | 24.35 | 24.79 |  | 23.72 |  |
| **Worked in subsidised employment** (dummy) | 0.02 | 0.01 |  | 0.02 |  |
| **Worked for service vouchers** (dummy) | 0.04 | 0.06 | \*\*\* | 0.04 |  |
| **Any unemployment benefits** (dummy) | 69.50 | 62.09 |  | 69.31 |  |
| **Amount of benefits** (linear) | 470.80 | 392.52 |  | 466.61 |  |
| **Jobseekers’ employment preferences and interaction with caseworker** |
| **Preferences: working hours** (categorical) |  |  |  |  |  |
| . Part-time work | 1.32 | 0.40 |  | 1.04 |  |
| . Full-time work | 5.69 | 5.45 |  | 5.08 |  |
| . Part-time or Full-time work | 71.03 | 69.38 |  | 71.27 |  |
| . No registered preference | 21.96 | 24.77 | \*\*\* | 22.61 |  |
| **Willing to work in daytime** (dummy) | 97.00 | 97.82 | \*\*\* | 97.14 |  |
| **Willing to work in night-time** (dummy) | 10.04 | 9.65 |  | 10.38 |  |
| **Willing to work in shifts** (dummy) | 48.26 | 46.57 |  | 49.14 |  |
| **Willing to work in weekends** (dummy) | 21.98 | 23.04 |  | 21.98 |  |
| **Willing to work other non-standard** (dummy) | 28.28 | 27.57 |  | 28.79 |  |
| **Number of preference fields used** (linear) | 2.36 | 2.36 |  | 2.38 |  |
| **Manual notifications during spell** (linear) | 0.12 | 0.15 | \*\*\* | 0.12 |  |
| **Automatic notifications during spell** (linear) | 1.49 | 1.88 | \*\*\* | 1.50 |  |
| **Mandatory job interviews during spell** (linear) | 0.23 | 0.23 |  | 0.23 |  |
| **Sanctions during spell** (linear) | 0.02 | 0.04 | \*\*\* | 0.02 |  |
| **Jobseekers’ participation in ALMP** |
| **Job search assistance during spell** (dummy) | 84.14 | 39.61 |  | 84.78 |  |
| **Job search assistance preceding spell** (linear) | 11.02 | 11.53 | \*\*\* | 11.83 |  |
| **Classroom training preceding spell** (linear) | 3.21 | 2.28 |  | 3.48 |  |
| **Workplace training preceding spell** (linear) | 0.61 | 0.50 |  | 0.71 |  |
| **Manual notifications preceding spell** (linear) | 0.99 | 1.18 | \*\*\* | 1.01 |  |
| **Auto notifications preceding spell** (linear) | 30.38 | 41.15 | \*\*\* | 33.07 |  |
| **Mandatory interviews preceding spell** (linear) | 3.35 | 3.94 | \*\*\* | 3.55 |  |
| **Sanctions preceding spell** (linear) | 0.23 | 0.30 | \*\*\* | 0.24 |  |
| **Jobseekers’ demographic and family context** |
| **Female** (dummy) | 45.08 | 48.48 | \*\*\* | 45.76 |  |
| **Age** (linear) | 29.67 | 31.34 | \*\*\* | 29.75 |  |
| **Calendar year** (linear) | 2010.44 | 2010.96 | \*\*\* | 2010.49 |  |
| **migration background** (categorical) |  |  |  |  |  |
| . No migration background | 10.83 | 9.44 |  | 11.06 |  |
| . European 1st generation | 3.28 | 3.28 |  | 3.16 |  |
| . European 2nd generation | 15.88 | 13.81 |  | 16.35 |  |
| . Non-European 1st generation | 39.15 | 38.85 |  | 38.04 |  |
| . Non-European 2nd generation | 30.85 | 34.61 | \*\*\* | 31.40 |  |
| **Children** (categorical) |  |  |  |  |  |
| . No children | 51.89 | 43.99 |  | 52.01 |  |
| . 1 child | 17.35 | 18.15 |  | 17.82 |  |
| . 2 children | 16.69 | 18.46 |  | 16.24 |  |
| . 3 or more children | 14.08 | 19.40 | \*\*\* | 13.93 |  |
| **Any children younger than 3** (dummy) | 17.89 | 23.18 | \*\*\* | 16.90 |  |
| **Partner** (categorical) |  |  |  |  |  |
| . No partner | 62.84 | 58.16 |  | 62.87 |  |
| . Non-employed partner | 13.09 | 15.53 | \*\*\* | 12.53 |  |
| . Employed low wage partner | 12.27 | 13.97 | \*\*\* | 12.73 |  |
| . Employed high wage partner | 11.81 | 12.34 |  | 11.86 |  |
| **Any history of physical limitations** (dummy) | 7.68 | 7.17 |  | 7.77 |  |
| *Significance levels: p < .010 (\*\*), p < .001 (\*\*\*)**Source: MIA panel dataset 2005-2016 (unweighted), calculations by authors* |

1. Based on the administrative data at hand, it is only possible to extract the total amount of wages one has received in a given quarter, and whether they are employed a the end of a given quarter. As a result of instability in labour force participation within the quarter (in combination with part-time work), we are unable to provide full-time equivalent (FTE) monthly wage levels. [↑](#footnote-ref-1)
2. For limitations similar to those affecting our ability to assess FTE monthly wage levels, we are unable to provide monthly unemployment benefit levels. [↑](#footnote-ref-2)