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The Effectiveness of Active Labour Market Policies for Long-Term Unemployed Jobseekers in Flanders

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Abstract

Despite the fact that many European countries in the post-pandemic period exhibit relatively low unemployment rates similar to the late 2010s, population ageing and labour shortages urge European policy-makers to increasingly aim to also activate the remaining hard-to-employ unemployed such as long-term unemployed groups. In the context of transitions to sustainable development and digitalization, a socially inclusive activation requires a wide array of activation programmes (including training, internships, or job search assistance), but also monitoring of whether such programmes are effective for more vulnerable population subgroups. Therefore, this study applies dynamic propensity score matching and hazard models to population-wide administrative data for all long-term unemployed jobseekers in Flanders (Belgium) between 2015–2022 to study their enrolment and the effectiveness of participation in a wide range of active labour market policies (ALMP) provided by the Flemish public employment service: labour market orientation, job search assistance, application and job interview training, and human capital programmes. Our findings highlight the continued enrolment of long-term unemployed jobseekers in activation policies, demonstrating continuous support for labour market (re-)entry. Additionally, the positive effects of participation on employment outcomes emphasize the importance of expanding and tailoring activation measures to ensure equitable opportunities for long-term unemployed jobseekers.

Keywords

active labour market policy; Flanders; long-term unemployment; programme evaluation

1. Introduction

The activation of working-age population subgroups has been a consistently high-ranked aim on European policy agendas for decades. In recent years, this aim has been complicated by the overlap of three contextual

challenges. First, despite the fact that many European countries in the post-pandemic period exhibit relatively low unemployment rates similar to the late 2010s, European governments face severe long-term challenges related to population ageing, such as labour shortages and high costs of pensions and health care. Second, the European Pillar of Social Rights (EPSR) proclaimed in 2017 includes the ambition to promote inclusive labour markets with labour market opportunities also for more vulnerable subgroups. This increased emphasis on social inclusion implies that the "success" of activation policies should not only be evaluated against their general effectiveness, but also based upon the degree to which programmes create opportunities for hard-to-employ unemployed individuals. Third, the current context of transitions to sustainable development and digitalization illustrates the importance of EPSR principles geared towards lifelong learning and training in order to gain a vanguard position in these transitions whilst updating skill sets across all segments of the labour market to prevent patterns of social exclusion as the transitions to sustainable development and digitalization unfold.

As a consequence of these challenges, policy-makers increasingly invest in the activation of more vulnerable subgroups, such as long-term unemployed individuals. Their labour force participation is of utmost importance in the context of population ageing and labour shortages, but also to prevent social exclusion and poverty, risks which become more threatening in case of skill deprivation during the transitions to sustainable development and digitalization. However, despite the large body of academic literature evaluating the effectiveness of a wide array of activation programmes (including training, internships, or job search assistance; Boone & Van Ours, 2004; Card et al., 2010, 2017; Martin, 2015), our understanding of the extent to which such programmes are effective for long-term unemployed groups remains relatively limited (Card et al., 2016, 2017; Eppel et al., 2024). A meta-analysis of 106 programme estimates across high-income countries suggests that the impacts of activation programmes are larger for long-term unemployed groups than for short-term unemployed groups, particularly for programmes geared towards human capital and job search assistance (Card et al., 2016). However, researchers conducting meta-analyses highlight the small sample size of studies specifically focussing on long-term unemployed groups (Card et al., 2016), which has led scholars to call for more empirical studies on the effects of active labour market policies (ALMP) for long-term unemployed individuals (Eppel et al., 2024). Furthermore, tentative findings from meta-analyses across countries are likely to mask considerable heterogeneity between countries, as the effects of ALMP are likely to depend on contextual features such as employment protection or unemployment benefits (Benda et al., 2020), or the degree of work–family reconciliation (Nieuwenhuis, 2022). As a result, the available state-of-the-art literature would benefit from comprehensive case studies assessing the effectiveness of active labour market programmes for long-term unemployed groups. Another limitation in the literature is that most contributions evaluate a specific training programme in a given country or region. In contrast, few studies evaluate multiple subtypes of ALMP in the same context (Gerfin & Lechner, 2002; Kasrin & Tübbicke, 2024; Lechner et al., 2011), let alone focussing specifically on long-term unemployed groups.

Benefitting from population-wide administrative data for all long-term unemployed jobseekers in Flanders (Belgium) between 2015–2022, this study applies dynamic propensity score matching and hazard models to examine their enrolment and the effectiveness of participation in a wide range of programmes provided by the Flemish public employment service. We make three key contributions to the literature. First, we provide a comprehensive case study that examines both the uptake and the effects of a wide range of programmes for long-term unemployed individuals. This study takes a holistic approach by investigating the full range of

supply-side actions available through public employment services, including labour market orientation, job search assistance, application and job interview training, and human capital development. Moreover, conducting the study within a single context—Flanders (Belgium)—enables a more straightforward comparison of the performance of these programmes. This is particularly valuable as it isolates the potential impact of the specific national or regional institutional contexts (Benda et al., 2020; Nieuwenhuis, 2022).

Second, the study adopts an individual-level longitudinal perspective, tracking the cumulative effects of participation in activation programmes over both the short and medium term. This approach provides a nuanced understanding of how the benefits of programme participation accumulate over time. Additionally, besides taking the perspective of a jobseeker who participates in a given programme, we also address the potential disadvantages faced by long-term unemployed individuals who do not engage with activation measures. This comparative analysis helps to clarify the broader effects of exclusion from such policies and highlights the risks of non-participation.

Third, the Belgian case study provides a relevant laboratory for examining the impact of ALMP among long-term unemployed individuals. Belgium offers a distinctive context due to its labour market characteristics, with features such as relatively high minimum wages and generous unemployment benefits, which influence the labour market structure. Unlike labour markets with lower minimum wages (e.g., the USA or the UK), sources of vulnerability on the Belgian labour market are less likely to materialise in working poverty, yet are more likely to include segmentation between insiders with stable careers and outsiders with structurally high risks of unemployment or living off means-tested benefits. This context is for instance illustrated by relatively high levels of long-term unemployment in comparison to the EU average (Eurostat, 2025), particularly among disadvantaged groups, such as low-skilled individuals or those with a non-European migration background (Maes et al., 2019; Noppe et al., 2018; OECD, 2016). Additionally, the Belgian context provides an interesting case study as a relatively high proportion of its GDP is allocated to ALMP, particularly in the Northern region of Flanders (Card et al., 2016; Federaal Planbureau, 2020; OECD, 2019), making it a relevant setting for evaluating the effectiveness of these policies. The context of high spending on ALMP and significant labour market segmentation presents an important opportunity to understand how active labour market programmes can mitigate the risks of long-term unemployment and social exclusion.

In addition to the aforementioned three main contributions to the scholarly literature, the empirical findings of this study also bear policy relevance in two respects. First, a detailed documentation of the degree to which long-term unemployed jobseekers still enrol in the different programmes under consideration provides an indication of whether these groups are being served by the public employment service. Low enrolment might inspire policy-makers to investigate the underlying reasons and remediate potential barriers to participation. Second, in the context of contemporary overlapping challenges related to population ageing and labour shortages, the objective to develop more inclusive labour markets, and the impact of transitions to sustainable development and digitalization on the skills required by employers, policy-makers tend to consider further expanding the demand-based ALMP studied in this article. Such a strategy of expansion hinges on findings evidencing positive effects of participation on employment entry, and indicating disadvantages connected to non-participation, such as provided in this study.

2. Background

The activation of unemployed jobseekers in Belgium is a regional authority. In Flanders, the Northern and Dutch-speaking region of Belgium which populates 6,821,770 out of a total of 11,763,650 legal Belgium inhabitants in January 2024, unemployed individuals must register as jobseekers with the Flemish public employment service as soon as possible. This registration is crucial to receive unemployment benefits, access employment support, such as job search assistance or training and internship opportunities, and benefit from financial aids (e.g., discounted train tickets for job interviews). Jobseekers are expected to actively search for jobs and engage with relevant offers. Non-compliance with the public employment service's expectations, such as failing to attend appointments or respond to job offers, can result in sanctions, including the reduction or loss of unemployment benefits, which are otherwise not limited to a certain duration of unemployment. This implies that in most cases, offers to participate in activation programmes can only be declined in agreement with the caseworker, and that declining offers without agreement is likely to result in sanctions. However, it should be noted that—although the overwhelming majority of long-term unemployed jobseekers have already participated in multiple programmes in their first year of unemployment—participation in programmes cannot be considered mandatory across the board, as jobseekers themselves are always left with choices between different strategies to re-enter employment. Caseworkers of the public employment service can initiate several potential actions to activate unemployed jobseekers, which are divided into four main categories. First, labour market orientation includes providing information on the labour market and job opportunities, and helping jobseekers develop realistic job goals. The second category of actions is labelled job search assistance, which includes vacancy notifications (an algorithm automatically matches vacancies to jobseekers' profiles, or caseworkers manually notify jobseekers), but also regular appointments and set goals to be achieved by the jobseeker at set times. Third, human capital programmes include a wide range of training programmes, which mostly provide the opportunity to acquire an occupation-specific skill set through classroom training sessions and/or internships at the workplace. Fourth, application and job interview training includes advice and training specifically geared to application and job interviews, as well as mandatory interviews obliging unemployed jobseekers to participate in interviews selected by caseworkers, followed by evaluation.

Much like in other high-income countries, ALMP have been a central point of focus amongst policy-makers for many decades in Flanders, yet the objectives of such policies have undergone a shift in recent decades (Bonoli, 2014). Historically, substantial cohorts of working-age baby boomers resulted in a surplus of labour supply relative to demand, which prompted policy-makers to primarily concentrate on activating unemployed groups receiving unemployment benefits, and focusing on unemployed profiles that were considered easiest to activate. However, with ageing populations in many high-income countries, manifested by the retirement of baby boomers and smaller cohorts entering the labour market, a substantial number of unfilled job vacancies is now likely to persist, even in the case of low unemployment levels. The remaining group has been documented to be highly selective, and exhibits a high degree of long-term unemployment (i.e., at least one year). As illustrated in Figure 1, the long-term unemployment rate (i.e., the percentage of all unemployed persons who have been unemployed for at least one year) is consistently higher in Belgium in comparison to the EU average throughout this study's observation period (2015–2022). The Flemish region—which typically exhibits a lower unemployment rate—also displays a relatively low long-term unemployment rate in 2015, yet above EU-average levels thereafter. This position results from a gradual increase between 2015–2018 and a more rapid rise in the long-term unemployment rate in 2021,

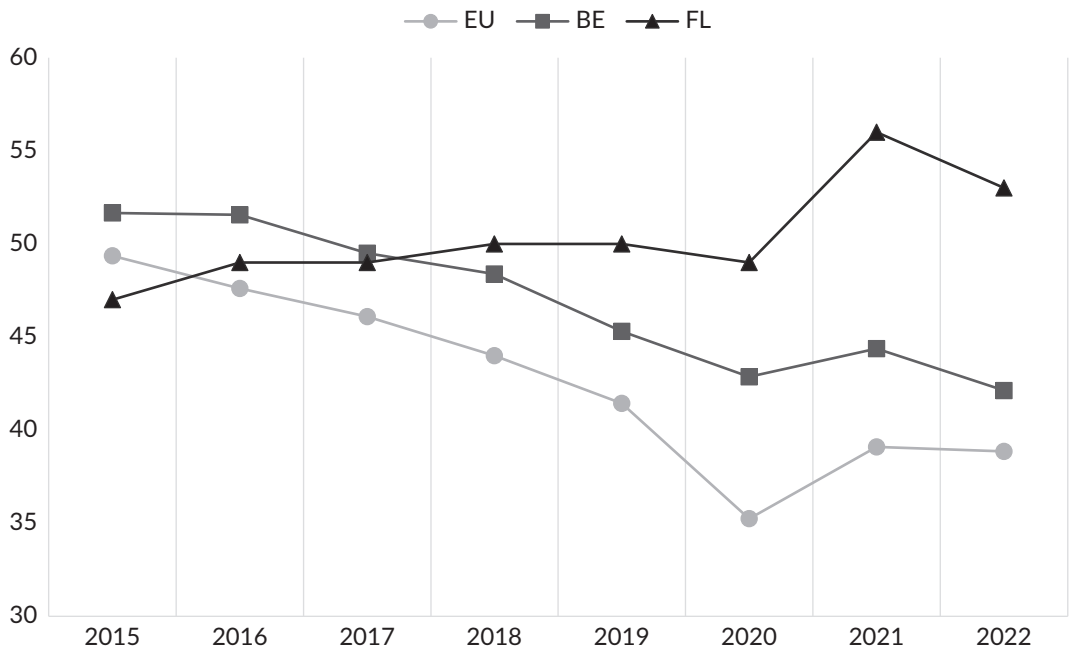

Figure 1. Long-term unemployment rate: EU average (EU), Belgium (BE), and Flanders (FL), 2015–2022. Sources: Eurostat (2025) and VDAB (n.d.).

which is likely to be related to the Covid-19 pandemic. The overall high proportion of long-term unemployment in Flanders highlights the importance of evaluating ALMP specifically for this group.

3. Theory

This section puts forward potential theoretical mechanisms through which participation in the programmes under consideration might affect subsequent employment entry amongst long-term unemployed jobseekers. It is important to note that we adopt a theoretical model which is limited to the factors that are targeted by the programmes considered. This implies that we focus on human capital, job search behaviour, and jobseekers' and employers' attitudes. As a result, this section does not provide a holistic account of the wide range of potential determinants of employment entry amongst long-term unemployed jobseekers, which presumably includes many factors which cannot directly be influenced by programme participation (e.g., health, childcare needs, regional mobility; e.g., Nieuwenhuis, 2022). We argue that such a partial theoretical account of the determinants of employment entry is justified as we aim to evaluate the impact of participating in activation programmes targeting specific mechanisms leading to employment entry.

One of the most notable supply-side barriers is the overrepresentation of low-educated and/or low-skilled individuals among the long-term unemployed (Lallukka et al., 2019; Tasci & Ozdemir, 2006). These groups tend to face significant challenges in securing employment due to a lack of qualifications, experience, or skills that are often demanded by employers. Furthermore, motivational issues, such as the gradual shift in expectations as unemployment continues over an extended period, can exacerbate these challenges (De Witte et al., 2010; Liu et al., 2014). Another important factor is the lack of knowledge about institutional processes and ineffective job search behaviours, which can further hinder re-employment efforts (Kanfer et al., 2001; Moynihan et al., 2003). In addition, a frequently discussed demand-side barrier is the negative signal long-term unemployment sends during the recruitment process. Employers often view long-term

unemployment as an indicator of potential inefficiency, lack of motivation, or lack of employability, making it harder for these individuals to secure job interviews (Bonoli & Hinrichs, 2012; Oberholzer-Gee, 2008).

The aforementioned, non-exhaustive, list of barriers to employment illustrates that activation measures at least bear the potential to stimulate long-term unemployed jobseekers' entry into the labour force not only through increasing human capital, but also by enhancing job search behaviour and potentially by affecting jobseekers' and employers' attitudes. Consequently, developing hypotheses regarding the potential impact of different ALMP requires the integration of multiple theoretical frameworks, taking into account the perspective of the long-term unemployed jobseeker and potential employers. Given the diversity of programmes evaluated in this study, it is clear that the theoretical mechanisms behind the potential effects of these programmes vary depending on their nature and objectives.

First, regarding *labour market orientation* programmes, we draw upon the theory of planned behaviour to hypothesise on their potential impact on entry into employment. The theory of planned behaviour (e.g., Liu et al., 2014) states that the intention to perform an action is influenced by individual attitudes, prescribed social norms, and perceived personal control. Orientation programmes potentially affect all three of these components. With respect to the jobseeker's attitude to seeking a job, providing information and particularly the development of attainable career ambitions are likely to help jobseekers overcome negative feelings of insecurity and discouragement as their (new) job search ambitions are validated by a professional caseworker. Furthermore, interactions with the caseworker might also counteract potential exposure to social norms against seeking work for some jobseekers and instil positive attitudes towards looking for a job. Regarding personal control, perceived self-efficacy is also potentially enhanced in labour market orientation programmes through the validation of realistic career goals by a caseworker. Available literature indicates that jobseekers' job search attitudes and perceived self-efficacy positively affect job search behaviour and outcomes (Kanfer et al., 2001; Moynihan et al., 2003). However, unlike other programmes, these orientation programmes do not include components which increase the objective skill set of a jobseeker. We assume that participation in labour market orientation programmes is relatively unlikely to induce negative effects on job acceptance due to increased reservation wages, given the strong focus on choices in terms of sector, occupation, and working conditions which are considered realistic from the public employment service's point of view. As a result of these mechanisms, we hypothesize:

> H1: Exposure to labour market orientation measures will positively affect the transition from long-term unemployment to employment.

Second, with respect to *job search assistance and job application or interview* programmes, the presumed increased intensity of the job search under the impulse of these programmes is assumed to improve the efficiency and productivity of the job search process. Regarding the potential impact of job search assistance, it should be noted that vacancy notifications might both increase the efficiency of the job search process, and increase jobseekers' selectivity in accepting job offers in the case they have more opportunities than they realised before being exposed to job search assistance. However, this potential negative effect on entry into employment is assumed to be unlikely as job search assistance also includes regular appointments and job search goals which are strongly monitored by public employment service caseworkers. The latter is assumed to prevent long postponements of entry into the labour force due to changes in reservation wages throughout the job search process. Consequently, we hypothesize:

H2: Exposure to job search assistance will positively affect the transition from long-term unemployment to employment.

Job application and interview programmes potentially positively affect the transition to employment as jobseekers are provided tools to persuade potential employers, whereas reservation wages should remain similar as job application and interview training, unlike vacancy notifications in job search assistance, does not as such impact jobseekers' assessment of the range of labour market opportunities. As a result, we hypothesize:

H3: Exposure to job interview training will positively affect the transition from long-term unemployment to employment.

Focusing on *human capital* programmes, we hypothesize that such programmes which provide occupation-specific skill sets can significantly increase the likelihood of long-term unemployed individuals re-entering the labour market for two main reasons. First, according to human capital theory, individuals can enhance their productivity and earning potential by investing in their education and skills (Becker, 1962, 1964). These investments increase their marginal productivity, which refers to the additional value an individual can contribute to production through improvements in their education, skills, or experience. This increase in productivity positively impacts not only task proficiency and efficiency, but also creativity, innovation, and adaptability in the workplace. From a human capital perspective, programme participation might mitigate the negative effects of long-term unemployment due to missed opportunities for skill development, as well as the potential erosion of previously acquired skills due to a lack of practice and updating of knowledge (Shi et al., 2018). Second, in line with signalling theory, we suggest that participation in human capital programmes also influences employers' perceptions of long-term unemployed jobseekers. When making hiring decisions, employers face uncertainty due to asymmetric information, where they struggle to assess candidates' true qualities and future productivity. As a result, employers rely on observable characteristics, such as participation in training or educational programmes, to infer unobserved attributes (McCormick, 1990; Spence, 1973; Weiss, 1995). Although signalling may play a lesser role in later stages of hiring, when more information becomes available, it is critical in shaping the first selection of candidates for job interviews. In fact, research has demonstrated that long-term unemployment, all else being equal, often signals lower employability, which can significantly reduce the chances of progressing to an interview (Bonoli & Hinrichs, 2012; Eriksson & Lagerström, 2006; Oberholzer-Gee, 2008). However, signalling theory also suggests that participation in labour market programmes can positively alter these perceptions, especially for long-term unemployed individuals. This participation can help counteract the negative stereotypes and stigma associated with long-term unemployment (Liechti et al., 2017), thereby improving their chances of being selected for further stages in the recruitment process. As a result of the aforementioned mechanisms, we hypothesize:

H4: Exposure to human capital programmes will positively affect the transition from long-term unemployment to employment.

4. Data and Methods

4.1. Data

We use administrative data from the Flemish public employment service for the period 2015–2022, which includes the entire population of long-term (i.e., at least one year) unemployed individuals residing in Flanders. More specifically, these data provide longitudinal information on a monthly basis for 357,464 individuals who have been long-term unemployed at least once between 1 January 2015 and 31 December 2022. Individuals may experience long-term unemployment more than once between 2015 and 2022. As a result, we record 422,510 spells in which an individual is classified as long-term unemployed. The data also include an indicator for entry into employment (i.e., worked more than 10 days in a given month), as well as variables that denote participation in the ALMP under consideration. This enables us to examine the impact of programme exposure on subsequent employment entry for all long-term unemployment spells. In the following, we discuss the methodology in an intuitive and accessible manner. A detailed formal discussion of the dynamic propensity score matching and event history methodology used is available in Wood and Neels (2024).

4.2. Dynamic Propensity Score Matching

This study aims to evaluate activation programmes available for long-term unemployed jobseekers on a one-by-one basis, which implies that we compare a group who took part in a programme to those who did not participate in that given programme. Simply comparing the employment outcomes of long-term unemployed jobseekers who were exposed to a given activation measure with the respective outcomes of jobseekers who did not experience the given measure is typically inappropriate. Participants in activation programmes tend to exhibit specific characteristics that can positively or negatively influence their labour market prospects compared to non-participants. Without adjusting for these differences, comparing labour market outcomes between the two groups could lead to biased conclusions regarding the effectiveness of the activation measure. If participants already possess a more favourable labour market profile, the programme's effectiveness may be overestimated. Conversely, if the activation measure targets individuals with weaker labour market profiles, the programme's effectiveness may be underestimated if no adjustment is made for this difference. To address this, this study uses dynamic matching techniques to construct a "statistical twin" for each participant in the activation programme. A statistical twin is an individual who, based on all observable characteristics that influence labour market outcomes, closely resembles a participant.

Participation in activation measures can begin at different times, and the dynamic nature of programme participation means that the group who participated during the observation period cannot simply be compared with an arbitrary group of non-participants. The timing of participation is influenced by a selection process based on unemployment duration, which must be accounted for in the evaluation. Individuals with more favourable labour market profiles tend to be unemployed for shorter periods, which negatively affects their likelihood of participating in activation measures. This mechanism demonstrates that the probability of entering employment, through unemployment duration, impacts the likelihood of participating in activation programmes, while the evaluation seeks to measure the reverse effect: the impact of participation on the likelihood of employment entry, given the individual's profile. Since entry into activation measures can occur at different times, Sianesi (2004) developed a dynamic matching model that compares individuals who enter

a programme at a specific point in time with a similar group of long-term unemployed individuals who have not yet participated (Wood & Neels, 2024; Wood et al., 2024). For each activation measure, we compare individuals who enrol in a given month (e.g., month 13 since registration as unemployed) with a similar group who have not yet participated in the programme considered at that time. Matching is carried out separately for the four categories of programmes.

Due to the large set of characteristics in which the participant group may differ from the non-participant group, individual matching based on all combinations of observed characteristics is not feasible due to cell frequency limitations. Therefore, propensity score matching techniques are typically employed (Rosenbaum & Rubin, 1983). Propensity scores represent the probability that a long-term unemployed jobseeker, given certain profile characteristics, will enter the activation measure at different time points since the start of their unemployment. These probabilities are estimated using a probit regression using the nearest-neighbour algorithm with replacement (results using other matching algorithms will be discussed in the robustness checks). All treated individuals are on common support, resulting in a match for all treated jobseekers. Since propensity score matching aims to correct for selection bias by comparing participants with non-participants who had a similar chance of entering the programme, the quality of the matching can be assessed by comparing the distribution of observed characteristics of participants before and after matching with the control group of non-participants (see Section 5.2).

We include four groups of indicators into the propensity score matching models, all of which are likely determinants of both participation in activation measures and subsequent transitions to employment. First, a group of socio-demographic variables is included, which have all been found to be associated with both participation in ALMP programmes and employment (Maes et al., 2019, 2021; Noppe et al., 2018; OECD, 2016; Wood et al., 2017). In addition to age and sex, we include origin (distinguishing Africa, America, Asia, Belgium, EU-13, EU-14, European Free Trade Association and UK, other European countries, and other non-European countries), region (i.e., 24 administrative regions typically including one large city), educational level (distinguishing primary, lower secondary, upper secondary, vocational secondary, higher vocational, bachelor, and master degrees), and knowledge of Dutch (distinguishing none, little, good, very good, and no registered information).

Second, we consider characteristics of the unemployment episode, as such characteristics might also affect both enrolment in the programmes considered, as well as subsequent employment. We include the type of jobseeker, distinguishing those eligible for unemployment benefits, graduates, those eligible for means-tested or disability/illness benefits, students, voluntarily registered jobseekers (not eligible for benefits), and those excluded from unemployment benefits (i.e., due to sanctions). The motivation to control for this variation is that these groups are likely to vary considerably in the opportunity and/or motivation to enrol into an activation programme, but also exhibit differential hazards of employment entry. In addition, we also include the calendar year in which the unemployment spell began, which controls for the fact that both the enrolment into activation programmes and employment entry depends on period changes (e.g., economic cycles, or the introduction or expansion of activation programmes; Wood, 2024; Wood et al., 2024). Similarly, we control for the month in which the unemployment spell began, as enrolment into activation programmes and employment entries exhibit seasonal variation. Failing to control for period and season effects could entail bias in the estimated effects of activation programme participation on subsequent employment entries (Wood et al., 2024).

Third, we include a set of variables that capture the jobseeker's labour market history, as available literature indicates that previous labour market outcomes are an important predictor of future outcomes in terms of ALMP participation and employment (e.g., so-called scarring effects), and therefore is considered vital as a factor in evaluations of programmes such as this study (OECD, 2020). This set of twelve continuous variables indicates the number of days in the last two years that the individual was employed, worked via temporary employment agencies, unemployed, voluntarily registered as a jobseeker, engaged in part-time education, receiving means-tested benefits, receiving disability or illness benefits, subject to a sanction by the public employment service, a student, an intern, an asylum seeker appealing status, or was exempt from activation for family or social reasons. The choice to include indicators that also cover domains other than the labour market history per se is motivated by the fact that labour market positions of long-term unemployed jobseekers are routinely documented to be intrinsically related to other life domains and social issues such as benefit dependence and poverty, family dynamics, migration, and social isolation (Amuedo-Dorantes & Serrano-Padial, 2010; Krug et al., 2019; Pohlan, 2024; Wood & Neels, 2024).

Fourth, we also include indicators for participation in activation measures in the year preceding the observation period (i.e., during the first 12 months of unemployment). These four indicators capture the number of days an individual was exposed to labour market orientation programmes, job search assistance, job application and interview training, and human capital programmes. By including these variables, we account for prior exposure to activation measures, which may influence an individual's subsequent exposure and employment outcomes. This helps to control for potential biases stemming from prior engagement with such programmes and ensures that the observed effects are not confounded by earlier programme participation, as available literature routinely identifies relatively long-lasting effects of programme participation (e.g., Card et al., 2017).

4.3. Hazard Models

In order to address the effectiveness of exposure to the four different activation measures, we compare the subsequent hazards of entering employment between long-term unemployed jobseekers who participated in a given measure (i.e. "treated"), and a matched control group of individuals who were not (yet) exposed (i.e. "control"). The treated and control groups are followed until a transition is made into employment or censoring occurs due to inactivity, death, emigration, reaching age 65, or the end of the observation window on 31 December 2022. Individuals in the matched control group are not censored in case of enrolment in other activation programmes. A discrete-time hazard model (see Equation 1) estimates the hazard of entering employment accumulated within a month $H(t)_i$) as a function of the time since the start of programme participation or selection into the matched control group T (baseline, cubic effect), exposure to the programme P, and interactions between programme participation and the baseline hazard function. In this equation, $q(t)$ is the conditional probability of entering employment for individual i in quarter t since entry into the programme (or matching) among individuals who had not entered employment prior to quarter t. Due to the complementary log-log link function, exponentiated parameter estimates represent hazard ratios.

$$H(t)_i = -\ln\left[1 - q(t)_i\right] = e^{\hat{\alpha}}.e^{\hat{\beta}T_i}.e^{\hat{\beta}T_i^2}.e^{\hat{\beta}T_i^3}.e^{\hat{\beta}P_i}.e^{\hat{\beta}P_iT_i}.e^{\hat{\beta}P_iT_i^2}.e^{\hat{\beta}P_iT_i^3} \quad (1)$$

To better understand the cumulative effects of participation in a given activation programme, we compare the cumulative incidence of the transition to employment for jobseekers who participated in a given programme

to the cumulative incidence of their matched control group (Maes et al., 2021; Wood & Neels, 2024; Wood et al., 2024). The cumulative incidence of the transition to employment over time describes the proportion of individuals who, at a given point in time, have transitioned from long-term unemployed to employed during the observation period. While the cumulative incidence function shows the portion of the population at risk that has exited from the initial state during the observation period, it does not necessarily imply that these individuals remain permanently in employment. For re-entrants into long-term unemployment, it is possible to further examine their re-entry into activation measures and their subsequent transition from these measures into employment.

5. Results

5.1. Exposure to Activation Programmes Amongst Long-Term Unemployed Jobseekers

Before discussing the results regarding the effectiveness of participation in different activation programmes, Figure 2 illustrates the extent to which long-term unemployed jobseekers are exposed to these programmes (i.e., one minus the proportion remaining without participation (S(t))). The figure shows the percentage of individuals who, since becoming long-term unemployed (i.e., after one year of unemployment), have participated in the given types of activation programmes. The figure clearly indicates that long-term unemployed jobseekers do indeed come into contact with the activation measures under consideration. This indicates that—even though the overwhelming majority of long-term unemployed jobseekers have been exposed to activation measures in the first year of their unemployment spell—the public employment service continues to invest resources in long-term unemployed jobseekers' (re-)entry into the labour force.

After 11 months of follow-up in long-term unemployment (i.e., the 24th month of unemployment), the percentage of jobseekers who have participated in at least one activation measure since reaching one year of unemployment ranges between 17% and 25%. Additional analyses (which are not presented in detail here) show that, contrary to previous findings for all jobseekers (i.e., not selecting long-term unemployed jobseekers; see Kasztan-Flechner et al., 2022; Wood & Neels, 2020), there is no significant variation in participation in activation measures by age, gender, or education level, and only limited variation by origin,

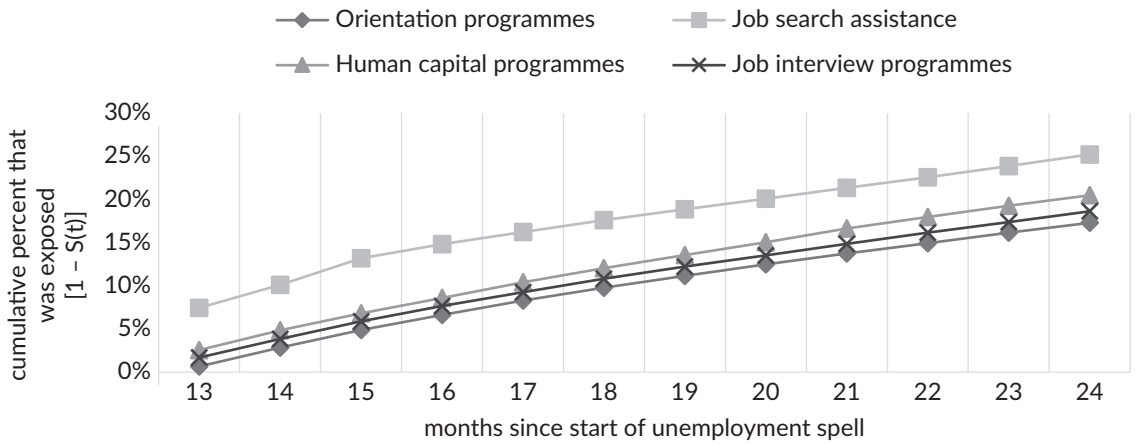

Figure 2. Long-term unemployed jobseekers' exposure to active labour market programmes, 2015–2022, Flanders.

with no clear patterns emerging by region or origin (e.g., European vs. non-European). This suggests that, when focussing on the already selective group of long-term unemployed jobseekers, these demographic characteristics no longer play a major role in determining entry into activation measures.

5.2. Results of Matching

Table 1 illustrates the extent to which a balance was achieved between the groups of participants who start participating in a given measure at a given duration of long-term unemployment, the unmatched control groups (column "Without matching"), and the matched control groups (column "With matching"). Values in highlighted cells indicate a poor balance in the distribution of observed characteristics, implying that the participants and the control group—and presumably their probabilities of transitioning into employment—cannot be directly compared. Comparing the columns "Without matching" and "With matching" clearly shows that problematic values frequently arise when no matching is applied, whereas the matching

Table 1. Results of dynamic propensity score matching models: balance of covariate indices by activation measure and duration of long-term unemployment.

	Labour market orientation				Human capital programmes			
	Without matching		With matching		Without matching		With matching	
Duration[1]	Rubin's *B*	Rubin's *R*	Rubin's *B*	Rubin's *R*	Rubin's *B*	Rubin's *R*	Rubin's *B*	Rubin's *R*
1	66.3*	0.67	13.5	0.91	61.3*	1.26	10.6	0.92
2	52.2*	0.41*	12.4	0.95	57.1*	1.37	11.3	0.95
3	50.2*	0.32*	14.3	1.10	54.3*	1.42	11.4	1.12
4	46.6*	0.40*	13.6	1.07	59.6*	1.76	12.1	0.98
5	48.8*	0.39*	12.6	1.08	54.2*	1.54	14.8	1.10
6	42.9*	0.40*	15.1	1.04	58.6*	1.51	14.0	0.94
7	42.1*	0.42*	18.6	0.95	68.5*	1.50	18.4	0.97
8	43.5*	0.34*	15.7	1.32	70.9*	1.75	23.5	0.82
9	46.6*	0.29*	18.4	0.98	59.4*	1.96	22.9	0.86
10	44.4*	0.43*	18.9	1.00	54.2*	1.49	20.0	0.92
11	44.9*	0.39*	20.3	1.14	55.4*	1.30	21.6	0.97
	Job search assistance				Job interview training			
	Without matching		With matching		Without matching		With matching	
Duration[1]	Rubin's *B*	Rubin's *R*	Rubin's *B*	Rubin's *R*	Rubin's *B*	Rubin's *R*	Rubin's *B*	Rubin's *R*
1	144.6*	0.34*	12.6	1.02	56.9*	0.38*	9.3	1.01
2	152.5*	0.35*	21.0	1.05	56.4*	0.35*	11.0	1.09
3	111.1*	0.52	15.2	1.09	57.3*	0.35*	11.7	1.11
4	93.2*	0.61	12.0	1.06	51.8*	0.34*	12.9	1.09
5	79.4*	0.69	13.2	1.04	52.9*	0.33*	15.0	1.08
6	70.6*	0.63	13.7	1.00	54.4*	0.34*	11.2	0.99
7	66.5*	0.70	14.1	1.11	52.5*	0.27*	13.5	1.13
8	63.4*	0.65	15.4	1.08	57.5*	0.33*	14.2	1.09
9	57.2*	0.70	19.3	1.16	55.9*	0.26*	15.2	1.10
10	58.8*	0.66	18.2	1.04	53.0*	0.42*	21.5	1.00
11	53.2*	0.73	20.2	1.17	57.2*	0.41*	17.6	1.01

Notes: Rubin's *B* and *R* are indicators of balance between the group that starts an activation measure and the control group; Rubin (2001) states that a good balance is achieved if *B* is lower than 25 and *R* is higher than 0.5 and lower than 2; Duration[1] = duration in months since the start of long-term unemployment (i.e., duration since the 12th month of unemployment).

procedure effectively succeeds in generating a group of non-participants who—in terms of the observable characteristics included in the matching process (see the methods section)—are comparable to the group of long-term unemployed individuals who entered the considered activation programme.

5.3. Identified Effects of Activation Measures

Figure 3 illustrates the effect measurements for four types of activation programmes in terms of (a) average marginal effects of participation on the monthly hazard of employment entry (Figures 3a, 3c, 3e, and 3g), and (b) cumulative incidence of employment entry (Figures 3b, 3d, 3f, and 3h). Estimated hazards of employment entry for groups of participants and matched non-participants are illustrated in the Supplementary File (Figure 5). With respect to participation in labour market orientation programmes, long-term unemployed jobseekers who started such a measure had higher chances of transitioning to work in the following years compared to those in the matched control group (Figure 3a). The effect of participation gradually diminishes over time, but remains statistically significant. After 48 months of observation, the difference between the remaining long-term unemployed in both groups is minimal. However, it is crucial to note that the absence of a difference at the end of the observation period does not imply that the programme was ineffective. Rather, it suggests that the remaining participants who, despite their involvement, had not exited unemployment by the end of the observation period, did not show further benefits compared to those in the matched control group. Figure 3b shows how the advantage for participants builds up cumulatively over time since the start of the programme. After eight months, 28.0% of the matched control group had transitioned to work, while 31.5% of those who participated in the orientation activation programme made the transition. After 24 months, the cumulative incidence for both groups was 54.4% and 63.4%, respectively. At longer durations, this advantage stabilises due to the relatively small additional advantage for participants.

Regarding job search assistance, Figure 3c illustrates that long-term unemployed individuals who participated in this programme during the first 11 months of long-term unemployment also exhibit subsequent higher chances of transitioning to work compared to the matched control group. These differences are statistically significant, and the advantage for participants exhibits a pattern and magnitude similar to the results for labour market orientation programmes. Towards the end of the observation period, the difference in the exit probabilities between the participants and the matched control group approaches zero, indicating that the advantage has disappeared. Figure 3d demonstrates how the cumulative incidence of employment entry increases more rapidly for participants in job search assistance compared to the matched control group. After eight months, 31.6% of participants had transitioned to work, compared to 25.1% in the control group. After 24 months, the cumulative incidence for both groups was 60.5% and 51.8%, respectively.

Regarding application and job interview training, Figure 3e shows that the group who participated in these activation measures during the first 11 months of long-term unemployment had significantly higher chances of transitioning to work. This advantage for participants exhibits a time-patterning similar to the aforementioned results for labour market orientation programmes and job search assistance, yet the magnitude of the estimated effects is considerably larger. It should be noted that the greater estimated effect size does not necessarily imply that application and job interview training is more effective than the other activation programmes under consideration, as these measures are presumably also taken for different profiles of long-term unemployed jobseekers. Similar to the results for the orientation and job search

assistance measures, the findings for job application training indicate that the benefit for participants approaches zero towards the end of the observation period. This suggests that long-term unemployed jobseekers who participated in job application and interview training but had not transitioned to work after a substantial period might benefit from entry into follow-up measures more than is currently the case. Figure 3f illustrates the difference in cumulative incidence—the proportion that transitioned to work—over time. After eight months, 28.9% of the matched control group had made the transition to work, compared to 46.9% of those who participated in job application and interview training.

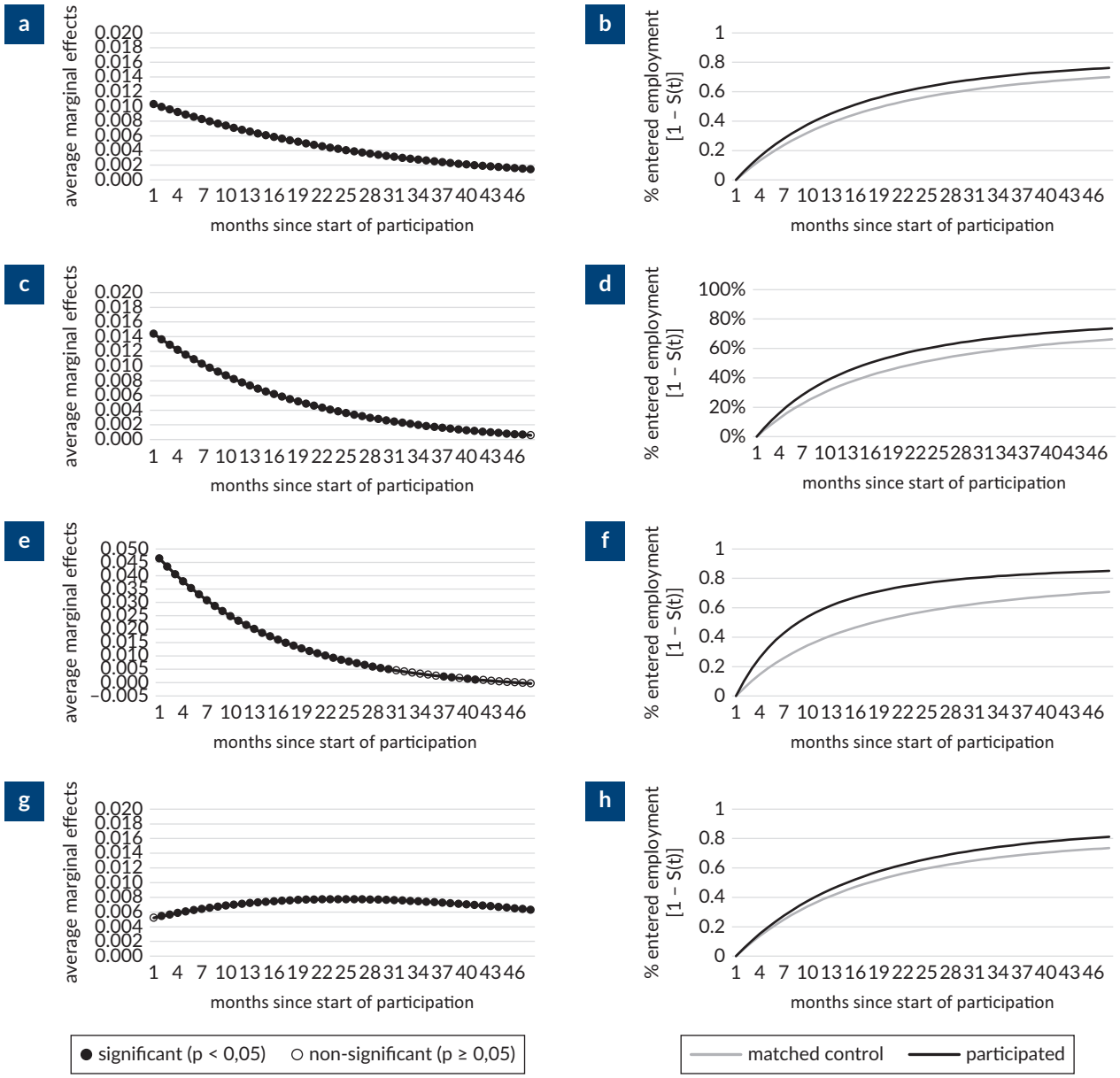

Figure 3. Estimated advantage of ALMP participation on employment entry compared to matched non-participants: (a) average marginal effects of labour market orientation programmes; (b) cumulative incidence of labour market orientation programmes; (c) average marginal effects of job search assistance; (d) cumulative incidence of job search assistance; (e) average marginal effects of application and job interview training; (f) cumulative incidence of application and job interview training; (g) average marginal effects of human capital programmes; and (h) cumulative incidence of human capital programmes.

Finally, Figures 3g and 3h present the results for activation measures focused on human capital development. As with the previous measures, long-term unemployed jobseekers who engaged in human capital programmes consistently showed higher hazards of transitioning to work. Findings reveal that, unlike the other activation measures, the advantage for participants in human capital programmes is not concentrated at lower durations since programme start. This implies that long-term unemployed individuals who participated in these measures had a significantly higher chance of exiting unemployment throughout the entire observation period. Notably, no "lock-in" effects were observed for human capital programmes. Previous research on jobseekers (i.e., not restricted to long-term unemployed jobseekers) typically finds that participation in human capital programmes initially leads to negative effects, often interpreted as temporary reductions in time invested in job search while participating in training (e.g., Wood et al., 2024). There are two possible explanations for the absence of a lock-in effect. First, the start of participation itself may generate positive effects, such as increased motivation or inspiration to return to work, even in the case a human capital programme was not completed (yet). Second, it is possible that the matched non-participants do not benefit compared to new participants who are locked into a human capital programme, due to their very low chances of exiting unemployment after more than one year of unemployment.

5.4. Is Non-Participation Detrimental to Employment Entry for Non-Participants?

The previous results consistently demonstrated that the group participating in an activation measure within the first 11 months of long-term unemployment experienced an advantage in terms of employment exit chances in comparison to their matched counterparts who did not yet participate. However, it remains unclear what the potential effect of the different activation measures is for *all* long-term unemployed jobseekers. In other words, the question remains whether long-term unemployed jobseekers who did not participate in a given programme experience a disadvantage which is equivalent to the advantage identified amongst participants. The positive effects of activation measures do not necessarily imply that the group who, in our observation, did not participate in a particular activation programme would have experienced similar benefits had they participated in that programme. This is due to the fact that the analysis focuses on the labour market outcomes of participants, comparing them to statistical twins, with the latter being very similar in all observable characteristics. This implies that non-participants with somewhat different profiles—who are less often used as statistical twins—are underrepresented in the analysis. As a result, the analyses discussed thus far do not provide a representative picture of the labour market outcomes for all long-term unemployed individuals who did not participate in an activation programme. Consequently, we also focus on the outcomes for all non-participants and, ultimately, match each non-participant with a statistical twin who did participate in that specific activation measure.

Figure 4 illustrates the estimated disadvantage that non-participants experienced by not engaging in an activation programme, compared to a matched set of participants. Each graph displays two lines. The black line shows the advantage that participants gained from participating in a specific activation programme (see Section 5.3). The grey line represents the results of the analysis where non-participants form the basis for matching, and the outcomes for this group are compared to the outcomes of matched participants who did engage in the respective programme. This line provides a representative illustration of the disadvantage experienced by non-participants due to their lack of participation at the time of matching. Regarding labour market orientation programmes and training related to job applications and interviews, the disadvantage experienced by non-participants closely approaches the advantage experienced by participants (Figures 4a

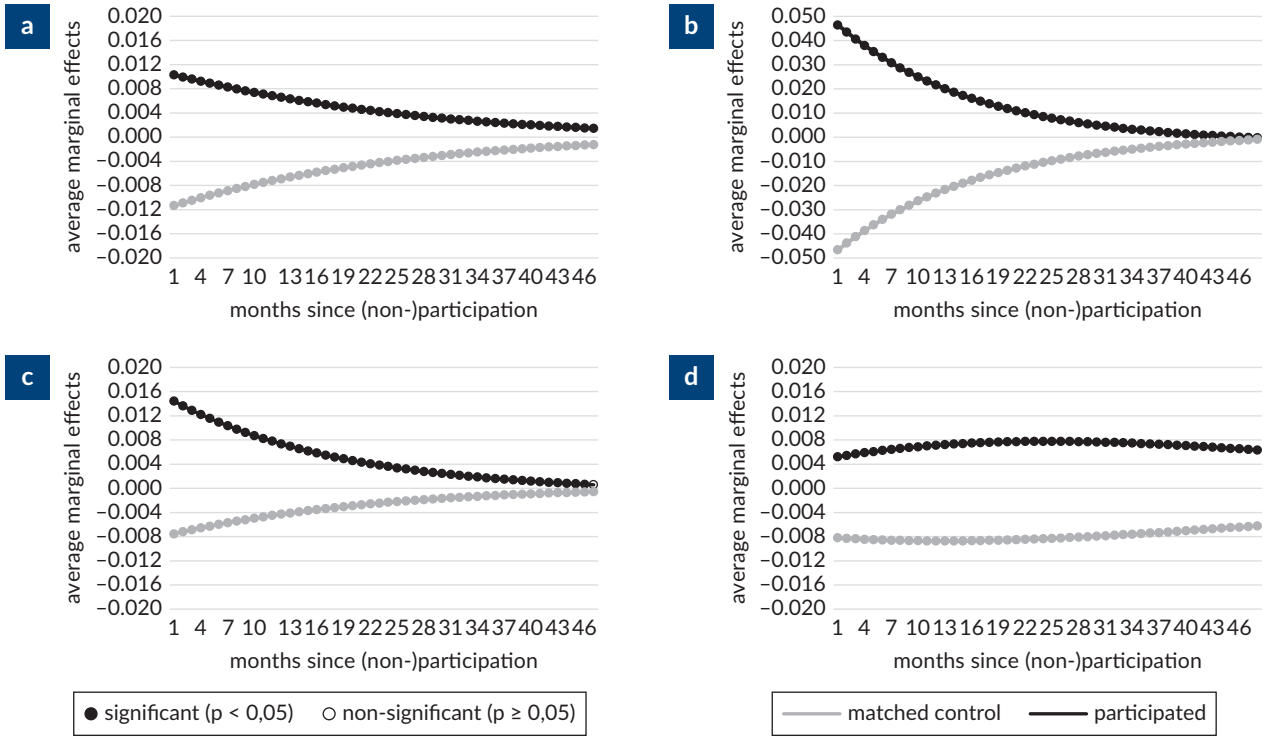

Figure 4. Estimated advantage of participation on employment entry compared to matched non-participants (grey), and estimated disadvantage of non-participation on employment entry compared to matched participants (black): (a) labour market orientation programmes; (b) application and job interview training; (c) job search assistance; and (d) human capital programmes.

and 4b). This finding suggests that scaling up investments in such programmes targeting all long-term unemployed jobseekers would be similarly effective.

Regarding job search assistance and human capital programmes, the results indicate a clear difference between the advantage participants experience in terms of employment entry (relative to matched non-participants) and the disadvantage non-participants face (relative to matched participants). Regarding job search assistance (Figure 4c), the disadvantage for non-participants is roughly half of the advantage for participants. Therefore, it would be erroneous to conclude that all long-term unemployed jobseekers would equally benefit from participation as the group of long-term jobseekers that these programmes currently reach. The implication of this finding is that if participation in this type of activation programme were to be encouraged also for profiles with lower chances of engaging (e.g., profiles most capable of finding a job independently), the overall effectiveness might decrease, but would still remain positive. In contrast, regarding the effect of non-participation in human capital programmes, we reach the opposite conclusion (Figure 4d). The disadvantage related to non-participation for the group that did not engage is larger than the benefit for participants. This implies that if profiles with lower chances of entering human capital development programmes today were to participate, they might derive a greater advantage in terms of employment entry than the group of participants that these programmes currently reach. This result at least suggests that there is unrealised potential in either expanding human capital programmes or targeting participation to those who would benefit most from them.

5.5. Robustness Checks

Finally, two robustness checks were performed. First, as the usage of Caliper or kernel matching entails similar substantive findings, we chose to present the simpler nearest-neighbour approach. Second, given that participants in the activation measures considered can start participation in the first 11 months since the start of long-term unemployment, we also assessed whether the estimated effects vary depending on the timing of participation. However, in contrast to previous findings for (long-term) unemployed jobseekers (i.e., not restricted to long-term unemployment; e.g., Goller et al., 2021; Lechner & Wiehler, 2013), this was not the case.

6. Discussion and Conclusion

Policy-makers are increasingly investing in the activation of long-term unemployed groups due to their critical role in addressing low unemployment rates, population ageing, and labour shortages, as well as their vulnerability to social exclusion and poverty. Participation in activation programmes might facilitate the employment entry of long-term unemployed jobseekers, which limits the aforementioned vulnerabilities and allows them to reap the benefits of other commodified services such as formal childcare and parental leave in Belgium (Kil et al., 2015; Marynissen et al., 2021; Wood & Marynissen, 2019). However, while there is a significant body of research on the effectiveness of activation programmes in general, there is limited understanding of their specific impact on long-term unemployed individuals. Meta-analyses suggest that the effects of ALMP are generally larger for long-term unemployed groups, especially those focused on human capital and job search assistance, but the small sample size and lack of studies specific to this group call for more empirical research. Moreover, the effectiveness of such policies is likely to vary across countries due to contextual factors, and comprehensive case studies are needed to assess the impacts of various activation measures in long-term unemployment contexts. Benefitting from population-wide administrative data for long-term unemployed jobseekers in Flanders (Belgium) from 2015–2022, this study addresses these gaps by using dynamic propensity score matching and hazard models to assess the enrolment in and the effectiveness of four activation programmes among long-term unemployed individuals: labour market orientation, job search assistance, application and interview training, and human capital development.

Three take-home findings emerge from our empirical results. First, long-term unemployed jobseekers continue to enrol in different types of activation programmes. This indicates that the Flemish public employment service continues to invest resources in long-term unemployed jobseekers' (re-)entry into the labour force, which aligns with the EPSR goal that unemployed individuals have the right to continuous activation support and training. Notably, in contrast to previous research among unemployed jobseekers without a specific focus on long-term unemployed jobseekers (Kasztan-Flechner et al., 2022; Wood & Neels, 2020), we find no significant variation in participation in the considered activation programmes by age, gender, or education level, and only limited variation by origin, with no clear patterns emerging by region of origin. This suggests that activation opportunities for long-term unemployed jobseekers are relatively socially inclusive in Flanders (Belgium), which is an explicit EPSR target.

Second, we find positive effects of participation in all four activation measures considered on the entry into employment amongst long-term unemployed jobseekers. This finding is in line with the available literature (Card et al., 2016; Goller et al., 2021), and at least suggests that participation in activation programmes helps

long-term unemployed jobseekers to overcome well-documented barriers to employment, by enhancing their human capital (Lallukka et al., 2019; Tasci & Ozdemir, 2006), which might also strengthen confidence and enhance the motivation to start the search process to find a job (De Witte et al., 2010; Liu et al., 2014), a process which is supported by enhancing institutional knowledge and search strategies in the activation programmes considered. Additionally, the identified positive effects of programme participation on employment entry also suggest that the potential mechanism in which employers interpret long-term unemployment as an indicator of potential inefficiency, lack of motivation, or lack of employability (Bonoli & Hinrichs, 2012; Oberholzer-Gee, 2008), might be weakened by participation in activation programmes that enhance productivity and support jobseekers to manage signals during hiring processes.

Third, our findings indicate that expanding the four activation programmes considered in this study (i.e., labour market orientation, job search assistance, application and interview training, and human capital development) would be beneficial to enhance the employment prospects for long-term unemployed individuals. Our results not only show positive effects of participation on employment entry, but also indicate that non-participants would benefit in the case of enrolment. Hence, activation programmes still have positive effects for long-term jobseekers. Moreover, the finding that the negative effect of non-participation among the long-term unemployed individuals who did not participate in human capital development is in the short term slightly higher than the benefit for participants, underscores that scholars and policy-makers should pay attention to underlying barriers for participation in such activation programmes.

Our findings are particularly relevant in light of the first and fourth EPSR principles. Principle 1 of the EPSR emphasizes the right to quality education, training, and lifelong learning to enable individuals to acquire skills that foster societal participation and successful labour market transitions. Our findings underscore that the Flemish public employment service provides continuous support for long-term unemployed individuals, ensuring that they can develop and maintain the skills needed for re-entering the labour market. This aligns with the EPSR's call for inclusive education and training opportunities for all, especially vulnerable groups like the long-term unemployed. Furthermore, Principle 4, which highlights the right to active support for employment, emphasizes the importance of timely, personalized assistance for jobseekers. Our results show that participation in activation programmes significantly enhances employment prospects for long-term unemployed individuals, supporting the EPSR's principle that personalized, tailored support should be provided to improve employment or self-employment outcomes. The lack of significant variation by age, gender, or education level in participation further suggests the socially inclusive nature of the activation measures for long-term unemployed jobseekers in Flanders, reinforcing the notion that everyone, regardless of background, should have access to opportunities for social and economic integration through ALMP.

Finally, we discuss four limitations and corresponding avenues for future research. First, regarding the identification of causal effects of programme participation on long-term jobseekers' likelihood of entering employment: While propensity score matching is a powerful technique for generating statistical twins to serve as a comparison group for those who engage in an activation measure, the method has limitations. The primary limitation is that the accuracy of the estimate for the difference between participants and their statistical twins in terms of employment exit depends on the available data. This is referred to as the "condition of independence" in econometrics. This assumption means that all factors influencing both participation in an activation programme and the subsequent hazard of employment entry must be observed in the data. This, however, is rarely fully the case. There are often additional factors on which participants

may differ from their statistical twins, which could also affect employment outcomes. Consequently, the estimates in this report are only approximations of the causal effect of programme participation, conditional on the characteristics used in the dynamic matching. This limitation contrasts with randomized controlled trials, where participants and non-participants only differ in terms of exposure to the activation programme (Bollens, 2007).

Second, building upon our theoretical interpretations of effectiveness, a fruitful pathway for future research would be to measure the presumed mediators in the different programmes and model the relationship between programme participation (e.g., general classroom training), mediating variables (e.g., motivation), and job search outcomes (e.g., employment entry). The longitudinal linked register data used in this article did not provide sufficient information to do so, yet it would strengthen our theoretical interpretations of effectiveness.

Third, despite the fact that this article reports both the estimated effect of participation in activation programmes, and the estimated disadvantage of not participating in the group that was observed not to do so, it is noteworthy that such estimates do not necessarily provide an accurate indication of the effectiveness of activation programmes in the future. ALMP effectiveness is likely to be influenced by period effects in terms of policy design features and investments, but also other contextual factors such as economic cycles (Card et al., 2010) and other policy domains (e.g., childcare; Nieuwenhuis, 2022). As a consequence, further studies explicitly considering period changes in ALMP investments, uptake, and effectiveness are likely to contribute to our understanding of the activation of long-term unemployed jobseekers (e.g., Wood, 2024).

Fourth, as this study aimed to provide a one-by-one evaluation of the main categories of activation programmes, possible avenues to further increase the level of detail include further unpacking the groups of activation programmes in more specific categories, and studying the effects of sequential or parallel participation in different programmes.

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Conflict of Interests

The authors declare no conflict of interests.

Supplementary Material

Supplementary material for this article is available online in the format provided by the authors (unedited).

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