

Pre-Analysis Plan for:

**Talking to role models: how experiences from previous job seekers can support occupational transitions**

By Michèle Belot, Bart K. de Koning, Yvonne Engels, Didier Fouarge, Mario Keer, Philipp Kircher, Paul Muller and Sandra Philippen

October 27, 2022

## 1. Abstract

We study the impact of a platform on which unemployed jobseekers can come into contact with 'buddies': former jobseekers who have recently transitioned from one occupation to another. The platform aims at facilitating conversations between the unemployed jobseekers and their buddies, so as to motivate the jobseekers to make a transition themselves. Jobseekers who are looking for work in occupations with poor labor market prospects will be invited to express their interest in the platform. Within those who express interest, we give a randomly selected group access to the platform. The others form the control group. The outcome measures of interest are employment status and earnings (both from administrative data), job search behavior (measured by activity on the public job search website), and characteristics of newly found jobs (measured using a survey)

Trial start date: 28 October 2022

Intervention start date: 4 November 2022

Intervention end date: March 2023 (expected)

Trial end date: April 2024

## 2. Experimental design

The experiment will consist of matching job seekers who search in occupations with poor job finding prospects (identified by a low 'job finding score'; a metric computed by the Dutch employment Office) with former job seekers who have successfully changed occupations, which we refer to as 'buddies'. For this purpose, an online platform was designed and developed. Buddies were recruited through a survey that was part of a previous experiment (<https://www.socialscienceregistry.org/trials/7374>) and LinkedIn. 40 buddies have registered on the platform as of the 27<sup>th</sup> of October, 2022. Recruitment is still ongoing.

**Sample of job seekers:** Job seekers were recruited through email and were asked to express interest in joining the platform if they met the following criteria

- (1) Were registered to search primarily in one of 31 selected occupations with poor job finding prospects,
- (2) Have completed their online resume,
- (3) Have sufficient written and spoken Dutch language skills,
- (4) Have at least 90 days of unemployment benefits rights left and

6048 job seekers received an email asking them to express interest in participating on the platform. Of this group, 313 job seekers have expressed interest as of the 26<sup>th</sup> of October, 2022. Recruitment is still ongoing.

Job seekers who have expressed interest form the sample for this experiment. Within this sample, a number of job seekers (50% of the sample, with a maximum of 5 times the number of buddies on the platform) will be randomly selected to receive a link to create an account on the platform. On the platform, job seekers will be able to search through a list of 7 randomly selected buddies.

The impact of platform access will be evaluated using (i) administrative data on job finding and earnings, (ii) job search activities on a public job search website, (iii) a pre- and a post-intervention survey on job search behavior and (iv) exit surveys on the occupation of the new job.

The administrative data (i) and the job search activities (ii) will be provided by the Dutch employment office. The pre-intervention survey will be sent to all individuals on the 28<sup>th</sup> of October 2022. The post-intervention survey will be sent to all individuals around 4 to 5 weeks after the start of the intervention. The exit surveys will be sent at 3-month intervals starting after the intervention is completed, to all individuals that have (according to the employment office's records) found a new job.

**Note:** as the degree of use on the platform is still uncertain at the time of writing this preregistration, we may invite additional job seekers onto the platform. We will do this as long as the capacity of buddies has not yet been reached, up to the point where half of the sample is in the treatment group.

## 1. Randomization method

Randomization occurs at the individual level. There are two treatment arms: (i) treatment, (ii) control. Randomization will be stratified by occupation and unemployment duration to ensure balance on these dimensions.

Randomization unit: Individual

Was the treatment clustered: no

Experiment characteristics:

1. Sample size, planned number of clusters: approximately 350, not clustered
2. Sample size, planned number of observations: approximately 350, not clustered
3. Sample size by treatment arm: approximately 175

## 2. Ethical approval

Institutional review board (IRB): Research Ethics Review Board VU University Amsterdam, School of Economics and Business (SBE)

IRB approval date: February 4, 2022

IRB approval number: 20220324.1.pmr450

### 3. Empirical analysis plan

#### Main hypotheses

The goal of the intervention is to encourage job seekers to broaden their search in terms of occupational breadth. Given that this group will be searching in occupations with poor labor market prospects at baseline, we would predict that the treatment should affect positively their labor market outcomes in the medium run (9 to 18 months after the intervention).

In the short run (up to a year after enrolling in the study), the effect of the treatment is ambiguous: On the one hand, job seekers may benefit from considering jobs with better labor market prospects, but they may need time to learn what specific occupations are best suited to them or undertake some training on the other hand. This would delay their transition into employment. For this reason, the effects on employment and on earnings may take time to materialize.

#### Primary outcomes

Our primary analysis concerns employment status. We will compare the two groups (control and treatment) each month  $t$  after the intervention on the following outcomes:

1. Employment status in months 1 to 18 after enrollment in the study
2. Job stability: the likelihood at each month 1 to 18 of having found a stable job (defined as lasting at least 6 months with at least 16 hours per week)
3. Cumulative and current labor earnings in months 1 to 18 after enrollment

Since the decision to create an account on our platform may be related to unobservable individual characteristics, our main analysis is intention-to-treat where the treatment group consists of all individuals that received an invitation link to sign up on the platform.

The randomized treatment assigned implies that raw differences between the three groups have a causal interpretation. To increase precision we also present the same figures controlling for individual characteristics, by estimating regressions of the form:

$$y_i = \alpha + \gamma Treated_i + \mathbf{x}_i \boldsymbol{\beta}' + \varepsilon_i \quad \forall t$$

Here  $y_i$  is the outcome of interest for individual  $i$ .  $\alpha$  is a constant,  $Treated_i$  is a dummy indicating whether individual  $i$  was part of the treatment group, and  $\mathbf{x}_i$  is a row vector of time-invariant individual characteristics (including demographics, unemployment spell characteristics and pre-unemployment job characteristics). We estimate this regression for every month after the treatment, up to 18 months. Coefficient  $\gamma$  is the intent-to-treat effect of the buddy platform on the outcome at time  $t$ . We intend to follow all participants for 18 months after the intervention.

These primary outcomes come from administrative data and are available on a monthly basis for the full sample. The Appendix contains approximate power calculations.

## Secondary outcomes

In addition to the primary outcomes, we explore various secondary outcomes that aim to uncover the mechanisms underlying the job finding outcomes in the primary hypotheses.

- Impact on **distance** between new occupation and initial search occupation. The distance will be measured by the number of overlapping digits in the 4-digit occupation code (the Dutch BRC classification). The information on the new occupation will be collected through an 'outflow survey' and is only available for individuals that found employment and respond to the survey.
- Impact on **search behavior on the public employment platform such as**: saved vacancies and applications.
- Impact on **search behavior measured from survey responses**: applications (per occupation), occupational breadth, willingness to consider other occupations, time spent searching, time spent exploring alternative occupations. The survey on search behavior will be sent out prior to the start of the intervention, and 4 to 5 weeks after the start of the intervention.

## Heterogeneity

We further expect a number of heterogeneous effects for the primary and secondary hypotheses, which will be assessed according to the following dimensions:

1. Are the impacts of the treatment heterogeneous across initial unemployment duration? The hypothesis is that longer duration leads to more willingness to consider alternatives following the treatment. We will estimate treatment effects interacted with a dummy for unemployment duration (taking the value of 1 if unemployment duration is above the median in the sample)
2. Heterogeneity by the similarity between the job seeker's previous occupation and the original occupation of the matched buddy. Since the match is endogenous, we will instrument it by how close the 'closest' buddy is in the restricted set of buddies that the job seeker could choose from. In addition, we will add occupation fixed effects, as the likelihood of having a buddy from a similar occupation in the choice set naturally depends on the occupation. Closeness is once again defined by the number of overlapping digits. As it is unclear how much variation there will be in the occupational proximity of buddies in job seekers' choice sets, we will assess the feasibility of this analysis as soon as we have the data.

## 4. Appendix

### List of selection occupations (in Dutch)

- Sociotherapeuten
- Bibliotheekmedewerkers
- Winkeliers mode
- Fotografen
- Grafisch vormgevers
- Afslankconsulenten en adviseurs lifestyle
- Dierenverzorgers
- Interieurarchitecten
- Sociaal-juridisch adviseurs en mediators
- Archiefmedewerkers
- Organisatoren van conferenties en evenementen
- Ontwerpers mode, textiel en meubel
- Productieleiders en producenten televisie, film en theater
- Vormgevers televisie, film en theater
- Conciérges
- Stewards luchtvaart
- Uitvaart- en mortuariummedewerkers
- Beeld-, geluid en uitzendtechnici
- Onderwijsassistenten basisonderwijs
- Praktijkopleiders in het (v)mbo
- Activiteitenbegeleiders
- Leidinggevenden sociaal cultureel werk
- Ondersteunende secretariële medewerkers
- Verkoopmedewerkers detailhandel huishoudelijke artikelen-speelgoed
- Kappers
- Drukwerkvoorbereiders
- Bloemen- en plantentelers
- Office managers
- Journalisten en redacteurs
- Schoonheidsspecialisten
- Facilitair managers

## Power calculations

We run a number of preliminary power calculations to estimate the minimum detectable effect size for the different primary outcomes of interest in our study. We estimate the minimum detectable effect size in the following way<sup>1</sup>:

$$MDE = \left( t_{\frac{\alpha}{2}} + t_{1-k} \right) \sqrt{\frac{1}{P(1-P)} \times \frac{\sigma^2}{N}}$$

The two  $t$  values are the critical values,  $k$  is the power and  $\alpha$  is the significance level.  $P$  denotes the proportion treated,  $\sigma^2$  the variance of the outcome, and  $N$  the total sample size. The Table below shows the various minimum detectable effect sizes for different outcomes and scenarios.

We use a power of 80% (-  $t_{1-k} = 0.842$ ) and  $t_{\frac{\alpha}{2}} = 1.960$  (95% significance level) throughout.

Outcome	Control mean	$\sigma$	N	P	MDE
Stable job found & employment status (short run; first 5 months)	0.1	0.3	350	0.5	0.090
Stable job found & employment status (medium run; 6-12 months)	0.5	0.5	350	0.5	0.137
Stable job found & employment status (long run; 13 to 18 months)	0.7	0.46	350	0.5	0.150
Earnings (short run)	€600	450	350	0.5	134.80
Earnings (medium and long run)	€1200	750	350	0.5	224.66
Stable job found & employment status (half N; e.g., heterogeneity; medium run)	0.5	0.5	175	0.5	0.212
Earnings (half N; e.g., heterogeneity; medium run)	€1200	750	175	0.5	317.72

---

<sup>1</sup> See Gupta, S., Kopper, S., Cavanagh, J., Doyle, M. A., Duru, M., Feeney, L., ... & Naimpally, R. Power calculations. <https://www.povertyactionlab.org/resource/power-calculations>.