

Pre-Analysis Plan for:

Broaden your horizon: stimulating occupational mobility among unemployed job seekers

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1. Abstract

We study the impact of an information treatment for unemployed job seekers. The treatment consists of a personalized email providing suggestions about suitable alternative occupations, including details on the labor market prospects of these occupations. An extended version of the treatment also adds a motivational video aiming to reduce psychological hurdles of switching to a different occupation. The email will be sent to jobseekers active in occupations with relatively bad labor market prospects and will be accompanied by a pre- and posttreatment survey on labor market beliefs and expectations. Administrative data on outflow to work will be used for an evaluation of long-term impacts.

Trial start date:	March 22 nd , 2021
Intervention start date:	April 12 th , 2021
Intervention end date:	April 26 th , 2021
Trial end date:	October 12 th , 2022

2. Experimental design

The sample contains all jobseekers receiving unemployment insurance (UI) benefits in March 2020 that are registered to search primarily in one of 21 selected occupations with particularly bad job finding prospects. Randomly selected, 33% of these job seekers will receive an email containing information on 6 to 10 alternative occupations that fit well in terms of transferable skills and offer substantially better prospects. The occupational suggestions are different for each of the 21 selected occupations. The information is conveyed through a visualization and contains (for each suggestion) (i) the labor market tightness (ii) an indicator for long-term automation risk (iii) two key competencies (iv) a representative picture. The email is sent again after two weeks as a reminder. Another 33% of the sample will receive a similar email that only differs in that it includes an additional short motivational video. The video contains (self-recorded) stories of successful job-switchers. The final 33% does not receive any email and functions as the control group.

The interventions will be evaluated using (i) data from a pre-intervention survey, (ii) data from a post-intervention survey, (iii) administrative data from the employment office and (iv) data from a post-unemployment-spell survey. The pre- and postintervention surveys are very similar and collect information on the occupations of interest, beliefs about the labor market (hiring probabilities, salaries, job stability), reservation wages and job search activities (applications and job interviews). The complete survey is attached as an appendix to this pre-registration. Survey results will be linked to administrative data from the employment office on job search activities, UI benefit duration, basic demographics and information on post-unemployment jobs. Finally, the post-unemployment spell survey will be used to collect information on the occupation of the post-unemployment job. While (iii) covers the complete experimental sample, (i) and (ii) are collected on a subset. This allows us to assess whether participation in the survey itself has an impact on our outcomes of interest. (iv) is sent out to the entire sample, but will likely suffer from substantial nonparticipation.

The key outcome measures of interest are the outflow to work as well as hours worked, aggregate earnings and the occupation of the new job. The other variables will be used to assess mechanisms (impact on job search strategies and beliefs). The pre-analysis plan below provides further details.

3. Randomization method

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

An (orthogonal) random subset will be selected to participate in the pre- and post-intervention surveys.

Randomization unit: Individual

Was the treatment clustered: no

Experiment characteristics:

1. Sample size, planned number of clusters: not clustered
2. Sample size, planned number of observations: 33,000
3. Sample size by treatment arm: 11,000

4. Ethical approval

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

IRB approval date: 19-05-2020

IRB approval number: 20200428.1.pmr450

5. Empirical analysis plan

Primary hypotheses

Our primary analysis concerns finding employment. We will compare the three groups (control group, email-treatment group and email+video-treatment group) at each month t after the intervention on the following outcomes:

1. Receiving UI benefits
2. Being employed
3. Hours worked
4. Monthly labor earnings

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:

$$y_{it} = \alpha_{gt} + x_i \beta'_t + \varepsilon_{it}$$

Here Y_{it} is the outcome of interest such as labor earnings for individual i in month t after the intervention. x_i is a row vector of time-invariant individual characteristics (including demographics, unemployment spell characteristics and pre-unemployment job characteristics). The three groups (control, treatment 1 and treatment 2) are indexed by g and thus the α_{gt} are the parameters of interest as they capture the group averages in month t after controlling for observable characteristics. We intend to follow all participants for 18 months after the intervention.

These four primary outcomes are taken from administrative data and are thus available on a monthly basis for the complete sample. In addition, we investigate whether the occupation in the first job after the unemployment spell differs from the initially preferred occupation. This information is only available for those that complete the outflow survey (and even then only for the first job after outflow from UI benefits).

Secondary hypotheses

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

1. The treatment impacts on job search behavior
 - a. Does the treatment lead to different search activity on *werk.nl* (for both the preferred and alternative occupations)?
 - b. Do job seekers add new alternative search occupations?
 - c. Does the treatment affect the number of applications reported in the post-treatment survey (for both preferred and alternative occupations)?
 - d. Does the treatment affect the number of job interviews reported in the post-treatment survey (for both preferred and alternative occupations)?
2. The treatment impacts on beliefs regarding the preferred and alternative occupations
 - a. Do beliefs about the hiring probability of the preferred occupation become more pessimistic?

- b. Do beliefs about hiring probabilities of alternative occupations become more optimistic?
- 3. The treatment impacts on the **motivation** to explore alternative occupations:
 - a. Is there a change in the self-reported number of hours spent per week on exploring alternative occupations?
 - b. Is there a change in the self-reported willingness to consider other occupations?
 - c. Is there a change in the difference in reservation wage between the initially preferred occupation and alternative occupations?
 - d. Is there a change in the number of applications individuals would send out to the initially preferred occupations and alternative occupations if wages and hiring probabilities were equal?
 - e. Do job seekers experience more positive emotions regarding job search in alternative occupations?

Heterogeneity

Heterogeneous effects for the primary and secondary hypotheses will be assessed according to the following dimensions, where the first two dimensions are motivated by Belot et al (2019).

- 4. Are the impacts of the treatment heterogeneous across initial unemployment duration? The hypothesis is that longer duration leads to more willingness to consider alternatives.
- 5. Are the impacts of the treatment heterogeneous across 'breadth' of search prior to the intervention? This will be measured using the 'breadth measure' from Belot et al. (2019) applied to the set of occupations of interest on the online CV of the jobseekers. Heterogeneous impacts will be estimated for those below and those above the median breadth. In addition, we will use the self-reported initial willingness to consider other occupations (below or above median), which is only available for the sub-sample that completes the pre-intervention survey.
- 6. Finally, we consider two ways to split the 21 occupations and estimate heterogeneous effects. First, we split between occupations that had bad prospects already prior to the onset of the Covid-crisis (March-2020) and occupations that had decent prospects but that deteriorated substantially due to the Covid-crisis. Second, we split the occupations by educational level (lower level and middle/higher level).

Descriptive evidence

Our datasets allow various descriptive explorations as well. Note that none of these exploit the randomized treatments.

- 1. What are the key differences between beliefs about the preferred occupation and alternative occupations (in terms of salary/hiring probability/job stability)?
- 2. What are the key hurdles for more prominent search in alternative occupations? This will be based on the pre-intervention survey questions on hypothetical equalization of hiring probabilities/salary levels.
- 3. What is the rate of belief updating? Do beliefs about hiring probabilities change with increased unemployment duration? For this we will use changes in beliefs between pre- and post-intervention survey for the control group.

4. How do reservation wages change over time? For this we will use differences in reservation wage responses between pre- and post-intervention survey for the control group.
5. Are expected future updates in beliefs accurate? We will make a comparison between expected changes in beliefs from the pre-survey with actual updates from the post-survey for the control group.

6. References

- Belot, Michèle; Kircher, Philipp; Muller, Paul (2019). Providing advice to jobseekers at low cost: An experimental study on online advice. *Review of Economic Studies* 86(4): 1411–47.

7. Appendix

List of included occupations with bad prospects

1. Activiteitenbegeleider (*Activity supervisor*)
2. Archiefmedewerker (*Archivist*)
3. Beeld- en geluidtechnicus (*Video and audio technician*)
4. Conciërge/huismeester (*Janitor*)
5. Dierenverzorger (*Animal caretaker*)
6. Drukkerijmedewerker (*Printing press operator*)
7. Grafisch vormgever (*Graphic designer*)
8. Hotelreceptionist (*Hotel receptionist*)
9. Kapper (*Hairdresser*)
10. Medewerker bediening/bar (*Waiter/waitress, bartender*)
11. Medewerker bedrijfsrestaurant of buffet (*Company restaurant/cafeteria attendant*)
12. Ondersteunend medewerker op een kantoor/secretariaat (*Office clerk*)
13. Onderwijsassistent basisonderwijs (*Teaching assistant elementary school*)
14. Organisator van conferenties en/of evenementen (*Event planner*)
15. Productieleider/producent (*Producer*)
16. Receptionist/telefonist (*Receptionist*)
17. Reisadviseur/reisbureau medewerker (*Travel agent*)
18. Sociaal werker (*Social worker*)
19. Steward/stewardess (*Flight attendant*)
20. Taxi- of particulier chauffeur (*Taxi driver*)
21. Verkoopmedewerker huishoudelijke en vrijetijdsartikelen (*Retail salesperson household items*)

Pre-intervention survey (separate document)