

Training Jobseekers to Fill Understaffed Jobs: An Experimental Study on Information Barriers

Pre-Analysis Plan

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Abstract

This study investigates the role of information frictions in explaining why jobseekers do not fill understaffed jobs. To do so, we design a low-cost informational intervention in cooperation with a Public Employment Service in Belgium. The intervention aims at addressing potential information frictions faced by jobseekers when making decisions about training. Specifically, the intervention consists in communicating, to a random subset of recent UI recipients, information on the advantages of following a training (and searching for a job) in a shortage occupation. We then study whether directly providing this information to jobseekers by email has an impact on their likelihood of following a training to enter a shortage occupation.

JEL Classification: J24, J64, J68, M53

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Intervention

The Walloon Public Employment Service encourages jobseekers to follow trainings, for free and while remaining eligible to UI benefits, in shortage occupations. Yet, these trainings are chronically undersubscribed. Our intervention consists in an informational outreach about these training opportunities and the advantages of enrolling in them. The aim is to determine whether information frictions about the trainings and related advantages could (partly) explain why jobseekers do not enrol in shortage occupation trainings.

In most developed countries, a large number of unemployed individuals coexist along numerous job postings for which no appropriate candidate can be found. Such jobs are typically referred to as shortage or bottleneck occupations – i.e., jobs that employers find particularly difficult to fill. In theory, skill shortages should not last in the long run as jobseekers should learn about job opportunities on the labour market and, either apply for these jobs directly, or get the appropriate training to do so. Yet, skill shortages typically do persist over time (McGrath, 2020).

One reason why this might occur could be that jobseekers are not perfectly informed about job or training opportunities in shortage occupations. In addition, they might not be aware of the advantages of following professional trainings that would allow them to enter such jobs. Following a growing body of evidence demonstrating that UI recipients face a number of information barriers when making decisions about their job search strategies (e.g., Barr and Turner, 2018; Spinnewijn, 2015; Belot, 2019; Mbih, 2020), we thus study the role of information frictions in explaining why jobseekers do not fill understaffed jobs.

Specifically, we design a low-cost informational intervention in cooperation with the Walloon (one of Belgium’s three regions) Public Employment Service (PES henceforth) that aims at reducing information frictions in order to nudge jobseekers into understaffed jobs. The randomized experiment addresses potential information frictions about the occupations that yield the greatest job finding probabilities as well as the advantages of following trainings to enter these jobs. To do so, we send information about the existence of shortage occupations to a random subset of jobseekers, as well as information about the benefits of enrolling in trainings in an understaffed occupation.

Our study builds on the nudging literature (e.g., Hoxby and Turner, 2015; Chetty and Saez, 2013) and assesses the extent to which the persistence of shortage occupations and the effectiveness of active labour market programs are influenced by information frictions. It is inspired by and adds to an emerging body of literature analysing the consequences of information provision in a variety of economic applications, including job search and labor supply (Belot et al., 2019; Altmann et al., 2018; Chetty and Saez, 2013), and education and training (Balaban and Conway, 2020; Bonilla-Mejia et al., 2019; Barr and Turner, 2018; Jensen, 2010; Hastings and Weinstein, 2008). Our experiment is particularly close to Mbih (2020), Belot et al. (2019), Altmann et al. (2018) and Barr et al. (2018) and contributes to this strand of the literature by focusing on labour market shortages specifically, and combining information about the labour market and training opportunities for the unemployed to improve the likelihood that jobseekers re-enter the labour market.

Outcomes & Analysis Plan

The data used to construct the outcomes will be drawn from administrative registers of the Walloon PES, the Forem. The main outcomes of interest include:

- Signing up to an information session for a training (only available if in person)
- Signing up on the waiting list to follow a training (for a shortage occupation; or not)
- Starting a training (for a shortage occupation; or not)
- Finishing a training (for a shortage occupation; or not)
- Exiting the Unemployment Insurance
- Entering employment (in a shortage occupation; or not)
- Time on Unemployment Insurance

In addition, we will send a survey to the entire sample in order to determine the extent to which the information contained in the treatment email affected perceptions about trainings and shortage occupations. Specifically, we will study whether the treatment and control groups differ in:

- Perceptions about the extent to which focusing one’s job search on shortage occupations is a good technique to increase one’s chances of finding a job;

- Perceptions about the extent to which following trainings is a good technique to increase one's chances of finding a job;
- Intentions to follow a training in the coming year;
- Perceptions about the support offered by the PES to follow a training.

The data from the survey will not be linked to the administrative data from the PES.

We will estimate specifications that take the variables described above as outcomes and compare the effects of the treatment (T) arm to the control arm (C) using the following Ordinary Least Squares regression:

$$Y_i = \alpha + \beta_1 T_i + \delta X_i + \epsilon_i$$

Where Y_i is our outcome of interest, T_i is a dummy variable indicating whether the individual i received the letter and X_i includes a set of individual control variables.

We also intend to perform a number of heterogeneity analyses, namely across characterises of the jobs (e.g., working conditions, salary) and across individual characteristics (e.g., genre, age, level of education).

Data

We will be using pseudonymised administrative data provided by the Walloon PES, which is described in more details in the table below. The data is collected monthly by the PES and includes potential changes within the month of observation. It also includes a labour market history of two years preceding the intervention, subject to the individual having already been registered at the PES in the past (i.e., data exists within the PES from the first time an individual enters the UI).

Personal characteristics	• Gender • Age • Nationality • Level of education • Field of education • District of residence
Labour market characteristics	• Labour market status • Type of UI recipient (if unemployed)

	• Sector of activity (if employed) • Type of contract (if employed) • Type of work (if employed) • Receipt of other UI aids (e.g., wage subsidy, if employed) • Labour market orientation (declared, if unemployed)
Training	• Registration as “interested” in an occupation (binary) • Registration to information session on shortage occupation training (only if in person, binary) • Selection test (binary) • Medical examination (binary) • Signing of the reservation contract (binary) • Signing of the training contract (binary) • Training modules followed • Shortage occupation training (binary) • Finishing a shortage occupation training (binary) • Reason for exiting the training

Experimental Design

The evaluation will rely on a randomized experiment in which the PES will send emails to all individuals who were registered as UI recipients for at least one day between July and September 2021. An email will be sent to both controls and treated individuals. The control group will receive an email inviting them to fill in a satisfaction survey about their experience with the PES, as is customary for the PES to do at the end of each quarter. The treatment group will receive the same email, augmented by information on shortage occupations and related training opportunities offered by the PES (and advantages of following these trainings). To measure the effects of the program, we will collect administrative data on training and employment from all study participants each year for at two years after the time that the emails are sent.

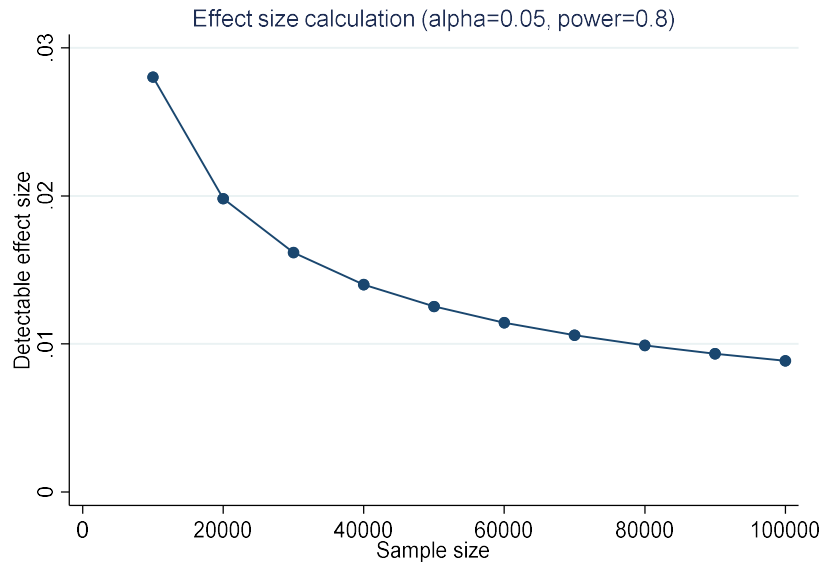
Randomization method. Randomization will be conducted based on the last number of the anonymized identification number of jobseekers. The random allocation to treatment and control group is done by the researchers and the PES does not intervene in this procedure.

Randomization unit. Randomization will be conducted on an individual basis.

Clusters. The experiment will not include any clusters.

Planned number of observations. We aim to have minimum 50,000 observations in our sample, and possibly more depending on the number of individuals who register at the UI between July and September 2021. Of those 50,000, approximately half will be allocated to the treatment group and the other half to the control group (depending on their anonymized UI identification number). These observations will be drawn from the population of individuals who registered as UI recipients between July 2021 and September 2021.

Power calculation. Our simulations in the figure below show that a sample size of between 50,000 and 60,000 UI recipients would be enough to detect a statistically significant effects of the nudge on the probability to participate in trainings of between 1.25 and 1.14 percentage points. The Public Employment Service estimates that the base take up rate of trainings (i.e., the share of UI recipients who follow a training in a given year) is between approximately 2% and 5%. A 1.25-1.14 percentage point increase in the probability of following a training (28%-63% proportional effect) and would be considered an acceptable effect of the information campaign by our partner PES.



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