

Digital Tools to Facilitate Job Search

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Motivation

- Information frictions are a pervasive feature of the job search process
- Digital tools may be ideal policy instruments to tackle the lack of information
 - ▶ Ability to disseminate information at low cost
 - ▶ Ability to tailor information to different worker groups
- Implementation decisions need to take externalities into account
- In this project we ask:
 - 1 Can job seekers' employment prospects be improved by providing personalized information on labour demand?
 - 2 How does such information perform when rolled out on large-scale?

What we do

- 1 We conduct a large-scale field experiment with the universe of UI recipients in Denmark
 - ▶ Main sample: UI recipients on March 15, 2019 ($N = 92.063$)
- 2 Make use of a new information dashboard on the online platform of the Danish Agency for Labour Market and Recruitment
- 3 Exogenously vary the content of dashboard across treatment groups
 - ▶ Information on the number of vacancies fitting job seeker's search profile
 - ▶ Information on alternative occupations that might be a "good match" (Belot et al., 2019)
- 4 Apply a two-stage randomization procedure
 - ▶ Vary treatment intensities regional level (Crépon et al., 2013)
 - ▶ Individual treatment assignment, based on regional treatment intensity
- 5 Using administrative data we evaluate the impact on labour outcomes
 - ▶ Follow job seekers up to one year after the experiment began

Jobnet: a countrywide laboratory

Jobnet.dk platform:

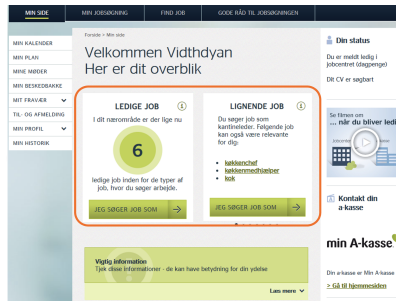
- Key contact point between job seekers, employers and employment agency
- Mandatory log-in once per week, log applications etc.
- Large job search platform

Dashboard on Jobnet.dk

- Experiment makes use of new information dashboard on jobnet.dk
- Directly visible on landing page after log in
- Exogenously vary content of dashboard

Job search profile

- Job seekers have to set up a search profile with selected desired occupation(s)
▶ Descriptives



Information cards

- Two main information cards:

1 Vacancy information

- ▶ Number of job ads on jobnet.dk fitting job seeker's search profile + in the local labour market

▶ Vacancy


2 Recommended alternative occupations

- ▶ Up to 3 alternative occupations
- ▶ Based on individual search profile + data on historical occupational transitions and educational requirements (Statistics Denmark data)

▶ Recommendation

LEDIGE JOB

I dit nærområde er der lige nu



6

ledige job inden for de typer af job, hvor du søger arbejde.

JEG SØGER JOB SOM →

LIGNENDE JOB

Du søger job som kantineleder. Følgende job kan også være relevante for dig:

- [køkkenchef](#)
- [køkkenmedhjælper](#)
- [kok](#)

JEG SØGER JOB SOM →

2 x 2 design of the experiment

Control group

<p>LÆR MERE OM JOBNET</p> <p>Se mere om hvordan du kan bruge Jobnet i denne film.</p> 	<p>JEG SØGER JOB SOM</p> <p>Under "Jeg søger job som" kan du angive de jobtyper, du søger arbejde indenfor.</p> <p>JEG SØGER JOB SOM →</p>
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Occupational treatment

<p>LIGNENDE JOB ⓘ</p> <p>Du søger job som kantineleder. Følgende job kan også være relevante for dig:</p> <ul style="list-style-type: none">• <u>køkkenchef</u>• <u>køkkenmedhjælper</u>• <u>kok</u> <p>JEG SØGER JOB SOM →</p>	<p>LÆR MERE OM JOBNET</p> <p>Se mere om hvordan du kan bruge Jobnet i denne film.</p> 
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Vacancy treatment

<p>LEDIGE JOB ⓘ</p> <p>I dit nærområde er der lige nu</p> <p>6</p> <p>ledige job inden for de typer af job, hvor du søger arbejde.</p> <p>JEG SØGER JOB SOM →</p>	<p>LÆR MERE OM JOBNET</p> <p>Se mere om hvordan du kan bruge Jobnet i denne film.</p> 
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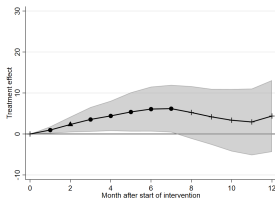
Combined treatment

<p>LEDIGE JOB ⓘ</p> <p>I dit nærområde er der lige nu</p> <p>6</p> <p>ledige job inden for de typer af job, hvor du søger arbejde.</p> <p>JEG SØGER JOB SOM →</p>	<p>LIGNENDE JOB ⓘ</p> <p>Du søger job som kantineleder. Følgende job kan også være relevante for dig:</p> <ul style="list-style-type: none">• <u>køkkenchef</u>• <u>køkkenmedhjælper</u>• <u>kok</u> <p>JEG SØGER JOB SOM →</p>
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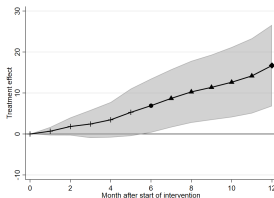
Labour market outcomes: working hours

Figure: Treatment effects on working hours cumulated over time

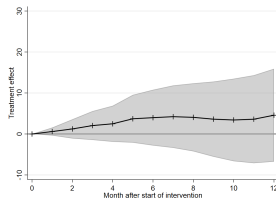
A. Recommendation treatment *Working hours*



B. Vacancy treatment *Working hours*



C. Combined treatment *Working hours*



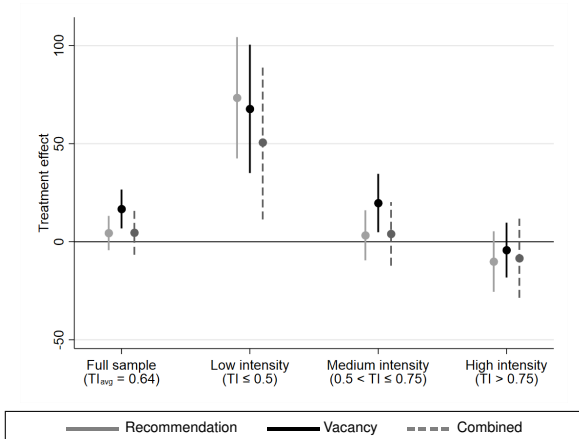
Note: Depicted are treatment effects (including 90% confidence intervals) for all three treatments relative to the control group on the average working hours accumulated over the first 12 months after the start of the intervention.

●/▲/◆ indicates statistical significance at the 10%/5%/1%-level.

Treatment externalities

- Exploit the two-stage randomized design to study relevance of externalities [▶ Map](#) [▶ Balancing statistics across treatment intensity](#)

Figure: Average treatment effects for separate subsamples of treatment intensity



Treatment externalities

- Nature of treatment externalities
 - ▶ The average control individual is not affected by the treatment intensity
 - ▶ Treated individuals crowd each other out
 - ▶ Effects for treated and control individuals
- We learn that
 - ▶ It is not possible to improve the employment prospects of all unemployed at the same time
 - ▶ Policymakers need to decide who to target
 - ▶ Who benefits the most?

Conclusions

- Online job search assistance can have a positive impact on the employment and earnings prospects of unemployed workers
- Less is more - no effects from the combined treatment
 - i) a possible role for limited attention/information overload
 - ii) counteracting effects on job search
- Treatment externalities are relevant yet subtle
 - i) the average control individual is not affected by the treatment, however
 - ii) effects for treated individuals attenuate when more workers are treated
- Our results underscore that instruments need to be carefully designed and evaluated
 - i) Avoid offsetting reactions
 - ii) Employment effects crucially depend on the treatment environment
 - iii) Targeting is unavoidable: which tools for different subgroups?

Thank you for your attention !