

Inform, Reveal and Innovate: What RCTs Bring to the Public Employment Service

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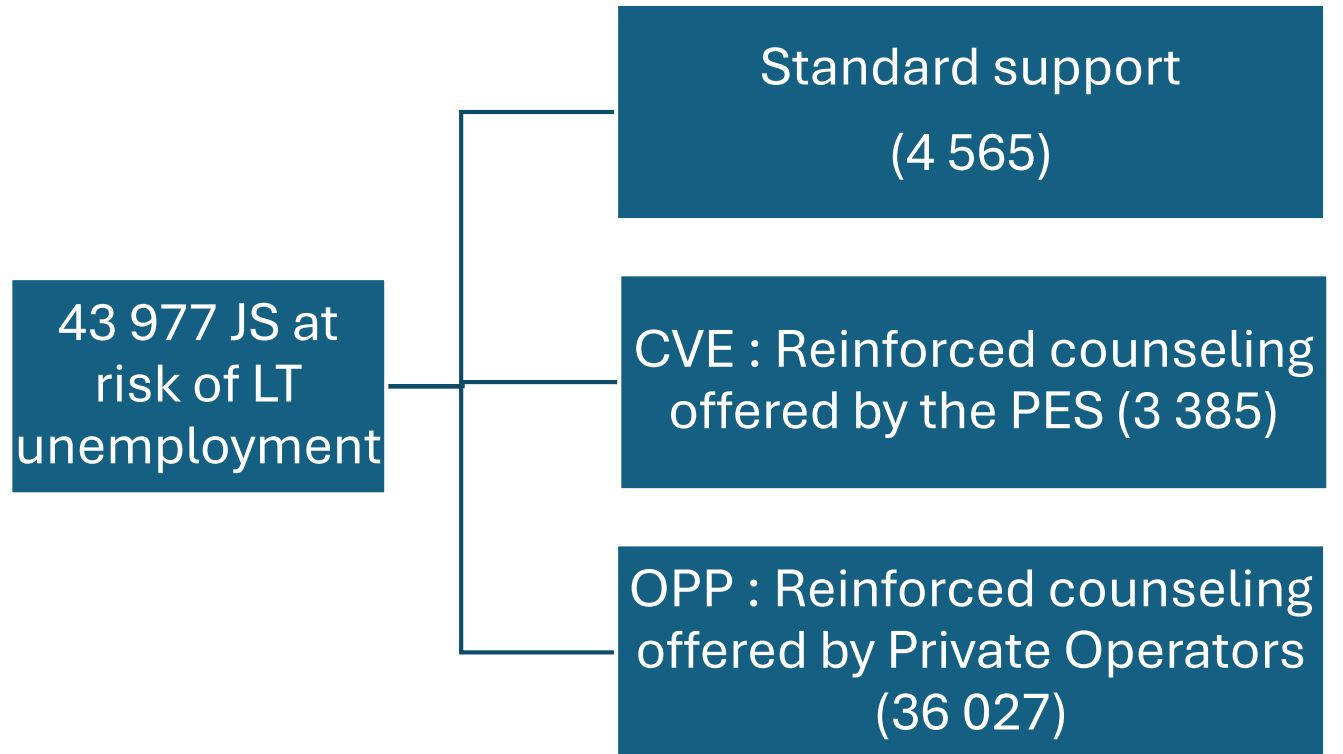


An evolving long-term partnership of the French PES with research centers

- The PES in France has conducted Randomized Control Trials for nearly 20 years. What for?
- To begin with to **INFORM** on the impact of existing programs
 - Key and tough questions i.e. who should deliver these services
 - Strategic questions regarding the type of activity the PES could offer
- But also to **REVEAL** hidden and key effects of interventions and test existing mechanisms
- Finally, RCTs is also the engine of **INNOVATION**: So many new challenges and opportunities!
 - How to be sure that new interventions are properly designed? Example of an **AI powered Recommender Systems**

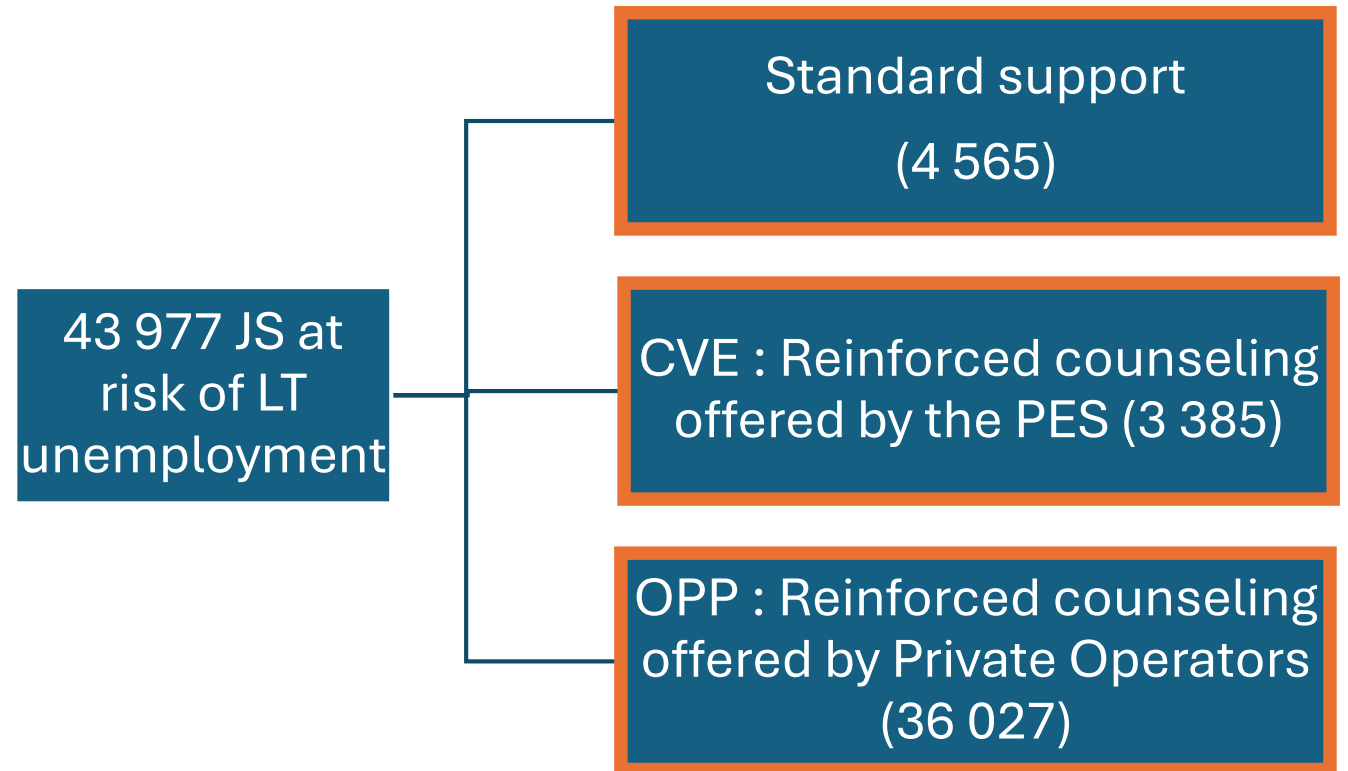
INFORM: Is it worthwhile assisting jobseekers - should this assistance be provided by the public or private sector?

- Our first RCT with the PES
- Target group: jobseekers identified by their counselor as being at risk of long-term unemployment.
- Reinforced support for jobseekers
 - One counselor assists 40 jobseekers, compared with 120 jobseekers in the standard program.
- Clearly a costly program: does it help to find a job?
- Who should deliver this program:
 - An intense debate about private versus public providers
- What is the evidence on this?



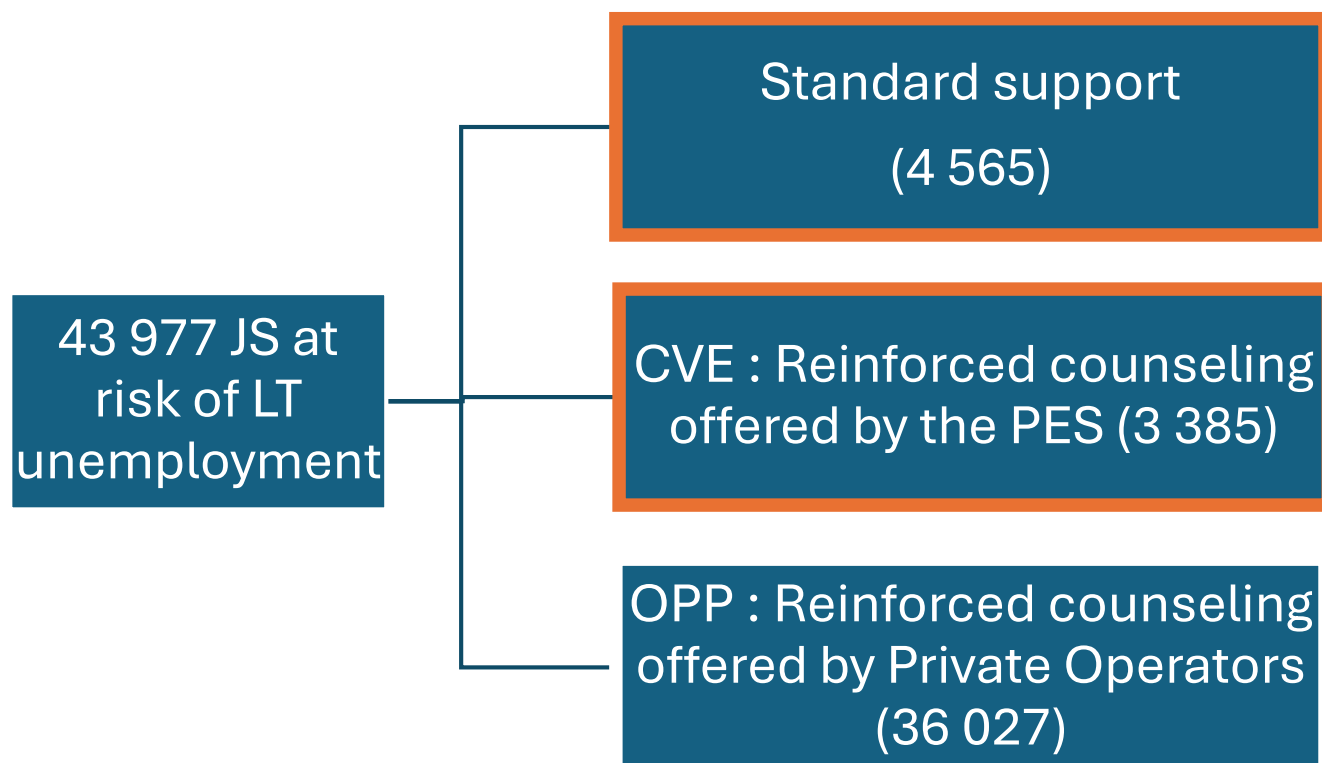
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- **We can compute the average of return to employment for each group over time**



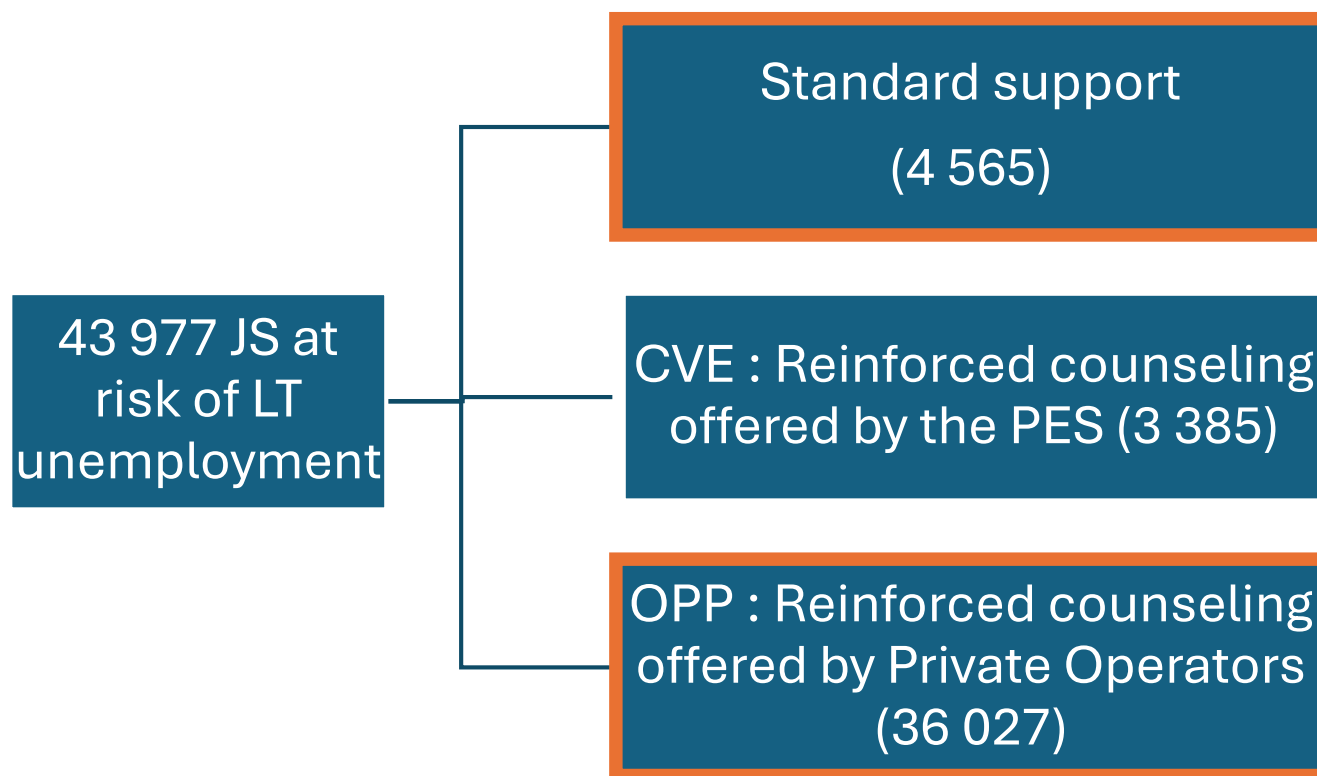
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 - One counselor assists 40 jobseekers, compared with 120 jobseekers in the standard program **for 6 months**
- Clearly a costly program: does it help to find a job?
- Who should deliver this program:
 - An intense debate about private versus public providers
- **Or we can compare the average of return to employment between one treatment group and the control group**

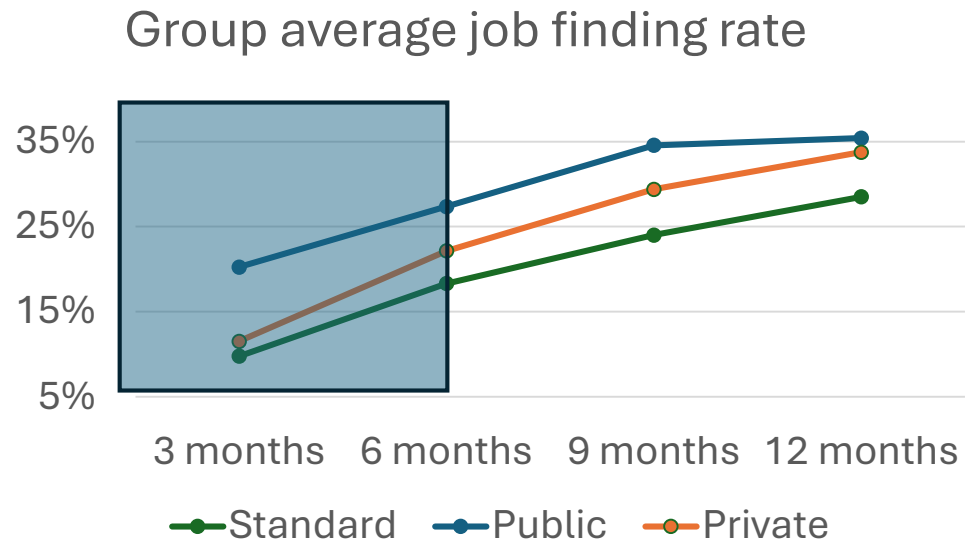


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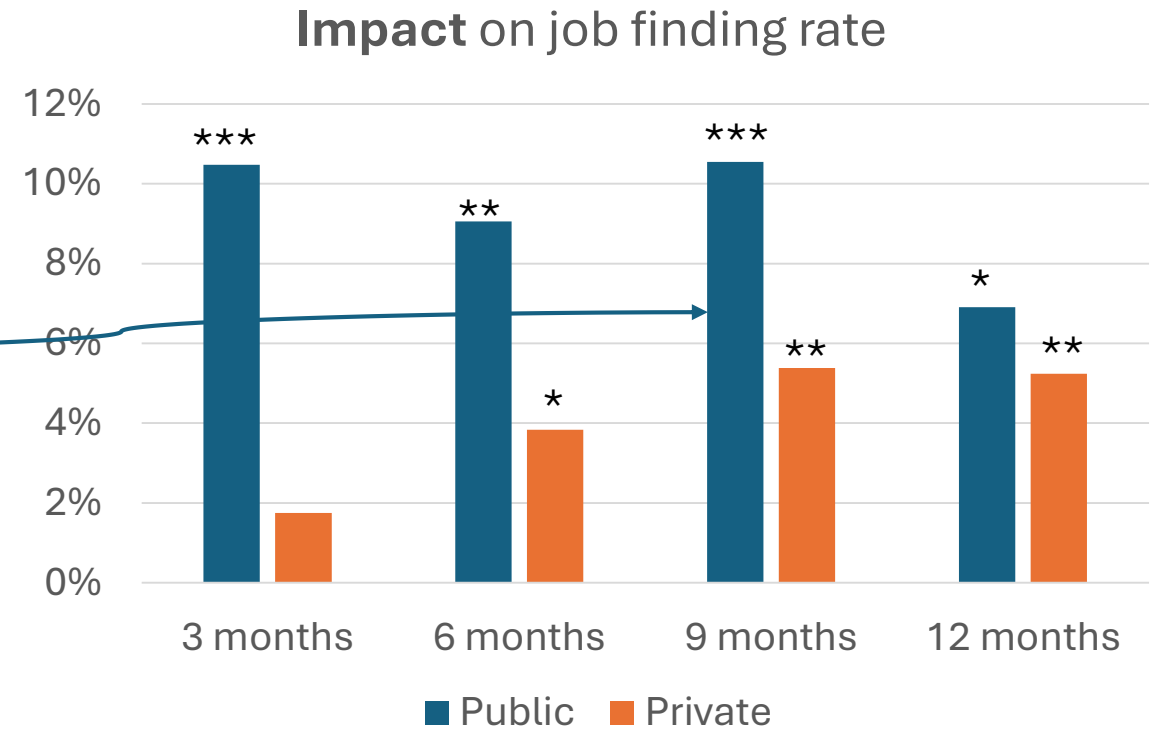
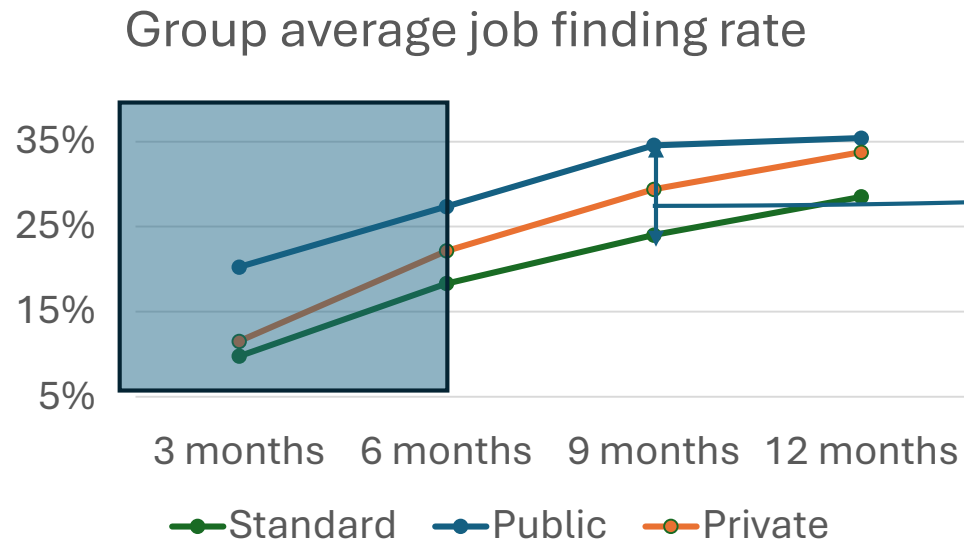
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Group average job finding rates

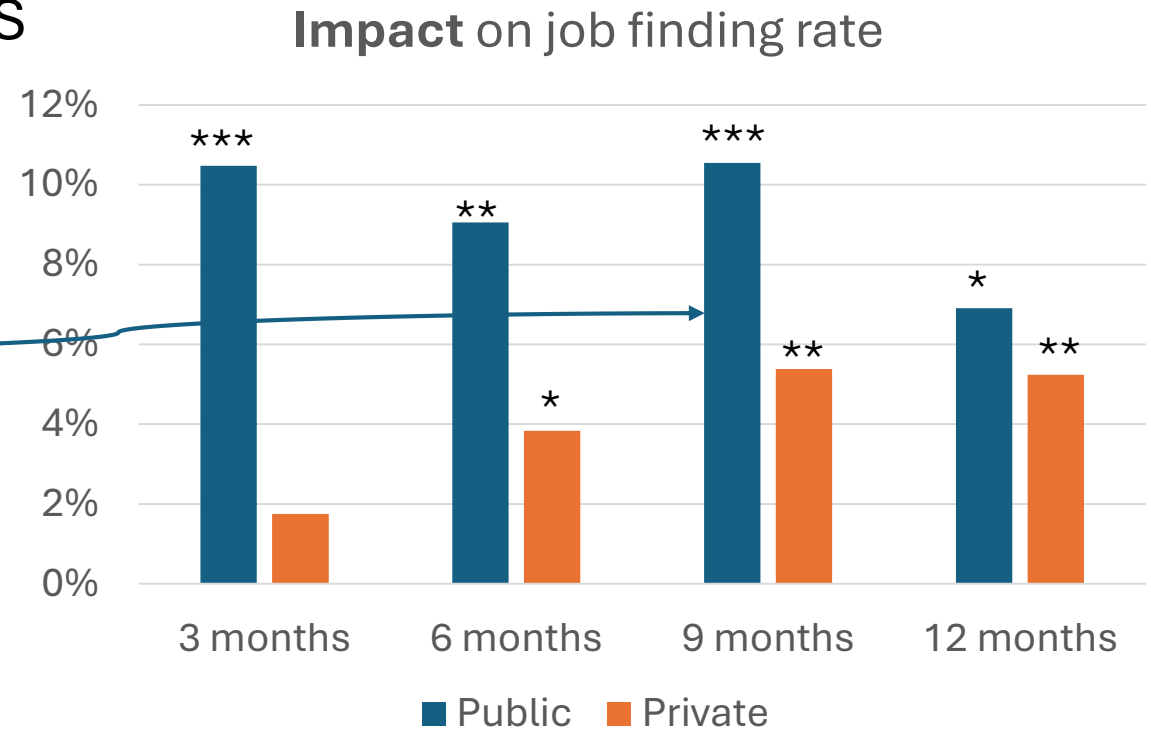
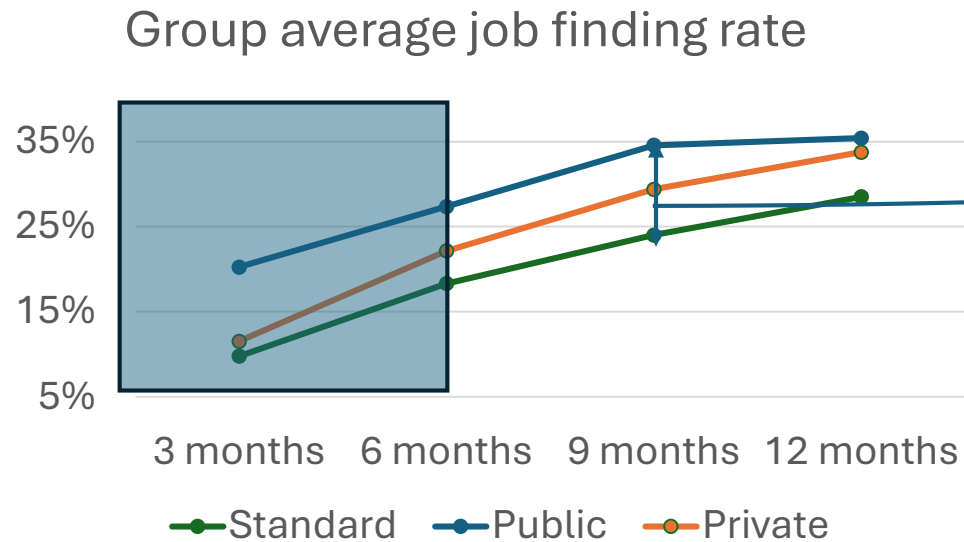


From group average to treatment effects



A very effective program yes! When offered by the PES

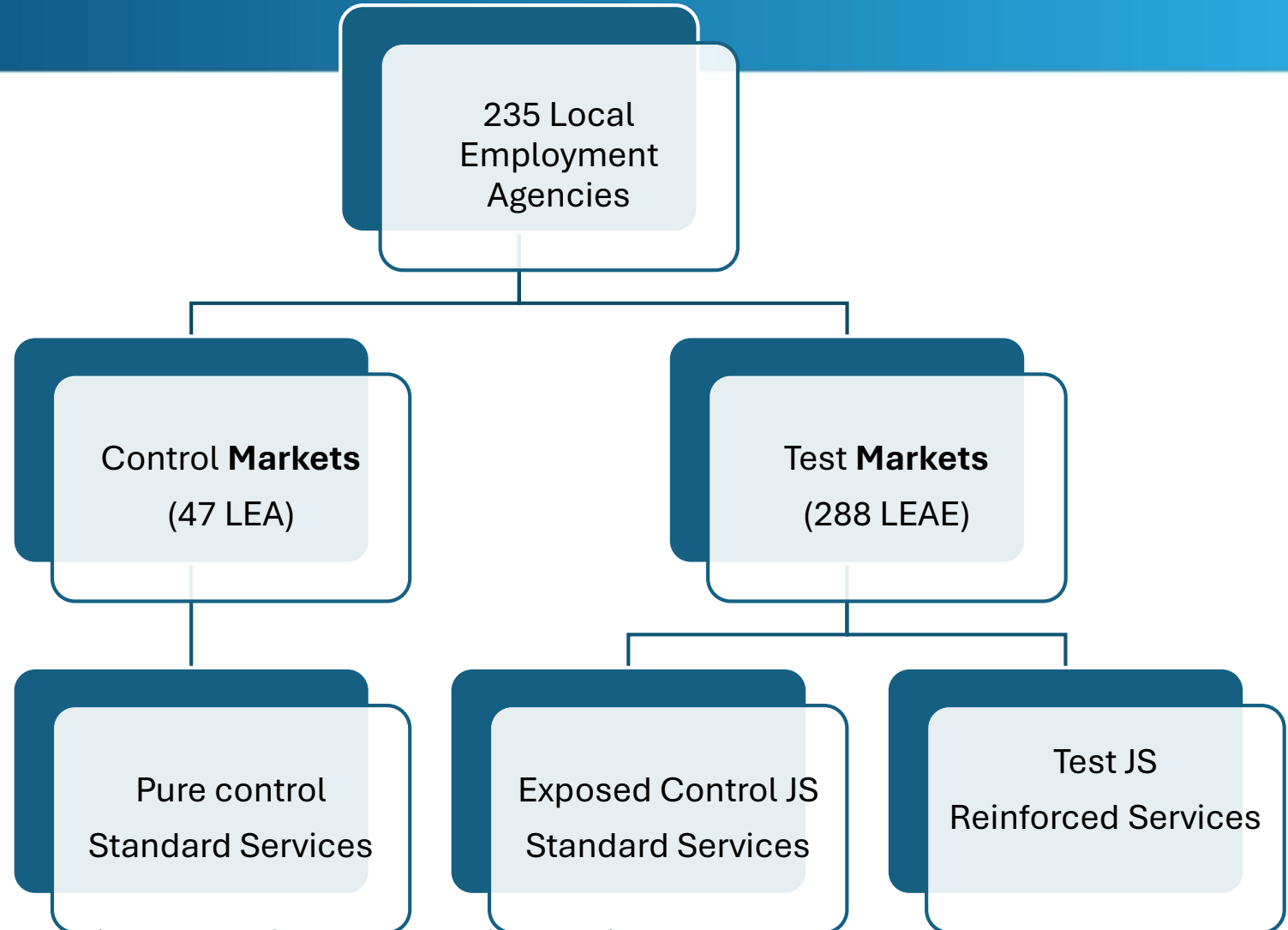
- Slow return to employment for the target JS



- Reinforced support programs accelerate participants' return to employment
 - After 3 months, a significant increase in the rate of return to employment
- A much sharper and faster impact when the program is offered by PES

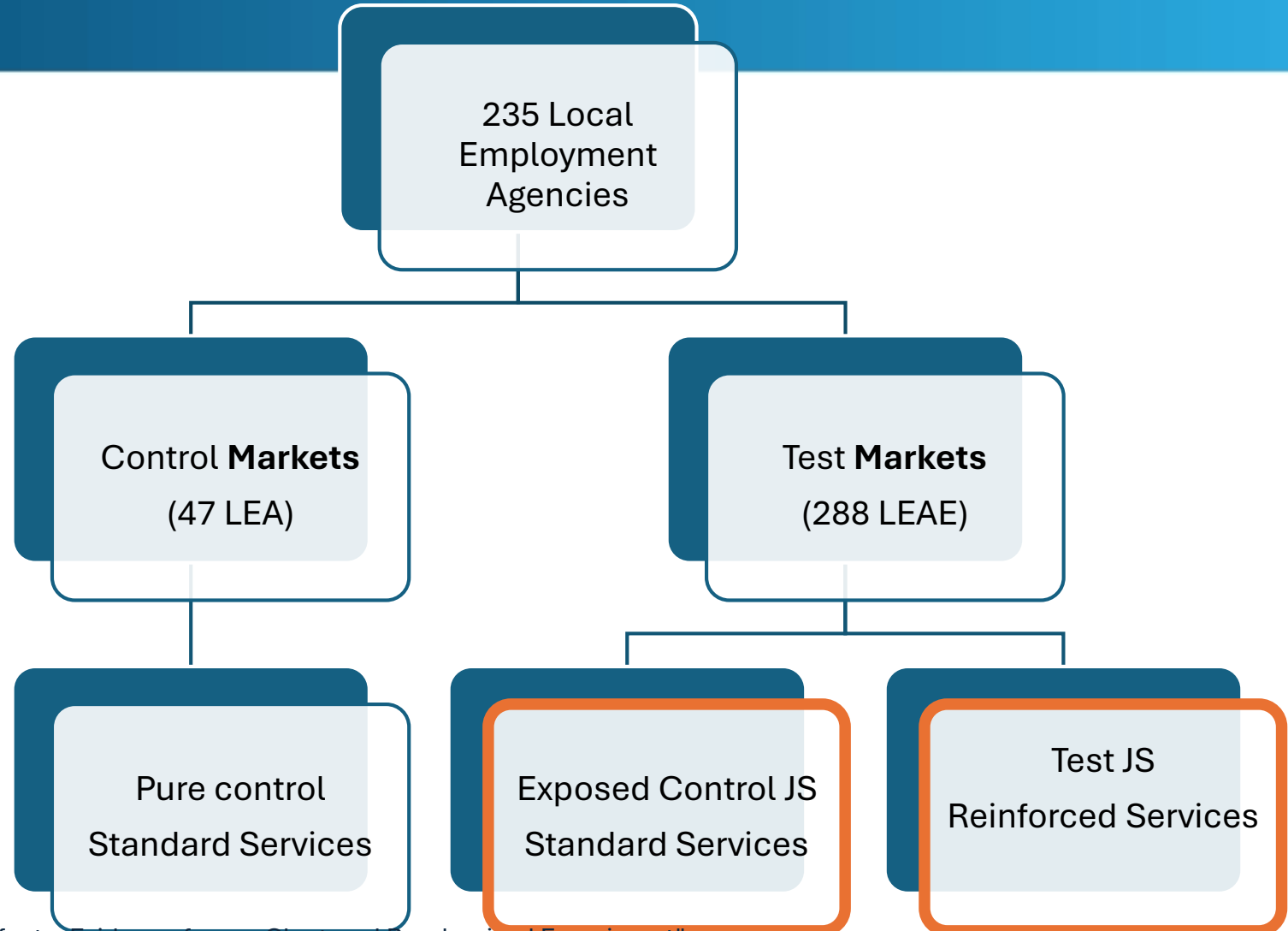
REVEAL: Does assisting some jobseekers reduce the chances of others?

- One objection immediately comes to mind:
 - If there is a shortage of jobs, helping some will benefit them, but at the expense of others.
- Could such a game of musical chairs be at work?
- We used a clever design to answer this question
- The audience is young unemployed graduates



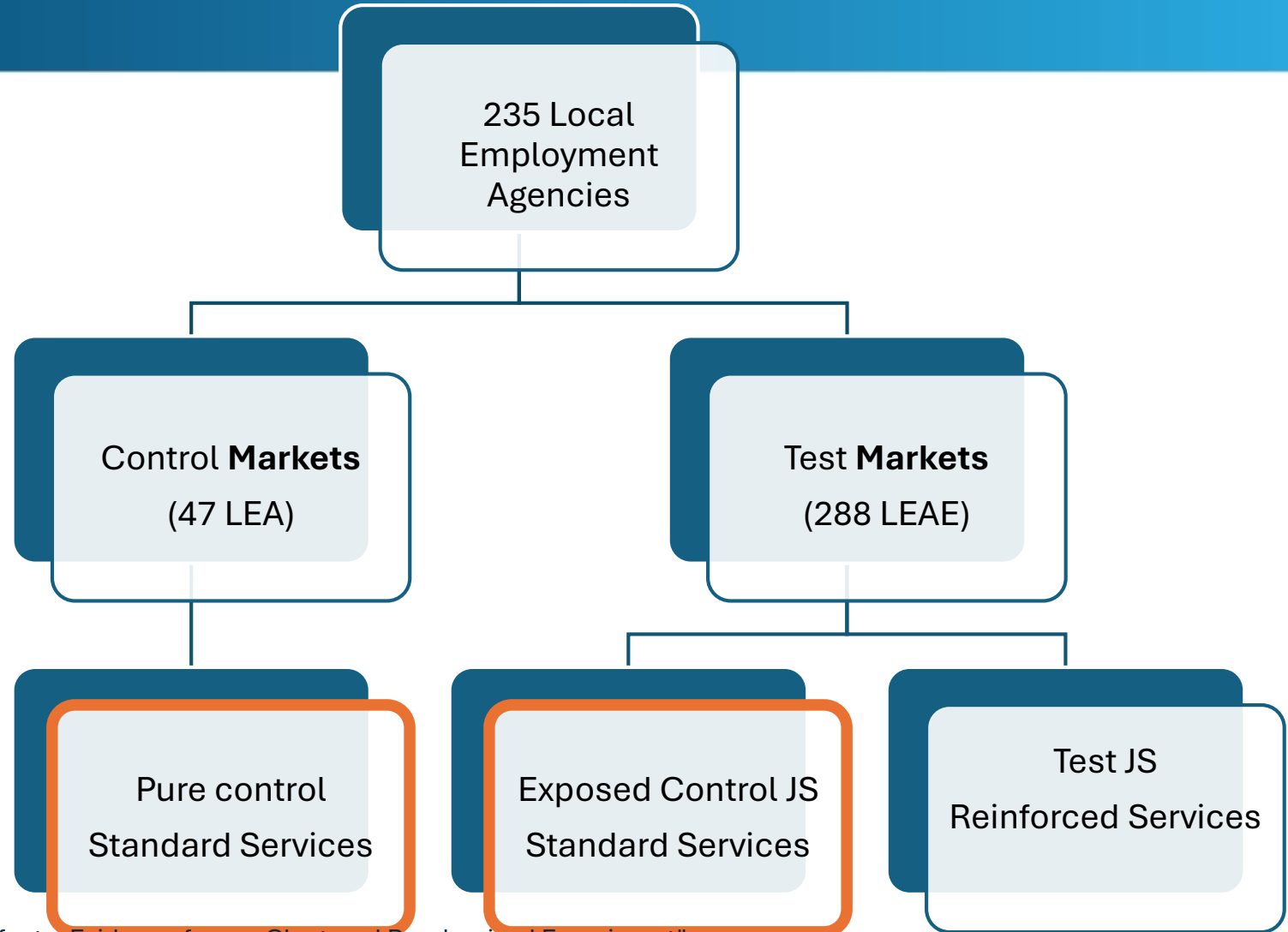
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- Comparing jobseekers in the “**test**” and “**exposed**” control groups is the **standard** way of measuring impacts **ignoring competition**.



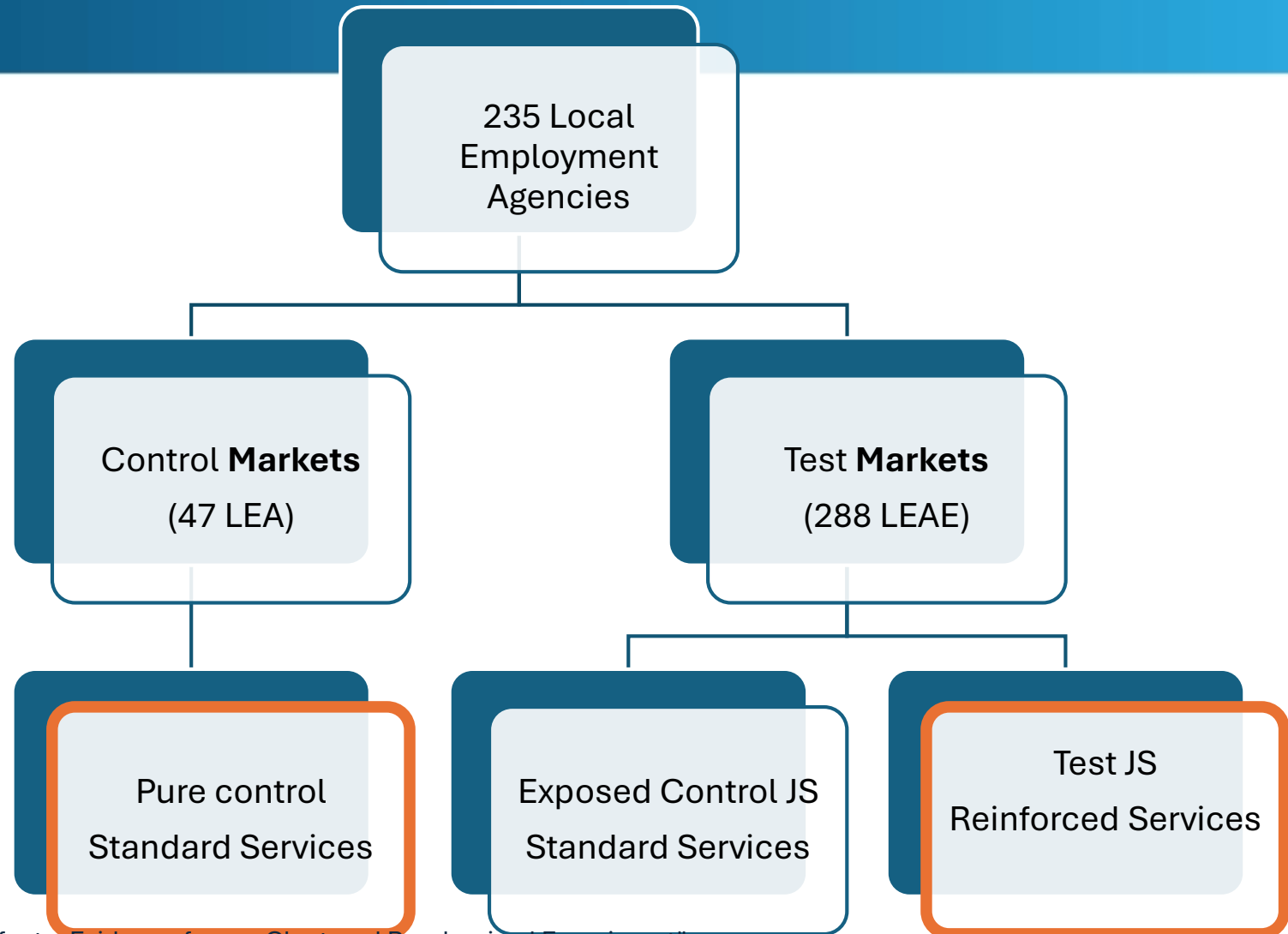
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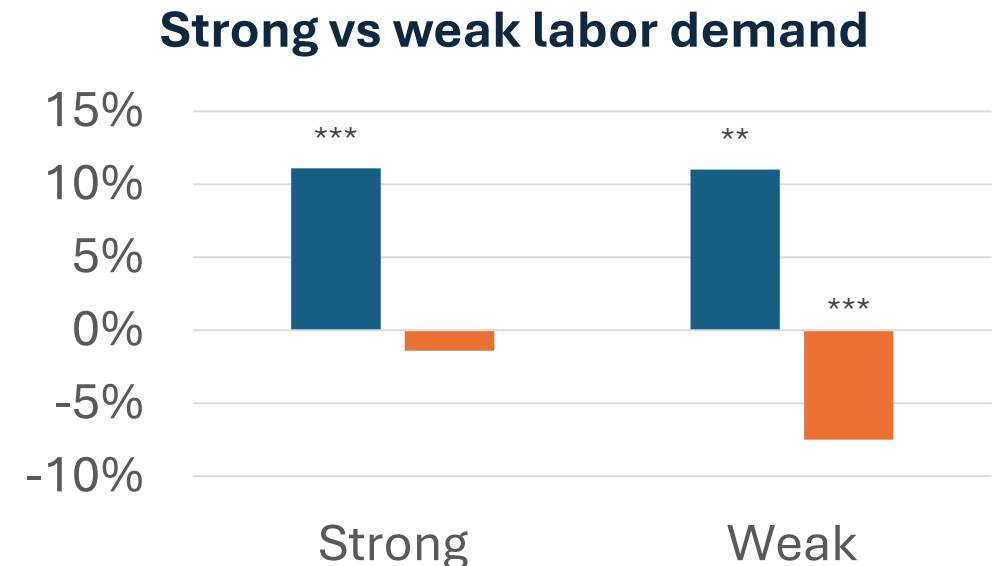
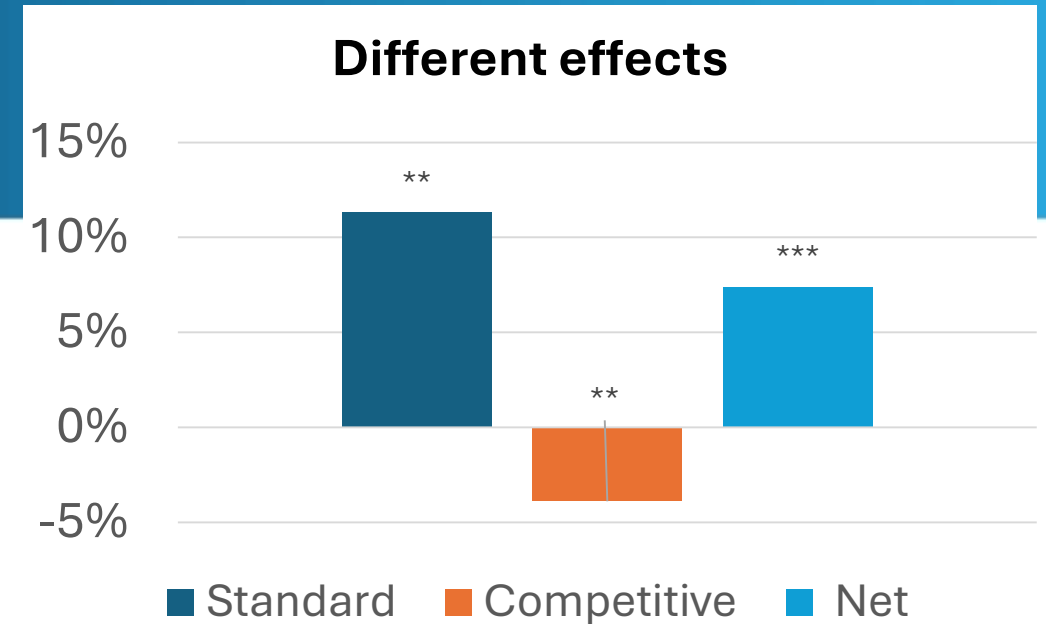


REVEAL : Substantial competition effects can reduce the overall effectiveness

- As expected, the situation of the participants is better than that of the exposed control.
- But **the situation of the exposed control deteriorates** in relation to that of the pure control.

Helping some comes at the expense of others

- This is particularly true in markets where demand for labor is weak (unemployment above median)
- An important result as assisting JS when the demand is weak is a natural response.

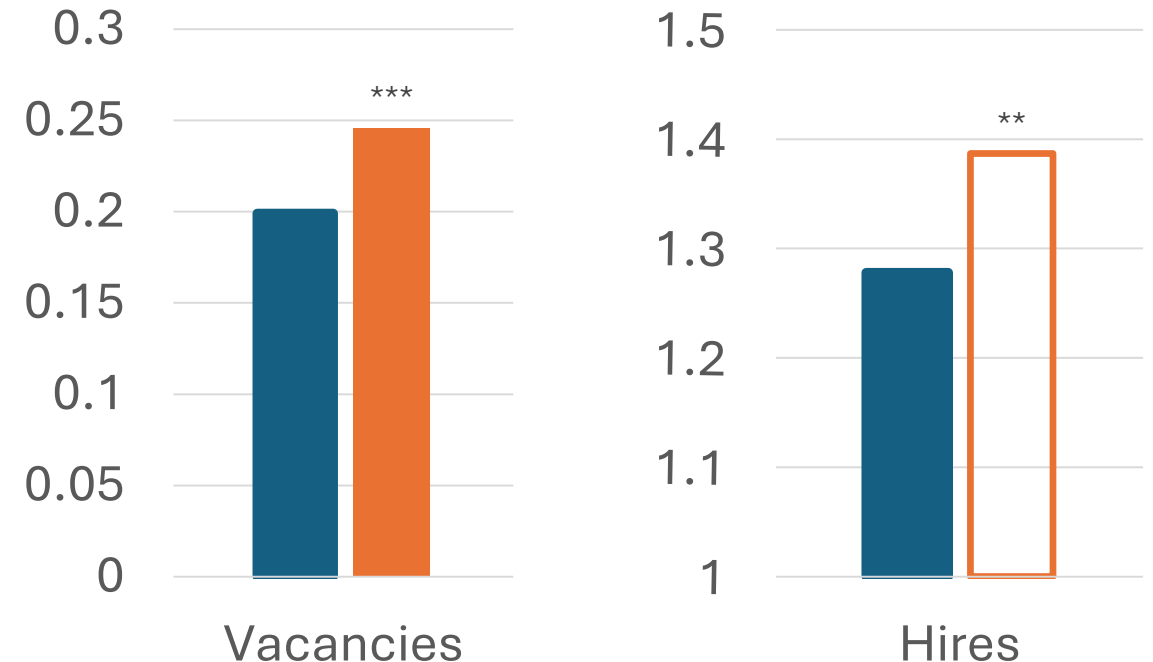


INFORM strategic choices: Is it worthwhile supporting firms ?

- **When labor demand is low, why not support firms instead?**
- The PES revamped its supply of firm services in 2014
- **4,000 firms out of 8,000** were selected at random to be “prospected” by the PES.

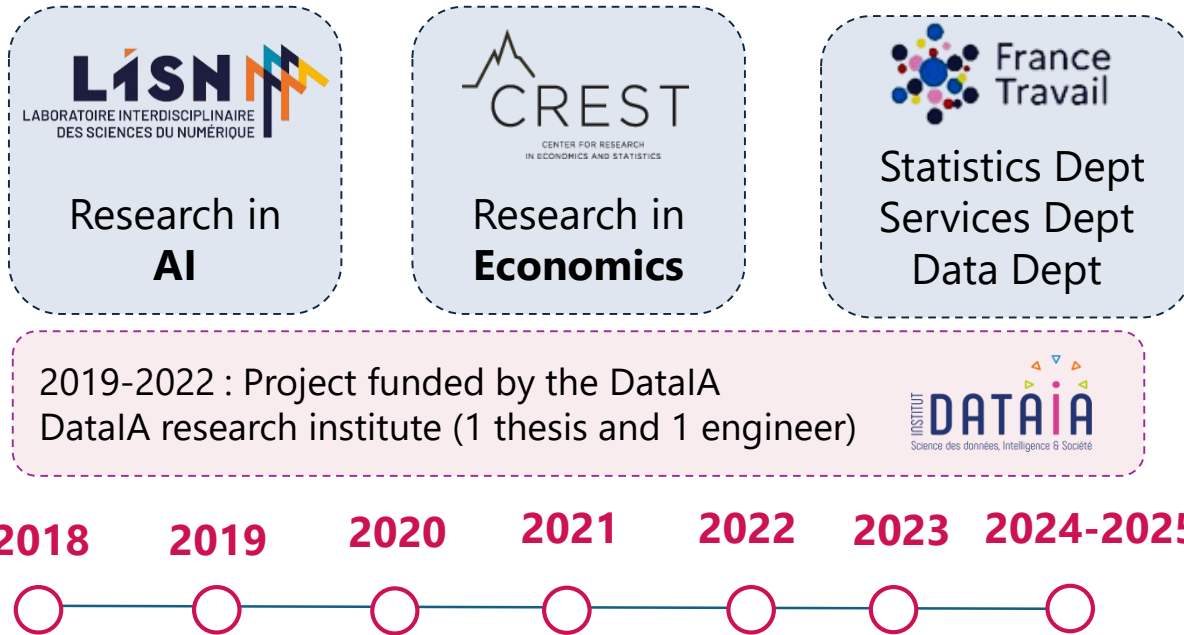
Strong impact on vacancies and permanent hires

- **But which service is responsible for this effect?**
- A closer look at the results reveals that the key factor is the existence of a **pre-screening service**
- Employers are often reluctant to post job vacancies because they fear being overwhelmed by a flood of applications
- Providing such pre-screening service allows them to post vacancies while avoiding this costly influx



INNOVATE: Build a Recommender System

A long-standing collaboration between various stakeholders:



- Late 2018: kick-off meeting
- Work on FT data
- Focus groups
- 2 Beta-tests with 100k jobseekers
- Large scale experiment
- Algorithm development

- A simple Idea:
 - Use the latest advances in AI to improve labor market matching
 - Use the **very rich data** available at the PES to **predict** the vacancies on which jobseekers have been hired
 - Use the prediction function to identify for each JS the vacancies where they have **the largest chances to be hired**
- **Use beta test** to assess how suitable the recommendations are
- **Improve and re-test**
- **Test at scale** the use of the RS in the French Labor Market

A learning cycle based on series of beta-test

Many possible RS

Criterion: The “In House” RS used at the PES – identify job offers satisfying jobseekers' search criteria. **This is our reference**, but it identifies *“a job you might like”*

Vadore: Our state of the art “AI powered” RS identifying vacancies with high hiring probability. **This is our Innovation**, but it identifies *“a job you might get”*

→ However, each capture some, but not all, of the jobseeker's motivations: **they might be combined**

We conducted a **series of beta tests** to test this idea and improve the algorithm

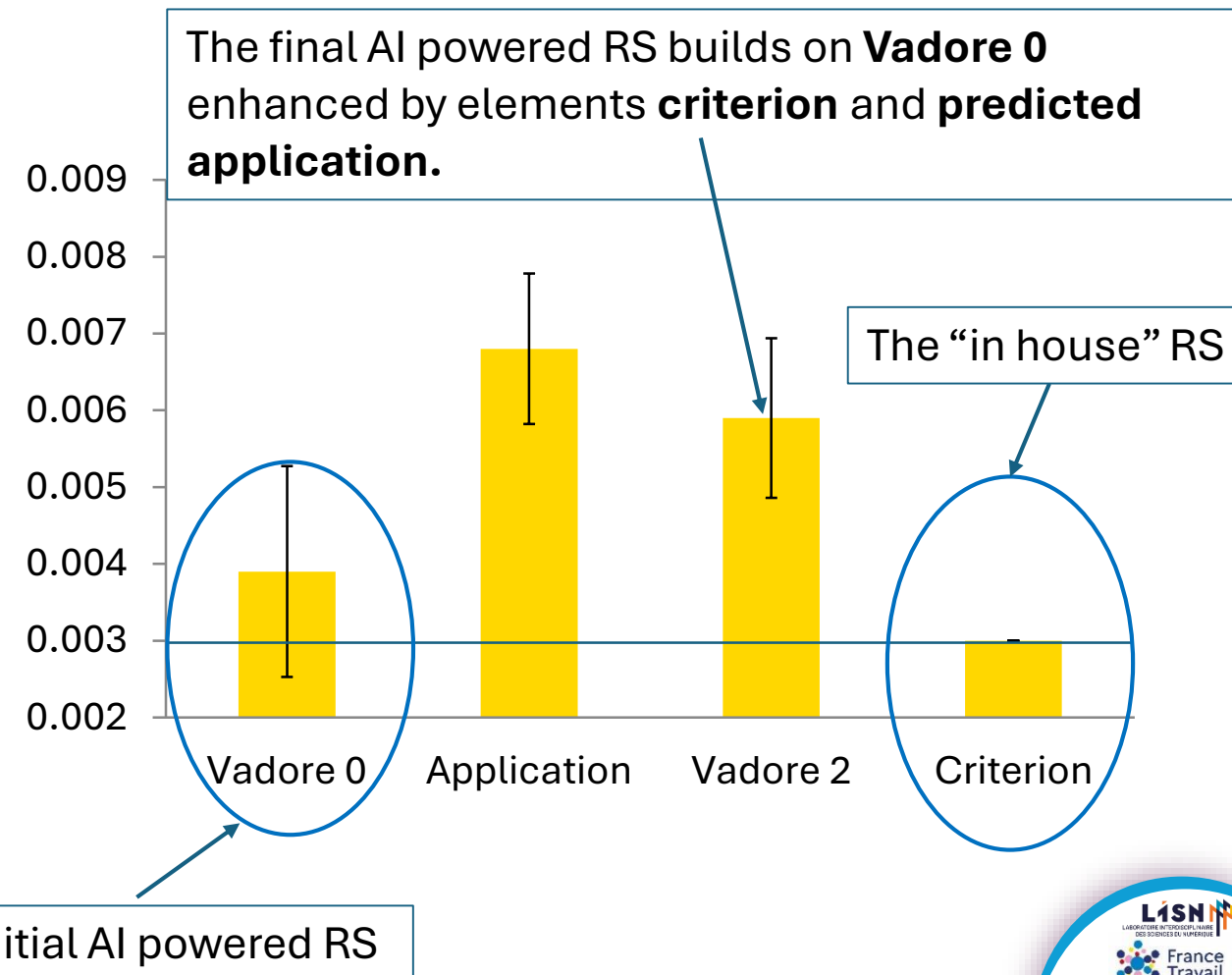
We randomly exposed jobseekers to vacancies from different and evolving versions of the RS, gradually improving them.

The **improvements were spectacular**, more than doubling the application rate

Results

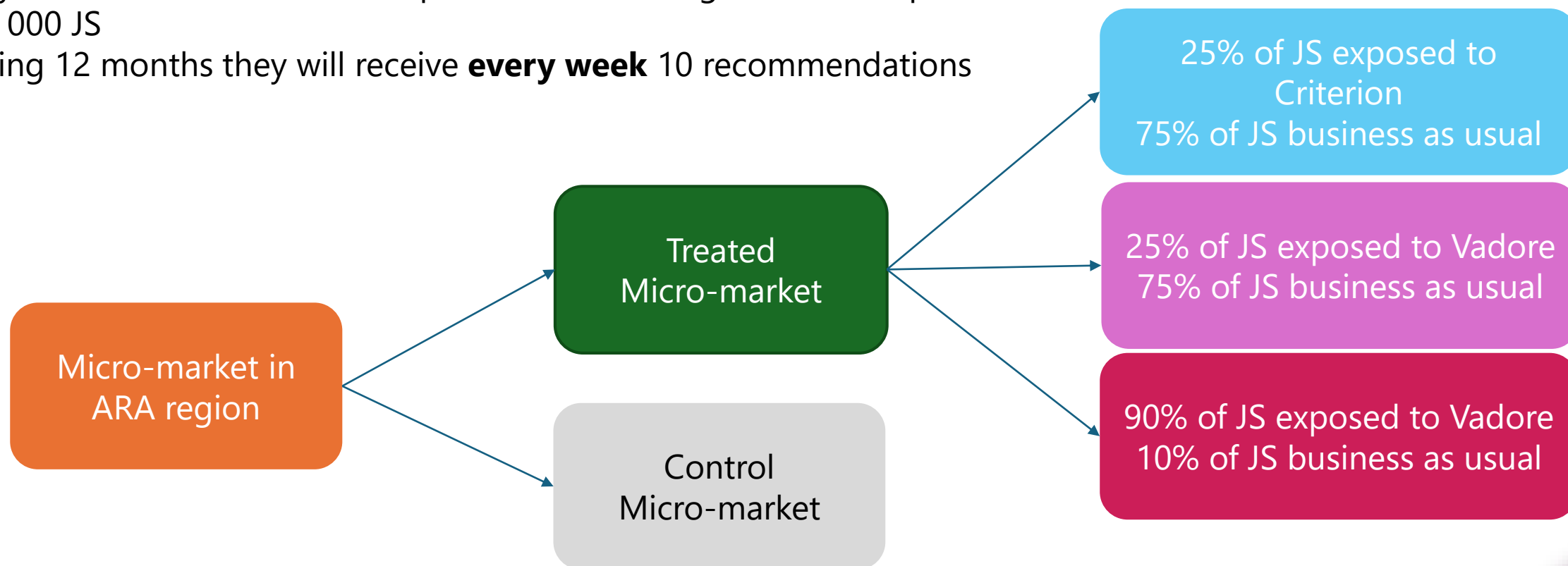
Average number of applications on recommendations

- Clear differences between RS
 - **Criterion based** has the worst performance
 - But **Vadore0** does only slightly better (ns)
 - The new algorithms perform far better
 - **Application** has the largest score
 - Just below is **Vadore 2**
- This demonstrates that
 - Questioning how RS **align** with jobseekers' objective
 - Adjusting RS to account for this' objective
 - And measuring the performance of different versions
- Can lead to substantial improvements in the AI matching tools.
- **This is a key take away**



Vadore, JS component: experimental design to assess impact

We just launched an “at scale experiment” in Auvergne-Rhône-Alpes
500 000 JS
During 12 months they will receive **every week** 10 recommendations



The intervention



Target: all JSs stock+inflow (300k+300k) in the ARA region

- Approximately 86,250 receive **Vadore** recommendations
- Approximately 18,750 receive **Criterion** recommendations.
- Approximately 195,000 do not receive mail (**control groups**)

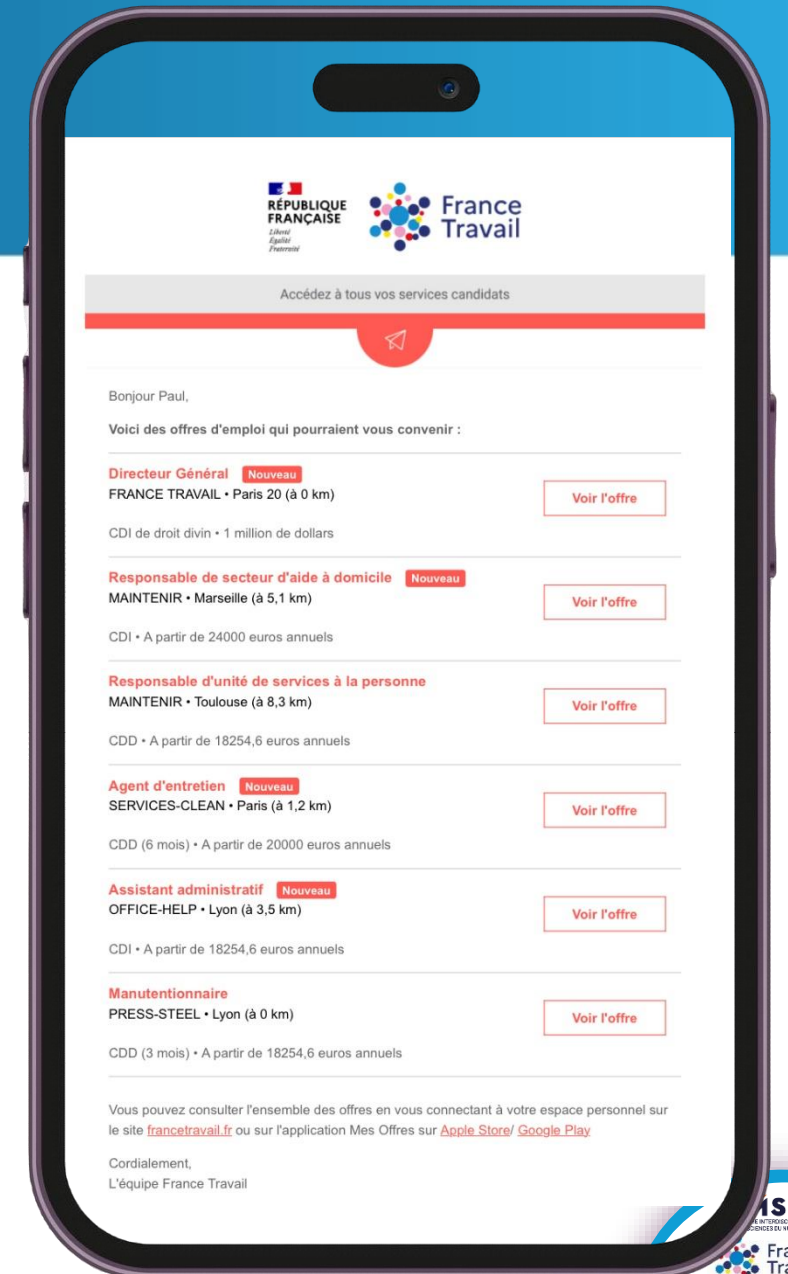
→ Approximately 105,000 e-mails are sent each week.



Treatment groups are set up on the basis of micro-markets (employment area x profession) to enable the best possible extrapolation of the results obtained.



The 10 current best offers according to Vadore or Criterion are shown to the Treated JS



Early results on applications (later will come the key hiring results)

LARGE SCALE
RCT
FEB 2025

Application rates on “Vadore” recommendations are much higher than on “Criterion”-based recommendations.

→ Vadore job offers are unambiguously more appealing.

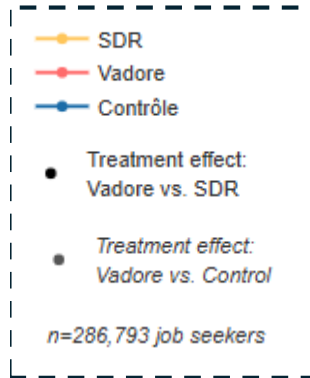
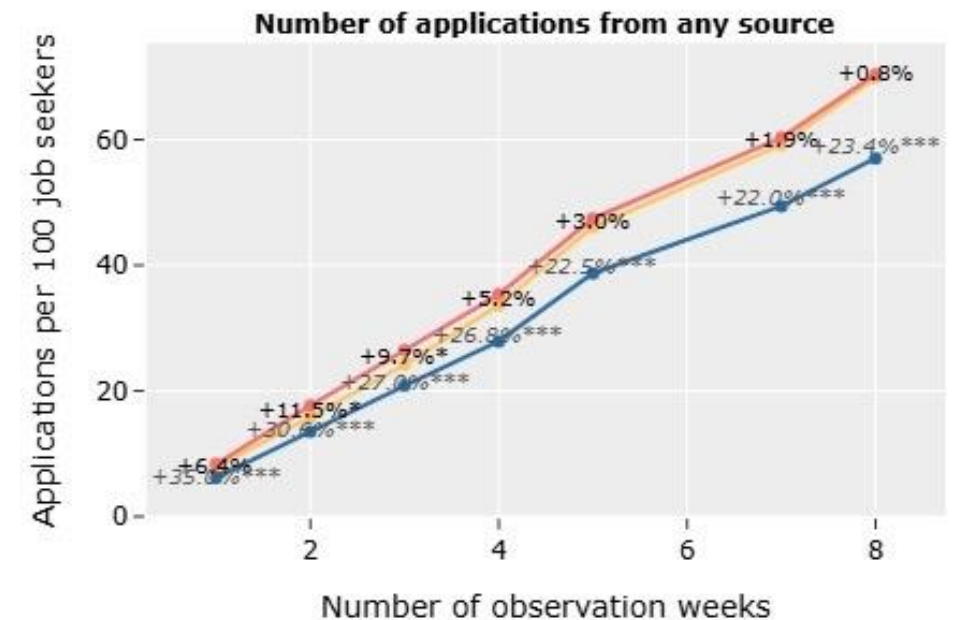
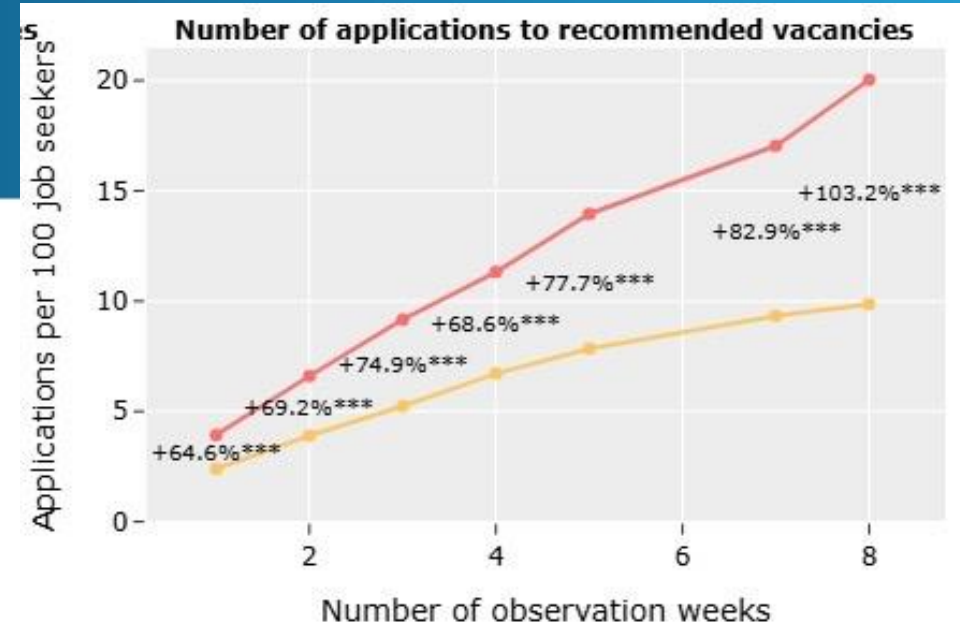
The application rate in the control group is far lower than that in groups with recommendations

→ This means that sending a weekly email with recommendations boosts application behavior.

The previous differences between Vadore and Criteria no longer appears

→ Vadore recommendations partially replace the job offers jobseekers would have applied to on their own.

→ Compared to Criterion, Vadore JS should have a **“better”** pool of applications



Conclusion: Rigorous evaluations can serve multiple purposes

- They can shed light on the effectiveness of existing programs and help answer difficult questions, such as public vs. private provision
- They can also **inform** strategic decisions — for example, should PES support firms in their recruitment rather than jobseekers?
- They can **reveal** important mechanisms that affect program effectiveness, such as the existence of spillover effects
- Finally, they are a key component in the development and implementation of **innovations**.



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