Can job search assistance improve the labour market integration of refugees? Evidence from a field experiment[*]

Michele Battisti[†]   Yvonne Giesing[‡]   Nadzeya Laurentsyeva[§]

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Abstract

We conducted a field experiment to evaluate the impact of job search assistance on the employment of recently arrived refugees in Germany. The treatment group received job-matching support: an NGO identified suitable vacancies and sent the refugees' CVs to employers. Six months after the start of the treatment, we find no evidence for positive treatment effects on employment. However, after twelve months, we detect positive treatment effects: marginally significant for the full sample and larger in magnitude and significant for lower educated refugees and those who have not yet received a refugee status. These individuals face higher uncertainty about their residence status, they do not search effectively, lack access to alternative support programmes and may be disregarded by employers due to perceived higher hiring costs. Our results suggest that personalised job search assistance can improve labour market integration of these refugee groups by alleviating labour market frictions.

JEL classification: F22, J61, J68

Keywords: Refugees, labour market integration, job search assistance, field experiment

1 Introduction

Several European countries faced large inflows of asylum seekers between 2014 and 2017. During this period, almost 1.5 million individuals applied for asylum in Germany. Throughout 2014-18, Germany issued almost 950,000 positive decisions on asylum claims (data from Eurostat). At least in the short and medium term, the recognised refugees are likely to remain in Germany. Despite migrating for non-economic reasons, many of them intend to work. The labour market integration of refugees is crucial for their own well-being. It also affects public finances and shapes the public view on refugee migration, which in turn influences migration policy at large. According to the German Federal Employment Agency, as of December 2018, about 456,000 refugees and asylum seekers were registered with the Public Employment Services (PES) as job-seekers and 175,000 among them were classified as unemployed.[1] A growing number of academic studies emphasise that the labour market integration of refugees is more challenging than that of unemployed natives or of other immigrants.[2] Refugees often have to comply with additional legal requirements and restrictions in the host countries. In addition, they differ from other immigrant groups in terms of background characteristics and life experiences, which can partly explain refugees' inferior labour market outcomes, as discussed in Keller (2016). However, as suggested by Dustmann et al. (2016), specific policies have the potential to accelerate the labour market integration of refugees.

While language and professional skills certainly matter for the employment of refugees, labour market frictions, such as a lack of information about host-country labour market, limited social networks, uncertainty concerning asylum or residence status, and legal barriers may create additional obstacles for refugees. Similarly, employers who could potentially benefit from hiring a refugee may be discouraged by a lack of information and high perceived hiring costs. To what extent do these frictions affect the chance of job-seeking refugees and potential employers to form successful matches? In particular, can a simple and inexpensive job search assistance programme ease these frictions and increase employment rates?

To address these questions, we set up a Randomised Controlled Trial (RCT) that allows us to estimate the causal effect of easing matching frictions on labour market outcomes of refugees and asylum seekers in Munich.[3] The participants of our study arrived in Germany between 2014 and 2017. We met the participants during regular job-counselling sessions of a Munich-based NGO, which provides job search support for refugees. Over the period May 2016-September 2017, we interviewed over 400 job-seeking refugees in person. All participants of the job-counselling sessions received a CV in German and basic job search information. In a second step, we randomly allocated each participant to either the treatment or the control group. Those who were part of the treatment group benefitted from the NGO's job-matching services. The CV profiles of the participants in the treatment group were added to a database, which the NGO's employees use for matching with potential employers. Once the NGO identified a potential match between a job-seeker and a vacancy, the NGO (with the consent of the job-seeker) forwarded his or her CV to the employer. This means that the treatment could reduce the matching frictions between job-seeking refugees and potential employers, without affecting the underlying skills of the former.

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[1]Other registered job-seekers either attended full-time integration classes, took part in activation measures or worked part-time (Bundesagentur für Arbeit 2018).

[2]Among others, see Brücker et al. (2016), Chiswick and Miller (1994), Cortes (2004), Constant and Zimmermann (2005), Jaeger (2006), Aydemir (2011) Dustmann et al. (2016), Fasani et al. (2018), and Ruiz and Vargas-Silva (2018).

[3]Our sample includes individuals whose asylum application has been approved (so they have the status of refugees), as well as those who are still waiting for a decision and those who have been already rejected but cannot be deported and thus received a tolerated status ("Duldung"). This means that no single category will precisely characterise our sample. For simplicity, in the rest of the text, we will refer to "refugees" to denote all three groups, unless a distinction is necessary.

The treatment effects we estimate are based on 298 follow-up surveys conducted after six months and 195 follow-up surveys conducted twelve months after the initial job-counselling sessions. For the full sample, the estimated treatment effects at the time of the first follow-up survey are relatively small. With our data, we do not have sufficient statistical power to reach a clear conclusion about the effect of the job-matching intervention after six months. However, we find larger albeit only marginally significant positive effects on employment after twelve months. We then investigate heterogeneity of the effects by education and by legal status, after having observed that the level of matching frictions varies along these two dimensions. We find that the positive effects of the intervention prevail among refugees who face more difficulties accessing the German labour market, i.e. those with lower levels of education and those facing uncertainty about their asylum status. Our data does not support the view that lower search efforts among these individuals drive the results. Rather, job-seekers with these characteristics have a higher need for the job search assistance offered by the NGO, as they have limited access to other providers of similar services and may not search effectively on their own. In addition, potential employers may disregard their applications due to perceived higher hiring costs. In this case, firms that receive a CV from the NGO can get encouraged to hire counting on the NGO's support.

Our project relates to the literature on the economic integration of refugees. Researchers have identified a number of important factors that may affect refugees' integration: initial conditions upon arrival (Braun and Dwenger 2017), expected duration of stay (Adda et al. 2014; Dustmann and Görlach 2016)[4], legal status (Devillanova et al. 2018), and length of the asylum process (Hainmueller et al. 2016). A few studies evaluate specific integration policies aimed at refugees. For instance, Clausen et al. (2009) analyse the effect of different integration policies on the job search duration for refugees and family reunification migrants, using administrative data from Denmark. They find wage subsidies to be an effective policy tool to integrate newly arrived refugees into the labour market. Rosholm and Vejlin (2010) also use Danish data, and look at how incentives influence the extent to which refugees take up work. They find that lowering income transfers for refugees increases their labour force participation. Lochmann et al. (2019) find large effects of language training on labour force participation in France using a regression discontinuity design. Andersson Joona et al. (2015) evaluate a Swedish labour market reform aimed at supporting refugees in finding employment faster using a difference-in-difference design. They do not find any significant short-term effects of increased support by the public employment services. However, analysing outcomes after two and three years, Andersson Joona et al. (2016) find a positive impact on both employment and wages.

Our work also relates to the larger literature on the effects of active labour market programmes aimed at immigrants and at unemployed individuals overall. Exploiting a cut-off eligibility rule and using Finnish data, Sarvimäki and Hämäläinen (2016) find that restructuring training for unemployed immigrants can substantially increase their long-term earnings. Similarly, Åslund and Johansson (2011) investigate the effects of a workplace introduction programme targeting disadvantaged groups of immigrants in Sweden, and find it to be effective in transitioning individuals to schemes that lead to larger employment probabilities. Using an RCT approach, Maibom et al. (2017) find that individual meetings with case workers improve future employment outcomes of unemployed Danish workers. Manoli et al. (2018) evaluate the long-term effects of a job search assistance programme for the unemployed in Nevada. They find that monitoring of search effort and personalised job-counselling lead to long-term employment and

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[4]While looking at all immigrants, these papers highlight a mechanism that is very relevant for refugees as well.

earnings gains. Belot et al. (2018) evaluate an online tool to improve the job search of unemployed individuals in Edinburgh. The tool significantly increased the number of job interviews, especially for participants who otherwise searched narrowly and had been unemployed for a few months. Abel et al. (2018) estimate the effects of plan-making on job search behaviour and employment among unemployed youth. The study shows that, beyond the time allocated to job search, efficiency and effectiveness of search activities is important. Butschek and Walter (2014) present a meta-analysis of a large number of studies focused on evaluating the impact of active labour market programmes for the integration of immigrants across European countries, including job search assistance. Their results indicate wage subsidies to be the most effective policy to foster employment. Card et al. (2018) also provide a large meta-study on evaluations of active labour market programmes. Their results show that job search assistance programmes can be particularly effective for disadvantaged job-seekers. While not targeted at refugees, a number of the above studies suggests that job-matching services add value as they help to identify potential employers and make it easier to approach them. This is particularly relevant for individuals who are likely to not search effectively on their own. However, it is not obvious that findings from studies on native unemployed or immigrants in general can provide a useful benchmarks for refugees. Unemployed natives and other immigrants often have more experience in the local labour market and do not face many of the disadvantages that hinder employment of refugees. Furthermore, certain characteristics of these individuals (some of which may have contributed to their unemployment) might not be present to the same extent among refugees.

The contribution of this paper to the existing literature is threefold. First, we provide a rigorous evaluation of a job search assistance service for refugees through an RCT. To the best of our knowledge, our paper is the first to use an RCT for the evaluation of a labour market programme that specifically targets refugees. Using a clean identification strategy is important because unobservable characteristics are likely to influence the decision to contact service providers and at the same time may affect labour market outcomes. We show that lower educated refugees and those facing uncertainty regarding their legal status experience particular difficulties in their job search process and that in certain cases a job-matching service can significantly increase their employment. This suggests that policies targeted at facilitating labour market entry may be effective also for refugees. Second, we present details on what our treatment has entailed in practice, which allows us to better describe the mechanisms at work and derive precise policy implications. Third, we build our own panel data set and present descriptive statistics on recently arrived refugees and their dynamic integration outcomes. Between 2014 and 2017, Germany became one of the largest refugee-receiving countries in the developed world. We thus study a relevant case of refugee integration. We look at labour market outcomes, which are important both in their own right, and indirectly through their effects on political outcomes (Dustmann et al. 2016; Edo et al. 2019).

2 Institutional setting

This section provides a brief overview of the institutional and legal framework that regulates the labour market access of refugees and asylum seekers in Germany. During the asylum process, many asylum seekers (with the exception of those coming from "safe countries of origin") have labour market access but are subject to several restrictions. Since 2014, asylum seekers are allowed to start working three months after their arrival in Germany. Three months is the typical length of stay in the initial reception centres in

the federal state to which they were allocated by a distribution rule ("Königsteiner Schlüssel" in German). After three months, they move into a new accommodation, so-called community accommodation, which is located in the same state but might be in a different municipality.[5] Afterwards, asylum seekers register with their new municipality and are eligible to receive a work permit. An asylum seeker can receive an actual work permit if he or she receives a job offer from a German employer and if this job offer is approved by the Foreigners Office. The approval is requested by the refugee and takes on average two weeks. The Foreigners Office checks that an adequate wage is paid ("salary review") and that there is no EU citizen that could be hired instead ("priority review"). An issued work permit is valid for a specific employment only and terminates with a job separation. The priority review and the prohibition to work for temporary employment agencies no longer apply to asylum seekers who have been in Germany for more than 15 months. Whereas some of the above restrictions were lifted for all asylum seekers in many German municipalities in 2016, in Munich all restrictions stayed in place.

The legal status is likely to influence expectations of both refugees and potential employers and, thereby, labour market integration of the former. There are three possible outcomes of an asylum application. The applicant may be officially recognised as in need of asylum, either under the Geneva convention or the subsidiary protection regime. Alternatively, the application may be rejected but fall under the national ban on deportations (i.e. an individual is granted a "tolerated' status" - *"Duldung"* in German). Finally, the claim may be rejected and the applicant may face deportation. Recognised refugees have unlimited access to the labour market and are treated like German nationals in terms of employment laws.[6] Individuals granted a "tolerated" status receive a temporary permission to stay in Germany and the duration varies from case to case, typically between one and six months. Individuals under this legal status are eligible to obtain a work permit and face the same restrictions as asylum seekers. Finally, rejected asylum seekers who do not obtain the temporary permission status lose their right to work and face potential deportation. In 2015-2017, the asylum process took about seven months on average, with significant variation depending on country of origin and time of arrival.[7]

3 Experimental setup

We conduct a field experiment to evaluate the role of matching frictions for the employment of refugees. Our experimental design was approved by the Ethics commission of the Economics faculty at the University of Munich. We also uploaded the pre-analysis to the American Economic Association's registry for RCTs (AEARCTR-0001799) in November 2016, before we conducted any evaluation of the results. The pre-analysis plan is part of the Online Appendix. The experiment involved close cooperation with a Munich-based NGO, which offered the job search assistance we evaluate. The NGO was founded in 2015 and at the time of our intervention counted six employees and about 20 part-time volunteers. It has been mainly financed through donations, and in 2016-2018 had an annual budget of around 50,000 Euro. As one of its main activities, the NGO has conducted weekly job-counselling sessions in Munich to support job-seeking refugees with CV preparation and to advise them on basic legal and cultural speci-

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[5]Due to space constraints, some asylum seekers stay in the initial reception centres for up to six months and during this time they are not allowed to take up employment.

[6]In 2014-2017, about 68 percent of asylum applicants were recognised. Recognition rates vary by country of citizenship, from less than seven percent for Pakistan to 98 percent for Syrian nationals (Eurostat data).

[7]Much faster for Syrians (four months on average), much slower for nationals of Afghanistan (14 months), Pakistan and Iran (over 15 months). See the (AIDA Country Report for Germany). Procedures accelerated between 2014 and 2017.

ficities of the German labour market. In addition, the NGO has organised a number of support activities, including CV photo-shoots, computer classes, small-scale mentoring classes, and social activities. The NGO has established a network of local partners including the Munich Public Employment Agency and its Job Centre, the Chamber of Commerce, and other refugee initiatives. Through its network, as well as using direct online search, the NGO has received information about open vacancies. During the time of the experiment, our research group participated in all regular job-counselling sessions of the NGO and organised (on behalf of the NGO) additional sessions at different locations in the Munich region.

The participants of our experiment were refugees who had recently arrived in Germany, were looking for employment, and voluntarily came to one of the NGO's job-counselling sessions.[8] All participants had to be eligible to obtain a work permit.[9] The experiment included participants with different legal statuses: asylum seekers, recognised refugees, and refugees with a "tolerated" status. Participants had to be able to communicate in a language spoken by the members of the NGO or our research team. These languages included Arabic, Dari, English, Farsi, French, German, Italian, Kurdish and Russian and covered around 98 percent of the refugees that came to job-counselling sessions. Finally, participants had to be at least 18 years of age.[10] These restrictions, together with the fact that participants voluntarily took part in the sessions and were willing to enter the German labour market, imply that our sample is not likely to be representative of the refugee population as a whole. We believe, however, that this is the relevant population for the evaluation of a job search assistance program, given that all programmes of this type are targeted to individuals who seek employment and can obtain a work permit.

Our experimental setup comprises three stages: the initial job-counselling session, the treatment stage, and the follow-up stage. During the first stage, together with the NGO, we interviewed the participants to collect the information for CVs and to conduct baseline surveys. The treatment stage started closely after the initial meeting: after each job-counselling session we randomised new participants into two groups of the same size. Half of participants became eligible to receive additional job-matching services. The first follow-up survey took place six months after the initial job-counselling session.[11] The second follow-up survey started around twelve months after the initial meeting. For each participant, the experiment lasted for about one year, starting from the day of the initial job-counselling session with the NGO and ending on the day the second follow up survey was conducted. Our overall data collection period ran from May 2016 - the month of the first experimental job-counselling session - to September 2018 - the month when the participants who entered the experiment in September 2017 were interviewed for the second time. Figure 1 provides an overview of the stages of the experiment. The first stage is illustrated in green, the second stage in red and the third stage in blue. Below, we describe in detail the three stages of the experiment. In Appendix B we discuss several limitations of our approach and possible concerns to the study's internal and external validity.

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[8]To comply with Bavarian data protection laws, every participant had to sign a data protection agreement (exact text can be accessed in the Online Appendix).

[9]As discussed above, asylum seekers usually can obtain a work permit three months after arrival, except individuals from "safe origin countries" (Bosnia-Herzegovina, Macedonia, Serbia, Montenegro, Albania, Kosovo, Ghana, Senegal). Asylum seekers from these countries were therefore excluded from the experiment.

[10]The NGO does not include underage refugees in its target group. Additionally, the age restriction is necessary for us to obtain the participation consent. Refugees below the age of 18 cannot legally sign the data protection agreement.

[11]The exact timing for each participant depended on the date of the initial meeting, hence all first follow-up surveys were conducted between November 2016 and March 2018.

Figure 1: **Timeline of the experiment**
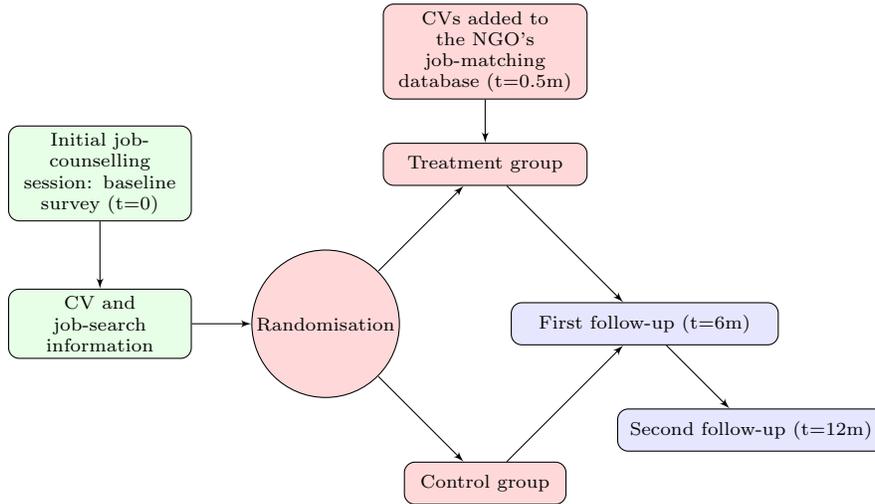
3.1   First stage: initial job-counselling sessions

The first stage of the experiment consisted of job-counselling sessions, jointly organised by the NGO and our research team. The regular sessions took place once a week in the centre of Munich. In addition, we organised several sessions in a support centre for refugees and in two big refugee accommodation facilities in Munich. The NGO advertised the sessions through social workers, Facebook, word of mouth, and partner organisations. The main incentives for refugees to participate in these sessions were receiving a CV in German (which they could then forward to employers or to the Job Centre), as well as acquiring basic information on the job search process. During the job-counselling sessions, the interviewers conducted one-to-one interviews with refugees to collect the information needed to prepare their CVs. After collecting the CV data, the interviewers asked the questions of the baseline survey on search behaviour, salary expectations, job preferences and German language skills.[12]   CVs were sent out to all participants by email two weeks after their session.[13]   The email included a message encouraging participants to search for a job on their own and to not rely on the NGO only, and included practical advice on how to search for a job in Germany. The complete email text can be found in the Online Appendix.

3.2   Second stage: treatment

After the initial meeting, we randomly assigned half of the participants to the treatment group. We added the CVs of the treatment group to the NGO's database for job-matching. Therefore, the employees of the NGO working on job-matching only had access to the information concerning individuals in the treatment group. The NGO's employees used this database to search for suitable candidates every time a new job vacancy arrived. The NGO usually found out about new vacancies through its network of social partners, the Munich public employment services, and the Chamber of Commerce. In addition to

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[12]The complete baseline survey can be found in our Online Appendix.

[13]If participants did not have an email address, the NGO sent it to them via WhatsApp® or through the responsible social worker.

the available offers, the NGO employees specifically looked for other vacancies (online and through their personal networks) that could fit the candidates in the job-matching database. Once the NGO identified a potential match, it informed the candidate about the vacancy and, upon agreement, sent the CV to the employer. While this intervention reduced the matching frictions between employers and job-seekers, it did not affect the skill set of participants. We believe that this allows us to interpret our results as driven by changes in matching frictions, not as the effect of changes in underlying skills.

To determine which candidates are allocated to the treatment and the control group, we randomised at the session level, so as to have the same number of participants in the treatment and in the control group for each session.[14] Since individuals in the same session were more likely to have similar characteristics, we believe that this procedure provides a useful (albeit weak) stratification.[15] We conducted our randomisation every two weeks, so that new profiles were added to the matching database twice a month. We thereby guaranteed a stable flow for the NGO and ensured that the treatment started at about the same time after the initial meeting with the participants.[16] Tables A.1 and A.2 in the Appendix present a balance test of differences in personal characteristics and job search behaviour between treatment and control groups. The tables provide evidence that the randomisation worked reasonably well given our sample size and created two comparable groups.[17] For each participant, the treatment lasts one year from the initial job-counselling session. Once the second follow-up survey was completed, the profiles of the control-group participants were also added to the job-matching database. During the treatment stage, participants in both treatment and control group had full access to all other NGO services and activities. It is important to note that participants did not know whether they are in the treatment or the control group. The email they received with their CV and some basic job search information only mentioned that there is a possibility that the NGO might contact them again about suitable vacancies. Therefore, the participants could not adapt their behaviour based on their assignment.

3.3 Third stage: follow-up surveys

We tried to contact all participants from the treatment and control groups six months and one year after the initial job-counselling session. The first follow-up was conducted by phone between November 2016 and March 2018. The second follow-up survey was conducted by phone until November 2018. We asked participants about their labour market experiences in Germany, their job search behaviour and challenges they face. Participants who found a job were also asked specific questions about that job.[18]

4 Descriptive statistics

This section presents descriptive statistics on participants' personal characteristics, as well as on their job search behaviour and expectations. The data were collected during the initial job-counselling sessions. Our baseline sample includes 420 individuals, who were randomised into a treatment and a control group.

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[14]Participants were ranked by a random number generator and the upper 50 percent of participants were allocated to the treatment. If the number of candidates was odd, the additional person was then randomly allocated.

[15]People who attended the regular job-counselling sessions in the centre of Munich were likely to differ from those who got interviewed directly in their accommodation facilities, while participants from different accommodations might have had access to varying degrees of support services through local social workers and NGOs.

[16]On average, every week we met with 15 new job-seekers during the job-counselling sessions.

[17]One measure out of 27 is significantly different between the groups, which is no more than expected under randomness.

[18]The text of the follow-up questionnaires can be found in the Online Appendix.

4.1 Personal characteristics at baseline

Table 1 summarises the main characteristics of participants: gender, age, family status, months spent in Germany, education, country of origin,[19] knowledge of German and English, and status of the asylum application. Most participants are young unmarried men without children. The majority arrived in 2015 and, on average, have been in Germany for ten months at baseline, i.e. at the time of the initial job-counselling session. Around 70 percent of participants have relatively low levels of educational attainment, i.e. upper secondary education at most.[20] At the time of the first meeting with the NGO, 16 percent of participants could speak German at a level of B1 or higher.[21] Only 17 percent have completed their asylum procedure with a positive decision.

Table 1: **Descriptive statistics at baseline, CV data**

	Mean	SD	N
Treatment	0.502	0.501	420
Female	0.057	0.232	420
Age	27.67	7.377	408
Married	0.233	0.423	416
Have children	0.245	0.431	396
Months in Germany	10.13	8.785	401
Lower educated	0.710	0.455	420
Afghanistan	0.200	0.400	420
Nigeria	0.250	0.434	420
Syria	0.207	0.406	420
Rest Africa	0.205	0.404	420
Rest Asia	0.138	0.345	420
German >= B1	0.155	0.362	420
English >= B1	0.455	0.499	420
Recognised	0.173	0.379	415

Note: The table presents mean, standard deviation (SD) and the number of valid responses (N) for the baseline characteristics of 420 experiment participants. For some variables, the number of observations is less than 420 due to missing responses. Definition of some variables: *Treatment* - the share of participants in the treatment group; *Months in Germany* - stay in Germany (months) on the day of the job-counselling session; *Lower educated* - the share of participants with no schooling, primary, lower or upper secondary education; *Afghanistan, Nigeria, Syria, Rest Africa and Rest Asia* denote the origin of participants; *German/ English >= B1* denote the share of participants with at least intermediate language knowledge; *Recognised* denotes the share of participants who at the time of the session had received the refugee status.

Regarding the national composition, two thirds of the experiment's participants come from three countries of origin: Nigeria, Syria, and Afghanistan. In our sample, we have relatively fewer individuals from Syria and more from Nigeria compared to the average shares for Germany: first, fewer Syrians came to the NGO's sessions as they could have had wide access to alternative public and private support services; second, Bavaria hosted more asylum seekers from Nigeria than other German states due to the location of specialised centres to process asylum applications. As there are substantial differences in characteristics depending on the origin, we show descriptive statistics by region of origin in the Online Appendix in Table Online.A.1.

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[19]For the countries where the sample is larger, i.e. Afghanistan, Nigeria and Syria, we look at individual countries. For the others, we group them into regions (Other African and other Asian countries). Other African countries include: Congo, Eritrea, Mali, Sierra Leone, Somalia, Tanzania and Uganda. Other Asian countries include China, Iran, Iraq, Jordan, Myanmar, Pakistan, Palestine, Turkey and the United Arab Emirates.

[20]The only representative dataset on the characteristics of recently arrived refugees in Germany was collected by IAB, BAMF and SOEP. Brücker et al. (2018) report on education levels, labour market history, expectations and integration of around 4,500 refugees in Germany. Compared to that survey (1st wave), the sample of job-seekers in our study is positively selected: the share of individuals between 18 and 65 years old with lower education is 78.3 percent (Brücker et al. 2018).

[21]B1 is a level of German in a European-wide classification system that describes an intermediate level that allows to understand the central points of texts and talks in normal language and to cope with everyday situations at work. It is the minimum language level that is required for most jobs.

4.2 Job search behaviour and expectations

In addition to collecting data for CVs, we asked participants several questions on their job search behaviour and job perspectives. We completed 396 baseline surveys.[22] Table 2 shows that around half of the survey respondents report to have already looked for work before attending the initial job-counselling session. Only 38 percent of those who had started the job search were registered with the Munich Public Employment Services (PES) at the day of the initial job-counselling session.

Table 2: **Job search behaviour at baseline, survey data**

|	Mean	SD	N
Started job search	0.534	0.499	393
Registered with PES	0.381	0.487	210
Minimum wage to accept an offer	1329.7	644.7	350
Work below minimum wage	0.549	0.498	390
Has original certificate	0.337	0.473	389
Contact with employer	0.237	0.426	396
Employed	0.096	0.295	396

Note: The table presents mean, standard deviation (SD) and the number of valid responses (N) for the job search behaviour of the respondents to the baseline survey. While 396 individuals completed the baseline survey, the number of observations is less than 396 for some variables due to missing responses. Definition of variables: *Started job search* - the share of respondents who had already started searching for a job prior to the initial job-counselling session; *Registered with PES* - the share of survey respondents (conditional on having started the job search) who had been already registered with the PES; *Minimum wage to accept an offer* - stated minimum wage to accept a job offer; *Work below minimum wage* - the share of survey respondents willing to work below the minimum wage; *Has original certificate* - the share of survey respondents who possess original certificates of their highest degree; *Contact with employer* - the share of survey respondents who had had at least one work-related contact with a German employer: a job interview, a job offer, or employment; *Employed* - the share of survey respondents who were employed (incl. full-time, part-time, internship, mini job) on the day of the survey.

Figure 2 shows the relative importance of different job search channels. Among participants who had already started their job search, the most common ways to search for a job are to ask friends (45 percent), to directly approach employers (39 percent) and to use the Internet for their job search (39 percent). Slightly fewer approach a social worker or a teacher for job search support. About 30 percent of respondents mention PES. There is large heterogeneity across countries of origin, as shown in Table Online.A.2 in the Online Appendix. For example, while 65 percent of Syrians use the Internet during their job search, only 18 percent of Afghans do. At the day of the initial job-counselling session, 24 percent of the survey's respondents had already been in contact with a German employer (for an interview, job offer or employment); only 10 percent of the respondents had already been employed (full-time, part-time, internship or a mini job). On average, the participants report that they would accept a job that pays at least 1,330 Euro per month (after tax). At the same time, 55 percent state to be willing to work for less than the minimum wage. Many participants report the unavailability of school, university or vocational certificates: 66 percent of individuals do not have the original certificate of their highest degree with them in Germany. The unavailability of original documents presents a challenge for further academic or professional careers of refugees. Figure 3 shows what refugees perceive as the major difficulties during their job search. Almost 40 percent of the respondents indicate that they do not know where to search for a job, which is the relevant difficulty for our experiment. This is the second largest difficulty after the language barrier (69 percent).

To summarise, the descriptive statistics from our baseline survey show that refugees perceive both missing skills, mainly language skills, and difficulties in their job search as obstacles to enter the labour

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[22]Participation in the baseline survey was not a prerequisite to participate in the experiment. We randomised over 420 participants who completed the CV information and tried to reach this sample during the follow-up surveys.

Figure 2: **Job search channels, baseline survey**
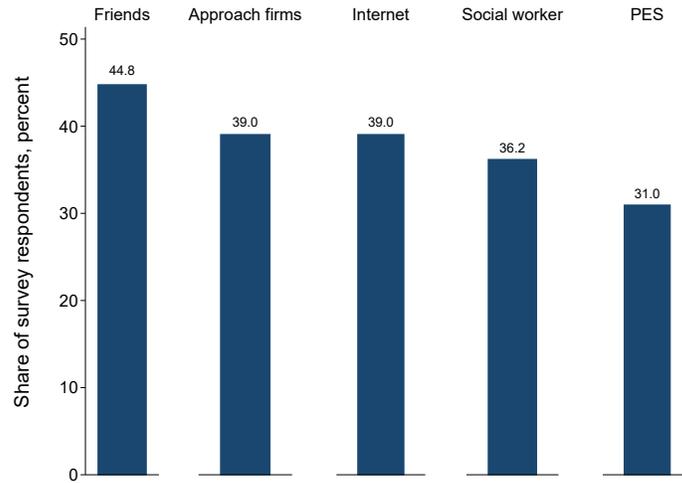
Note: The figure shows the shares of survey respondents (210 valid responses, the sample includes only refugees who have already started the job search) who report using the above job search channels. The respondents could choose several answers to the question: *How do you search for a job?* Bars correspond to the following answer options: *Friends* - Asking family and friends; *Approaching firms* - Directly approaching employers; *Internet* - on the Internet; *Social worker* - Asking a social worker or a teacher; *PES* - With the help of the public employment services.

Figure 3: **Difficulties during job search, baseline survey**
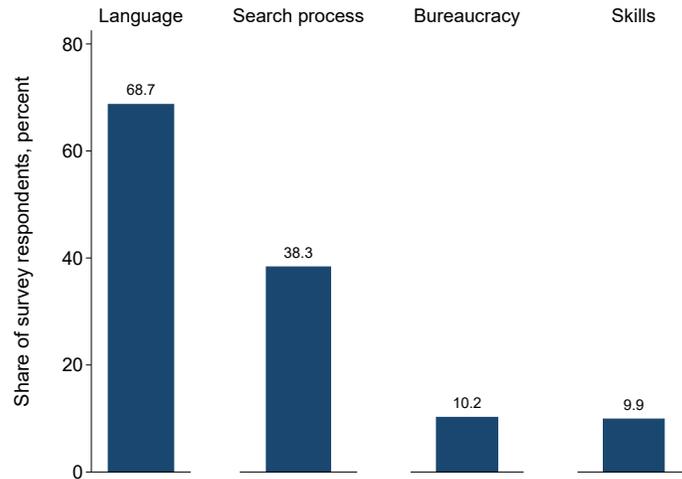
Note: The figure shows the shares of survey respondents (313 valid responses) who report to face the above difficulties during their job search. The respondents could choose several answers to the question: *Which difficulties do you face during your job search?* Bars correspond to the following answer options: *Language* - Language; *Search* - Do not know where to search or difficulty with a job application; *Skills* - Missing skills or No suitable job; *Bureaucracy* - Many rules.

market. We evaluate a programme that aims at alleviating the latter. In the next section, we investigate the effects of our intervention on participants' contacts with German employers and on their employment outcomes six and twelve months after the initial job-counselling session.

5   Results

We estimate treatment effects using the data from the first and second follow-up surveys, which we conducted from November 2016 to November 2018. Of the 420 participants at baseline, we could reach 298 participants (71 percent) for the first follow-up survey and 195 participants (46 percent) for the second follow-up survey. Figure B.1 in the Appendix shows differences in response rates among treatment and control groups. While treatment does not affect response rates after six months, we reached relatively fewer participants from the treatment group after twelve months. Response rates are 49.8 percent for the control group and 43.1 percent for the treatment group. The difference is marginally significant, and may be due to employed refugees being less likely to reply to the follow-up survey. This would bias our estimates towards zero. Table B.1 further examines whether observable characteristics predict response rates during the follow-up surveys. As education level and legal status are not correlated with attrition, we believe that our subsequent heterogeneity analysis across these characteristics is not affected by it. Concerning other possible covariates, after six months, we have slightly higher response rates for refugees from Nigeria and Syria. The pattern is similar in magnitude in the second follow-up survey, but no longer statistically significant. After twelve months, we have higher response rates for older refugees, which was not the case after six months. To conclude, there is no strong systematic relationship between refugees' observable characteristics and their response rates in the follow-up surveys.

5.1   Descriptive results from follow-up surveys

Figure 4 shows how the labour market outcomes of the experiment's participants evolve over time. The left panel reports the share of participants who have been in contact (i.e. interview, job offer, or employment) with a German employer. The right panel shows the average employment rate in our sample over time. For this descriptive exercise, we look at treatment and control groups together.

Refugees' likelihood to be in contact with an employer and employment increase over time. At baseline, 24 percent of participants report to have had a work-related contact with a German employer. This number rises to 41 percent after six months and to 55 percent after twelve months. Similarly, employment rises from below 10 percent at baseline to 31 percent after six months and 42 percent after twelve months. Only half of employed refugees in our sample have full-time positions. Furthermore, around half of those employed work in cleaning, personal care, or gastronomy. According to participants' responses, missing language skills and a lack of information about the application process continue to prevent a faster and more successful labour market integration (see Figure A.1 in the Appendix).

Figure 4: **Contact with employer and employment over time**
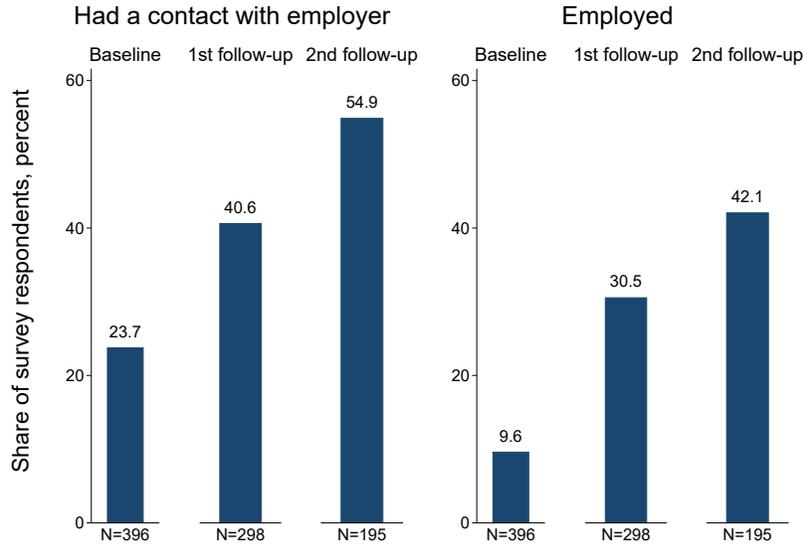
Note: The figure compares labour market outcomes of participants over time: the day of the baseline survey (N = 396), the day of the first follow-up (N = 298) and the day of the second follow-up (N=195). *Had a contact with employer* denotes the share of survey respondents who had had at least one work-related contact with a German employer: a job interview, job offer, or employment. *Employed* denotes the share of survey respondents who were employed at the day of the survey. The pattern holds when we restrict the sample to participants with completed second follow-up surveys.

5.2 Treatment effects

Tables 3-6 present estimated treatment effects for our main outcomes, i.e. contact with employer and employment, six months (first follow-up) and twelve months (second follow-up) after the initial job-counselling session. All tables have the same structure. Columns (1) and (2) show treatment effects for the full sample, Columns (3) and (4) for the sub-sample of participants who have not (yet) received the recognised refugee status, Columns (5) and (6) for the sub-sample of lower educated refugees. We include such heterogeneity analyses because the level of matching frictions may differ depending on the legal status and education of the experiment's participants. After recognition, a refugee faces no legal barriers to enter the labour market and has full access to PES and alternative support services of private providers. Recognised refugees also hold residency permits with longer validity, which on the one hand can increase their willingness to invest effort in job search, and on the other hand makes it less risky for firms to hire them. Education may play a role if, for example, there are more jobs available for lower educated refugees (among others, as they have fewer language requirements). Lower educated refugees are also likely to face higher frictions. Employers might find it hard to screen applications of lower educated refugees. In addition, according to our baseline survey, lower educated refugees search for a job less effectively: for instance, only 23 percent of lower educated refugees search for jobs online compared to 39 percent among higher educated refugees. Finally, because of language and other barriers, they are less likely to receive effective support by the PES. Therefore, they may differentially benefit from programmes such as the one evaluated in this paper.

In the tables below, Columns (1), (3) and (5) include no control variables. Columns (2), (4) and (6) include origin dummies (Afghanistan, Nigeria, Syria, rest Africa and rest Asia) and interviewer fixed effects. In an RCT, there is typically no need for control variables. Yet, we decided to show the estimations

including fixed effects for the following reasons. First, due to differences in response rates, origin region is not perfectly balanced between control and treatment (see Table B.1). Second, the assignment of participants to interviewers was not random, but based on their native language and working hours. Hence, it could happen that different interviewers reached participants with systematically different characteristics. In addition to standard (OLS) p-values, we report p-values based on randomisation inference in all tables. In randomised experiments it is more accurate to calculate exact p-values based on the randomisation itself instead of the OLS sampling strategy.[23] However, as observable characteristics of participants are not correlated with the treatment assignment, the two types of p-values are similar (Athey and Imbens 2017).

Tables 3 and 4 present treatment effects based on data from the first follow-up survey. After six months, treatment effects are either very close to zero thus suggesting no effect or too small in magnitude to be precisely estimated with our data. This holds for both outcomes: a work-related contact with a German employer and for employment, as well as for all samples we are looking at. While the actual treatment had started during those first six months, we do not have sufficient statistical power to detect any effect of job search assistance services in the short term. Conceivably, the time it takes the NGO to find a job match, the length of the hiring process or the initial lack of German language skills limit the possible effects of easing job matching frictions in the short run.

Table 3: **Contact with employer, first follow-up survey**

	(1) Full sample	(2) Full sample	(3) Unrecognised	(4) Unrecognised	(5) Lower	(6) Lower
Treatment	-0.015	-0.003	0.060	0.073	-0.003	-0.023
	(0.057)	(0.056)	(0.068)	(0.067)	(0.067)	(0.067)
P-value OLS	0.792	0.963	0.374	0.273	0.959	0.727
P-value RI	0.796	0.968	0.349	0.242	0.968	0.723
Observations	298	298	201	201	205	205
Fixed effects	No	Yes	No	Yes	No	Yes
Mean Y control	0.414	0.414	0.326	0.326	0.353	0.353
SD Y control	0.494	0.494	0.471	0.471	0.480	0.480

Note: First follow-up survey takes place about six months after the initial job-counselling session. Dependent variable: *Contact with employer* denotes any work-related contact with a German employer (i.e. for a job interview, job offer or employment). *Unrecognised* denotes participants who have not (yet) received the recognised refugee status at the time of the follow-up survey. *Lower* denotes lower educated participants, i.e. with no schooling, primary, lower or upper secondary education. Standard errors (OLS) in parentheses. We report two-sided p-values from OLS (P-value OLS) and p-values based on randomisation inference (P-value RI) stratified by the randomisation date. Fixed effects include origin (Syria, Afghanistan, Nigeria, rest Africa and Asia) and interviewer fixed effects. *Mean/SD Y control* denote mean/standard deviation of the dependent variable for participants in the control group. *** p<0.01, ** p<0.05, * p<0.1

Tables 5 and 6 present unconditional and conditional treatment effects estimated with the data from the second follow-up survey, which was conducted around twelve months after the initial job-counselling session. For work-related contact with a German employer, effects of the treatment are positive and larger in magnitude compared to the results after six months.[24] Yet, the results are significant (at the 10 percent level) only for the sub-sample of unrecognised refugees. Among this group, the treatment

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[23]When implementing the randomisation inference, we used the STATA package ritest from Heß (2017).

[24]One limitation of this outcome is that we managed to measure it only on the extensive margin. We cannot therefore distinguish *how many* work-related contacts participants actually had, which attenuates treatment effects.

Table 4: **Employment, first follow-up survey**

	(1) Full sample	(2) Full sample	(3) Unrecognised	(4) Unrecognised	(5) Lower	(6) Lower
Treatment	-0.050	-0.042	0.004	0.002	-0.022	-0.030
	(0.053)	(0.053)	(0.060)	(0.062)	(0.063)	(0.064)
P-value OLS	0.351	0.429	0.943	0.970	0.723	0.641
P-value RI	0.359	0.438	1.000	0.973	0.745	0.654
Observations	298	298	201	201	205	205
Fixed effects	No	Yes	No	Yes	No	Yes
Mean Y control	0.331	0.331	0.232	0.232	0.284	0.284
SD Y control	0.472	0.472	0.424	0.424	0.453	0.453

Note: First follow-up survey takes place about six months after the initial job-counselling session. Dependent variable: *Employed* denotes being employed (incl. full-time, part-time, internship, or a mini job) at the day of the follow-up survey. *Unrecognised* denotes participants who have not (yet) received the recognised refugee status at the time of the follow-up survey. *Lower* denotes lower educated participants, i.e. with no schooling, primary, lower or upper secondary education. Standard errors (OLS) in parentheses. We report two-sided p-values from OLS (P-value OLS) and p-values based on randomisation inference (P-value RI) stratified by the randomisation date. Fixed effects include origin (Syria, Afghanistan, Nigeria, rest Africa and Asia) and interviewer fixed effects. *Mean/SD Y control* denote mean and standard deviation of the dependent variable for participants in the control group. *** p<0.01, ** p<0.05, * p<0.1

increases the probability to have a work-related contact with an employer by 16 percentage points (the average for the control group is 40 percent). The treatment effects on employment are significant for the full sample once we control for origin and interviewer effects. Including controls slightly reduces the coefficient's standard error and increases its magnitude, but does not make it significantly different from the unconditional point estimate. We therefore conclude that for the full sample we find weak evidence of a positive treatment effect on employment: the job-matching treatment increases the probability of employment on average by twelve percentage points, which is around a third of the average employment rate in our sample.[25] For the sub-sample of unrecognised refugees, the treatment effect on employment is larger in magnitude and statistically significant at the five percent level. Specifications with and without fixed effects produce almost identical point estimates. At the time of the second follow-up survey, the probability to be employed in the treated group of this sub-sample is almost 20 percentage points larger than that in the control group, whose average employment rate is just 24 percent. As Table A.3 in the Appendix (Columns (3) and (4)) shows, we do not have the statistical power to detect a positive treatment effect on employment after twelve months for the sub-sample of recognised refugees. Treatment effects on employment are larger in magnitude (albeit to a smaller extent) for the sub-sample of lower educated refugees. After twelve months lower educated refugees in the treatment group are 15.6 percentage points (significant at 10 percent level) more likely to be employed than lower educated refugees in the control group. While the unconditional treatment effect of 12.6 percentage points is not statistically significant, the associated p-value is 0.131. To compare, there are zero treatment effects on the employment of higher educated refugees (Columns (5) and (6) of Table A.3) at the point of the second follow-up survey. Thus, the intervention is relatively more important for lower educated refugees and those who have not (yet) received the recognised refugee status. We elaborate on possible explanations in the following sub-section.

There are at least three possible reasons why we find stronger treatment effects after twelve months. First, it takes time to be matched to a suitable job vacancy by the NGO. The NGO becomes aware of

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[25]Tables Online.A.9 and Online.A.10 in the Appendix show that the results are robust to using a logit specification.

Table 5: **Contact with employer, second follow-up survey**

	(1) Full sample	(2) Full sample	(3) Unrecognised	(4) Unrecognised	(5) Lower	(6) Lower
Treatment	0.043	0.076	0.168*	0.164*	0.085	0.136
	(0.072)	(0.072)	(0.089)	(0.090)	(0.088)	(0.089)
P-value OLS	0.553	0.290	0.061	0.072	0.335	0.129
P-value RI	0.559	0.293	0.042	0.042	0.288	0.108
Observations	195	195	125	125	131	131
Fixed effects	No	Yes	No	Yes	No	Yes
Mean Y control	0.529	0.529	0.397	0.397	0.465	0.465
SD Y control	0.502	0.502	0.493	0.493	0.502	0.502

Note: Second follow-up survey takes place about twelve months after the initial job-counselling session. Dependent variable: *Contact with employer* denotes any work-related contact with a German employer (i.e. for a job interview, job offer or employment). *Unrecognised* denotes participants who have not (yet) received the recognised refugee status at the time of the follow-up survey. *Lower* denotes lower educated participants, i.e. with no schooling, primary, lower or upper secondary education. Standard errors (OLS) in parentheses. We report two-sided p-values from OLS (P-value OLS) and p-values based on randomisation inference (P-value RI) stratified by the randomisation date. Fixed effects include origin (Syria, Afghanistan, Nigeria, rest Africa and Asia) and interviewer fixed effects. *Mean/SD Y control* denote mean and standard deviation of the dependent variable for participants in the control group. *** p<0.01, ** p<0.05, * p<0.1

Table 6: **Employment, second follow-up survey**

	(1) Full sample	(2) Full sample	(3) Unrecognised	(4) Unrecognised	(5) Lower	(6) Lower
Treatment	0.077	0.118*	0.197**	0.195**	0.126	0.156*
	(0.071)	(0.069)	(0.083)	(0.083)	(0.085)	(0.084)
P-value OLS	0.280	0.091	0.019	0.020	0.141	0.065
P-value RI	0.282	0.094	0.014	0.009	0.131	0.062
Observations	195	195	125	125	131	131
Fixed effects	No	Yes	No	Yes	No	Yes
Mean Y control	0.385	0.385	0.238	0.238	0.324	0.324
SD Y control	0.489	0.489	0.429	0.429	0.471	0.471

Note: Second follow-up survey takes place about twelve months after the initial job-counselling session. Dependent variable: *Employed* denotes being employed (incl. full-time, part-time, internship, or a mini job) at the day of the follow-up survey. *Unrecognised* denotes participants who have not (yet) received the recognised refugee status at the time of the follow-up survey. *Lower* denotes lower educated participants, i.e. with no schooling, primary, lower or upper secondary education. Standard errors (OLS) in parentheses. We report two-sided p-values from OLS (P-value OLS) and p-values based on randomisation inference (P-value RI) stratified by the randomisation date. Fixed effects include origin (Syria, Afghanistan, Nigeria, rest Africa and Asia) and interviewer fixed effects. *Mean/SD Y control* denote mean and standard deviation of the dependent variable for participants in the control group. *** p<0.01, ** p<0.05, * p<0.1

available vacancies on a rolling basis and sometimes it can take several months until a suitable vacancy (that matches the skills of a treated participant) arrives. Second, the hiring process takes time. Often several weeks or months pass between the application, the interview stage, the hiring and the actual start of the work. Third, after twelve months, the participants speak much better German and are thus more likely to succeed in job interviews. As the sample for the second follow-up survey is smaller than the sample with completed first follow-up surveys, one might be concerned that the treatment effects after twelve months are driven by the endogenous selection of participants into the second follow-up survey despite similar average response rates between treatment and control groups. We thus re-run the

regressions with the data from the first follow-up survey but limiting the sample only to the participants who we also managed to contact after twelve months. Results are presented in Table A.4 and Table A.5 in the Appendix. The table shows that in the full sample, we still find no clear evidence of a positive treatment effect on work-related contacts or employment after the first six months. Effects for unrecognised and lower educated refugees are larger in magnitude, but we do not have sufficient statistical power to reach a clear conclusion whether they are statistically significantly different from those in the baseline results for the first follow-up survey.

Tables Online.A.3 - Online.A.6 in our Online Appendix report treatment effects at the point of the second follow-up survey for other labour market outcomes that we had indicated in the pre-analysis plan, namely: duration of employment, gross wages, job satisfaction, and time until the first job. We treat these results, however, with caution for several reasons. First, sample sizes are further reduced as most of these measures could be observed only conditional on being employed (which is only 42 percent of the respondents at the time of the second follow-up). Second, recall bias and noise in these outcomes is likely to be larger compared to our main outcomes. Third, the observed treatment effect is attenuated by the selection to employment among the control group: as the matching frictions for the control group are higher, it is less likely that individuals with lower abilities will be employed. Despite these caveats, we still observe a large, positive and relatively precisely estimated unconditional treatment effect on monthly gross wages of about 370 euro. This points to the fact that the intervention could also increase the quality of jobs. Yet, this estimate is based on 55 responses and therefore could serve only as suggestive evidence.

We also present alternative heterogeneity analyses of the treatment effect on employment after twelve months: by region of origin, marital status, age, and months of stay in Germany (Tables Online.A.7 and Online.A.8 in the Online Appendix). Together with legal status and education, we indicated these dimensions in our pre-analysis plan. However, we do not find significantly different treatment effects when splitting the sample along these characteristics. There is not a lot of variation in age, marital status, or duration of stay among the experiment's participants. Concerning the effects by origin, the power is low due to small group sizes. One might still note that the treatment effect for participants from Syria is smaller than that for other origins. This could be explained by the facts that 60 percent of Syrians are higher educated, and by the time of the second follow-up survey, 98 percent had been recognised as refugees.

5.3 Treatment in practice and possible mechanisms

Within the literature evaluating different types of active labour market programmes, it is often hard for researchers to obtain information on the practical details of the intervention, which is crucial for our understanding of its mechanisms and for replicability. We have been fortunate to be able to be in close contact with the NGO and have access to their internal database, which includes job-seekers' CVs, tracks available vacancies, NGO's activities, and realised job matches, and records participation in other activities, such as job-preparation classes, computer courses, and mentorship programmes.[26]

First, we can use these data to verify that the treatment worked as intended. The left panel of Figure 5 shows the probability to be matched to a job vacancy by the NGO. A "match" in our setting is a record

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[26]The job-matching database was part of this bigger information system. Due to technical issues (moving to another platform), the NGO could not make direct records in the job-matching database in the period from October 2017 to March 2018. For this period, however, we retrieved the information on job-matching from the NGO's mailbox. The NGO started to record the information on other activities from December 2017.

in the database that a job-seeker was informed about a job vacancy; in most cases, upon agreement of the job-seeker, this was followed by sending the CV to the employer. Apart from one case, the NGO created matches to job vacancies only for individuals in the treatment group.[27] From May 2016 until September 2018, the NGO matched 112 treated participants to at least one job vacancy. Conditional on being matched, a participant received on average almost two job matches. Importantly, participation rates in other NGO's activities are not statistically different between control and treatment groups. This reassures that our intervention affected matching frictions and not the skills of refugees. This is also supported by Figure A.1 in the Appendix, which reports difficulties in the job search after twelve months separately for treatment and control groups. Treated participants are significantly less likely to report difficulties with search process and instead stress the importance of skills (as could have been revealed to them during unsuccessful job interviews). We can further use information on the actual matches to vacancies from the NGO dataset to shed some light on the mechanisms of our treatment and provide possible explanations for the timing and the heterogeneity results. For instance, we see that a substantial number of job matches took place already prior to the first follow-up survey (62 out of 112 participants were already matched to at least one job vacancy between the baseline and the first follow-up surveys). Hence, the absence of the effect after six months cannot be only due to low job-matching activities by the NGO in the first months of our study, but rather due to other factors, such as insufficient language skills, or simply because the employment effects take time to materialise. Stronger effects among lower educated and unrecognised refugees could arise if the NGO matched treated individuals from this group more often. However, as Table A.6 shows, while treated lower educated individuals indeed have relatively more matches (not statistically significantly), treated unrecognised refugees are, on the contrary, less likely to be matched than those with a secure residence status. Thus, the heterogeneity of our results is not fully driven by selective matching by the NGO. Instead, the provided treatment appears to be relatively more important for participants with lower education or unrecognised status.

One possible reason for a stronger effect among lower educated and unrecognised refugees is that on average individuals in these groups exert lower search effort on their own. This could be due to uncertainty about the future legal status (for unrecognised refugees) or lack of knowledge about the job search process (for lower educated refugees). In this case, relatively more job opportunities would be generated by the NGO. To check whether this affects our results, we limit the sample to individuals who reported to have sent at least one CV (or at least five CVs).[28] If low personal effort was driving the result, the effect of the treatment would be lower in the sub-samples. The opposite is true: coefficients are larger in the sub-samples of lower educated and unrecognised refugees who also report to exert substantial job search effort (see Table A.7). Thus, the intervention was more likely to alleviate frictions *outside* of refugees' control. The heterogeneity of the treatment effects could stem from the fact that unrecognised and lower educated refugees face relatively stronger frictions in the German labour market.

Job applications of unrecognised refugees may be disregarded by employers due to perceived legal difficulties in hiring them and uncertainty around their residence permit status. Having received a CV of such an applicant from the NGO, the employers could be encouraged to proceed with an interview

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[27]We observe one case of non-compliance when a participant from the control group was mistakenly matched to a job vacancy before the second follow-up survey took place. We kept this observation in the main sample. We ran all the regressions dropping this observation, and results are identical. A possible reason for this mistake was that two participants had the exact same first and last name.

[28]We take responses about search effort as of the first follow-up, because the majority of those who were already employed at the time of the second follow-up survey skipped this question.

Figure 5: **Job-matching treatment vs. other activities by the NGO**
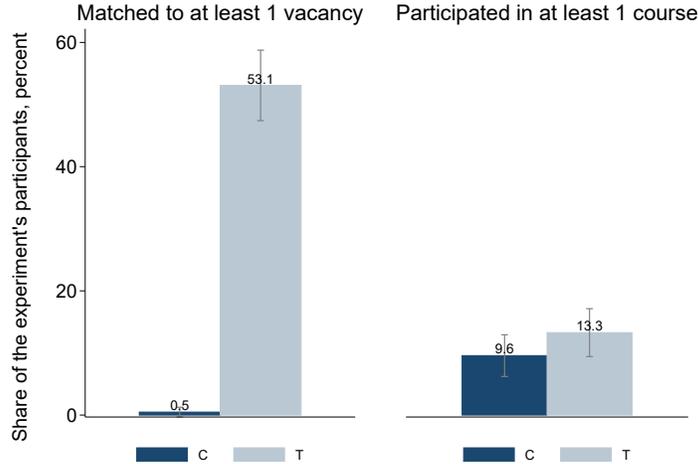
Note: The figure shows the shares of the experiment's participants from treatment (N=211) and control groups (N = 209) who were matched to at least one job vacancy by the NGO (left panel) and who participated in at least one course offered (right panel). The data come from the NGO's internal database. It is matched to our dataset through unique IDs. A non-negative value of the "Matched" bar for the control group is due to one non-compliance case, when a participant from the control group was mistakenly matched to a job vacancy before the end of the experiment.

while knowing that they can get advice and support from the NGO if necessary. Another possibility is a reputation effect: employers could have interpreted the CV sent by the NGO as a positive signal of ability or reliability, perhaps as a sort of referral to the job-seeker, despite the fact that CVs for both control and treatment had the same formatting and logo. Such referral would be then especially beneficial to lower educated refugees whose skills are more difficult to verify while assessing the job application.

Our findings are also consistent with the observation that lower educated and unrecognised refugees lack alternative means of support in the labour market. While many programmes have been developed over the recent years to foster integration of refugees (for example a programme called Joblinge that is active in Munich or the programmes by the PES), most of them have strict selection criteria either in terms of legal status or education requirements. The PES offer general counselling sessions that include advice on suitable career options and study programmes for all refugees and asylum seekers. Those who have been in Germany for more than three months and have left the reception centres are eligible for more specific job counselling, basic job search assistance, and help with the recognition of degrees and qualifications. Recognised refugees or asylum seekers from countries with high recognition rates (Eritrea, Iran, Iraq, Somalia, and Syria) have access to additional services for labour market integration: competency assessments and professional integration planning, general language support and cultural integration support, long-term education and training if needed, exploration of job vacancies in their pool and assistance in the job application process and interviews.

The NGO has three distinct features that differentiate it from the services of the Public Employment Agency. First, the NGO actively supports recognised, tolerated refugees and asylum seekers. These are all refugees that can obtain work permits. They only exclude refugees that are from countries that the Government considers "safe" and refugees that have a rejection without toleration. The Public Employment Services have narrower eligibility rules. They focus their support on recognised refugees and asylum seekers from five countries with high recognition rates (Eritrea, Iran, Iraq, Somalia and Syria).

Therefore, the large group of Afghans and Nigerians that are still in the asylum process or tolerated have less access to alternative support measures. The second difference concerns support in the refugee's native language. The public employment service mainly offers support in German with rare usage of English. This leads to many misunderstandings or situations where communication is severely hampered. The NGO works with many students and volunteers that speak a variety of languages, especially the languages typically spoken by refugees. This does not only improve communication tremendously but also provides job opportunities for people that can work in English for example in IT or tourism. The NGO is also able to match refugees to jobs where they do not need German or English language skills, such as jobs in restaurants or companies managed by immigrants from the same background. This might be particularly helpful for lower educated refugees. The third difference is about the refugee to employee ratio. In the public employment agency, one case-worker is typically responsible for around 150 job-seekers. This number is much lower at the NGO, where more than 10 employees are supporting less than 400 job-seekers. This allows for more personal contact for those who need it, more time-intensive support and faster appointments if needed. While these three differences are likely to matter and explain why the NGO is more successful in supporting especially more vulnerable groups such as low-educated and unrecognised refugees, these are no unique features. Other NGOs or private organisations operate with similar techniques and it would be easy to adopt these features.

Table 7 uses data from the German IAB/DIW/SOEP refugee sample to confirm the hypothesis that particular groups of refugees are more likely to benefit from the intervention. Indeed, unrecognised and lower educated refugees are less likely to receive the labour market and career counselling provided by the PES. Lower educated refugees are also less likely to search for vacancies online or with the help of the PES. This evidence from publicly available data is in line with responses in our survey and illustrates the extent of the matching frictions for particular groups.

Table 7: **Suggestive evidence from publicly available data**

	(1) Employed	(2) Search with PES	(3) Search in Internet	(4) Labour market counselling	(5) Career counselling
Unrecognised	0.026**	0.014	-0.002	-0.140***	-0.054***
	(0.010)	(0.015)	(0.011)	(0.015)	(0.013)
Lower educated	-0.026**	-0.039**	-0.064***	-0.076***	-0.058***
	(0.013)	(0.018)	(0.013)	(0.018)	(0.015)
Observations	3,432	2,782	2,782	3,388	3,392
Mean Y, recognised and higher educated	0.114	0.234	0.135	0.362	0.242
SD Y	0.318	0.424	0.342	0.481	0.429

Note: The data come from the German IAB/DIW/SOEP refugee sample (wave 1, 2018 distribution). The regression sample includes refugees and asylum seeker who arrived to Germany after 2014 and at the time of the survey are between 18 and 65 years old. Dependent variables: *Employed* - being employed at the time of the survey; *Search with PES / Search in Internet* - using the channels for job search; *Labour market / Career counselling* - has already received labour market / career counselling by PES. Dummies: *Unrecognised* - respondents who have not (yet) received the recognised refugee status at the time of the survey. *Lower educated* - participants with no schooling, primary, lower or upper secondary education. *Mean/SD Y , recognised and higher educated* - denote the mean/standard deviation of the dependent variable for the group of recognised and higher educated respondents. The number of observations varies due to differences in the number of invalid responses to the survey's questions. Weighted with sampling weights provided by SOEP. * p<0.10, ** p<0.05, *** p<0.01.

At the end of 2016, the NGO has done a small online survey of companies that hired their candidates

with the purpose of improving their services. Only five companies responded but they provide some anecdotal evidence. All companies see missing language skills as the main barrier to hiring. In addition, two out of five companies perceive the risk of rejected asylum and deportation as a barrier to employment and consider the additional work for HR problematic. These findings are in line with a larger survey conducted by the ifo Institute. When asked about tips for other employers when hiring refugees, some mentioned that the PES were not sufficient for their search of potential employees. While this evidence is entirely anecdotal, it does point towards a possible lack of alternative support programmes and the importance of matching frictions.

6   Costs and benefits

The previous sections quantify the effects of the job-search assistance programme on affected refugees. Ultimately, whether a programme similar to the one we evaluate should be implemented elsewhere depends on its costs and benefits. Since we have been in close contact with the NGO, it is possible to provide some back-of-the-envelope calculations. Quantifying the potential benefits from such a programme is a complex task. First, there are many possible choices in terms of whose benefit one could focus on. In our analysis below, we take the perspective of the government. We will calculate the benefits in terms of taxes and welfare payments. This is clearly very partial, since it ignores all non-economic benefits, benefits to employers, and benefits to the refugees themselves. Secondly, even when focusing on the government's perspective only, basic economic theory suggests that the relevant benefits to consider are dynamic in nature. They should be calculated as the present value of the future stream of income (or transfers to the government). Many relevant elements make this calculation complicated, including employment duration, return propensity, and legal framework. Most crucially, we have no information on how long the gap in employment and wages that we observed (twelve months after the baseline survey) may last. In the analysis below, we look at different scenarios. All of them make conservative assumptions about the benefits. This means that the levels discussed below are not generated by speculating that the effects we find are long-lasting.

We calculate benefits as the difference in contributions to the government between treatment and control group that are implied by our baseline treatment effects. We measure these by multiplying differences in expected labour income (which may reflect employment and wage differences) by average tax rates, and add differences in expected welfare payments received. Static benefits from the programme (accruing in month twelve only) arise from differences in taxation and differences in welfare payments received. They can be written as

$$\text{benefits} = \Delta\text{taxes} - \Delta\text{welfare} = (\text{taxes}_T - \text{taxes}_C) - (\text{welfare}_T - \text{welfare}_C) \tag{1}$$

where T denotes the treatment group and C denotes the control group. In turn, after some minor rearranging we can write Equation (1) as

$$\text{benefits} = t(E_T w_T - E_C w_C) - \eta[(1 - E_T) - (1 - E_C)] = t(E_T w_T - E_C w_C) + \eta(E_T - E_C) \tag{2}$$

where t denotes the tax rate, η denotes monthly welfare payments that are provided for those who are not employed (amount of payments do not depend on treatment), E denotes employment rates and w denotes

monthly wages of each group. Equation 2 shows that overall benefits of the programme crucially depend on employment and wage effects, as well as on taxation and welfare generosity. Table 8 below calculates benefits as in Equation 2 fist, and then makes two modifications, shutting down wage differences and looking at dynamic effects.

Costs of the programme are simply calculated as total costs in Euros divided by the number of individuals in the treatment group. As the treatment group is made up of 211 individuals, calculating total costs is straightforward. In Row (a) we calculate cost of the job-search assistance programme alone, i.e. the matching of CVs to firms. This is equal to one part-time staff member of the NGO for the duration of the treatment. This person is hired to network with firms, identify potential vacancies, search for suitable candidates in the database of the NGO and send their CVs to the firms. We can assume personnel costs of around 1,000 Euro per month for 16 months of part-time work, resulting in a total cost of 16,000 Euro, or around 76 Euros per individual. In Row (b) we add 5,000 Euros to these costs to reflect the cost of constructing CVs for individuals in the treatment group. Because this is not necessarily a part of the job-search assistance service, it is not obvious whether they should be included or not. Once they are included, costs are around 100 Euros per individual in the treatment group.

The results of our simple cost and benefit calculations are presented in Table 8. All costs and benefits are expressed in Euros per individual in the treatment group. We look at a static scenario in Columns (1) and (2), with benefits occurring in month twelve only, without looking at following periods. We also look at a dynamic scenario in Columns (3) and (4), in which we assume differences to decrease until they disappear after six months. Overall, our analysis suggests that the programme's benefits tend to be larger than its costs, even with very conservative assumptions. In particular, even static (one-month) benefits in Column (1) are around 115 Euros per individual, i.e. around 15 percent higher than the higher level of costs we consider. These benefits arise largely because of differences in taxes paid to the government, as shown in row (e). Column (2) shows that benefits are large even when we set wage differences to zero and work with employment differences only (since our wage differences are based upon a very small sample, one may not trust them as much as the main results). Column (3) shows dynamic effects over six months. Total benefits of 394 Euros are around four times as large as our higher cost estimate. Even when we shut off the wage channel (Column (4)) benefits are around 267 Euros, driven by both differences in taxation and welfare payments. Using the results from Row (g), Column (3) for benefits and from Row (b) for costs, we can calculate total benefits net of total costs simply by multiplying both by 211. We obtain that under these assumptions the program may have produced around 104,000 Euros of additional revenues for the government. Letting benefits survive for longer than six months (which might be more realistic) will further increase this estimate. While we feel that we need to stress once more that it is impossible for us to have enough information to make precise calculations, the fact that we tried to make very conservative assumptions and nevertheless found benefits to be larger than costs reassures us that the programme seems to be very much cost effective, even in a context in which this population may not be able to stay in Germany or access long-term employment.

Table 8: **Cost and benefits of the programme**

	Costs				
(a)	Job-search program (Euros/individual)		75.83		
(b)	Job-search program plus CV (Euros/individual)		99.53		

	Benefits	Static (month 12)		Dynamic (months 12-18)	
		Baseline (1)	No wage gap (2)	Baseline (3)	No wage gap (4)
(c)	Difference in employment rates (Table 6)	0.10	0.10	0.10	0.10
(d)	Wage differences (Table Online.A.4)	393	0	393	0
(e)	Difference in tax payments $t(E_T w_T - E_C w_C)$	66.00	27.56	223.45	96.47
(f)	Difference in welfare payments $\eta(E_T - E_C)$	48.73	48.73	170.54	170.54
(g)	Benefits to the government: (e) + (f)	114.72	76.29	393.99	267.00

Note: All costs and benefits are expressed in Euros per individual in the treatment group. We calculate the costs of the programme as the total cost for job-search assistance by the NGO in row (a) above (16,000 Euros) or the total cost of job-search assistance and CVs for the treatment group in row (b) above (16,000 Euros plus an additional 5,000 Euros), divided by the number of individuals in the treatment group (211 individuals). Calculating benefits involves four types of inputs: employment rates of the control group and of the treatment group, wage levels of the control group and of the treatment group, average tax rates faced by employed individuals, and welfare payments. Row (c) reports difference in employment rates between the treatment and the control groups at the time of our second follow-up survey. We take employment rates of the control group and employment differences, i.e. treatment effects, in employment after twelve months as the average of the effects of Column 1 and Column 2 of Table 6. Equivalently, row (d) reports wage differences between treatment and control group averaging treatment effects of Column 1 and Column 2 of Table Online.A.4. We take average wages of the control group and wage differences between treatment and control groups after twelve months from Columns 1 and 2 of Table Online.A.4. Row (e) reports estimated differences in taxation between treatment and control groups, which are calculated using employment rates and average wages of treatment and control groups, and a tax rate of 20 percent. Row (f) estimates differences in welfare payments between the control and the treatment group (a positive difference means that the control group is getting larger payments). These are calculated using employment rates of control and treatment group, and setting welfare payments at 500 Euros per month (individuals receive around 400 Euros in cash, and we value housing benefits at 100 Euros on average). Row (g) is the sum of row (e) and row (f), and measures the overall difference in net contributions to the government between treatment and control group. From the point of view of the government, we believe that this is a useful measure of the benefits generated by the programme. Columns (1) and (2) report "static" benefits, i.e. benefits occurring for a single month (month twelve after the start of the programme), which is when we are able to measure employment and wages. Estimates in Columns (1) and (2) are extremely conservative estimate of benefits, being based on assuming that all employment and wage differences disappear immediately after month twelve. Columns (3) and (4) let some employment wage differences survive after month twelve. In particular, we assume that differences dissipate linearly between month twelve and month 18, at which point they are zero. For simplicity and because we are looking at a short time period, we do not discount benefits. Therefore, one can interpret total benefits as present-value benefits by assuming a real interest rate equal to one. Columns (1) and (3) use both employment and wage information to calculate differences in incomes, taxes and benefits. Columns (2) and (4) instead assume away wage differences, setting them to zero.

7 Conclusion

This paper provides new insights into the labour market integration of recently arrived refugees in Germany by evaluating a job-search assistance programme. While there are only weak employment effects of the job search assistance for the overall sample, there may be scope to increase the employment of certain groups of refugees. Individuals with lower levels of education and individuals who are not (yet) recognised as refugees may benefit the most. They may face relatively high matching frictions, due to the lack of alternative job search support. In addition, these individuals may be disregarded by employers due to perceived higher hiring and screening costs. Since many rejected asylum seekers stay in Germany in the medium term and obtain a "tolerated" status, it is important to provide them with the means to earn a living. We believe that it would be possible to scale up this type of intervention. Many other NGOs support the labour market integration of refugees in different locations, and we do not see any reason why similar interventions would be hard to implement. We performed the intervention in a labour market with very low overall unemployment rates and ample job opportunities, which might affect the external validity of our results. We include a brief discussion of benefits and costs, which cannot be carried out without making some assumptions. Even under very conservative assumptions, however, we find that this program is easily able to recoup its costs in terms of increased revenues for the German

government thanks to employment and wage effects, which result in more taxes paid and lower welfare payment received by affected individuals.

The main limitations of this study originate from its small sample size. Unfortunately it was not possible to run the experiment with more refugees. In addition, attrition rates for the first and second follow-up survey are relatively high. This might be due to the fact that refugees often change residencies and contact details, such as phone numbers. We would therefore encourage the implementation of larger RCTs in the future. While it is important to collect as many different contact details per participant as possible, researchers also have to make realistic assumptions about attrition based on previous studies in their power calculations. Otherwise, the advantage of following people over time is lost and panel studies might not pay off. Alternative ways to collect follow-up indicators (i.e. through administrative data or social networks) could be useful in future studies.

In Germany and elsewhere, there are alternative providers of services that are similar to those we evaluate. In Germany, Job Centres have the task of supporting recognised refugees in their job search. Another branch inside the PES is responsible for supporting asylum seekers who are not recognised yet, but come from a country with high recognition chances. Asylum seekers from countries with low recognition rates do not receive much support. Therefore, the treatment we analyse provides a significant value added, especially for these individuals. Refugees also reported that communication with the NGO is easier due to staff speaking their native language and having more time to explain and advise individually. This paper focuses primarily on labour market effects. Further research is needed to investigate whether faster labour market access also triggers better social integration and language improvements thanks to exposure to the language on the job. At the same time, some types of early employment may trap refugees in low-wage employment with few chances to "climb the ladder" and no time to learn German. Which of these forces prevails is likely to depend on the type of job refugees find.

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Appendix

A   Additional Tables and Figures

Table A.1: **Balance table, baseline personal characteristics, CV data**

	(1) Treatment = 0	(2) Treatment = 1	(3) Diff. T-C
Female	0.0622	0.0521	-0.010
	[0.242]	[0.223]	(0.023)
Age	27.11	28.23	1.117
	[7.327]	[7.188]	(0.708)
Married	0.203	0.263	0.060
	[0.401]	[0.439]	(0.041)
Have children	0.225	0.265	0.041
	[0.405]	[0.430]	(0.041)
Months in Germany	10.14	10.12	-0.013
	[8.119]	[9.039]	(0.838)
Lower educated	0.732	0.687	-0.045
	[0.444]	[0.465]	(0.044)
Afghanistan	0.225	0.175	-0.050
	[0.419]	[0.381]	(0.039)
Nigeria	0.244	0.256	0.012
	[0.431]	[0.437]	(0.042)
Syria	0.206	0.209	0.003
	[0.405]	[0.407]	(0.040)
Rest Africa	0.201	0.209	0.008
	[0.402]	[0.407]	(0.039)
German >= B1	0.163	0.147	-0.016
	[0.370]	[0.355]	(0.035)
English >= B1	0.464	0.445	-0.019
	[0.500]	[0.498]	(0.049)
Recognised	0.180	0.168	-0.012
	[0.382]	[0.373]	(0.037)
Observations	209	211	420

Note: The table checks whether baseline personal characteristics are balanced between control and treatment groups. We use data from all participants of the experiments (N = 420). Columns (1) and (2) show mean values of baseline personal characteristics with standard deviations in brackets. Column (3) tests the mean differences between control and treatment. Standard errors in parentheses. * $p<0.10$, ** $p<0.05$, *** $p<0.01$. If the number of observations is less than 420 (see Table 1), we calculate the means and compare the differences using non-missing observations.

Table A.2: **Balance table, job search behaviour at baseline, survey data**

	(1) Treatment = 0	(2) Treatment = 1	(3) Diff. T-C
Started job search	0.569	0.500	-0.069
	[0.494]	[0.500]	(0.050)
Registered with PES	0.249	0.271	0.023
	[0.433]	[0.446]	(0.044)
Minimum wage to accept an offer	1,301	1,358	57.424
	[522.1]	[679.0]	(60.831)
Work below minimum wage	0.532	0.566	0.034
	[0.494]	[0.496]	(0.050)
Has original certificate	0.337	0.337	-0.000
	[0.469]	[0.470]	(0.047)
Contact with employer	0.239	0.236	-0.002
	[0.427]	[0.426]	(0.043)
Employed	0.0863	0.106	0.019
	[0.282]	[0.308]	(0.030)
Difficulty: Language	0.735	0.639	-0.096**
	[0.387]	[0.433]	(0.041)
Difficulty: Search process	0.402	0.365	-0.036
	[0.437]	[0.429]	(0.044)
Search with PES	0.311	0.308	-0.003
	[0.350]	[0.324]	(0.034)
Search in Internet	0.366	0.414	0.048
	[0.361]	[0.350]	(0.036)
Ask social worker	0.334	0.390	0.056
	[0.351]	[0.348]	(0.035)
Directly approach firms	0.397	0.384	-0.013
	[0.371]	[0.341]	(0.036)
Ask friends	0.457	0.438	-0.019
	[0.377]	[0.348]	(0.036)
Observations	197	199	396

Note: The table checks whether baseline job search behaviour is balanced between control and treatment groups. We use the sample of respondents to the baseline survey (396 out of 420 participants). Columns (1) and (2) show mean values of baseline job search characteristics with standard deviations in brackets. Column (3) tests the mean differences between control and treatment. Standard errors in parentheses. * $p<0.10$, ** $p<0.05$, *** $p<0.01$. If the number of observations is less than 396 (see Table 2), we calculate the means and compare the differences using non-missing observations.

Table A.3: **Employment, second follow-up survey, sub-samples of recognised and higher educated refugees**

	(1) Full sample	(2) Full sample	(3) Recognised	(4) Recognised	(5) Higher	(6) Higher
Treatment	0.077	0.118*	-0.093	-0.007	-0.031	0.080
	(0.071)	(0.069)	(0.121)	(0.135)	(0.127)	(0.121)
P-value OLS	0.280	0.091	0.448	0.958	0.806	0.509
P-value RI	0.282	0.094	0.537	0.957	0.925	0.627
Observations	195	195	70	70	64	64
Fixed effects	No	Yes	No	Yes	No	Yes
Mean Y control	0.385	0.385	0.610	0.610	0.515	0.515
SD Y control	0.489	0.489	0.494	0.494	0.508	0.508

Note: Second follow-up survey takes place about twelve months after the initial job-counselling session. Dependent variable: *Employed* denotes being employed (incl. full-time, part-time, internship, or a mini job) at the day of the follow-up survey. *Recognised* denotes participants who have already received the recognised refugee status by the time of the follow-up survey. *Higher* denotes higher educated participants, i.e. with some or completed tertiary degree. Standard errors (OLS) in parentheses. We report two-sided p-values from OLS (P-value OLS) and p-values based on randomisation inference (P-value RI) stratified by the randomisation date. Fixed effects include origin (Syria, Afghanistan, Nigeria, rest Africa and Asia) and interviewer fixed effects. *Mean/SD Y control* denote mean and standard deviation of the dependent variable for participants in the control group. *** p<0.01, ** p<0.05, * p<0.1

Table A.4: **Contact with employer, first follow-up survey, the sample is limited to participants with completed second follow-up**

	(1) Full sample	(2) Full sample	(3) Unrecognised	(4) Unrecognised	(5) Lower	(6) Lower
Treatment	0.043	0.048	0.153*	0.136	0.091	0.051
	(0.074)	(0.075)	(0.087)	(0.089)	(0.088)	(0.091)
P-value OLS	0.562	0.524	0.081	0.128	0.300	0.575
P-value RI	0.566	0.537	0.115	0.115	0.408	0.612
Observations	177	177	121	121	119	119
Fixed effects	No	Yes	No	Yes	No	Yes
Mean Y control	0.380	0.380	0.276	0.276	0.302	0.302
SD Y control	0.488	0.488	0.451	0.451	0.463	0.463

Note: **Note**: First follow-up survey takes place about six months after the initial job-counselling session. Dependent variable: *Contact with employer* denotes any work-related contact with a German employer: a job interview, job offer, or employment. *Unrecognised* denotes participants who have not (yet) received the recognised refugee status at the time of the follow-up survey. *Lower* denotes lower educated participants, i.e. with no schooling, primary, lower or upper secondary education. Standard errors (OLS) in parentheses. We report two-sided p-values from OLS (P-value OLS) and p-values based on randomisation inference (P-value RI) stratified by the randomisation date. Fixed effects include origin (Syria, Afghanistan, Nigeria, rest Africa and Asia) and interviewer fixed effects. *Mean/SD Y control* denote mean and standard deviation of the dependent variable for participants in the control group. *** p<0.01, ** p<0.05, * p<0.1

Table A.5: **Employment, first follow-up survey, the sample is limited to participants with completed second follow-up**

	(1) Full sample	(2) Full sample	(3) Unrecognised	(4) Unrecognised	(5) Lower	(6) Lower
Treatment	-0.034	-0.028	0.066	0.046	0.048	0.006
	(0.068)	(0.071)	(0.074)	(0.080)	(0.081)	(0.088)
P-value OLS	0.623	0.695	0.377	0.573	0.559	0.946
P-value RI	0.642	0.701	0.463	0.563	0.626	0.946
Observations	177	177	121	121	119	119
Fixed effects	No	Yes	No	Yes	No	Yes
Mean Y control	0.304	0.304	0.172	0.172	0.238	0.238
SD Y control	0.463	0.463	0.381	0.381	0.429	0.429

Note: **Note**: First follow-up survey takes place about six months after the initial job-counselling session. Dependent variable: *Employed* denotes being employed (incl. full-time, part-time, internship, or a mini job) at the day of the follow-up survey. *Unrecognised* denotes participants who have not (yet) received the recognised refugee status at the time of the follow-up survey. *Lower* denotes lower educated participants, i.e. with no schooling, primary, lower or upper secondary education. Standard errors (OLS) in parentheses. We report two-sided p-values from OLS (P-value OLS) and p-values based on randomisation inference (P-value RI) stratified by the randomisation date. Fixed effects include origin (Syria, Afghanistan, Nigeria, rest Africa and Asia) and interviewer fixed effects. *Mean/SD Y control* denote mean and standard deviation of the dependent variable for participants in the control group. *** p<0.01, ** p<0.05, * p<0.1

Figure A.1: **Difficulties during job search, second follow-up survey**
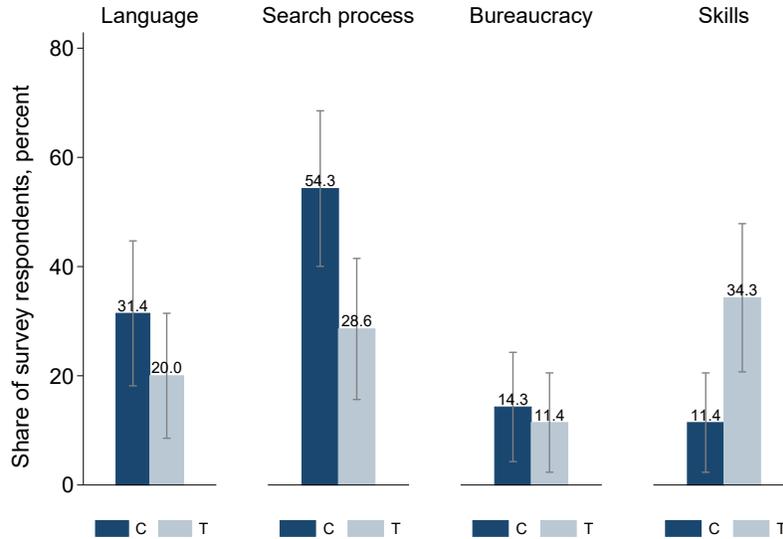
Note: The figure shows the shares of survey respondents (70 valid responses) who report to face the above difficulties during their job search, about twelve after the initial job-counselling session. *C* stands for control group and *T* - for treatment group. Confidence levels are reported at 90 percent. The respondents could choose several answers to the question: *Which difficulties do you face during your job search?* Bars correspond to the following answer options: *Language* - Language; *Search* - Do not know where to search or difficulty with job application; *Skills* - Missing skills or No suitable job; *Bureaucracy* - Many rules.

Table A.6: **Probability to be matched to a vacancy by the NGO and the number of job matches (only treated participants)**

| | All treated | | With the 2nd follow-up | |
| | (1) | (2) | (3) | (4) |
	Matched	Number of matches	Matched	Number of matches
Female	0.156	0.680	0.127	-0.498
	(0.157)	(0.420)	(0.248)	(0.720)
Age	-0.003	-0.014	0.001	-0.004
	(0.006)	(0.015)	(0.008)	(0.024)
Married	-0.062	-0.329	-0.067	-0.906**
	(0.088)	(0.234)	(0.131)	(0.379)
Months in Germany	-0.005	0.016	-0.010	0.032
	(0.004)	(0.012)	(0.008)	(0.023)
Lower educated	0.100	0.091	0.130	0.098
	(0.088)	(0.236)	(0.121)	(0.349)
Afghanistan	-0.217*	-0.847**	-0.131	-1.236**
	(0.128)	(0.342)	(0.192)	(0.556)
Nigeria	-0.289**	-0.793***	-0.393**	-1.734***
	(0.114)	(0.304)	(0.161)	(0.465)
Syria	0.049	-0.479	-0.026	-1.518***
	(0.130)	(0.349)	(0.177)	(0.512)
Rest Africa	-0.161	-0.825**	-0.178	-1.889***
	(0.119)	(0.318)	(0.172)	(0.499)
German >= B1	0.064	0.029	-0.001	0.070
	(0.112)	(0.299)	(0.161)	(0.466)
Recognised	0.114	0.825**	0.449**	1.690***
	(0.120)	(0.320)	(0.178)	(0.515)
Has original certificate	-0.025	-0.029	-0.176	-0.585
	(0.095)	(0.253)	(0.135)	(0.391)
Observations	211	211	91	91
R-squared	0.090	0.165	0.220	0.413
Fixed effects	Yes	Yes	Yes	Yes
Mean Y treated	0.531	0.834	0.604	1.055
SD of outcome	0.500	1.396	0.492	1.642

Note: The table checks which observable characteristics of the participants are associated with a higher probability to be matched to a job vacancy by the NGO or with a higher number of such matches. The sample includes only treated individuals: all treated (N=211) in columns (1) and (2) and those with completed second follow-up surveys (N=91) in columns (3) and (4). In case of missing observations for some variables (see Tables 1 and 2) we replaced the missing with sample averages. Dependent variables: *Matched* - a dummy, denotes being matched to at least one job vacancy by the NGO during the experiment; *Number of matches* - total number of job matches received during the experiment, ranges from zero to eight in our sample. *Mean/SD Y treated* denote mean / standard deviation of the dependent variable for treated participants. Standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table A.7: **Treatment effects on employment, second follow-up survey, lower educated or unrecognised refugees: association with search effort**

	(1) All unrecognised or lower	(2) Sent >= 1 application	(3) Sent >= 5 applications
Treatment	0.140*	0.229**	0.433*
	(0.077)	(0.111)	(0.233)
P-value OLS	0.069	0.044	0.079
P-value RI	0.069	0.038	0.043
Observations	159	59	21
Fixed effects	No	No	No
Mean Y control	0.309	0.138	0.167
SD Y control	0.465	0.351	0.408

Note: Second follow-up survey takes place about twelve months after the initial job-counselling session. Dependent variable: *Employed* denotes being employed (incl. full-time, part-time, internship, or a mini job) at the day of the follow-up survey. *All unrecognised or lower* denotes all participants who have not (yet) received the recognised refugee status at the time of the follow-up survey OR are lower educated; *Sent >= 1 (5) application(s)* denotes the sub-sample of unrecognised or lower educated participants who report to have sent at least one (five) job applications by the time of the first follow-up survey. Standard errors (OLS) in parentheses. We report two-sided p-values from OLS (P-value OLS) and p-values based on randomisation inference (P-value RI) stratified by the randomisation date. Fixed effects include origin (Syria, Afghanistan, Nigeria, rest Africa and Asia) and interviewer fixed effects. *Mean/SD Y control* denote mean and standard deviation of the dependent variable for participants in the control group. *** p<0.01, ** p<0.05, * p<0.1

Figure A.2: **Job search channels, second follow-up survey**
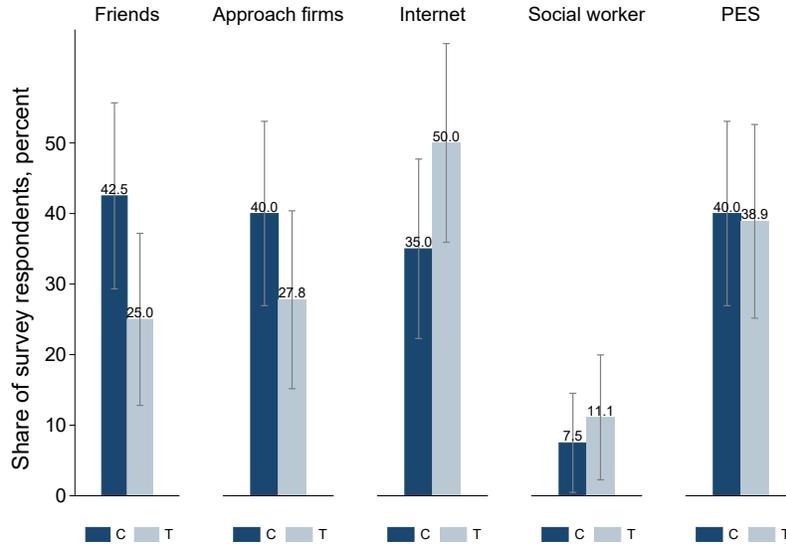
Note: The figure shows the shares of survey respondents (76 valid responses) who report using the above job search channels. *C* stands for control group; *T* denotes treatment. Confidence intervals are reported at 90 percent level. The respondents could choose several answers to the question: *How do you search for the job?* Bars correspond to the following answer options: *Friends* - Asking family and friends; *Approaching firms* - Directly approaching employers; *Internet* - in the Internet; *Social worker* - Asking a social worker or a teacher; *PES* - With the help of the public employment services.

B Limitations of the experimental approach

B.1 Selection

The refugees that took part in our experiment are certainly not representative of all refugees living in Germany for several reasons: our eligibility criteria, their motivation to come to our sessions and a focus on refugees residing in Munich. This selection has implications for external validity. An expansion of the programme or a different setting might lead to different results. However, it does not impact the internal validity of the experiment as we randomised over equally selected participants.

We can make a rough estimation of the percentage of all refugees in Munich that took part in our experiment. There have been around 12,000 refugees in Munich at the end of 2015. If we restrict this to men of working age, then we have a pool of potential candidates of around 6,000. Further subtracting refugees without a work permit and from safe countries of origin restricts the pool to around 5,000.[29] We thus have a participation rate of around eight percent of relevant and eligible candidates in Munich.[30]

B.2 Attrition

Sample attrition is a challenge when working with this population. There are multiple reason why we were not able to conduct our first and second follow-up survey, e.g. deportation, leaving Germany voluntarily, choice not to answer our questions. We concentrated our efforts on obtaining contact details that do not change over time. Besides obtaining the email address and phone number of participants, we also asked if we can contact them via WhatsApp or Facebook. One advantage in this respect is that we provided everybody with some support (CV in German and basic job search information). As the NGO offers additional support activities, both treatment and control group have an incentive to stay in touch with the NGO. Our attrition rate is 29 percent for the first follow-up survey and 56 percent for the second follow-up survey. These high attrition rates are likely to be driven by the characteristics of this population. Importantly, however, response rates are not systematically different between treatment and control groups in either our first or our second follow up, as shown in Table B.1 and Figure B.1.

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[29]There are around 4,000 asylum seekers registered with the Munich branch of the Federal Employment Agency.
[30]Numbers are taken from the Munich municipality. These are likely to be rather rough approximations.

Table B.1: **Response rates to the first and second follow-up surveys**

	(1) After 6 months	(2) After 6 months	(3) After 12 months	(4) After 12 months
Treatment	0.031	0.027	-0.066	-0.082*
	(0.044)	(0.044)	(0.049)	(0.048)
Female		-0.057		0.026
		(0.098)		(0.107)
Age		0.006		0.014***
		(0.004)		(0.004)
Married		-0.024		-0.028
		(0.058)		(0.064)
Months in Germany		-0.004		-0.004
		(0.003)		(0.003)
Lower educated		-0.013		-0.042
		(0.054)		(0.059)
Afghanistan		0.036		0.022
		(0.079)		(0.087)
Nigeria		0.137*		0.107
		(0.075)		(0.083)
Syria		0.177**		0.094
		(0.086)		(0.094)
Rest Africa		0.062		0.084
		(0.078)		(0.085)
German >= B1		0.108		0.083
		(0.070)		(0.076)
Recognised		0.066		-0.018
		(0.075)		(0.082)
Contact with employer		-0.016		0.009
		(0.059)		(0.065)
Observations	420	420	420	420
R-squared	0.001	0.051	0.004	0.056
Mean Y control	0.694	0.694	0.498	0.498
SD Y control	0.462	0.462	0.501	0.501

Note: The table checks which observable characteristics of the participants are associated with higher response rates during first (columns (1) and (2)) and second (columns (3) and (4)) follow-up surveys. The sample includes all participants of the experiment (N = 420). In case of missing observations for some variables (see Tables 1 and 2), we replaced the missing with a sample average. *Mean/SD control* denote mean / standard deviation of the dependent variable for the control group. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Figure B.1: **Response rates in the follow-up surveys by treatment status**
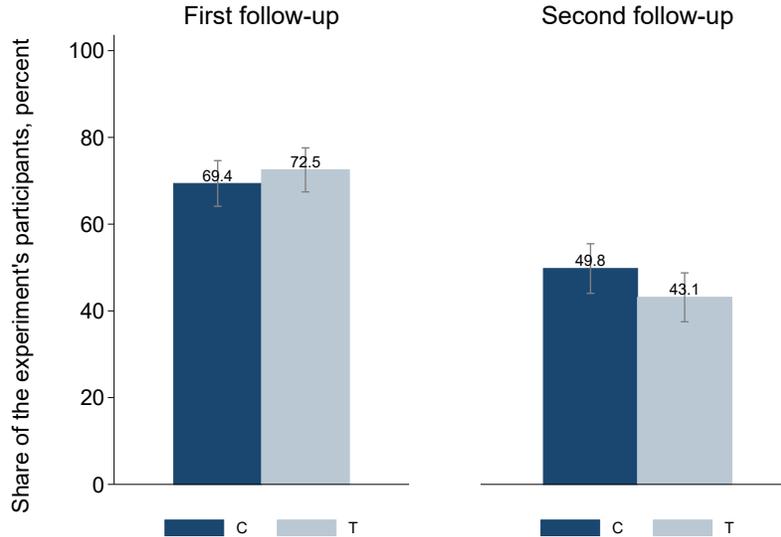
Note: This figure shows response rates in the first (N=298 out of 420 participants) and second (N=195 out of 420 participants) follow-up surveys. *C* - denotes the control group and *T* - the treatment group.

B.3   Non-compliance

There are two forms of non-compliance we need to be aware of. The first case happens if participants who have been allocated to the control group receive the treatment. This case can be excluded as the experiment design does not make it possible for the control group to be added to the database. Participants are not aware of the internal organisation of the NGO and can not push for their CV to be included. The second case happens if the participants of the treatment group do not receive the treatment (which of course depends on the way one defined the treatment). This could happen if the NGO does not find a suitable job match for a participant (e.g. because of lacking skills) or if the NGO matches treated participants but they do not attend job interviews or reject the offer. This happened, for instance, if participants attended full-time German classes or if they got an asylum rejection and hence lost the right to obtain a work permit. These cases of non-compliance bias the estimates of treatment effects towards zero.

B.4   Spillovers

Spillovers could occur if a candidate from the treatment group finds work and then recommends his friend, who is in the control group, to his employer. If this person then gets hired, he has received spillovers from the treatment group. As these types of spillovers imply that the control group receives (part of) the treatment too, this would bias the estimated effect downwards.

B.5   Displacement effects

One worry in labour market experiments is that participants of the treatment group obtain jobs that might have been filled by the control group in the absence of our experiment. If there is a limited

number of jobs and both control and treatment group are competing for these jobs, then this is a valid concern. Crepon et al. (2013) find that displacement effects are particularly strong in labour markets with high unemployment. We think that displacement effects are of limited importance in the context of our experiment for two reasons. First, Munich has a very low unemployment rate and more than 1,5 million inhabitants. The size of the treatment group seems negligible given the large number of vacancies in Munich. Second, most companies indicated that they would be willing to hire additional people if they have the required German and technical skills. So the amount of vacancies does not seem to be the limiting factor. However, if one thinks about expanding the programme in terms of size or in another location, then one would need to take general equilibrium effects into consideration

Online Appendix

A   Additional Tables and Figures

Table Online.A.1: **Descriptive statistics at baseline, CV data, by region of origin**

	(1) Total	(2) Afghanistan	(3) Nigeria	(4) Syria	(5) Rest Africa	(6) Rest Asia
Female	0.0571	0.0357	0.0667	0.0230	0.105	0.0517
	[0.232]	[0.187]	[0.251]	[0.151]	[0.308]	[0.223]
Age	27.67	23.82	28.29	31.07	25.86	29.35
	[7.270]	[4.981]	[5.833]	[8.716]	[7.026]	[7.504]
Married	0.233	0.214	0.221	0.287	0.188	0.268
	[0.421]	[0.413]	[0.415]	[0.455]	[0.391]	[0.439]
Have children	0.245	0.150	0.250	0.233	0.296	0.321
	[0.418]	[0.351]	[0.416]	[0.422]	[0.446]	[0.450]
Months in Germany	10.13	10.13	7.163	13.76	9.786	10.28
	[8.583]	[7.187]	[8.134]	[8.318]	[8.572]	[9.824]
Lower educated	0.710	0.762	0.886	0.391	0.802	0.655
	[0.455]	[0.428]	[0.320]	[0.491]	[0.401]	[0.479]
German >= B1	0.155	0.214	0.00952	0.322	0.128	0.121
	[0.362]	[0.413]	[0.0976]	[0.470]	[0.336]	[0.329]
English >= B1	0.455	0.131	0.714	0.333	0.640	0.362
	[0.499]	[0.339]	[0.454]	[0.474]	[0.483]	[0.485]
Recognised	0.173	0.0357	0.0194	0.598	0.105	0.109
	[0.377]	[0.187]	[0.137]	[0.493]	[0.308]	[0.306]
Observations	420	84	105	87	86	58

Note: The table presents mean and standard deviation (in brackets) for the baseline characteristics of the experiment's participants by origin. Countries of origin with more that 70 observations are listed separately (Afghanistan, Nigeria, Syria). Rest Africa includes: Congo, Eritrea, Mali, Sierra Leone, Somalia, Tanzania and Uganda. Rest Asia includes China, Iran, Iraq, Jordan, Myanmar, Pakistan, Palestine, Turkey and the United Arab Emirates. For some characteristics, the number of actual observations is less than 420 due to missing responses (see Table 1). In this case, we report the averages for non-missing observations. Definition of some variables: *Months in Germany* - stay in Germany (months) at the day of the job-counselling session; *Lower educated* - the share of participants with no schooling, primary, lower or upper secondary education; *German/ English >= B1* denote the share of participants with at least intermediate language knowledge; *Recognised* denotes the share of participants who at the time of the session had received the refugee status.

Table Online.A.2: **Job search behaviour at baseline, survey data, by region of origin**

	(1) Total	(2) Afghanistan	(3) Nigeria	(4) Syria	(5) Rest Africa	(6) Rest Asia
Started job search	0.534	0.418	0.558	0.698	0.400	0.604
	[0.498]	[0.493]	[0.497]	[0.462]	[0.490]	[0.494]
Registered with PES	0.381	0.515	0.321	0.400	0.344	0.344
	[0.354]	[0.323]	[0.349]	[0.412]	[0.300]	[0.373]
Minimum wage to accept an offer	1,330	1,651	1,188	1,395	1,102	1,349
	[606.0]	[710.0]	[533.7]	[574.8]	[495.2]	[585.9]
Work below minimum wage	0.549	0.558	0.698	0.214	0.738	0.509
	[0.494]	[0.490]	[0.462]	[0.408]	[0.440]	[0.505]
Has original certificate	0.337	0.436	0.149	0.612	0.177	0.321
	[0.469]	[0.493]	[0.354]	[0.487]	[0.379]	[0.471]
Contact with employer	0.237	0.250	0.167	0.349	0.160	0.283
	[0.426]	[0.436]	[0.375]	[0.479]	[0.369]	[0.455]
Employed	0.0960	0.0625	0.0625	0.186	0.0741	0.0943
	[0.295]	[0.244]	[0.243]	[0.391]	[0.264]	[0.295]
Difficulty: Language	0.687	0.705	0.765	0.700	0.534	0.717
	[0.413]	[0.401]	[0.359]	[0.445]	[0.425]	[0.423]
Difficulty: Search process	0.383	0.361	0.353	0.300	0.500	0.457
	[0.433]	[0.422]	[0.404]	[0.445]	[0.426]	[0.468]
Search with PES	0.310	0.333	0.321	0.300	0.273	0.323
	[0.337]	[0.305]	[0.349]	[0.385]	[0.286]	[0.361]
Search in Internet	0.390	0.182	0.302	0.650	0.333	0.323
	[0.356]	[0.249]	[0.343]	[0.401]	[0.303]	[0.361]
Ask social worker	0.362	0.303	0.415	0.250	0.455	0.452
	[0.350]	[0.297]	[0.368]	[0.364]	[0.320]	[0.384]
Directly approach firms	0.390	0.455	0.453	0.383	0.0606	0.581
	[0.356]	[0.322]	[0.372]	[0.408]	[0.153]	[0.381]
Ask friends	0.448	0.515	0.340	0.583	0.424	0.323
	[0.363]	[0.323]	[0.354]	[0.414]	[0.317]	[0.361]
Observations	396	80	96	86	81	53

Note: The table presents mean and standard deviation (in brackets) for the job search behaviour of the respondents to the baseline survey, by origin. 396 out 420 participants completed the baseline survey. Countries of origin with more that 70 observations are listed separately (Afghanistan, Nigeria, Syria). Rest Africa includes: Congo, Eritrea, Mali, Sierra Leone, Somalia, Tanzania and Uganda. Rest Asia includes China, Iran, Iraq, Jordan, Myanmar, Pakistan, Palestine, Turkey and the United Arab Emirates. For some characteristics, the number of actual observations is less than 396 due to missing responses (see Table 2). In this case, we report the averages for non-missing observations. Definition of variables: *Started job search* - the share of respondents who had already started searching for a job prior to the initial session; *Registered with PES* - the share of survey respondents (conditional on having started the job search) who had been already registered with the PES; *Minimum wage to accept an offer* - stated minimum wage to accept a job offer; *Work below minimum wage* - the share of survey respondents willing to work below the minimum wage; *Has original certificate* - the share of survey respondents who possess original certificates of their highest degree; *Contact with employer* - the share of survey respondents who had had at least one work-related contact with a German employer: a job interview, a job offer, or employment; *Employed* - the share of survey respondents who were employed (incl. full-time, part-time, internship, mini job) at the day of the survey; *Difficulty: Language/Search process* - the share of survey respondents reporting these difficulties during their job search; *Search with PES, in Internet, Ask social worker, Directly approach firms, Ask friends* - reported ways to search for a job.

Table Online.A.3: **Treatment effects on employment duration, second follow-up**

	(1) Full sample	(2) Full sample	(3) Unrecognised	(4) Unrecognised	(5) Lower	(6) Lower
Treatment	-0.711	-0.107	0.708	0.507	0.019	0.690
	(0.905)	(0.706)	(0.699)	(0.680)	(1.134)	(0.793)
P-value OLS	0.433	0.879	0.313	0.457	0.986	0.386
P-value RI	0.450	0.880	0.327	0.451	0.987	0.381
Observations	192	192	123	123	129	129
Fixed effects	No	Yes	No	Yes	No	Yes
Mean Y control	3.333	3.333	1.413	1.413	2.666	2.666
SD Y control	7.616	7.616	4.035	4.035	7.711	7.711

Note: Second follow-up survey takes place about twelve months after the initial job-counselling session. Dependent variable: *Employment duration* denotes total duration of employment (in months) by the day of the follow-up survey. For participants who have never been employed, it takes the value of zero. For participants who have been employed, it sums the duration of all employment spells. Duration of the current employment spell is calculated as the difference between the day of the follow-up survey and the reported start of the spell. Three observations are missing (from a total sample of 195 respondents to the second follow-up survey) as we could not identify the spell dates. *Unrecognised* denotes participants who have not (yet) received the recognised refugee status at the time of the follow-up survey. *Lower* denotes lower educated participants, i.e. with no schooling, primary, lower or upper secondary education. Standard errors (OLS) in parentheses. We report two-sided p-values from OLS (P-value OLS) and p-values based on randomisation inference (P-value RI) stratified by the randomisation date. Fixed effects include origin (Syria, Afghanistan, Nigeria, rest Africa and Asia) and interviewer fixed effects. *Mean/SD Y control* denote mean and standard deviation of the dependent variable for participants in the control group. *** p<0.01, ** p<0.05, * p<0.1

Table Online.A.4: **Treatment effects on gross wages (conditional on employment), second follow-up**

	(1) Full sample	(2) Full sample	(3) Unrecognised	(4) Unrecognised	(5) Lower	(6) Lower
Treatment	371.942*	414.612*	-60.271	121.652	551.898**	569.624*
	(193.584)	(239.488)	(289.708)	(336.870)	(250.677)	(320.988)
P-value OLS	0.060	0.090	0.837	0.723	0.035	0.088
P-value RI	0.067	0.069	0.831	0.723	0.034	0.061
Observations	55	55	23	23	33	33
Fixed effects	No	Yes	No	Yes	No	Yes
Mean Y control	1395.924	1395.924	1744.438	1744.438	1381.435	1381.435
SD Y control	723.381	723.381	653.591	653.591	754.623	754.623

Note: Second follow-up survey takes place about twelve months after the initial job-counselling session. Dependent variable: *Gross monthly wage* - self-reported monthly wage in Euro before tax, conditional on being employed at the time of the second follow-up survey. One participant who was already unemployed reported his wage at the previous job. *Unrecognised* denotes participants who have not (yet) received the recognised refugee status at the time of the follow-up survey. *Lower* denotes lower educated participants, i.e. with no schooling, primary, lower or upper secondary education. Standard errors (OLS) in parentheses. We report two-sided p-values from OLS (P-value OLS) and p-values based on randomisation inference (P-value RI) stratified by the randomisation date. Fixed effects include origin (Syria, Afghanistan, Nigeria, rest Africa and Asia) and interviewer fixed effects. *Mean/SD Y control* denote mean and standard deviation of the dependent variable for participants in the control group. *** p<0.01, ** p<0.05, * p<0.1

Table Online.A.5: **Treatment effects on time to the first job (conditional on being ever employed)**

	(1) Full sample	(2) Full sample	(3) Unrecognised	(4) Unrecognised	(5) Lower	(6) Lower
Treatment	2.846	3.857	8.076**	8.499*	4.129	3.678
	(2.549)	(3.722)	(3.802)	(4.602)	(3.111)	(4.958)
P-value OLS	0.267	0.304	0.041	0.075	0.189	0.463
P-value RI	0.269	0.281	0.027	0.041	0.185	0.425
Observations	103	72	36	36	64	44
Fixed effects	No	Yes	No	Yes	No	Yes
Mean Y control	16.590	16.590	12.026	12.026	14.692	14.692
SD Y control	13.038	13.038	4.029	4.029	12.806	12.806

Note: Second follow-up survey takes place about twelve months after the initial job-counselling session. Dependent variable: *Time to the first job* denotes time (in months) from the day of the initial job-counselling session to the starting date of the first job. It can be calculated only for participants who reported at least one employment spell by the time of the second follow-up survey. We pull reported employment spells from the first and second follow-up surveys and use the starting date of the first one for the calculation of the outcome. The sample size differs between columns (2) and (1) and (6) and (5), because by including interviewer fixed effects we automatically limit the sample size only to respondents of the second follow-up survey. *Unrecognised* denotes participants who have not (yet) received the recognised refugee status at the time of the follow-up survey. *Lower* denotes lower educated participants, i.e. with no schooling, primary, lower or upper secondary education. Standard errors (OLS) in parentheses. We report two-sided p-values from OLS (P-value OLS) and p-values based on randomisation inference (P-value RI) stratified by the randomisation date. Fixed effects include origin (Syria, Afghanistan, Nigeria, rest Africa and Asia) and interviewer fixed effects. *Mean/SD Y control* denote mean and standard deviation of the dependent variable for participants in the control group. *** p<0.01, ** p<0.05, * p<0.1

Table Online.A.6: **Treatment effects on job satisfaction (conditional on employment), second follow-up**

	(1) Full sample	(2) Full sample	(3) Unrecognised	(4) Unrecognised	(5) Lower	(6) Lower
Treatment	-0.132	-0.047	-0.142	-0.099	-0.055	-0.092
	(0.226)	(0.237)	(0.373)	(0.414)	(0.299)	(0.330)
P-value OLS	0.563	0.842	0.706	0.814	0.855	0.783
P-value RI	0.567	0.840	0.668	0.784	0.860	0.775
Observations	73	73	35	35	45	45
Fixed effects	No	Yes	No	Yes	No	Yes
Mean Y control	3.500	3.500	3.455	3.455	3.475	3.475
SD Y control	0.866	0.866	0.757	0.757	0.697	0.697

Note: Second follow-up survey takes place about twelve months after the initial job-counselling session. Dependent variable: *Job satisfaction* is an average of self-reported happiness with job tasks and happiness with the wage. Both indicators range from one (lowest) to five (highest). This measure is available for participants who were employed at the day of the second follow-up survey or who were no longer employed, but reported happiness with their previous job (only three cases). *Unrecognised* denotes participants who have not (yet) received the recognised refugee status at the time of the follow-up survey. *Lower* denotes lower educated participants, i.e. with no schooling, primary, lower or upper secondary education. Standard errors (OLS) in parentheses. We report two-sided p-values from OLS (P-value OLS) and p-values based on randomisation inference (P-value RI) stratified by the randomisation date. Fixed effects include origin (Syria, Afghanistan, Nigeria, rest Africa and Asia) and interviewer fixed effects. *Mean/SD Y control* denote mean and standard deviation of the dependent variable for participants in the control group. *** p<0.01, ** p<0.05, * p<0.1

Table Online.A.7: **Treatment effects on employment, second follow-up survey, by origin**

	(1) Full sample	(2) Afghanistan	(3) Nigeria	(4) Syria	(5) Rest Africa	(6) Rest Asia
Treatment	0.077	0.198	0.168	-0.134	0.151	0.269
	(0.071)	(0.180)	(0.125)	(0.146)	(0.150)	(0.214)
P-value OLS	0.280	0.279	0.183	0.363	0.322	0.221
P-value RI	0.282	0.251	0.143	0.352	0.289	0.187
Observations	195	32	53	47	39	24
Fixed effects	No	No	No	No	No	No
Mean Y control	0.385	0.444	0.207	0.690	0.238	0.143
SD Y control	0.489	0.511	0.412	0.471	0.436	0.378

Note: Second follow-up survey takes place about twelve months after the initial job-counselling session. Dependent variable: *Employed* denotes being employed (incl. full-time, part-time, internship, or a mini job) at the day of the follow-up survey. *Unrecognised* denotes participants who have not (yet) received the recognised refugee status at the time of the follow-up survey. *Lower* denotes lower educated participants, i.e. with no schooling, primary, lower or upper secondary education. Standard errors (OLS) in parentheses. We report two-sided p-values from OLS (P-value OLS) and p-values based on randomisation inference (P-value RI) stratified by the randomisation date. *Mean/SD Y control* denote mean and standard deviation of the dependent variable for participants in the control group. *** p<0.01, ** p<0.05, * p<0.1

Table Online.A.8: **Treatment effects on employment, second follow-up, by marital status, age, and months of stay in Germany**

	(1) Full sample	(2) Single	(3) Married	(4) Age < median	(5) Age >= median	(6) Stay < median	(7) Stay >= median
Treatment	0.077	0.053	0.119	0.081	0.066	0.071	0.104
	(0.071)	(0.082)	(0.143)	(0.110)	(0.095)	(0.096)	(0.106)
P-value OLS	0.280	0.519	0.412	0.461	0.487	0.463	0.327
P-value RI	0.282	0.512	0.420	0.422	0.487	0.461	0.378
Observations	195	145	50	84	111	103	92
Fixed effects	No	No	No	No	No	No	No
Mean Y control	0.385	0.362	0.458	0.360	0.407	0.333	0.434
SD Y control	0.489	0.484	0.509	0.485	0.496	0.476	0.500

Note: Second follow-up survey takes place about twelve months after the initial job-counselling session. Dependent variable: *Employed* denotes being employed (incl. full-time, part-time, internship, or a mini job) at the day of the follow-up survey. *Unrecognised* denotes participants who have not (yet) received the recognised refugee status at the time of the follow-up survey. *Lower* denotes lower educated participants, i.e. with no schooling, primary, lower or upper secondary education. Standard errors (OLS) in parentheses. We report two-sided p-values from OLS (P-value OLS) and p-values based on randomisation inference (P-value RI) stratified by the randomisation date. *Mean/SD Y control* denote mean and standard deviation of the dependent variable for participants in the control group. *** p<0.01, ** p<0.05, * p<0.1

Table Online.A.9: **Logit regressions: Contact with employer, second follow-up survey**

	(1) Full sample	(2) Full sample	(3) Unrecognised	(4) Unrecognised	(5) Lower edu	(6) Lower edu
Treatment	0.172	0.338	0.678*	0.687*	0.342	0.600
	(0.289)	(0.311)	(0.363)	(0.375)	(0.352)	(0.385)
P-value logit	0.551	0.278	0.062	0.067	0.332	0.119
P-value RI	0.282	0.290	0.042	0.042	0.288	0.105
Observations	195	193	125	124	131	129
Fixed effects	No	Yes	No	Yes	No	Yes
Mean Y control	0.529	0.529	0.397	0.397	0.465	0.465
SD Y control	0.502	0.502	0.493	0.493	0.502	0.502

Note: Second follow-up survey takes place about twelve months after the initial job-counselling session. Dependent variable: *Contact with employer* denotes any work-related contact with employer (for an interview, job offer, or employment) by the day of the follow-up survey. *Unrecognised* denotes participants who have not (yet) received the recognised refugee status at the time of the follow-up survey. *Lower* denotes lower educated participants, i.e. with no schooling, primary, lower or upper secondary education. Standard errors (logit) in parentheses. We report two-sided p-values from the standard logit model (P-value logit) and p-values based on randomisation inference (P-value RI) stratified by the randomisation date. Fixed effects include origin (Syria, Afghanistan, Nigeria, rest Africa and Asia) and interviewer fixed effects. The number of observations in columns with fixed effects is smaller because fixed-effects logit model drops observations from groups with no variation in the outcome. *Mean/SD Y control* denote mean and standard deviation of the dependent variable for participants in the control group. *** p<0.01, ** p<0.05, * p<0.1

Table Online.A.10: **Logit regressions: Employment, second follow-up survey (twelve months after the initial job-counselling session)**

	(1) Full sample	(2) Full sample	(3) Unrecognised	(4) Unrecognised	(5) Lower edu	(6) Lower edu
Treatment	0.316	0.553*	0.904**	0.974**	0.535	0.778*
	(0.291)	(0.323)	(0.391)	(0.417)	(0.363)	(0.414)
P-value logit	0.278	0.087	0.021	0.020	0.140	0.060
P-value RI	0.282	0.093	0.014	0.009	0.132	0.060
Observations	195	193	125	124	131	127
Fixed effects	No	Yes	No	Yes	No	Yes
Mean Y control	0.385	0.385	0.238	0.238	0.324	0.324
SD Y control	0.489	0.489	0.429	0.429	0.471	0.471

Note: Second follow-up survey takes place about twelve months after the initial job-counselling session. Dependent variable: *Employed* denotes being employed (incl. full-time, part-time, internship, or a mini job) at the day of the follow-up survey. *Unrecognised* denotes participants who have not (yet) received the recognised refugee status at the time of the follow-up survey. *Lower* denotes lower educated participants, i.e. with no schooling, primary, lower or upper secondary education. Standard errors (logit) in parentheses. We report two-sided p-values from standard logit model (P-value logit) and p-values based on randomisation inference (P-value RI) stratified by the randomisation date. Fixed effects include origin (Syria, Afghanistan, Nigeria, rest Africa and Asia) and interviewer fixed effects. The number of observations in columns with fixed effects is smaller because fixed-effects logit model drops observations from groups with no variation in the outcome. *Mean/SD Y control* denote mean and standard deviation of the dependent variable for participants in the control group. *** p<0.01, ** p<0.05, * p<0.1

B Pre-analysis Plan

This section contains the text of our pre-analysis plan, including a discussion of the experimental setup, outcomes of interests and empirical methods involved. Before conducting our field experiment, we have uploaded this pre-analysis plan on the American Economic Association's registry for Randomised Control Trials. To access it, please, click here.

B.1 Summary of the Project

We design a field experiment to evaluate the role of matching frictions on the employment prospects of refugees, and to shed light on the effects of employment on economic and social integration of refugees. During job-search training sessions taking place at refugee accommodation and other locations in and around Munich, we collect information from several hundred refugees that recently arrived in Munich and have (or are about to obtain) a work permit. All of our participants receive a complete CV in German. We then randomly allocate fifty percent of the refugees to our treatment group and fifty percent to our control group. The treatment group is then forwarded to an NGO that matches job candidates to suitable employers and supports the former through the placement process. We believe that this treatment can isolate the effect of matching and information frictions, while has not effect on the underlying skill set of refugees. The experimental setting allows to track both control and treatment groups over time. As a first stage, we analyse how successful the supported refugees are in obtaining interviews and job offers. If we were to find any treatment, we would also be able to discuss the possible mechanisms at work and attempt an evaluation of the treatment in a cost-benefit setting. We then use the treatment as an instrument for employment and focus on the integration outcomes of migrants, which we are able to measure through a panel survey. Our survey data include information on the background characteristics of refugees, their existing job-search strategies, and perceptions of integration.

B.2 Experimental Setup

B.2.1 General Information about the partner NGO

To conduct the experiment we collaborate with a Munich-based NGO that assists job-seeking refugees. The NGO was founded in 2015 and currently counts 5 employees and about 20 part-time volunteers. It is financed through donations. The NGO conducts weekly resume preparation sessions in central Munich, consults job-seekers and recently employed refugees about basic legal and cultural specificities of the German labour market, and organizes a number of support activities, such as interview preparations, computer trainings, job fairs, or German conversation meet-ups. The NGO has established a network of local partners including the Federal Employment Agency, the Chamber of Commerce, other initiatives for refugees, and social workers. Through its network, the NGO receives information about open vacancies and, when applicable, forwards resumes of suitable refugees to employers. During the time of the experiment, our research group has participated in all regular resume preparation sessions of the NGO and has organized (on behalf of the NGO) a number of additional ones at different locations in and around Munich.

B.2.2   Participants

The pool of potential participants in the experiment consists of job-seeking refugees who come to the resume preparation sessions of the NGO. In addition, several eligibility rules apply to ensure that the participants qualify to enter the German labour market. First, they have to possess a work permit. As a general rule, asylum-seekers obtain work permits three months after arrival in Germany. This excludes refugees from "safe origin countries" (Bosnia-Herzegovina, Macedonia, Serbia, Montenegro, Albania, Kosovo, Ghana, and Senegal). Consequently, the NGO cannot effectively support them in the job search. In rare cases, we still collect the data and prepare resumes for job-seekers from these countries, as these people qualify for unpaid volunteering jobs or schooling. However, we exclude them from our analysis.[31] Second, refugees in our sample must be able to communicate in a language spoken by the NGO's or our research team members. These languages include Arabic, Dari, English, Farsi, French, German, Italian, and Russian and cover around 97 percent of the refugees that came to resume sessions.[32] Third, we work with the refugees who are at least 18 years old. The NGO does not include under-age refugees in its target group: there are more opportunities for them to attend an educational institution, and only refugees aged 18 or above are encouraged to integrate in the labour market. Besides, the age restriction is necessary for us to obtain the participation consent.[33] We are fully aware that these restrictions imply that our sample is not representative of the refugee population at large. We believe that this was to some extent unavoidable, given that we needed participants to voluntarily take part in the session and be willing and qualified to enter the German labour market.

B.2.3   Time-Frame of the Experiment

The experiment comprises three stages: the resume preparation stage, the treatment stage, and the follow-up stage. The only difference between the control and treatment groups occurs during the second stage, when a randomly selected group of participants receives an additional job-matching treatment. The first two stages span over the period of six months (May-October 2016). The follow-up stage (the first follow-up survey) begins six months after the treatment has started (October/November 2016). We then intend to contact the participants every 6 months over the period of several years.[34]

First Stage: Resume Preparation

The first stage of the experiment consists of resume preparation sessions, which, during the time of the experiment, are jointly organized by the NGO and our research team. The regular sessions take place once a week in the centre of Munich. The participants can easily reach the location by public transportation. We have organized several additional sessions in a support centre for refugees (Caritas) and in big refugee camps in and around Munich. The NGO advertises the sessions through social workers, Facebook, word of mouth, and partner organisations (the flyer is in the Annex). The main incentives for

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[31]At the time of writing, there is an active debate whether Algeria, Morocco, and Tunisia should be declared as "safe origin countries" or not. There is no political consensus yet and we have not excluded these nationalities. However, the number of refugees from these countries in Munich has been very small and so far none of our participants are nationals of any of these countries.

[32]So far, we have met five candidates, whom we had to send away because they only spoke Kurdish or Pashto. These were probably rather low educated refugees that would not have a good chance to integrate into the German labour market and who would need to focus on German classes first.

[33]To comply with the data protection laws of Bavaria, every participant needs to sign a data protection agreement (available in the Annex). Refugees below the age of 18 cannot legally sign the data protection agreement.

[34]The experimental design was approved by the Ethics commission of the Economics faculty of the University of Munich.

the refugees to come to these sessions is to receive a resume in German (that they can then forward to employers or to the job centre) as well as to acquire some information on their job-search process. During all the experimental sessions, the standard NGO's procedures apply.

During the resume preparation sessions, the interviewers (the NGO's volunteers and our research team) conduct one-to-one interviews with job-seeking refugees to collect the information needed to prepare their resumes. After collecting the resume data, the interviewers ask questions from a background survey to determine job-search behaviour, salary expectations, and job preferences of the participants. Additionally, we ask the participants about their family circumstances, their perceptions of integration, and their progress in studying German. In the end, the interviewer (in a separate form) evaluates participant's social skills. The complete resume form and survey can be found in the Annex.

In general, it takes the NGO around two weeks to process the collected information and to prepare the resume. The finished resumes include a participant's personal picture and photo copies of the work permit and certificates, if available. The NGO sends out the resumes to all the participants as a pdf attachment by e-mail two weeks after their sessions. If participants do not possess an e-mail address, the NGO sends it to them as a pdf attachment by WhatsApp and, additionally, to the responsible social worker. The standard message, which accompanies the resume, encourages the participants for active job search, includes several job-search tips, and advises to continue learning German. It also states that there is a chance that the NGO matches the participant with a possible employer. The complete message can be found in the Annex.

Second Stage: Treatment

During the treatment stage, we randomly assign the participants to either the treatment or the control group. For the treatment group (50% of the participants), the NGO provides direct job matching assistance. The NGO can use job offers that it receives through its network.[35] In addition to the available offers, the NGO employees look for other vacancies that would fit the treated participants. Once the NGO identifies a potential match, it informs the participant about the vacancy and sends the resume to the employer. It is important to note, that while this intervention reduce the matching frictions between employers and job-seekers, it does not affect the skill set of participants in any way. Besides, both control and treated participants can take part in other activities organized by the NGO or, upon request, receive information support (for example, about the interview or the hiring process).

We randomize every two weeks, so that the NGO receives new resumes twice a month. In this way, we guarantee a stable flow for the NGO and ensure that the treatment starts at about the same time after the first meeting with the participants.[36] We generate a treatment and control group for each session separately, thereby insuring that for each session we have the same number of participants in the treatment and in the control group. For every session, a random number generator determines the treatment status. If the number of candidates is odd, the additional person is randomly allocated to the control or treatment group. As the sessions take place at different locations and time and individuals in the same session are more likely to be relatively similar, we believe that this procedure helps us in having people with similar characteristics in the treatment and in the control group, and therefore may provide a useful (albeit weak) stratification. People who attend the regular resume sessions are likely to differ from those who get interviewed directly in their camp; participants from different camps might have

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[35]For each offer, the NGO employees look for qualifying participants from the treatment group and send the resumes of up to five participants to the employer.

[36]On average, every week we meet with 15 new job-seekers during the resume preparation sessions.

access to varying degrees of support services through local social workers; etc. Besides, it is logistically impossible to reach and to interview all potential participants within a short time span. This means that a randomisation of all candidates at once would not be feasible.

Third Stage: Follow-Up

During the last stage, we intend to contact every participant to check their labour market status and to update our integration measures. This stage will include a series of follow-up surveys: tentatively, 6, 12, 18, and 24 months after treatment. Our research team will contact the candidates in person, by phone or alternatively by WhatsApp, Facebook messenger, E-mail or through an additional contact person they indicated. We will then conduct a follow-up survey of the employers to cross-validate the responses of the participants. Our goal is to attempt to be able to reach candidates although they moved away from Munich or from Germany, and are trying to collect all of the necessary information to make that possible. We also ensure funding to be able to cover our costs for the follow-up survey and to be able to incentivise participants, in order to avoid attrition (more on this below). The follow-up questionnaires are in the Annex.

B.3   Analysis

The analysis is divided into two parts, one focusing on labour market outcomes and one on further integration and self-reported satisfaction outcomes. Below, we focus on each of the parts separately, emphasizing the effects where our treatment could have an impact. As very effectively discussed in Olken (2015)[37] that is intrinsic in projects like ours.

B.3.1   Labour Market Outcomes

The hypothesis we would like to test here is simply whether participants in the treatment group have better labour market outcomes in the short (6 months) and medium (12-24 months) term compared to those in the control group. Evidence of positive effects would suggest that matching frictions between German employers and job-seeking refugees exist, and that the employment of refugees does not only depend on the skills they possess, but also on their possibility to be considered by employers who are trying to fill a vacancy. Overcoming these frictions may then facilitate labour market integration of refugees in Germany.

We consider two sets of variables. First, we look at a series of standard labour market outcomes, whioch can provide experimental evidence of a treatment effect. Second, we investigate a series of ancillary variables, which are useful to provide some (non-experimental) way of learning about the relative importance of different underlying mechanisms.

Main variables:
- Employed (at the point of the follow-up survey)
- Duration of employment (in months from the randomization day to the day of the follow-up survey)
- Wage (monthly (gross and net) wage at the point of the follow-up survey or in the last employment)

We define "employment" broadly as being in a paid job, internship, or vocational training. We might also consider each of the outcomes separately.

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[37]Olken (2015), Promises and Perils of Pre-Analysis Plans, *Journal of Economic Perspectives*, Volume 29, Number 3, Pages 6180

Once the main effect is established, it is important to understand what drives the result. The treatment may modify the outcomes of the participants by 1) creating awareness of the job opportunity, 2) reducing the search time, 3) enhancing the quality of the match or 4)) serving as a referral to the employer. Identifying the channel(s) is relevant for policy-making. We would also like to check for alternative mechanisms, i.e. whether the treatment (rather than or together with removing matching friction) modified the skills of participants, their knowledge of the local labour market, or job-search behaviour. This might happen through job interviews, for instance.

Supplementary variables
- Time until the first interview/trial/employment offer
- Number of job interviews for the first job (invited, happened)
- Number of job trials for the first job (invited, happened)
- Number of applications for the first job
- Where searched for vacancies (indicator variable as in the baseline survey)
- Job/skill match (an indicator variable: overqualified/ok/underqualified, based on observables, can measure for jobs they apply to and for the job they actually get)
- Self reported job satisfaction, self reported match quality
- Reservation wage (at the point of the follow-up)
- Difficulty in the job search (indicator variable as in the baseline survey)
- (Ask employers to see if they consider our treatment as a referral, if refugees contacted them directly)

B.3.2   Integration Outcomes

The hypothesis we would like to test is whether earlier (better) employment leads to better integration outcomes in short- and medium-term. The treatment will serve as an instrumental variable for employment.

Main variables (measures of integration):

- Intention to stay (dummy variable)
- Knowledge of German language (indicator variable)
- Local acquaintances (dummy)
- Activities: study, sport, shopping, meeting with friends (total number)
- Feel at home (indicator on Likert scale)
- Integration index: $\geq A2 German + German\ friends + Invited + Activities + Feel\ home$
- Any other investment in human capital (as driving license)?
- Housing conditions

These outcomes directly correspond to questions in the follow-up survey. Because many of these questions are included in the initial (pre-treatment) survey as well, these variable can be analysed both in levels and in changes.[38]

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[38]Clearly, because of the randomisation the two results should be identical, but adding pre-treatment levels as controls might lead to more precise estimates, which could be important given our limited sample size.

B.3.3 Network Effects

Two measures of network: 1) proxy - address (camp) and nationality, 2) directly ask in the follow-up survey, if their friends participated in the NGO's resume sessions and if, yes, ask for the names.

Possible outcomes: spillovers within the network, sharing information about vacancies and referrals. This would allow us to evaluate the extent to which results depend on whether contacts/friends of the focal individual have been treated as well. In addition, this also allows us to evaluate the extent to which knowledge of a friend being treated has any effect.

B.3.4 Inclusion Rules

All observations, for which we have resume information, pre- and post-treatment survey, will be included in the analysis. Participants who are not eligible for the experiment (see eligibility rules in section B.2.2) will be excluded from the analysis.

B.3.5 Statistical Model Specifications

We will start by comparing the means between the treatment and the control groups as the treatment should be orthogonal to the covariates.

We will complement the analysis with OLS regressions with treatment as the main independent variable. Although these may be too demanding given our sample size, We will include some specifications in which we add location and time fixed effects to our regressions: as the entry into the experiment spans over several months and locations, we expect significant differences between the locations over time, which will lower precision of the unconditional estimates. The coefficient of the treatment variable will, hence, measure the "intention-to-treat" effect within a given location for a given time.

For medium-term labour market outcomes and integration results, we will estimate both "intention-to-treat" effects and LATE using the treatment variable as an instrument for (earlier) employment.

We then will perform heterogeneity analysis and robustness checks with covariates (education, years of work experience, region of origin), for which the balance tests indicates significant differences.

There might be an opportunity to merge our data with some data from the lab, where some of our Arab speaking candidates have participated in an experiment. We could potentially get measures of risk taking and time preferences. However it is not yet clear if enough people will be part of both studies so that a meaningful analysis is feasible.

We intend to cluster observations at the location and time level. We have conducted resume preparation sessions around six different locations: EWH, Kammerspiele, Gruenwald, Caritas, Bayernkaserne.

B.3.6 Balance tables

We will present balance tables for the following variables: Country of origin (largest four countries or origin), months in Germany, family in Germany, years of education, years of work experience, date of job search start, previous contact with employer, received job offer previously, uses Internet in job search, has language difficulties in job search process, does not know where to search, level of German, currently in German class, integration index, return intention. These all correspond to questions in the pre-treatment survey.

B.3.7 Heterogeneity

For both labour market and integration outcomes, there are several interesting dimensions of heterogeneity, which we intend to analyse. First, by nationality or by nationality group.[39] We might be able to analyse the countries with many refugees (Syria, Afghanistan and Nigeria) seperately, while the rest of the countries can be grouped as other Arab countries, other Asian countries, other Subsaharan African Countries.

Another dimension of heterogeneity will be the level of education. Here, we can group people according to the schools attended and the highest school level completed (no school, primary completed and some secondary, secondary completed and some university, university completed).

Other interesting dimensions of heterogeneity will be age group, single refugees versus refugees that came with their family, asulym opportunities, and duration of stay in Germany.

B.4 Limitations

B.4.1 Selection

The refugees that are taking part in our experiment are not representative of all refugees living in Germany for several reasons: our eligibility criteria, their motivation to come to our sessions, and a focus on refugees residing in Munich. This selection has implications for external validity. An expansion of the Programme or a different setting might lead to different results. However, it does not impact the internal validity of the experiment as we randomize over equally selected participants.

The selection on the eligibility criteria is discussed in section B.2.2.

The second reason why our sample is selected is that the refugees that came to us are likely to be different from those who did not, and these differences are may matter for most of the outcomes that we are interested in. One obvious difference is motivation. It takes extra effort to come to the resume advising sessions, especially to those that take place far away from where people live or go to school, and we expect our candidates to be positively selected on motivation. These highly motivated refugees should be also more motivated to learn German, search more intensively for a job, and to go to other support institutions. Other reasons for a selected sample might be educational background, social skills (some people may "shy" away from our sessions), foreign language ability, or psychological well-being. Furthermore, in our way of reaching participants, we are focusing on refugees living in communal accommodation. By focusing on refugees living in communal accommodation, we exclude those that have the means to support themselves or who have already a network of family or friends. We thus focus on the ones most in need of support, which is the most policy-relevant group of refugees. This might actually induce some negative selection.

Third, the experiment only includes refugees that have been allocated to Munich and some of the surrounding municipalities. Refugees in Germany are allocated to federal states using the "Königsteiner Schlüssel", which distributes refugees to states according to population size and economic conditions. However, it also takes the refugees' nationality into account. This led to a slight over-representation of Afghan refugees in the case of Munich.

We can make a rough estimation of the percentage of all refugees in Munich that take part in our

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[39]Given our sample size, it is unlikely that we will be able to get meaningful results if we analyse each individual country of origin separately.

experiment. There have been around 12,000 refugees in Munich at the end of 2015. If we restrict this to men of working age, then we have a pool of potential candidates of 6,000. Further subtracting refugees without a work permit and from safe countries of origin restricts the pool to around 5,000. We thus have a participation rate of around seven percent of relevant and eligible candidates in Munich.

Important for the external validity, particularity of the Munich labour market.

B.4.2 Attrition

In addition, we are aware that sample attrition could be high when working with this population. We concentrated our efforts on obtaining contact details that will not change over time. Besides obtaining their e-mail address and phone number, we also asked if we can contact them via What's App or Facebook. One positive element in this respect is that we provided everybody with some support (resume in German). The treatment group was rather easy to follow up with. As the NGO offers additional support activities, the control group also had an incentive to stay in touch with us. In addition, we manage to secure funding that will guarantee that we will be able to have financial incentives for individuals to participate in our follow-up surveys. Sample attrition may thus be lower than for a simple survey, where the individuals have no gain in remaining in the sample.

B.4.3 Non-Compliance

"Always-takers": As we were in close contact with the NGO they provided us with all refugees that they provided services to, also the refugees that contacted them without our intervention. Therefore, we will be able to be informed if any individual in our control group will approch the NGO and what will come of that additional context. The NGO did not provide the control group with job matching services during the time of the experiment.

"Never-takers": endogenously did not take it up (less benefit); exogenously moved to a different location (away from Munich)

B.4.4 Displacement Effects

One worry in labour market experiments is that participants of the treatment group obtain jobs that might have been filled by the control group in the absence of the experiment. If there is a limited number of jobs and both control and treatment group are competing for these jobs, then this is a valid concern. Crepon et al. (2013) find that displacement effects are particularly strong in labour markets with high unemployment. We think that displacement effects are of limited importance in the context of our experiment for two reasons. First, Munich has a very low unemployment rate and the 150 people in our treatment group seem very small compared to the size of the labour market and the number of vacancies in Munich. Second, most companies indicated that they would be willing to hire additional people if they have the required German and technical skills. So the amount of vacancies does not seem to be the limiting factor.

B.4.5 Ethical concerns

Doing experiments with a vulnerable group of people is a sensitive issue and we need to ensure that we do not harm anyone participating in our experiment. This is important for our institutions and for

the funding agencies involved. First and foremost, however, it is important to us. It is critical to make sure that people in the control group are not put in an unfair position and we do not deprive them from finding a job. We guarantee this in two ways. First, we collect many more resumes than the NGO could potentially match to the available vacancies. The NGO is newly established, has less than 10 full-time staff and thus limited capacity. We make sure that at any time they had more suitable resumes than open positions. Thus, they are already working at full capacity with the treatment group, and our control group would not have been able to additionally benefit from the services of the NGO. While this may limited our chances to find any effect, it ensures that the existence of our experiment does not negatively effect the overall number of matches that are created. Second, six months after the start of the treatment, we will make the resumes of all participants in the control group eligible for job matching. Through this phased-in design, we ensure that everyone receives the treatment in the end, timing being the only difference. Furthermore, we provide both the control and the treatment groups with a resume in German and valuable information on the job search in Munich and we communicate with both treatment and control group making it very clear that it is important that they search on their own. We also comply with the recommendations from the Ethics commission of the Faculty of Economics at the University of Munich.

To ensure that we follow data protection requirements of the Bavarian government and the university, we have a consent declaration of every participant that allows us to use their data for research purposes (see appendix B). This form is in accordance with Bavarian Data Protection Law. We treat the data in a pseudonymous way and make sure that no confidential data is distributed to third persons. In particular, we save the personal identification in a separate place and only merge it for the follow-up purposes.

C Survey Questionnaires

Below, we include our survey questionnaires. We conducted the baseline survey in person during the first meeting with the participants (job-couselling session by the NGO). The follow-up surveys (after six and twelve months) were conducted over the phone. The version below is a rendering for the purposes of showing all questions that were available. The actual surveys were conducting using Google Forms.

Baseline questionnaire for refugees looking for work

Applicant's ID: _____

Volunteer name: _____

Date: _____

Job search

1. **When did you arrive in Germany ?** _____

2. **When did you start to look for a job in Germany?**
After arrival ☐   After getting the work permit ☐ Not yet ☐

3. **How do you look for work?** (up to 3 answers)
Arbeitsagentur ☐   Internet ☐   Social worker ☐   Teacher ☐   Asking employers/shops
directly ☐   Friends/relatives ☐   Other _____

4. **Have you registered at the Arbeitsagentur as looking for a job?**   Yes ☐   No ☐
4.1. When? _____
4.2. How many times were you there? _____

5. **How many hours per week do you spend searching for a job?** 0 ☐ $1-4$ ☐ $5-8$ ☐
$9-12$ ☐ >12 ☐

6. **What difficulties do you have during your job search?** (up to 3 answers)
Language ☐   Many rules ☐   Don't know where to search ☐   No suitable job ☐
Missing skills ☐   Job application ☐   Other _____

7. **Have you been in contact with a German employer?**   Yes ☐   No ☐
If yes, how?
Informal meeting ☐   Job interview ☐   Job offer ☐   Work ☐   Other _____

8. **Have you already received one or more offers?** (up to 3 answers)   Yes ☐   No ☐
8.1. From whom?
Arbeitsagentur ☐   Employer directly ☐   From the camp/housing ☐   Friends/relatives   Other _____
☐
8.2. For what kind of work?
Full-time work ☐   Part-time work ☐   Internship ☐   Other _____

9. **Did you accept the offer?**   Yes ☐   No ☐
If not, why?
Low wage ☐   Does not match your skills: too easy ☐ too hard ☐
Not full-time ☐   Too far ☐   Other _____

10. **If you already had an internship/job in Germany, what were the reasons to leave it?**
Contract is over ☐   Small wage ☐   Didn't like it ☐ Moving location ☐   Other _____

Job expectations and interests

1. **In which jobs would you like to work?** (up to 3 answers)

IT/Software Developer □   Engineer □   Construction worker □   Cleaning services worker □   Security □   Bar/restaurant □   Manufacturing □   Administrative work □   Personal care □   Car mechanic □   Sales person □   Other

_____

2. **Are there any jobs you would never do?** (up to 3 answers)

IT/Software Developer □   Engineer □   Construction worker □   Cleaning services worker □   Security □   Bar/restaurant □   Manufacturing □   Administrative work □   Personal care □   Car mechanic □   Sales person □   Other

_____

3. **What is the minimum monthly wage for you to accept a full time job offer?** _____

4. **The minimum monthly wage in Germany is about netto 1000 Euro per month. If it were dropped to 700 Euro, would you work for this wage?**
Yes □   No □

5. **Do you wish to get education or continue your education?**
University □   School □   Berufsausbildung (job training) □   No □

6. **Do you have experience being self-employed before arrival to Germany?**   Yes □   No □

7. **Do you think you will be self-employed in Germany?**   Yes □   No □

Integration

 1. **Do you have family in Germany?**   Yes ☐   No ☐

 2. **Are you married?**   Yes ☐   No ☐

 3. **Is your husband/wife here in Germany?**   Yes ☐   No ☐

3.1. Is he/she working in your home country?   Yes ☐   No ☐

3.2. Is he/she looking for a job in Germany?   Yes ☐   No ☐

 4. **Can we contact him/her regarding job assistance?**   Yes, at: _____   No ☐

 5. **In your family, who do you think should look for a job here in Germany in the future?**

You only ☐ Your partner only ☐   You and your partner ☐

 6. **Do you have children?**   Yes ☐   No ☐

How many?   _____

In Germany?   Yes ☐   No ☐

How old are they?   _____ years

 8. **Are you planning for your wife and/or children to join you in Germany?**   Yes ☐   No ☐

 9. **What is the highest education of your father?**

No school ☐   Primary School ☐   Secondary School ☐   University ☐

10. **Do you want to stay in Munich?**   Yes, forever ☐

                                                                         Yes, a few years ☐   No ☐

                                                                         Don't know ☐

10.1. Would you move for work?   Yes, within Germany ☐

                                                                         Yes, within Europe ☐   No ☐

                                                                         Don't know ☐

10.2. Do you want to return to your country once it is safe?   Yes ☐   No ☐

                                                                         Don't know ☐

11. **What was the main reason for choosing Germany as your destination as opposed to Italy, France or the UK?** (up to 3 answers)

Relatives/friends ☐   Jobs ☐   Safety ☐   Good reputation ☐

Asylum possibilities ☐   Other _____

12. **Did you make new friends in Germany?**   Yes ☐   No ☐

12.1. **Where are these people from?**

Your country   Yes ☐   No ☐

Germany   Yes ☐   No ☐

Other country   Yes ☐   No ☐

13. **You already feel at home in Germany**

1 (Not at all) ☐   2 ☐   3 ☐   4 ☐   5 (Completely) ☐

                                                                         Yes ☐   No ☐

14. **Have you ever been invited to the house of a German?**

15. **What activities do you do outside of the GU?**

Study/German ☐   Sport ☐   Shopping ☐   Meeting with people ☐ None ☐   Other _____

16. **Since coming to Germany, have you ever felt treated with less courtesy or respect because you are a refugee?**
Never ☐   Sometimes ☐   Often ☐   All the time ☐

Organisational details

1. **For how long have you learned German (in months)?**   _____

2. **Are you currently in a class?**   Yes ☐   No ☐

2.1. If yes, where?   Language school ☐   Courses by volunteers ☐   Other   _____

3. **At what day and time is your class?**   _____

4. **How many hours per week do you learn German on your own?**   _____

5. **Do you have the certificate of your highest degree?**   Yes, original ☐   Yes, copy ☐
   No ☐

6. **Do you have a bank account set-up?**   Yes ☐   No ☐

7. **How did you hear about this session?**
Internet ☐   Flyer ☐   Social worker ☐   Friends ☐
Teacher ☐ Other _____

8. **We would like to stay in touch and see how we can best support you in your job search. How can we best reach you?**

Phone _____

What's app _____

E-Mail _____

Facebook _____

Phone number/E-mail address of friend or family member _____

First follow-up questionnaire, six months after the baseline

Applicant's Name: _____

Applicant's ID: _____

Volunteer name: _____

Gender: _____

Date: _____

Job search

1. **Are you currently working?** Yes ☐ No ☐ Not looking ☐

Job search - not found

If no, continue here

2. **Would you like to work?** Yes ☐ No ☐

3. **How do you look for work?** (up to 3 answers)

Arbeitsagentur (employment office/job center) ☐ Internet ☐ Social worker ☐
Teacher ☐ Asking employers/shops directly ☐ Friends/relatives ☐ Other
_____

4. **Have you registered at the Arbeitsagentur (employment office/job center) as looking for work?** Yes ☐ No ☐

4.1. When? _____

4.2. How many times were you there? _____

5. **How many hours per week do you spend searching for work?** 0 ☐ 1 − 4 ☐ 5 − 8 ☐
9 − 12 ☐ > 12 ☐

6. **What difficulties do you have during your job search?** (up to 3 answers)

Language ☐ Many rules ☐ Don't know where to search ☐ No suitable job ☐
Missing skills ☐ Job application ☐ Other _____

7. **Have you been in contact with a German employer?** Yes ☐ No ☐

If yes, how?

Informal meeting ☐ Job interview ☐ Job offer ☐ Work ☐ Other
_____

7. **How many times did you send or give your CV to an employer?** 0 ☐ 1 − 4 ☐ 5 − 8 ☐

9 − 12 ☐ > 12 ☐

Yes ☐ No ☐

8. **Have you already received one or more offers?** (up to 3 answers)

8.1. From whom?

Arbeitsagentur ☐ Employer directly ☐ From the camp/housing ☐ Friends/relatives
☐ Other _____

8.2. For what kind of work?

Full-time work ☐ Part-time work ☐ Internship ☐ Ausbildung/job training ☐ Other
_____

9. **Did you accept the offer?** Yes ☐ No ☐

If not, why?

Low wage ☐ Does not match your skills: too easy ☐ too hard ☐

Not full-time ☐ Too far ☐ Other _____

Job search - found

If yes, continue here
1. **How did you find your work?** (up to 3 answers)
Arbeitsagentur ☐   Internet ☐   Social worker ☐   Teacher/School ☐   Asking employers/shops directly ☐   SIR ☐   Friends/relatives ☐   Previous employer ☐   Other

————————————

2. **When did you start working?**

————————————

3. **What is the name of the company?**

————————————

3. **What is your position in the company?**

————————————

4. **In which sector is the work?**
IT/Software Developer ☐   Engineer ☐   Construction worker ☐   Cleaning services worker ☐   Security ☐   Bar/restaurant ☐   Manufacturing ☐   Administrative work ☐   Personal care ☐   Car mechanic ☐   Sales person ☐   Other

————————————

5. **What type of work is it?**
Normal job ☐   Mini-job (part-time, 1 E job)☐   Internship ☐   Ausbildung ☐   Other

————————————

6. **What is the net salary? (What you receive every months on your bank account)**

————————————

7. **What is the gross salary? (Before tax and other deductions)**

————————————

8. **For how long is the contract? (in months)**

————————————

9. **How many hours do you work per week? (Full time is 40)**

————————————

Yes ☐   No ☐

10. **Is the job too easy for you?**

11. **Which languages do you speak at work?**
German ☐   English ☐   Arabic ☐   Other ☐

12. **Are you the only refugee in your work place?**
Yes, the only one ☐   No, one more ☐   No, several ☐   Don't know ☐

13. **How happy are you with your colleagues?**
1 (Not at all) ☐   2 ☐   3 ☐   4 ☐   5 (Completely) ☐

14. **How happy are you with the salary?**
1 (Not at all) ☐   2 ☐   3 ☐   4 ☐   5 (Completely) ☐

15. **How happy are you with the tasks at work?**
1 (Not at all) ☐   2 ☐   3 ☐   4 ☐   5 (Completely) ☐

_____

16. **How long does it take you to arrive at work (in minutes)?**

Yes ☐   No ☐

17. **Are you looking for better work?**

18. **Why did the work end?**
I quit ☐   fired ☐   contract ended ☐   legal issues ☐   other ☐

Not looking

If not looking, continue here

1. **Why are you not looking for work?** (up to 3 answers)
Studying German ☐   In School ☐   At university ☐   Taking care of family ☐   Medical
reasons ☐   net salary not high enough ☐   Enough money ☐   Uncertainty about asylum
process ☐   no work permit ☐   Other _____

Yes ☐   No ☐

2. **Will you look for work in the future?**

2.1. If yes, when (date)   _____

Integration

1. **Did someone from your family join you in Germany in the last six months?**   Yes ☐   No ☐

2. **Do you want to stay in Munich?**   Yes, forever ☐
Yes, a few years ☐   No ☐
Don't know ☐

2.1. Would you move for work?   Yes, within Germany ☐
Yes, within Europe ☐   No ☐
Don't know ☐

2.2. Do you want to return to your country once it is safe?   Yes ☐   No ☐
Don't know ☐

Yes ☐   No ☐

3. **Did you make new friends in Germany?**

3.1. **Where are these people from?**

Your country   Yes ☐   No ☐
Germany   Yes ☐   No ☐
Other country   Yes ☐   No ☐

4. **Did the refugees you are in contact with find work**
Yes, many ☐   A few ☐   One ☐   No one ☐

5. **Do you feel at home in Germany**
1 (Not at all) ☐   2 ☐   3 ☐   4 ☐   5 (Completely) ☐

6. **How is your life now compared to 6 months ago?**
Better ☐   Worse ☐   Same ☐

6. **How will your life be in six months?**
Better ☐   Worse ☐   Same ☐

7. **Have you ever been invited to the house of a German?**
Yes ☐   No ☐

8. **Do you still live at *address from CV*?**
Yes ☐   No ☐
8.1 **If no, where do you live now?**
apartment alone or with own family ☐   apartment with flatmates ☐   another GU/camp ☐
8.2 **What is your new address?**

9. **What activities do you do outside of your house?**
Study/German ☐   Sport ☐   Shopping ☐   Meeting with people ☐ None ☐   Other _____

10. **Since coming to Germany, have you ever felt treated with less courtesy or respect because you are a refugee?**
Never ☐   Sometimes ☐   Often ☐   All the time ☐

Organisational details

1. **For how long have you learned German (in months)?**

2. **In Deutsch: Bist du gerade im Kurs?**   Yes ☐   No ☐

2.1. Welches Niveau? (A1, A2, B1, B2, C1)

2.2. Wann und wieviel?

2.1. Interviewer estimate (A1, A2, B1, B2, C1)

3. **How many hours per week do you learn German on your own?**

Yes ☐   No ☐

4. **Did you already get your asylum decision?**

4.1. If yes, what is the outcome?

accepted for 3 years ☐   accepted for 1 year ☐   rejected but can stay ☐   rejected and have to leave ☐

4.1. When?

5. **How much do you agree or disagree with the following statements?**

5.1. **I am happy that I came to Germany.**

1 (Not at all) ☐   2 ☐   3 ☐   4 ☐   5 (Completely) ☐

5.3. **I will (still) be working in the next 6 months.**

1 (Not at all) ☐   2 ☐   3 ☐   4 ☐   5 (Completely) ☐

5.3. **Compared to what you expected, ist your life better, worse or as expected?**

Worse ☐   equal ☐   better ☐

5.3. **What did you know about the life of a refugee in Germany before you came?**

Worse information ☐   exact information ☐   better information ☐

5.6. **I need to focus on studying German before finding a job.**

Yes ☐   No ☐

5.7. **I had wrong information about Germany before I came.**

Yes ☐   No ☐

5.10. **What is the most important thing the German government could do to improve your situation?**

Facilitate family reunification ☐   Faster asylum decision ☐   Job finding support ☐   Better German courses ☐ Better housing ☐   free movement ☐   Other

Second follow-up questionnaire, 12 months after the baseline

Applicant's Name:	_____
Applicant's ID:	_____
Volunteer name:	_____
Gender:	_____
Date:	_____

Job history in Germany (to be completed by interviewer)

Fill with the available information from the baseline and follow-up surveys, double check with the participant. Then ask for the new information - what happened between the first and the second follow-up surveys.

Type	Start	End	Company name	Sector	Position	Why ended?
Full-time/Part-time				section 10, q.5		Quit/Fired
Internship						Contract ended
Ausbildung						Legal/Other

Job search - found

Ask details about the current (or the last) job.

1. **Still the same workplace *name of company* as during the last 6 months?**

Yes ☐   No ☐

2. **How did you find your new work?** (up to 3 answers, can be skipped if the job is the same as in the first follow-up)

Arbeitsagentur ☐   Internet ☐   Social worker ☐   Teacher/School ☐   Asking employers/shops directly ☐   SIR ☐   Friends/relatives ☐   Previous employer ☐   Other _____

3. **What is the net salary? (What do you receive every months on your bank account)** _____

4. **What is the gross salary? (Before tax and other deductions)** _____

5. **For how long is the contract? (in months)** _____

6. **How many hours do you work per week? (Full time is 40)** _____

7. **Is the job too easy for you?**

Yes ☐   No ☐

8. **Which languages do you speak at work?**

German ☐   English ☐   Arabic ☐   Other _____

9. **How happy are you with the salary?**
1 (Not at all) □   2 □   3 □   4 □   5 (Completely) □

10. **How happy are you with the tasks at work?**
1 (Not at all) □   2 □   3 □   4 □   5 (Completely) □

11.**Have you had another job in the last 6 months other than what you already mentioned?**
Yes □   No □
If yes, repeat the above section

Job search
Only if still looking for work.

All the questions I will ask you now are only about the last 6 months!

1. **Are you currently looking for a job? (or a better job if already employed)**
Yes □   No □   Not looking □

2. **How do you look for work now?** (up to 3 answers)
Arbeitsagentur (employment office/job center) □   Internet □   Social worker □   Teacher □   Asking employers/shops directly □   Friends/relatives □   Other _____

3. **What difficulties do you have during your job search now?** (up to 3 answers)
Language □   Many rules □   Don't know where to search □   No suitable job □   Missing skills □   Job application □   No connections □   Other _____

4. **How many job applications have you sent in the last 6 months?** 0 □   1 − 4 □   5 − 8 □
9 − 12 □   > 12 □

5. **In how many applications did you use the CV that we (SIR) sent you?** 0 □   1 − 4 □   5 − 8 □ 9 − 12 □
> 12 □

6. **Have you been in contact with a German employer in the last 6 months?**
Yes □   No □
6.1 If yes, how?
Informal meeting □   Job interview □   Job offer □   Work □   Other _____

7. **Have you already received one or more offers in the last 6 months?** (up to 3 answers) Yes □   No □
7.1. From whom?
Arbeitsagentur □   Employer directly □   From the camp/housing □   Friends/relatives □   Other _____
7.2. For what kind of work?
Full-time work □   Part-time work □   Internship □   Ausbildung/job training □   Other _____

8. **Did you accept the offer?** Yes ☐   No ☐

If not, why?

Low wage ☐   Does not match your skills: too easy ☐ too hard ☐   Not full-time ☐   Too far ☐   Legal issues ☐   Other _____

If not looking:

Why are you not looking for work? (up to 3 answers)

Studying German ☐   In School ☐   At university ☐   Taking care of family ☐   Medical reasons ☐   net salary not high enough ☐   Enough money ☐   Uncertainty about asylum process ☐   No work permit ☐   Other _____

Integration

1. **Do you want to return to your country once it is safe?** Yes ☐   No ☐   Don't know ☐

2. **Did you make new friends in Germany in the last 6 months?** Yes ☐   No ☐

2.1. **Where are these people from?**

Your country: Yes ☐   No ☐

Germany: Yes ☐   No ☐

Other country: Yes ☐   No ☐

3. **Did the refugees you are currently in contact with find work in the last 6 months?**

Yes, many ☐   A few ☐   One ☐   No one ☐

4. **Do you feel at home in Germany?**

1 (Not at all) ☐   2 ☐   3 ☐   4 ☐   5 (Completely) ☐

5. **How is your life now compared to 6 months ago?**

Better ☐   Same ☐   Worse ☐

6. **Have you ever been invited to the house of a German in the last 6 months?**

Yes ☐   No ☐

7. **Do you feel that you are now trusted and valued by the society here?**

Yes, definitely ☐   Yes, a little bit ☐   Not really ☐   No, not at all ☐

8. **What activities do you currently do outside of your house?**

Study/German ☐   Sport ☐   Shopping ☐   Meeting with people ☐   None ☐   Other _____

9. **How would you rate your average stress level compared to 6 months ago? (Are you more worried**

now compared to 6 months ago)
Low ☐   Normal ☐   High ☐

10. **Have you felt treated with less respect or courtesy in the last 6 months just because you are a refugee?**
No☐   Sometimes ☐   Often ☐   All the time ☐

Organisational details
1. **Do you still live in *address from CV*?** Yes ☐   No ☐

1.1 **If no, where do you live now?**
Apartment alone or with own family ☐   Apartment with flatmates ☐   Another GU/camp ☐

1.2 **What is your new address?**

2. **Auf Deutsch: Wie gut ist dein Deutsch?**
A1 ☐   A2☐   B1 ☐   B2 ☐   C1 ☐

3. **Auf Deutsch: Bist du gerade im Kurs?**   Yes ☐   No ☐

4. **How many hours per week do you learn German on your own?**   _____

5. **What has helped you the most get to your current German level other than German course?**
TV ☐   Online german course (app or video) ☐   Talking to friends ☐   Work ☐   Mentor ☐   Religious activities ☐   Sport activities ☐

6. **Did you already get your asylum decision?**   Yes ☐   No ☐
6.1. If yes, what is the outcome?
accepted for 3 years ☐   accepted for 1 year ☐   rejected but can stay and have work permit ☐   rejected but can stay and does not have work permit ☐   rejected and have to leave ☐
6.1.1. When? _____
6.2 If no, how likely is it that your asylum application gets approved? (0-100%)

D   Consent Form

This section contains the text of the consent form, which was signed by all participants in our experiment. Individuals both signed a German and an English version. For individuals that did not know enough English or German to understand the text of the form, we provided translations in their mother tongue.

Consent form, University of Munich

Researchers at the University of Munich (Giesing Yvonne, Nadzeya Laurentsyeva) and the Ifo Institute (Michele Battisti) are planning a research project to study the integration of refugees looking for a job in the German labour market. The purpose is to find out how refugees can be integrated into the labour market, which characteristics are especially important and how this impacts further integration.

The datasets that contain information about your CV and questions about integration in Germany are analysed in Munich in a pseudonymous form and information that allows personal reference will be stored separately for data security reasons. Only employees of the research team of the University of Munich and the Ifo Institute will have access to the data. The data will be saved on local files on computers of the LMU and the Ifo.

Your personal data is used only for this research project. It will not be passed to third parties for other purposes. As soon as the research purpose permits, the information that creates a personal reference will be anonymised or destroyed for data security reasons. The data is processed pseudononymously, so that no identification of individuals is possible. Anonymised and aggregated results will be published.

Your consent is voluntary. By withholding your consent you incur no disadvantages. You can revoke your consent for the future at any time and request deletion or destruction of your data.

I have received the information about the research project. I agree with the intended use of my data and currently have no further questions.

For questions I can write to yvonne.giesing@econ.lmu.de

_____

Date, Place, Signature

E Email sent to participants

This section contains the text of the e-mail that each participant received after the initial job-counselling meeting with the NGO. The e-mail below is identical for individuals in the treatment and in the control group. As attachment to the message below, every participant received a CV in German.

Text of the E-Mail

Dear *NAME*,

Kindly find your German CV attached to this email.
There is a chance that we match you with a possible employer from our database. If we find an employer that is looking for someone with your qualifications, we will send your CV and they will contact you directly. While we do our best to support you in the job search, we cannot guarantee that we can find you a suitable employer, this is why we highly encourage you to keep searching for a job on your own.
Here are some job search tips for you:

- Register at the Agentur für Arbeit The Agentur für Arbeit helps job seekers by providing advice and finding job vacancies.
- To register, you need to go there in person, once you have your work permit, and fill a form. Do not forget to take your ID (Ausweiss) and certificates if available!
- To get the address of the Agentur für Arbeit in your area, visit this link https://www.muenchen.de/rathaus/dienstleistu search for "Arbeitsvermittlung" and then give in your address.
- Please, visit their website for further information: www.arbeitsagentur.de
- Use job search websites Many people in Germany find jobs online, so you can additionally look for jobs using websites like:
    - http://www.monster.de
    - http://www.stepstone.de
    - http://www.jobpilot.de
    - http://www.jobboerse.de
- Continue to learn German, as this will greatly improve your chances of finding a job

If you find an employer through your own search and need support in preparing for the interview or in understanding the contract, please, contact us at this email address (*e-mail address*) and we would be happy to assist you.

In order to be able to contact you regarding possible job vacancies and other activities, it is extremely important for us to have your updated contact details (e-mail, phone, and whatsapp number). Please, let us know as soon as you change any of your contact details.

Please also like our Facebook Page to stay updated about new events:
Link to Facebook page

If your friends are also looking for a job, please recommend them to meet us every Thursday 3-5pm at *address*.

We wish you good luck and best regards,
Your *NGO* Team