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Low-skilled jobs, language proficiency and job opportunities for refugees: An experimental study*

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Abstract: In a field experiment, we study the causal effects of previous experience and language skills when newly arrived Syrian refugees in Sweden apply for low-skilled jobs. We find no evidence of sizeable effects from previous experience or completed language classes on the probability of receiving callback from employers. However, female applicants were more likely than males to receive a positive response. As a complement to the experiment, we interview a select number of employers, which provides additional insights into how they judge candidates for low-skilled jobs.

Keywords: Integration of immigrants; language skills; job mobility; employer interviews

JEL classification: J15; J24; J61

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1 Introduction

The refugee crisis of 2015–16 resulted in large immigrant inflows from countries in the Middle East and Africa to Europe. It is well documented in several countries that refugees, and especially female refugees, experience poorer labor market outcomes—e.g., lower employment and higher unemployment rates—than both natives and other groups of foreign born (see, e.g., Brell et al., 2020). In many cases it takes a long time after arrival for both refugees and their relatives to find stable employment. A large share of immigrants from the Middle East and Africa lack higher levels of education, preventing them from entering the skilled segments of the labor market. Poor language proficiency may also be an obstacle for labor market integration.

There is an ongoing discussion, both in policy circles and in academia, regarding the value of labor market experience and language skills for the labor market integration of immigrants (see, e.g., OECD, 2018). A key idea is that the first job significantly improves labor market prospects, making a worker better suited for, and more able to find, subsequent employment opportunities. The question then becomes how to facilitate labor market entry as soon after arrival as possible. The fact that language skills are strongly correlated with favorable labor market outcomes is often used as confirmation of the importance of language training. However, despite the obvious policy relevance of these issues, causal evidence on the impact of labor market experience and language training on the integration of immigrants is scarce.

This article studies job opportunities for refugee immigrants in Sweden, a country which has experienced a very large inflow of refugee immigrants in recent years. We focus on the effects of language training provided via the Swedish for Immigrants (SFI) program and labor market experience in low-skilled jobs in a field experiment. In the experiment, we investigate the impact of experience from jobs as restaurant assistants and completed SFI for foreign-born job seekers. Applications were sent from randomly assigned fictitious Syrian refugees with different levels of previous experience and language training, to employers who advertised low-skilled job vacancies. Syrians constitute the largest group of foreign born in Sweden. This allows us to put more focus on the effects of skill variation within a particular refugee group.

We complement the field experiment with interviews with a select number of employers with extensive experience of handling applications for low-skilled jobs from persons origi-

nating from Middle Eastern and African countries. While this evidence is only suggestive in nature, it nevertheless provides some insights into what employers look for when judging job candidates. It is also informative about how actual applications are typically written. In these respects, the interviews serve as a check on our results from the field experiment. But they should also be of interest in their own right.

In the econometric analysis, we are unable to demonstrate sizeable effects of previous experience or completed language training on the probability of callback from employers. However, females were more likely than males to receive a positive response on their applications. Most of the respondents in our employer interviews reported that they do not attach much value to previous experience and completed SFI. When judging applicants, the respondents had a very functional approach, considering the requirements of the task at hand and the potential for a long-term relationship rather than formal qualifications. They also put much emphasis on how motivated job candidates are. Moreover, some of the employers disclosed a preference for hiring females over males, because the former were regarded as more conscientious and adaptable. These qualitative results support our findings in the experiment.

Our study contributes to several literatures on the impact of work experience and language skills on labor market prospects for immigrants. Economic theory suggests that low-skilled jobs may lead to more qualified jobs if individuals increase their human capital by means of on-the-job-training or learning-by-doing (Becker, 1964). The transferability of skills between jobs is then of crucial importance. Moreover, such jobs may improve social capital through an expanded professional network (see, e.g., Calvó-Armengol and Jackson, 2004). Previous experience may also serve as a productivity signal when applying for other jobs (see, e.g., Spence, 1973). This may be so even if a worker's human capital is unaffected—simply exhibiting sufficient skills to handle a certain job may make a worker more attractive to other firms. Language skills can be considered an investment in the individual's human capital, and may also signal higher productivity (Chiswick and Miller, 2014). Taken together, these theories suggest that foreign-born persons, and especially refugee immigrants, may be disadvantaged by poor language skills, little work experience and inadequate professional networks.

The role of labor market experience, occupational sorting, and job mobility for the labor market assimilation process has been studied extensively in empirical work (see, e.g., Husted

et al., 2001, Chiswick et al., 2005, Barth et al., 2012, and Brenzel and Reichelt, 2017). Other observational studies show that proficiency in the language spoken in the host country is associated with higher employment and higher wages for immigrants (see, e.g., Chiswick and Miller, 2014, and Yao and van Ours, 2015, for surveys). There is also some evidence indicating that a large part of the difference in labor market outcomes between immigrants and natives can be explained by differences in language proficiency, as measured by tests, and not by differences in returns to these skills (see Ferrer et al., 2016, and Himmler and Jäckle, 2018). Consequently, it should be of great policy interest to investigate the labor market effects of government-sponsored, formal language training for adult immigrants. However, there are few such studies that allow a causal interpretation. Two recent exceptions are Lochmann et al. (2019) and Arendt et al. (2021), utilizing regression discontinuity designs to show that language classes improve the labor market integration of immigrants.

In general, though, the findings in the literatures that we have discussed cannot be interpreted as necessarily reflecting causal relationships. Labor market experience and language skills may be correlated with other unobserved characteristics that influence outcomes under investigation. Unlike previous observational studies on immigrants, our experimental approach enables us to identify causal relationships between, on the one hand, experience from a low-skilled job and language skills, and, on the other hand, employment prospects. Our design also allows for examining the impact of combinations of the two qualifications.

Our most salient result is that female applicants receive more callbacks than males. This is in line with other correspondence studies for the Swedish labor market, documenting that, compared to females, male applicants with foreign-sounding names are less likely to receive a positive response from employers (Arai et al., 2016; Vernby and Dancygier, 2019; Erlandsson, 2022). This evidence appears to be consistent with theories in social psychology postulating that mainly males are subject to stereotypes about foreign nationalities (see Manzi, 2019, for a literature survey). But it is inconclusive as to whether gendered ethnic discrimination is more pervasive in female-dominated occupations.[1]

Previous correspondence studies dealing with assimilation in the labor market typically do not concern refugee immigrants (but native-born persons with foreign or minority background), rarely consider variations in work experience, usually do not focus on typical entry occupations for immigrants, and typically do not examine the impact of variations in lan-

[1]There are also Swedish correspondence studies with native applicants only that document higher callback rates for females in female-dominated occupations (Carlsson, 2011; Carlsson and Eriksson, 2019).

guage skills within a minority group. However, some correspondence studies compare the returns to work experience for foreign born or a minority group to those of natives or members of the majority (see, e.g., Bertrand and Mullainathan, 2004, Vernby and Dancigyer, 2019, and Adermon and Hensvik, 2022). The typical finding in these studies is that experience is less rewarded, in terms of callback rates, for foreign born or minority groups. However, Baert et al. (2017) find that differences in returns to experience diminish and eventually disappear with longer experience in skilled jobs. To the best of our knowledge, the only comparable previous correspondence study on language proficiency is Edo et al. (2019), which, unlike our experiment, focuses on skilled jobs and has job applicants in France signaling language skills by participation in language related activities other than language classes, such as tutoring in French and membership in reading clubs. The results indicate that signal inclusion reduces discrimination against females with non-French-sounding names, but not against male minorities.

Based on our findings, we conclude that previous experience and completed SFI seem to provide at best a small positive signaling value when refugees apply for low-skilled jobs through formal channels. Effects of low-skilled job experience and language training may, however, be driven by other mechanisms outside our experimental setting, such as better access to informal career paths or personal networks. The fact that females from Middle Eastern and African countries have lower employment rates than males from these regions cannot be explained by females being less likely to be contacted for an interview, according to our experimental data. This indicates that the integration of foreign-born females could be improved if they apply for jobs to a greater extent—and more so than for males.

The remainder of the paper is organized as follows. The next section provides a background on the labor market situation for immigrants in Sweden. The correspondence study, involving newly arrived immigrants from Syria, is presented in Section 3. Section 4 reports the findings from the employer interviews and Section 5 concludes the paper.

2 The immigrant population in Sweden

During recent decades, immigration to Sweden has consisted mainly of refugees and their relatives, most of them originating from countries outside Europe. Of Sweden's total population of somewhat more than 10 million in 2021, around 2 million, or about 20 percent, are

foreign born. The foreign-born population has doubled in size during the last 20 years, but Sweden has a fairly long history of immigration and its characteristics have changed over time. (For an overview of Sweden's immigration history, see, e.g., Boguslaw, 2012.) Since the turn of the millennium, immigration from certain countries in the Middle East (Syria and Iraq) and Africa (Somalia) have accounted for most of the migration to Sweden. The increase of people with background in non-European countries has been considerable during the 2000s. In 2000, about 220,000 and 55,000 individuals in the Swedish population were born in Asian and African countries, respectively. In 2021, the corresponding numbers have increased to about 780,000 and 230,000 individuals. The refugee immigration reached historically high levels in 2015 and 2016 when refugee immigration from countries in the Middle East, with Syria and Iraq as the dominating countries, increased as a result of the civil wars in the region. During the peak of what is known as the "refugee crisis" in 2016, more than 70,000 individuals were granted residence permit as refugees in Sweden and an additional 40,000 were granted such permit as "tied movers". Most of the residence permits during 2016 were admitted to refugees from Syria, and around 60 percent to males. Today, Syria is the dominating immigrant country in Sweden and about 200,000 individuals in Sweden are born in Syria. Furthermore, around 150,000 individuals are born in Iraq and 70,000 are born in Somalia.

2.1 Educational attainment

Table 1 shows the educational attainment for the entire immigrant population in Sweden and for immigrants originating from Iraq, Somalia and Syria, respectively, in the age span 25 to 64 years. The foreign-born population are overrepresented among individuals with nine years of compulsory schooling or shorter education. This picture is most pronounced for individuals from Iraq, Somalia and Syria. Among immigrants from Syria and Iraq, around 30 percent had nine years of compulsory schooling or less and the corresponding figure for immigrants from Somalia is over 50 percent. This can be compared to 10 percent in the native-born population. Table 1 also highlights the fact that only 5 percent of the immigrants from Somalia have a university education that is three years or longer. For immigrants from Syria this share amounts to 15 percent. The figures can be compared to 27 percent in the native population.

2.2 Labor market integration

Several studies have documented differences in labor market outcomes between groups of immigrants in Sweden (see, e.g., Aldén and Hammarstedt, 2015, and Calmfors et al., 2018, for an overview). While immigrants originating from countries in Western Europe are doing about as well as natives on the labor market, low employment rates and high rates of unemployment characterize immigrants born in the Middle East and Africa. Table 2 shows the labor market situation for immigrants from the Middle East and Africa and also for immigrants originating from the three major non-European immigrant countries in 2017. Employment rates are considerably lower for immigrants from these regions than for natives, and this pattern is even more pronounced for females. For male immigrants, the employment rate differential to natives ranges between 25 (Iraqis) and 46 percentage points (Syrians), whereas the corresponding interval for females is 35 (Iraqis) to 61 percentage points (Syrians). A similarly bleak picture emerges for unemployment. It should be noted that the figures refer to 2017, i.e., immediately after the "refugee crisis", implying that a large number of immigrants from especially Syria only have been resident in Sweden for a very short time when we observe them in the data. This contributes to the employment rate being much lower and the unemployment rate considerably higher for Syrian immigrants than for immigrants from Iraq and Somalia in this particular year.

2.3 Employment in low-skilled jobs

Approximately one in twenty employees in Sweden work in elementary occupations, which typically do not require more than primary education. These include, i.a., cleaners, restaurant assistants and home care assistants. It can be concluded from Figure 1 that immigrants from Africa and the Middle East are strongly overrepresented in these jobs. This is especially true for males, and for individuals who immigrated recently; despite representing only around five percent of all jobs in Sweden, elementary occupations employ about 40 percent of male immigrant employees in the studied group who immigrated the year before. After four years, the number is still above 25 percent. Even after ten years, the share of employees in elementary occupations is still around three times larger than the share for all workers in Sweden. Our data indicate that elementary occupations are an important gateway to the labor market for newly arrived immigrants from Africa and the Middle East and continue to be of significance long after immigration.

To what extent are low-skilled jobs female dominated? Table 3 reports the percentage of female workers in the largest low-skilled occupations by region of birth. The highest share of female workers is in cleaning and related services and restaurant jobs, where, e.g., three-quarters of native workers are women. Elementary occupations in construction, manufacturing and transportation instead exhibit the lowest overall shares. The female share is notably lower for workers born in Africa and the Middle East than for natives. This is particularly true for restaurant and café assistants, where only around a third of workers from Africa and the Middle East are women.

3 The field experiment

The aim of the experiment is to study the impact of language training and experience from low-skilled jobs for foreign-born persons who apply for low-skilled jobs in the Swedish labor market. Eight fictional job applicants are included in the experiment: four males and four females, all of whom with unique Arabic-sounding names, born in Syria, 23 years old, single, living in the same suburb of Stockholm, with a high school diploma from their country of origin and with a residence permit granted in 2016. As we noted in the Introduction, a very large number of the refugees who were granted residence permits in Sweden in recent years have a Syrian background.[2] In order to avoid having job applicants with a long work history, we have chosen them to be relatively young. The experiment was carried out during the period January to December 2019 (i.e., before the Covid-19 pandemic broke out).

3.1 Design of the experiment

All eight job applicants were registered at the Swedish Public Employment Service in August 2016. Four of them signaled work experience by stating employment in a low-skilled job —restaurant assistant in a well-known fast-food restaurant chain (starting in November 2017) in their applications, while the other four instead continued to be registered at the employment service. Four of the applicants signaled language proficiency by stating that

[2]It is not explicitly stated in the applications that the applicants have been refugees. Strictly speaking, they could have been granted residence permits also as "tied movers" (see Section 2). (Around 24 percent of granted residence permits for Syrians during 2015-16 were for "tied movers" and very few, if any, were for work or studies, according to the Swedish Migration Agency.) The distinction between refugees and "tied movers" is not likely to matter much for employers in our experiment. For simplicity, we use the term "refugees" forthwith to include also migrants for family reasons.

they had completed the entire Swedish for immigrants (SFI) program, while the other four did not mention anything about such training. The applicants were randomly distributed to advertisements for low-skilled jobs. Through this procedure, we thus get the following four types of applicants of each gender:

1. One who has been registered with the Public Employment Service until the time of application and who does not mention anything about completed SFI.

2. One who has been registered with the Public Employment Service until the time of application and who claims to have completed SFI.

3. One who, after being registered with the Public Employment Service, worked in a low-skilled job until the time of application and who does not mention anything about completed SFI.

4. One who, after being registered with the Swedish Public Employment Service, worked in a low-skilled job until the time of application and who claims to have completed SFI.

Our hypothesis is that experience from a low-skilled job and completed SFI should increase the probability that employers respond positively to an application, as these two characteristics should signal higher productivity, relative to continued unemployment and not having completed language training, respectively.

We chose to signal labor market experience by having the applicants refer to a well-known fast food chain since the majority of people in Sweden should understand roughly what tasks are performed and what level of effort is required to carry out a low-skilled job in such a restaurant. Thus, the employer should relatively easily be able to infer the value of such experience for the advertised job at hand.

The purpose of the SFI education, which is the responsibility of municipalities and is free of charge, is to provide basic proficiency in the Swedish language to adult immigrants (Swedish National Agency for Education, 2018). SFI is structured in three different paths depending on the individual student's prior general skill level. Within each path, students can advance to courses with a gradually higher degree of difficulty (courses A to D for path 1, B to D for path 2 and C to D for path 3), but with the same knowledge requirements regardless of the path. The courses deal with listening and reading comprehension, oral

proficiency and writing skills. While courses A and B focus on informal language in everyday situations, courses C and D also teach students more formal language used in workplaces, educational institutions and the wider community. SFI can be vocationally oriented, with courses sandwiched with practical work, but it seems that only a minority of students—data at the national level are not available—get access to these vocational orientations (Swedish Schools Inspectorate, 2010).

Although SFI is a compulsory part of the Establishment program (*etableringsprogrammet*) that certain refugee immigrants are supposed to participate in, a substantial share do not complete the training.[3] During the period 2014–18, only between 35 and 37 percent of the participants completed the SFI courses, according to statistics published by the Swedish National Agency for Education. Participants drop out for various reasons, not necessarily detrimental to the individual. Some may have found a job, while others may have entered other types of education, moved to another part of Sweden or returned to their home country. Notwithstanding, it seems plausible that an explicit reference to having actually completed the language training can be perceived as a positive signal regarding language proficiency by the employers.

Employers responded to applications via email or phone message. We distinguish between two types of callback: (i) invitation to an interview or request for more information about the applicant (than what appears from the cover letters and attached resumés), and; (ii) invitation to an interview. As expected, no employers responded with direct job offers, so no such callbacks are categorized. To minimize the inconvenience for employers, we promptly declined any callback offers. In line with other correspondence studies, we interpret requests for more information from the applicant as a positive signal from the employer, even if it does not lead to an interview or a job offer.

The application letters were designed to be simple and rather short, but were written in grammatically correct Swedish without spelling mistakes. We decided not to signal language proficiency by variations in how correct the language in the application letters was. Arguably, this signal can be weak, for several reasons. First, checks for grammatical and spelling errors are integral parts of most word processing programs. Second, templates of correctly formulated applications are readily available on the Internet. Finally, relatives and

[3]The Establishment program is organized by the Public Employment Service and consists of support in the form of activities and education, directed to newly arrived refugee immigrants aged 20–64 with residence permits.

friends with good language skills may assist in the formulation of the applications. As we show in Section 4, employers seem well aware of these possibilities, implying that they are inclined not to draw strong conclusions regarding language proficiency from an application in correct Swedish until they have talked to the applicant in person. There are also other concerns with varying the quality of the language in the application letters. Such variation may, apart from language proficiency, signal other personal characteristics like ambition and conscientiousness, making the interpretation of any effects on callback complicated. Focusing on language training only is arguably also more policy relevant.

An example of an application with cover letter and resumé, translated to English, is shown in Appendix. The brief letters may also have motivated some employers to request additional information instead of forthwith inviting the applicant for an interview.

The eight applicants were randomly assigned to low-skilled job openings across the country, which were advertised on the Swedish Public Employment Service's portal *Platsbanken*. We selected five occupations at the lowest skill level (i.e., elementary occupations) according to the Swedish Standard Classification of Occupations (SSYK): restaurant/café assistant, cleaner, newspaper/leaflet deliverer, home care assistant and hand packer. At this skill level, these occupations are among the most common among foreign-born, according to Statistics Sweden. These occupations are also characterized by lower language requirements than more skilled occupations (Ek et al., 2020).

Advertised jobs were not applied for if qualifications were explicitly required that were not clear in all applications (for example, previous work experience, good knowledge of Swedish or other languages, special training, driving license or local knowledge) or if information about applicants were requested that we could not provide (for example, social security number or photo). We also excluded jobs advertised by staffing firms, as we lack the necessary information about the client firm in which the employee will work. In addition, we excluded jobs in the fast-food chain at which some of the fictitious applicants were already employed.

It turned out that many jobs in three of the occupations—newspaper/leaflet deliverer, home care assistant and hand packer—could not be applied for, to a large extent for the reasons stated above, and they were also relatively few in number. Consequently, almost all applications concerned jobs as restaurant/café assistants or cleaners. However, these occupations account for a very large proportion of the low-skilled jobs among foreign born,

86 percent for males and 61 percent for females in 2017 (Ek et al., 2020). In practice, the restrictions also meant that only jobs in the private sector could be applied for, as social security numbers are requested in job advertisements in the public sector.

The experiment was registered with the *American Economic Association's* registry for randomized controlled trials before performing any analyses using the collected data, which means that we specified in advance the regressions to be estimated and for which groups. We also performed some power calculations (to be discussed in Section 3.4), although the sample size was not determined by these, but rather by a predetermined start and end date of the trial. Moreover, we submitted the experimental design in advance to *Etikprövningsnämnden* (the Ethics Review Board) in Stockholm for ethical approval, which is standard procedure for research projects involving experimental subjects in Sweden. They decided that no ethical review was necessary.

In total, we sent out 2,184 applications. For 1,958 of these, we were able to determine the geographical location (municipality) of the job and whether the advertisements referred to an open-ended or fixed-term contract and/or a full-time or part-time job and in the analyses below we only include these observations.[4]

3.2 Descriptive results

Table 4 displays descriptive statistics for the variables included in our analysis. A first observation is that the callback rates were low: 3.9 percent for interview or more information and 1.4 percent for interview. However, the callback rates are fairly similar to those for non-European immigrants in other Swedish correspondence studies, although these results are not strictly comparable.[5] Furthermore, 63.3 (44.5) percent of the jobs were open-ended contracts (full-time), whereas the corresponding figure for the labor market as a whole is 83.4 (78.5) percent, according to Statistics Sweden. The jobs in the experiment are thus not only low-skilled, employment contracts are also atypical to a greater extent than is the case for the labor market as a whole. Some jobs could only be applied for via the employer's own

[4]The qualitative results regarding the randomized variables (SFI completion, experience and gender) are not affected by this choice, and the regression estimates are very similar when instead using all 2,184 observations and not including controls for job characteristics.

[5]There is no previous Swedish study that is fully comparable to ours, in terms of applicant groups and types of jobs. Some of the results in Carlsson (2010) and Vernby and Dancygier (2019) come closest. The former study reports a callback rate of 7 percent for persons born in the Middle East applying for low-skilled jobs in the restaurant sector. In the latter study, callback rates for Iraqi- and Somali-born turn out to be 10 and 5 percent, respectively, but the restaurant and café jobs applied for include not only low-skilled ones, as in our study, but also higher-skilled jobs.

web portal, and not by email. However, only 9 percent of applications were made through such online forms.

Table 5 reports balancing checks, where the characteristics of the job vacancies are related to those of the fictitious applicants. Since applicants are randomly assigned to each vacancy, there should be no systematic differences in job characteristics across them. We include indicators for open-ended and full-time contracts, if jobs were applied to via online forms, if the job was as a cleaner or restaurant assistant, if the job was located in the Stockholm local labor market area, and the distance from job to home. The upper part of the table reports averages for each of the eight applicants, while the lower part shows coefficients and standard errors from regressing the job characteristics onto indicators for having previous labor market experience, completed language training, and for being female, separately for each outcome and explanatory variable. Overall, the treatment is balanced over job characteristics. The only exception is that applicants with previous experience are four percentage points less likely to apply for jobs as restaurant assistants, with an average probability of just below 70 percent, which is mirrored in the higher probability of applying to jobs as cleaners.

Figure 2 shows the callback rates in our experiment by gender and type of job applicant, together with 95 percent confidence intervals, for the broad definition of callback (interview or request for more information), while Figure 3 shows corresponding rates for the narrow definition (interview).[6] The callback rate for females (around six percent) is three times as large as for male applicants (two percent). Within genders, there are no apparent differences across types, suggesting no large returns in the form of higher callback rates for applicants with completed language training, work experience or with both of these qualifications, relative to those with neither of them.

3.3 Econometric framework

The econometric analysis is based on linear probability models estimated with OLS. As the main dependent variable, we use an indicator variable for if there was a callback from the employer, either regarding invitation to an interview or a request for more information. We will also conduct analyses with just invitation to an interview as the dependent variable.

In the econometric analysis, our basic model is represented by the following equation:

[6]This is equivalent to estimating a fully saturated, non-parametric model of callback for each of the eight applicants.

$$y_i = \beta_0 + \beta_1 \times SFI_i + \beta_2 \times EXP_i + \beta_3 \times FEMALE_i + \boldsymbol{\gamma}'\boldsymbol{X}_i + \varepsilon_i, \quad (1)$$

where y is the outcome of interest, *SFI* is an indicator for whether the applicant successfully finished language training, *EXP* is an indicator for whether the job applicant has experience from a low-skilled occupation, *FEMALE* is an indicator for female applicants, and ε is the error term. Job applications are indexed by i. Although not necessary for identification, the model also includes a vector of additional, non-randomized controls, $\boldsymbol{X}$, which comprises indicator variables for whether the employment contract is open-ended or fixed-term, for whether the job is full-time or part-time, the distance from job to home, using data from Google Maps and scaled to lie between 0 and 1, as well as indicator variables for the occupations. As hand packers, home care assistants and newspaper/leaflet deliverers accounted for very few observations, these occupations have been merged into a single category, "Other occupations".

In alternative specifications, we add an interaction between *SFI* and *EXP* to the model above, in order to capture heterogeneous effects for different combinations of qualifications. Later on, we also examine if there are heterogeneous effects with regard to gender, occupation, the region in which the job is located, and mode of application, i.e., whether the job could be applied for by email or only by using the employer's own web portal.

3.4 Econometric results

In the registered analysis plan, our point of departure for the power calculations was a sample of 3,000 applications, a callback rate of 5 percent and a 5 percent significance level, implying that we can detect an effect of about 2.5 percentage points with an 80 percent probability (the standard power level used in experimental studies). The actual number of observations in our study turned out to be lower (2,184).[7] The actual callback rate for all applicants was slightly below 4 percent (for interview or more information). With that as the correct underlying baseline, the real effect of any intervention would need to be around 2.6 percentage points in order for us to reject with 80 percent probability the null hypothesis that there is no effect of, for example, completed SFI.

The first set of regressions, for all job applicants and both definitions of callback, is shown

[7]Basically all jobs were applied for that appeared on *Platsbanken* during the period of study and fulfilled our selection criteria.

in Table 6, while Table 7 reports regressions by gender, using the broader response measure only. Neither *SFI* nor *EXP* contributes significantly to higher (or lower) callback rates and this is true also for the interaction *SFI* × *EXP*, although the latter is borderline significant in the sample with male job applicants. In some of the regressions, the estimated effects are even negative, but they are never significant. The only variable that seems to systematically affect callback rates is the applicant's gender: females are about 3.8 percentage points more likely than males to be asked for an interview or for more information. The difference is 1.3 percentage points for the narrower measure of invitation to an interview. Relatively speaking, the gender difference is very large; the probability of being invited to an interview or asked for more information increases by approximately 190 percent if the applicant is female instead of male, while the corresponding increase for invitation to an interview amounts to around 180 percent.[8] The higher callback rate for females is also consistent with our finding in the employer interviews that some employers prefer hiring females over males in the low-skilled jobs we study (see Section 4).

With all applicants included and without interaction between *SFI* and *EXP*, the confidence interval for *SFI* ranges from -0.027 to 0.009, while that for *EXP* is between -0.018 and 0.018. Since the overall callback is only 4 percent, we cannot rule out sizeable relative effects. In absolute terms, however, the effects appear small; based on the upper bound of the confidence intervals, when signaling experience one would receive at most one additional positive callback per $\frac{1}{0.018} \approx 56$ applications and when signaling *SFI* the corresponding number is $\frac{1}{0.009} \approx 111$. With separate regressions by gender and with interaction effects the confidence intervals become even larger, since we are then in effect comparing either four or eight groups.

What about the control variables in the regressions? It should be noted that job characteristics were not randomized in the experiment, so it is not possible to interpret our findings for these variables in causal terms out of hand. If the advertisement refers to an open-ended contract, the callback rate for the more broadly defined response decreases by 1.9 percentage points, but the coefficient is close to zero for the interview alone. The fact that jobs with open-ended contracts are associated with lower callback rates may reflect that these positions are more attractive to apply for, but employers may also become more demanding

[8] To obtain the relative effects, we divide the estimated coefficient for the *FEMALE* indicator by the average probability of receiving a callback for male applicants. The average callback rate for invitation to an interview or request for more information was 2.0 percent for males and 5.8 percent for females, while the corresponding rate for invitation to interview was 0.7 and 2.0 percent, respectively.

when recruiting to such jobs as costs of dismissal are substantially higher. The mode of application could reflect unobserved employer characteristics correlated with callback rates, such as size, the number of expected applicants and the resources devoted to the screening of applicants. However, neither for full-time jobs nor online forms do we see a relationship with callback. While full-time jobs may also be more attractive to apply for, they are not associated with higher dismissal costs than part-time positions. Since all applicants resided in the Stockholm area but applied for jobs all over the country, we examine whether geographical distance affects callback rates. For example, the low callback rates in general may reflect that many jobs (over 60 percent) were located outside of Stockholm. The distance variable is rescaled to run between 0 and 1, so the coefficient can be interpreted as the difference between applying for jobs in the residential municipality and the municipality farthest from this municipality. We find a negative effect of the distance variable, but it is significant only for the narrow definition of callback. Employers may be reluctant to directly invite faraway applicants to interviews for low-skilled jobs, out of misgivings that the applicants are not genuinely interested in the position (see Section 4, where this matter is discussed in more detail).

Examination of heterogeneous effects with regard to independent variables is rendered somewhat problematic because of low power, but outlines of such analyses were part of our pre-registration plan and the results are provided in Table A1 in the Appendix. All regressions use the broader measure of callback as the dependent variable.

Separate regressions for cleaners and restaurant/café assistants reveal no sizeable positive effects from signaling SFI or experience for any occupation. The coefficient for *SFI* is significantly negative for the latter group. (Given the large number of estimates in the table, we are of course likely to find some significant effects just by chance.) Surprisingly, we find no positive effect of non-trivial magnitude on callback from signaling previous experience as a restaurant/café assistant even when such jobs were applied for.

We have examined heterogeneity relating to geographical distance in two ways. First, we have added interactions between the measure of the traveling distance between job and home and the *SFI*, *EXP* and *FEMALE* indicators. Second, we estimate separate models for job postings inside and outside the Stockholm local labor market as well as a joint model where the randomized explanatory variables are interacted with an indicator for if the job was located in Stockholm. However, we find no relationship between, on the one hand, the

traveling distance from the residential municipality and whether the jobs are in Stockholm and, on the other hand, effect sizes for the randomized variables. Furthermore, we find no difference in the returns from signaling completed SFI or experience with respect to the mode of application, but there is a negative effect of the distance variable when only online forms were used.

Finally, in unreported regressions (available on request from the authors) we investigated whether the month of application during the year-long experiment and repeat applications to the same employer matter. The month of application reflects pure calendar effects, on the one hand, as well as effects stemming from the fact that both length of previous experience and duration of unemployment increases over time, on the other hand. It is not possible to distinguish between the two effects with our data. We divided the sample according to month of application and estimated the regressions corresponding to Table 6, column 1, separately for each month. We see no clear trends in the estimates for *SFI* or *EXP*, but there is a weak tendency for the estimates for females to be somewhat smaller in the second half-year. Moreover, it turned out that many employers received more than one application—38 percent of all applications were made to an employer whose name and/or contact details appear multiple times in our sample. However, a large number of these occurrences were due to applications being sent to jobs at large chains/firms with multiple establishments across the country, hiring locally. Only about half of the occurrences (21 percent) in our main sample were associated with an email address that appears multiple times. These were often addresses used specifically for recruitment purposes. Although the applications were for different job postings and over the course of a year, it is conceivable that these firms discovered that an experiment was going on and consequently differ from other firms in their response. However, separate regressions, corresponding to Table 6, columns 1-2, for applications to employers who received only one application throughout the experiment show only small differences to the regressions using the full sample in the estimates for *SFI*, *EXP* and *FEMALE*.

4 The employer interviews

After the field experiment was completed, we conducted interviews with employers with extensive experience of handling and judging applications for low-skilled jobs from persons

of non-European origin. The purpose of the interviews was to shed additional light on what employers look for in such applications and how these are typically written. Contact information to suitable employers was provided by two Swedish employer associations, *Visita* and *Almega*. The former consists of firms in the hospitality industry and the latter directs itself to various other service industries, including cleaning firms.

In total, we contacted ten employers, five of whom did not respond or declined to participate. We carried out interviews with four employers from the hospitality industry and one cleaning firm. These were conducted via Zoom and recorded (with the consent of the interviewees) and lasted between 30 minutes and one hour. After the Zoom interviews, some follow-up questions were communicated via email. All the respondents were directly involved in recruitment, either as owners of the firms, chief operating officers or heads of human resources departments. The participating firms were located in different geographical areas of Sweden and of different size in terms of the number of employees: one small firm (49 employees or less), two medium-sized firms (50–249 employees) and two large firms (250 employees or more).

Before the interviews, the respondents were informed about the purpose of the interviews and that the identity of the firms would not be revealed. The interviews were semi-structured, and based on a questionnaire (that the respondents were given access to in advance), but allowing for follow-up questions depending on the answers given.

The number of interviews is small and the employers were not chosen randomly, implying that the evidence we collected should be regarded as suggestive in nature. Our respondents were, however, quite unanimous in several important respects.

All firms except one (a former user) reported that they use the web portal of the Public Employment Service, *Platsbanken*, as the main recruitment channel. Some interviewees also use social media, e.g., Facebook and LinkedIn, or the firm's own website. The type of low-skilled jobs our respondents advertise include restaurant assistants, cleaners and, in one firm, janitors/park-tenders.

All of the employers stated that they receive many applications for low-skilled jobs: from 30–40 applications for a single position in one firm up to 1,500 applications for a couple of hundred positions in another firm. Handling such large amounts of applications obviously require a great deal of resources on part of the firms. Some employers argued that the task is made more difficult by the perception that some applications are not seriously intended, only

serving as a means to fulfill requirements for unemployment benefits or activity support, i.e., monetary compensation for those participating in active labor market programs, sometimes resulting in no-shows for job interviews. These difficulties were also the reason why the former user of *Platsbanken* stopped using it entirely.

A clear majority of the applications for low-skilled jobs come from persons with perceived origin in non-European countries, according to all but one of our respondents. Estimated shares range between 50 and 90 percent. Regarding the share of applications from females, responses were more dispersed, between 20 and 80 percent. Three of the firms were of the opinion that there are no important differences in job performance between females and males, but two respondents regarded females as being more conscientious and adaptive. One of these respondents, with only 20 percent of the applications from females, would like to see the share of females in the firm increase. This respondent also claimed that females are more meticulous than males in cleaning jobs, and that this possibly reflects habits from their home countries, where females traditionally assume full responsibility for household chores.

Two respondents reported that, on average, there are differences in social skills between females and males. One of them stated that women can be relatively quiet and unobtrusive, in line with traditional gender roles. Another respondent was of the opinion that males connect faster to co-workers than females.

Without exception, the firms reported that job applications from non-Europeans tend to be very short and simple, containing only basic information. A length of six to seven sentences in the cover letter is typical for persons from Africa and the Middle East and some applicants do not even include a letter, only the resumé. Some applications are more standardized and formal than others, and appear to be written using templates, from SFI or the Internet, or with the assistance of a job coach from the Public Employment Service. While our respondents informed us that grammatical and spelling errors are common in the application letters, not much emphasis seems to be put on this in the screening process.

Most of the firms did not regard completed SFI as important. A common view was that proficiency in Swedish varies a great deal among those who have completed SFI, implying that the language skills signal is rather weak. The best way to assess language proficiency is to meet the applicant in person. One interviewee claimed that the quality of SFI is not always first-rate and that there are other ways to learn Swedish. Another one mentioned that many positions do not require advanced knowledge of Swedish. A third respondent observed that

completed SFI does not necessarily imply good communication skills—some employees with fluency in Swedish do worse when it comes to communicating with co-workers and customers, while some employees lacking in language skills are better at this. One respondent, however, had a more positive attitude toward the merit of completing SFI and argued that it shows dedication to and ability for learning. There is little to suggest that the responses were due to the interviewees being completely ignorant about SFI or lacking in interest; two employers had personal experience of SFI, as a visitor to language classes and co-arranger of vocationally oriented SFI, respectively. The extent to which our respondents put emphasis on proficiency in Swedish seems to vary with occupation. For jobs requiring direct contact with customers basic knowledge of Swedish is seen as quite important, while other jobs are less demanding in this respect (but some proficiency in English, at least, is desirable).

Regarding the value attributed to previous labor market experience in Sweden, opinions differed. Three of the firms do not attach much importance to this when recruiting, be it from the same type of job as the vacant position or not and regardless of length. One respondent emphasized the importance of on-the-job training. Under supervision from an experienced co-worker, it is possible to learn the job from scratch within a couple of weeks. Another interviewee noted that many positions in the firm pertain to summer or weekend jobs, which typically are applied for by new entrants in the labor market. Fostering an employee into a valuable member of a working team is not dependent on previous experience, according to a third respondent. For instance, in his/her firm, some of the restaurant staff are former carpenters. Two respondents reported that at least some labor market experience is valuable, but not necessarily from the same occupation as the one advertised.

Overall, our respondents regarded personal traits and attitudes—something that they try to figure out from the application letters but is better assessed during a job interview—as more important than formal qualifications. Being motivated, service minded, conscientious, interested in a long-term employment relationship with the firm, and able to fit in with the workplace culture, are characteristics highly sought after by employers in our survey.

Although strong conclusions cannot be drawn from our small survey, the findings do lend support to our simple design of the application letters in the field experiment. They also contribute to the understanding of the reasons behind the low callback rates in general, why they were higher for females than males, and why applicants with completed SFI and previous experience did not receive more callbacks than applicants without these qualifications. Our

findings suggest that employers hiring applicants from the Middle East and Africa in low-skilled jobs view SFI and experience as weak signals of productivity. When judging such applicants, employers seem to have a functional approach, considering the requirements of the task at hand and the potential for a long-term relationship rather than formal qualifications.

5 Conclusions

Using a correspondence test, we have investigated the impact of completed language training in Swedish (SFI) and experience from low-skilled jobs for recently arrived foreign-born job applicants in the Swedish labor market. Applications were sent from fictitious Syrian refugees with different language skills and previous work experiences to employers advertising low-skilled job vacancies. We are unable to demonstrate large positive effects of SFI or previous experience on callback rates. However, female job applicants were significantly more likely than male applicants to receive callback from employers. We have complemented the correspondence study with interviews with a select number of employers, in order to shed light on potential mechanisms behind our experimental results.

A review of previous research indicates that initial labor market experience is associated with improved long-term labor market outcomes for foreign-born individuals. Language proficiency also seems to be related to better prospects in the labor market for immigrants according to the literature. But employers in our experiment did not pay all that much attention to whether or not a job applicant has completed language training in Swedish or have any previous work experience. Neither completed SFI nor a low-skilled job thus seems to provide any significant positive signaling value when refugees from Syria apply for low-skilled jobs through formal channels. One interpretation of these findings is that the positive effects suggested in the literature of these qualifications are driven by other mechanisms than signaling, which are not possible to account for in our experimental setting, such as better access to informal career paths, information, human capital accumulation, or improved professional networks. The respondents in our employer interviews reported that they regard the link between completed SFI and language proficiency as being rather weak and that applicants' personal traits, like motivation and conscientiousness, are more important than previous experience. Applications for low-skilled jobs are typically very short and simple, according to our respondents, and more information about the personal characteristics that

employers are looking for could contribute to higher callback rates.

The observation (in Section 2) that females from Middle Eastern and African countries exhibit lower employment rates compared to men from these regions does not seem to be explained by females being less likely to be contacted for an interview. The two most important occupations in our experiment, restaurant assistant and cleaner, are dominated by females and there are also other correspondence studies that find that females have a higher callback rate than males in female-dominated occupations, as discussed in the Introduction. The interviews revealed that some employers regard females as more conscientious and adaptable than males. Disregarding any general equilibrium effects and differences in selection into employment for males and females, our results indicate that the integration of foreign-born females would be improved if they to a greater extent apply for jobs.

As is usual in correspondence studies, a number of caveats are in order. It should be emphasized that we do not test the effect of language skills per se, but the signal from completed language training. It is not obvious how employers interpret the formulation that the job applicant has completed "the entire SFI program" in terms of language skills, as employers may be ill-informed about the contents and structure of SFI (although the employer interviews showed that some of them were practically involved in the program). We cannot distinguish between effects due to ignorance or misconceptions regarding SFI on part of employers and effects based on actual knowledge. Moreover, given previous experience, completed formal language training may not be seen as a large additional advantage. It is also conceivable that SFI has no positive effect on the callback rate if an explicit reference to such training reminds the employer that the applicant belongs to a group with a perceived low productivity (foreign born) or if the employer is reminded of a training to which he or she is skeptical, even if completed by the applicant. This skepticism may be due to the requirements or quality in SFI perceived as being too low.

The fact that unemployment is assigned such a small role by employers in our study may be related to the fact that the group we examine has a generally low employment rate. For the group we are investigating, it may be that the work experience is considered to be too short (between 14 and 25 months, depending on time of application) or not sufficiently qualified. However, it is not possible to distinguish between effects of different lengths of work experience and calendar effects in our experiment.

Furthermore, the labor market we study is characterized by stronger competition for

available jobs than in more skilled occupations, according to the Swedish Public Employment Service (2019), whose regularly published indices indicate the extent of labor shortages or excess supply in various jobs. The observation that competition for low-skilled jobs can be fierce is also supported by our employer interviews, in which the respondents reported that they receive a large number of applications per vacant position, and by public statements from other employers (Bergfors, 2011; Jureskog, 2022). Fierce competition may have particularly negative consequences for the vulnerable group included in the experiment and not only lead to a generally low callback rate, but also to a small return on the signals of Swedish language proficiency and productivity acquired through work experience in the applications.

Appendix

Job application, with cover letter and resumé. [ ] indicates text not shown here. Text without { } refers to applicant 1 (see Section 3.1) and text with { } added refers to the other applicants.

Page 1

To: [Employer]

In your ad, I read that you are looking for a [Professional role]. I'm very interested in the job. I'm 23 years old. I was born in Damascus in Syria and received a residence permit in Sweden in 2016. I currently live in Stockholm. {I have completed the entire education in Swedish for immigrants (SFI).}[1]

I have a high school diploma from my home country. {I currently work as a restaurant assistant at [Fast-food chain] in Stockholm (references provided on request).}[2]

I'm single and in my spare time I like to work out, listen to music and meet friends.

I hope to meet you in person and send my application.

Page 2

Resumé

Personal Information:
Name: [Name]
Date of birth: [Date of birth]
Place of birth: Damascus, Syria
Address: [Residential address]
Email: [Email address]
Telephone: [Telephone number]

Education:
High school diploma from Damascus, Syria
{Completed the entire education Swedish for immigrants (SFI)}[1]

Work experience:
201608 - Registered at the Swedish Public Employment Service
{201711 - Employed as a restaurant assistant at [Fast food chain]}[2]

[1]{ } indicates text included for applicant 2 and 4, see Section 3.1.
[2]{ } indicates text included for applicant 3 and 4, see Section 3.1.

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Table 1: Educational attainment, by region of birth, percent, 2016

	Educational attainment (percent)				
	≤9 years compulsory schooling	Upper secondary schooling	University education <3 years	University education ≥3 years	Unknown
Born in Sweden	10	47	16	27	0
Foreign born	20	33	14	26	7
Born in:					
Iraq	29	30	15	22	3
Somalia	52	29	7	5	7
Syria	35	22	21	15	6

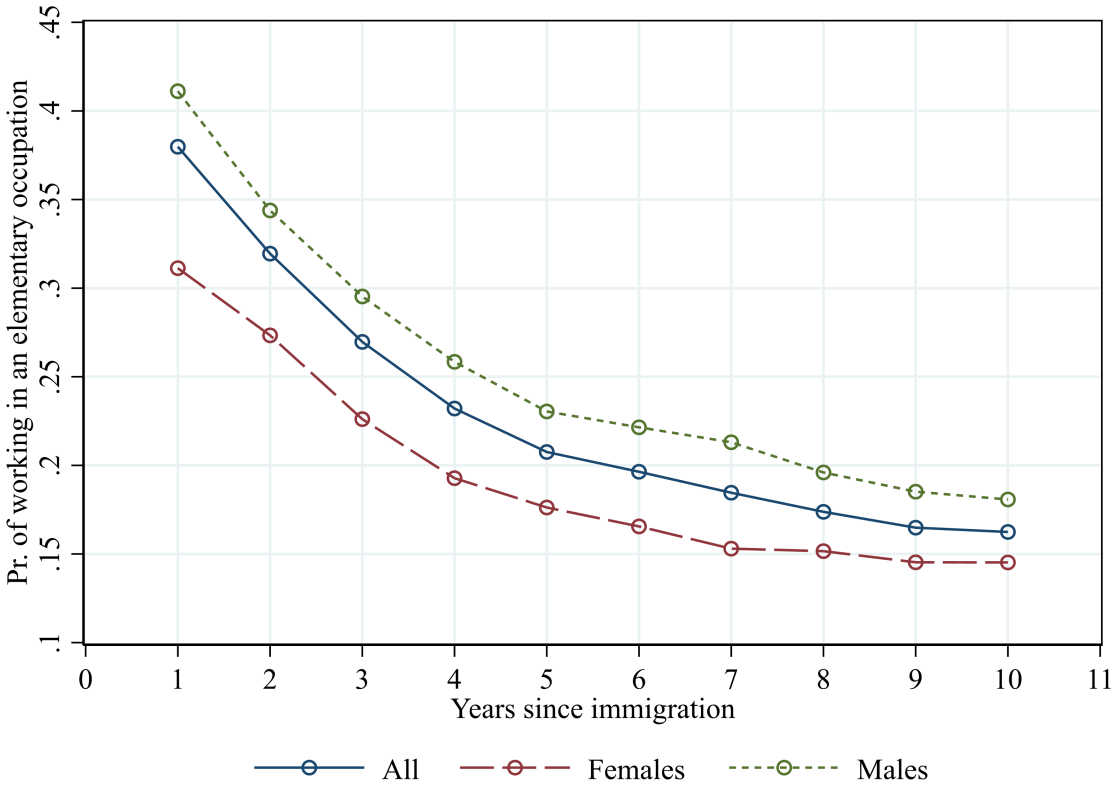
Notes: The data refer to 25-64-year-olds. Source: Statistics Sweden.

Table 2: Labor market status by region of birth, percent, 2017

	Sweden	Africa	Middle East	Iraq	Somalia	Syria
Males						
Employment rate	86.9	60.9	55.9	62.0	57.6	40.6
Share in unemployment	5.5	33.7	39.2	27.0	38.3	68.1
Females						
Employment rate	85.5	48.8	45.6	50.2	34.7	24.3
Share in unemployment	4.4	31.5	33.6	24.7	41.1	60.5

Notes: The data refer to 25-64-year-olds. The definition of employment is based on annual income taxation records. The cutoff for being classified as employed is based on a model which incorporates taxation records and data from the Swedish Labor Force Surveys for October-November. The method is designed to produce an employment measure that corresponds to the definition of employment according to the International Labour Organization as closely as possible. Unemployment is defined as "total" unemployment, i.e., being registered at the Swedish Public Employment Service as full-time unemployed or participating in any labor market program, including subsidized employment, on the 30th of November. Source: Own calculations, based on register data from Statistics Sweden.

Figure 1: Probability to be in elementary occupation for employees born in Africa and the Middle East, by gender and years since immigration



Notes: The data refer to individuals aged 20 to 64, observed between the years 2000 and 2013. Occupation based on the 1996 version of SSYK. Source: Own calculations, based on register data from Statistics Sweden.

Table 3: Share of females in low-skilled jobs, by occupation and region of birth, 2017

Occupation (two-digit SSYK)	N	Native	Foreign born	Africa	Middle East	Iraq	Somalia	Syria
Cleaning and related services (91)	87,392	75.1	68.6	47.6	38.1	37.9	43.7	34.9
Construction, manufacturing and transportation (93)	22,395	20.0	22.4	8.7	12.7	16.5	2.4	8.9
Restaurant and café assistants (94)	59,781	77.9	44.6	29.3	34.7	41.9	34.9	23.2
Other service workers (96)	47,757	30.7	31.5	21.2	26.6	25.8	23.7	22.0
All low-skilled occupations	220,505	54.5	53.2	36.6	33.0	36.6	36.7	24.9

Notes: The data refer to 25-64-year-olds. Elementary occupations, as defined by the International Standard Classification of Occupations, require at most primary education. Occupation based on the 2012 version of SSYK. Each cell reports the percentage of females of all workers by occupation and region of birth. The figures for all low-skilled occupations include the minor occupations "Berry pickers and planters" and "Market salespersons". Source: Own calculations, based on register data from Statistics Sweden.

Table 4: Descriptive statistics for the experiment

	Mean	Standard deviation
Type of callback:		
Interview/more information	0.039	0.194
Interview	0.014	0.117
Characteristics of job applicants:		
Completed language training (SFI)	0.508	0.500
Experience as restaurant assistant	0.500	0.500
Female	0.508	0.500
Characteristics of jobs applied for:		
Open-ended contract	0.633	0.482
Full-time schedule	0.445	0.497
Online form	0.089	0.285
Distance to job from home	284.0	249.3
Stockholm area market	0.369	0.483
Hand packer	0.006	0.078
Home care assistant	0.002	0.045
Restaurant/café assistant	0.697	0.460
Cleaner	0.291	0.454
Newspaper/leaflet deliverer	0.004	0.060

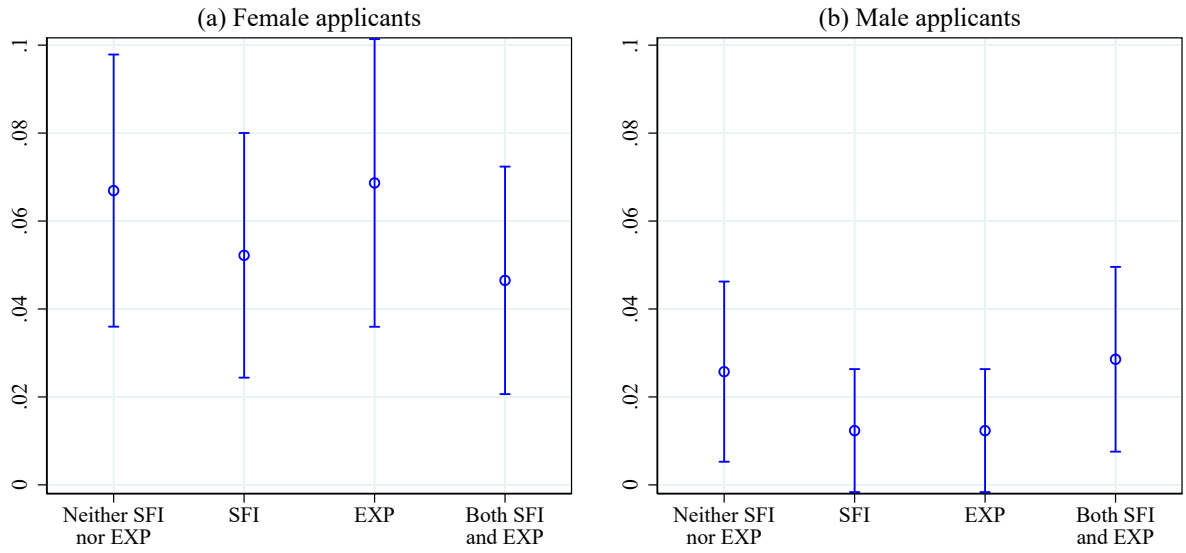
Notes: 1,958 observations. Distance is in kilometers between the residential municipality and the municipality in which the job is located, as indicated by Google Maps.

Table 5: Characteristics of vacancies, by applicant type

	(1) Open-ended contract	(2) Full-time contract	(3) Online form	(4) Cleaner	(5) Restaurant assistant	(6) Stockholm area	(7) Distance to job from home
Applicants:							
Male	0.631	0.416	0.077	0.266	0.717	0.348	301
Male with language training (SFI)	0.617	0.424	0.074	0.288	0.700	0.329	300
Male with experience as restaurant assistant	0.658	0.440	0.115	0.272	0.720	0.395	263
Male with SFI and experience	0.669	0.429	0.118	0.294	0.682	0.376	276
Female	0.606	0.469	0.095	0.276	0.720	0.331	297
Female with language training (SFI)	0.639	0.430	0.100	0.265	0.731	0.430	257
Female with experience as restaurant assistant	0.627	0.464	0.047	0.326	0.652	0.356	299
Female with SFI and experience	0.620	0.488	0.081	0.341	0.655	0.388	279
Estimated effect of:							
Female	-0.021	0.035	-0.015	0.022	-0.014	0.014	-2.242
	(0.022)	(0.022)	(0.013)	(0.021)	(0.021)	(0.022)	(11.272)
EXP	0.020	0.020	0.004	0.035*	-0.040*	0.019	-9.376
	(0.022)	(0.022)	(0.013)	(0.021)	(0.021)	(0.022)	(11.267)
SFI	0.006	-0.004	0.009	0.013	-0.012	0.024	-12.392
	(0.022)	(0.022)	(0.013)	(0.021)	(0.021)	(0.022)	(11.264)

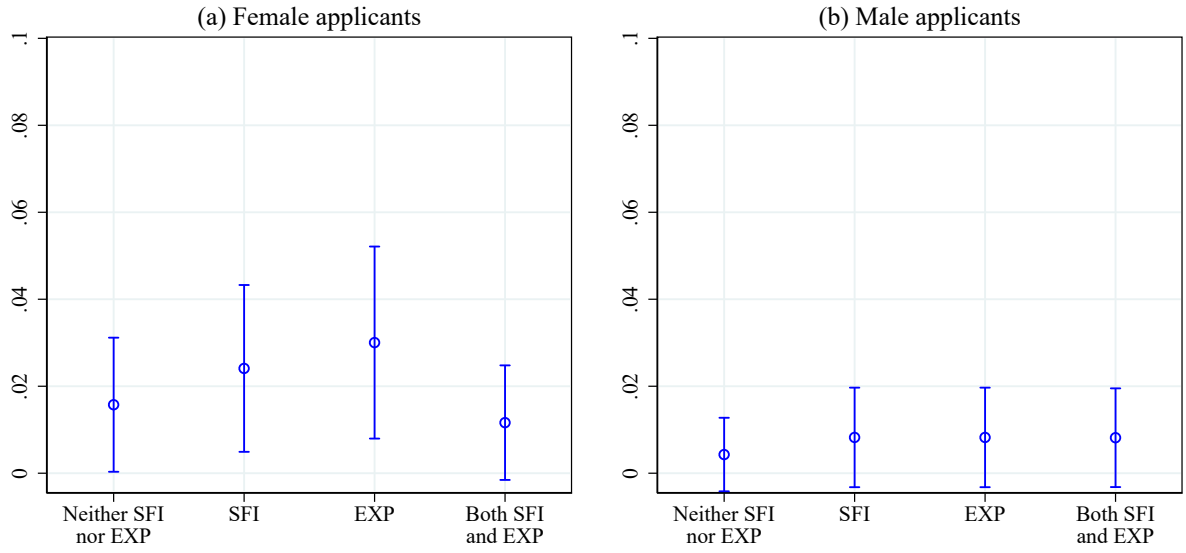
Notes: The upper part of the table reports average job characteristics of the applications sent from the eight applicants, while the lower part shows estimates from separately regressing the job characteristics onto the characteristics of the applicants. Distance is in kilometers between the residential municipality and the municipality in which the job is located, as indicated by Google Maps. Robust standard errors in parentheses. * indicates statistical significance at the 10-percent level.

Figure 2: Callback rates for broad definition of callback, by gender and type of job applicant



Notes: Callback refers to invitation to an interview from the employer or enquiry for more information about the applicant. SFI and EXP stands for completed education in Swedish for immigrants and experience as restaurant assistant, respectively. 994 observations for female applicants and 964 for male. 95 percent confidence intervals.

Figure 3: Callback rates for narrow definition of callback, by gender and type of job applicant



Notes: Callback refers to invitation to an interview from the employer. SFI and EXP stands for completed education in Swedish for immigrants and experience as restaurant assistant, respectively. 994 observations for female applicants and 964 for male. 95 percent confidence intervals.

Table 6: Callback regressions, by type of response

	(1)	(2)	(3)	(4)
	Interview/more information		Interview	
Language training (SFI)	-0.009	-0.014	-0.002	0.006
	(0.009)	(0.012)	(0.005)	(0.007)
Experience as restaurant assistant	-0.000	-0.006	0.001	0.009
	(0.009)	(0.013)	(0.005)	(0.008)
SFI × Experience		0.012		-0.015
		(0.018)		(0.011)
Female	0.038***	0.038***	0.013**	0.013**
	(0.009)	(0.009)	(0.005)	(0.005)
Open-ended	-0.019*	-0.019*	-0.006	-0.006
	(0.010)	(0.010)	(0.006)	(0.006)
Full-time	-0.010	-0.011	-0.008	-0.008
	(0.009)	(0.009)	(0.005)	(0.005)
Online form	-0.010	-0.010	0.010	0.011
	(0.016)	(0.016)	(0.012)	(0.012)
Scaled distance to job from home	-0.022	-0.022	-0.034***	-0.034***
	(0.021)	(0.021)	(0.012)	(0.012)
Cleaner	-0.006	-0.006	0.015**	0.015**
	(0.043)	(0.044)	(0.006)	(0.006)
Restaurant/café assistant	-0.010	-0.010	0.015***	0.015***
	(0.043)	(0.043)	(0.005)	(0.006)
Constant	0.056	0.059	0.007	0.003
	(0.044)	(0.044)	(0.007)	(0.007)
Number of observations	1,958	1,958	1,958	1,958
R^2	0.014	0.015	0.009	0.010

Notes: The regression models are estimated with OLS. The reference category for the occupations is Other occupations (hand packers, home care assistants and newspaper/leaflet deliverers). Robust standard errors in parentheses. *, ** and *** indicate statistical significance at the 10-, 5- and 1-percent level, respectively.

Table 7: Callback regressions for broad definition of callback, by gender

	(1)	(2)	(3)	(4)
	Female applicants		Male applicants	
Language training (SFI)	-0.018	-0.015	0.002	-0.014
	(0.015)	(0.021)	(0.009)	(0.013)
Experience as restaurant assistant	-0.003	0.000	0.002	-0.013
	(0.015)	(0.023)	(0.009)	(0.013)
SFI × Experience		-0.006		0.031*
		(0.030)		(0.018)
Open-ended	-0.027	-0.027	-0.012	-0.012
	(0.017)	(0.017)	(0.011)	(0.011)
Full-time	-0.013	-0.013	-0.009	-0.008
	(0.015)	(0.015)	(0.010)	(0.010)
Online form	-0.008	-0.008	-0.012	-0.012
	(0.031)	(0.031)	(0.013)	(0.013)
Scaled distance to job from home	-0.019	-0.018	-0.028	-0.028
	(0.038)	(0.038)	(0.020)	(0.020)
Cleaner	-0.058	-0.057	0.017*	0.020*
	(0.118)	(0.118)	(0.009)	(0.010)
Restaurant/café assistant	-0.070	-0.069	0.022***	0.025***
	(0.118)	(0.118)	(0.007)	(0.008)
Constant	0.162	0.160	0.016	0.022
	(0.120)	(0.120)	(0.014)	(0.015)
Number of observations	994	994	964	964
R^2	0.008	0.008	0.005	0.008

Notes: The regression models are estimated with OLS. The reference category for the occupations is Other occupations (hand packers, home care assistants and newspaper/leaflet deliverers). Robust standard errors in parentheses. *, ** and *** indicate statistical significance at the 10-, 5- and 1-percent level, respectively.

Table A1: Robustness regressions for broad definition of callback

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Stockholm vs. other local labor market				Heterogeneous effects by occupation			Applications via online forms		
	Interaction distance to municipality	Interaction with indicator Stockholm	Stockholm only	Outside Stockholm only	Interaction with restaurant assistant	Restaurant assistants only	Cleaners only	Interaction with online form	Other applications only	Online forms only
Language training (SFI)	-0.015	-0.008	-0.007	-0.007	0.021	-0.021**	0.027	-0.011	-0.011	0.013
	(0.013)	(0.011)	(0.014)	(0.011)	(0.016)	(0.010)	(0.017)	(0.009)	(0.009)	(0.027)
Experience as restaurant assistant	-0.001	0.001	-0.003	0.001	-0.005	0.001	-0.008	-0.003	-0.003	0.029
	(0.013)	(0.011)	(0.014)	(0.011)	(0.016)	(0.010)	(0.018)	(0.009)	(0.009)	(0.029)
Female	0.034**	0.045***	0.030**	0.045***	0.055***	0.032***	0.052***	0.037***	0.037***	0.072**
	(0.013)	(0.011)	(0.014)	(0.011)	(0.016)	(0.010)	(0.017)	(0.009)	(0.009)	(0.033)
Open-ended	-0.019*	-0.018*	-0.042*	-0.008	-0.019*	-0.014	-0.034*	-0.019*	-0.022**	0.014
	(0.010)	(0.010)	(0.022)	(0.012)	(0.010)	(0.012)	(0.019)	(0.010)	(0.011)	(0.027)
Full-time	-0.010	-0.010	0.003	-0.012	-0.011	-0.006	-0.016	-0.011	-0.009	-0.014
	(0.009)	(0.009)	(0.014)	(0.012)	(0.009)	(0.010)	(0.019)	(0.009)	(0.010)	(0.028)
Online form	-0.010	-0.011	0.047	-0.026*	-0.012	0.004	-0.031	-0.049**		
	(0.016)	(0.016)	(0.047)	(0.015)	(0.016)	(0.022)	(0.024)	(0.023)		
Scaled distance to job from home	-0.049	-0.053	0.728	-0.060*	-0.018	-0.028	0.004	-0.022	-0.006	-0.184**
	(0.043)	(0.037)	(0.504)	(0.035)	(0.022)	(0.023)	(0.045)	(0.021)	(0.022)	(0.080)
Cleaner	-0.006	-0.006	0.065**	-0.019	-0.011			-0.006	-0.024	0.029
	(0.041)	(0.041)	(0.031)	(0.056)	(0.041)			(0.044)	(0.065)	(0.028)
Restaurant/café assistant	-0.011	-0.010	0.068**	-0.030	0.015			-0.010	-0.030	0.045*
	(0.041)	(0.041)	(0.030)	(0.056)	(0.044)			(0.043)	(0.064)	(0.024)
Stockholm area		-0.005								
		(0.022)								
SFI interaction	0.029	-0.001			-0.042**			0.021		
	(0.044)	(0.018)			(0.019)			(0.028)		
EXP interaction	0.003	-0.005			0.007			0.037		
	(0.044)	(0.018)			(0.019)			(0.031)		
Female interaction	0.022	-0.017			-0.023			0.020		
	(0.044)	(0.018)			(0.019)			(0.032)		
Constant	0.063	0.064	-0.024	0.081	0.038	0.049***	0.034*	0.059	0.075	-0.006
	(0.043)	(0.044)	(0.042)	(0.058)	(0.044)	(0.017)	(0.019)	(0.044)	(0.065)	(0.027)
Number of observations	1,958	1,958	723	1,235	1,958	1,365	570	1,958	1,784	174
R^2	0.015	0.015	0.025	0.019	0.018	0.013	0.030	0.015	0.015	0.078

Notes: The table reports the results of variations of the regression model reported in the first column of Table 6, estimated by OLS. In column (1), we add interactions between the distance between the residential municipality and the municipality in which the job is located and language training, work experience and female indicators (henceforth the randomized indicators). The distance measure is rescaled to run between 0 and 1. Column (2) adds interactions between an indicator for if a job is located in the Stockholm area and the randomized indicators. Column (3) and (4) only include jobs located in and outside the Stockholm area, respectively. Column (5) interacts the randomized indicators with an indicator for if the job is as a restaurant assistant. Column (6) and (7) only include jobs as restaurant assistants and cleaners, respectively. In column (8), the randomized indicators are interacted with an indicator for if the job was applied to via a web portal instead of by sending a letter and a resumé via email. Column (9) excludes all applications made via web portals, while Column (10) only includes such applications. The reference category for the occupations is Other occupations (hand packers, home care assistants and newspaper/leaflet deliverers). Robust standard errors in parentheses. *, ** and *** indicate statistical significance at the 10-, 5- and 1-percent level, respectively.