

Ek, Simon; Hammarstedt, Mats; Skedinger, Per

Working Paper

Low-Skilled Jobs, Language Proficiency and Refugee Integration: An Experimental Study

IFN Working Paper, No. 1398

Provided in Cooperation with:

Research Institute of Industrial Economics (IFN), Stockholm

Suggested Citation: Ek, Simon; Hammarstedt, Mats; Skedinger, Per (2021) : Low-Skilled Jobs, Language Proficiency and Refugee Integration: An Experimental Study, IFN Working Paper, No. 1398, Research Institute of Industrial Economics (IFN), Stockholm

This Version is available at:

<https://hdl.handle.net/10419/240541>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

IFN Working Paper No. 1398, 2021

Low-Skilled Jobs, Language Proficiency and Refugee Integration: An Experimental Study

Simon Ek, Mats Hammarstedt and Per Skedinger

Low-skilled jobs, language proficiency and refugee integration:

An experimental study*

Simon Ek^a, Mats Hammarstedt^b and Per Skedinger^c

August 10, 2021

Abstract

We study the causal effects of previous experience and language skills when newly arrived refugees in Sweden apply for job openings by means of a field experiment. Applications were sent from randomly assigned fictitious Syrian refugees with experience in jobs with low skill requirements and completed language training in Swedish to employers advertising low-skilled job vacancies. 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. We conclude that previous experience and completed language training seem to provide at best a small positive signaling value when refugees apply for low-skilled jobs through formal channels.

JEL codes: J15, J24, J61

Keywords: Integration of immigrants, language skills, job mobility

* We thank Gabriella Chirico Willstedt, Stefan Eriksson, Peter Fredriksson, Georg Graetz, Edvin Hertegård and seminar participants at IFN and Uppsala University for helpful comments on earlier versions and Jörgen Nilson, Kasper Nilson and Sara Norbäck for excellent research assistance. The second and third authors gratefully acknowledge financial support from *Jan Wallanders och Tom Hedelius stiftelse* and the Marianne and Marcus Wallenberg Foundation.

^a Department of Economics, Uppsala University, Sweden, and Research Institute of Industrial Economics (IFN), Stockholm, Sweden. simon.ek@nek.uu.se

^b Department of Economics and Statistics, Linnaeus University, Växjö, Sweden, and Research Institute of Industrial Economics (IFN), Stockholm, Sweden. mats.hammarstedt@lnu.se

^c Research Institute of Industrial Economics (IFN), Stockholm, Sweden, and Department of Economics and Statistics, Linnaeus University, Växjö, Sweden. per.skedinger@ifn.se

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 the integration of 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. 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, compared to males, females were twice as likely to receive a positive response on their applications.

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., Lockwood, 1991). 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.¹ Other observational studies show that proficiency in the language spoken in the host country is associated with higher employment and higher wages for immigrants.² 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.³ 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

¹ See, e.g., Husted et al. (2001), Chiswick et al. (2005), Barth et al. (2012), and Brenzel and Reichelt (2017).

² See, e.g., Chiswick and Miller (2014) and Yao and van Ours (2015) for surveys.

³ See Ferrer et al. (2016) and Himmler and Jäckle (2018).

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.

Previous correspondence studies dealing with assimilation in the labor market typically do not concern refugee immigrants (but native-born persons with foreign or ethnic 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 language skills *within* a minority group. However, some correspondence studies compare the returns to work experience for foreign born or an ethnic minority to those of natives or members of the ethnic majority.⁴ 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 have job applicants signaling language skills by participation in other activities than language classes.

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 concludes the paper.

⁴ See, e.g., Bertrand and Mullainathan (2004), Baert et al. (2017), Vernby and Dancigyer (2019), and Adermon and Hensvik (2020).

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.⁵ 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.

⁵ For an overview of Sweden's immigration history, see, e.g., Boguslaw (2012).

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.⁶ 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.

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 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

⁶ See, e.g., Aldén and Hammarstedt (2015) and Calmfors et al. (2018) for an overview.

of the refugees who were granted residence permits in Sweden in recent years have a Syrian background. We have chosen the job applicants to be relatively young, in order to avoid giving them a long work history. 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 they had completed the entire Swedish for immigrants (SFI) program, while the other four did not mention anything about such training. The applications were distributed randomly to employers advertising low-skilled vacancies. 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 SFI education is structured in three different paths depending on the individual student's prior general skill level (Swedish National Agency for Education, 2018). Within each path, students can advance to courses with a gradually higher degree of difficulty (A to D), but with the same knowledge requirements regardless of the path. Depending on organizer, SFI can be vocationally orientated, with courses sandwiched with practical work.

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.⁷ During the period 2014–2018, 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 applications letters was. Arguably, this signal is very weak, for several reasons. First, checks for grammatical and spelling errors

⁷ 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.

are integral parts of most word processing programs. Second, templates of correctly formulated applications are readily available on the Internet. Finally, relatives and friends with good language skills may assist in the formulation of the applications. Employers are probably 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 also seems to be 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.⁸ 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 2,009 of these, we were able to determine 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.⁹

3.2 Descriptive results

Table 3 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 1.3 percent for interview. However, the callback rates are similar to those for comparable groups in other Swedish correspondence studies.¹⁰ Furthermore, 63.7 (44.9) 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.

⁸ For a more detailed description, see <https://www.socialscienceregistry.org/trials/4832>.

⁹ 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.

¹⁰ See Carlsson (2010) and Vernby and Dancygier (2019).

Figure 1 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 2 shows corresponding rates for the narrow definition (interview).¹¹ It is worth noting that callback rates are markedly higher for female than for male applicants of all types. 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 the following equation:

$$y_i = \beta_0 + \beta_1 \times SFI_i + \beta_2 \times EXP_i + \beta_3 \times FEMALE_i + \mathbf{X}'\boldsymbol{\gamma} + \varepsilon_i,$$

where y_i is the outcome of interest, SFI_i is an indicator for whether the applicant successfully finished language training, EXP_i is an indicator for whether the job applicant has experience from a low-skilled occupation, $FEMALE_i$ is an indicator for female applicants, and ε_i 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 \mathbf{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, 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_i and EXP_i to the model above, in order to capture heterogeneous effects for different combinations of qualifications.

¹¹ This is equivalent to estimating a fully saturated, non-parametric model of callback for each of the eight applicants.

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 (2,009).¹² 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 2.7 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 in Table 4, while Table 5 reports regressions by gender, using the broader response measure only. Our expectations based on the previous figure are basically confirmed; neither SFI nor EXP contributes significantly to higher (or lower) callback rates and this is true also for the interaction $SFI \times EXP$, 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 97 percent if the applicant is female instead of male, while the corresponding increase for invitation to an interview amounts to 100 percent.¹³

¹² Basically all jobs were applied for that appeared on *Platsbanken* during the period of study and fulfilled our selection criteria.

¹³ The average callback rate for invitation to an interview or request for more information was 1.9 percent for males and 5.8 percent for females, while the corresponding rate for invitation to interview was 0.7 and 1.9 percent, respectively.

If the advertisement refers to an open-ended contract, the callback rate for the more broadly defined response decreases by 1.7 percentage points (44 percent in relative terms), 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 when recruiting to such jobs as costs of dismissal are substantially higher. We do not see any relationship with callback for full-time jobs. While these jobs may also be more attractive to apply for, they are not associated with higher dismissal costs than part-time positions. 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.

Figure 3 illustrates the estimates for SFI and EXP, together with their 95-percent confidence intervals, from the regressions using the wider definition of callback for all applicants (panel a) as well as males (panel b) and females (panel c) separately. With all applicants included and without interaction between SFI and EXP, the confidence interval for SFI ranges from -0.026 to 0.007, while that for EXP is between -0.018 and 0.016. 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 $\frac{1}{0.016} \approx 63$ applications and when signaling SFI the corresponding number is $\frac{1}{0.007} \approx 142$. 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.

Examination of heterogeneous effects with regard to other 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 A.1 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.

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. First, 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. Second, we have constructed a measure of the traveling distance in kilometers between the residential municipality of the fictitious applicants and the municipality where the job is located, using data from Google Maps. We add this distance measure to our main regression and also interact it with the SFI, EXP, and FEMALE indicators. The distance variable is rescaled to run between 0 and 1. This allows the coefficients to be interpreted as the difference between applying for jobs in the residential municipality and the municipality farthest from this municipality. However, we find no relationship between, on the one hand, effect sizes for the randomized variables and, on the other hand, whether the jobs are in Stockholm and the traveling distance from the residential municipality.

Some jobs could only be applied for via the employer's own web portal, and not by email. 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. The callback rate from employers with web portals is significantly lower than that from other employers, but relatively few applications were made via such portals. Furthermore, we find no difference in the returns from signaling completed SFI or experience with respect to the mode of application.

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 ran the regressions corresponding to Table 4, column 1, separately for each month. We see no clear trends in the estimates for SFI or experience, 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—39 percent of all applications were made to an employer whose name and/or contact details appear

multiple times in our sample. 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 4, 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, experience and female gender.

4 Concluding remarks

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.

A review of previous research indicate 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 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.¹⁴ 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 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. Moreover, given previous experience, completed formal language training may not be seen as a large additional merit. 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). 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.

¹⁴ See, e.g., Carlsson (2011) and Carlsson and Eriksson (2019).

Appendix

Example of job application, with cover letter and resumé¹⁵

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).

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).

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)

Work experience:

201608- Registered at the Swedish Public Employment Service

201711- Employed as a restaurant assistant at [Fast food chain]

¹⁵ The example refers to applicant of type 4 (see main text). [] indicates text not shown here.

References

- Adermon, A. och Hensvik, L. (2020), "Gig-jobs: Stepping Stones or Dead Ends?", Working Paper 2020:23, Institute for Evaluation of Labour Market and Education Policy (IFAU), Uppsala.
- Aldén, L. and Hammarstedt, M. (2015), "Utrikes födda på 2000-talets arbetsmarknad – en översikt och förklaringar till situationen", *Ekonomisk Debatt*, 43, 77–89.
- Arendt, J. N., Bolvig, I., Foged, M., Hasager, L. and Peri, G. (2021), "Language Training and Refugees' Integration", Discussion Paper 14145, IZA, Bonn.
- Baert, S., Albanese, A., du Gardein, S., Ovaere, J. and Stappers, J. (2017), "Does Work Experience Mitigate Discrimination?", *Economics Letters*, 155, 35–38
- Barth, E., Bratsberg, B. and Raaum, O. (2012), "Immigrant Wage Profiles within and between Establishments", *Labour Economics*, 19, 541–556.
- Becker, G. S. (1964), *Human Capital*, National Bureau of Economic Research (NBER), New York.
- Bertrand, M. and Mullainathan, S. (2004), "Are Greg and Emily More Employable than Lakisha and Jamal? A Field Experiment on Labor Market Discrimination", *American Economic Review*, 94, 991–1013.
- Boguslaw, J. (2012), *Svensk invandringspolitik under 500 år: 1512–2012*, Studentlitteratur Lund.
- Brell, C., Dustmann, C., and Preston, I. (2020), "The Labor Market Integration of Refugee Migrants in High-income Countries", *Journal of Economic Perspectives*, 34, 94–121.
- Brenzel, H. and Reichelt, M. (2017), "Job Mobility as a New Explanation for the Immigrant-Native Wage Gap: A Longitudinal Analysis of the German Labor Market", *International Migration Review*, 51, 1–26.
- Calmfors, L., Danielsson, P., Ek, S., Kolm, A.-S., Pekkarinen, T. and Skedinger, P. (2018), *Hur ska fler komma in på arbetsmarknaden?*, Dialogos, Stockholm.
- Calvó-Armengol, A. and Jackson, M. O. (2004), "The Effects of Social Networks on Employment and Inequality", *American Economic Review*, 94, 426–453.
- Carlsson, M. (2010), "Experimental Evidence of Discrimination in Hiring of First- and Second-generation Immigrants", *Labour*, 24, 263–278.
- Carlsson, M. (2011), "Does Hiring Discrimination Cause Gender Segregation in the Swedish Labor Market?", *Feminist Economics*, 7, 71–102.
- Carlsson, M. and Eriksson, S. (2019), "Age Discrimination in Hiring Decisions: Evidence from a Field Experiment in the Labor Market", *Labour Economics*, 59, 173–183.
- Chiswick, B. R., Lee, Y. L. and Miller, P. W. (2005), "Immigrant Earnings: A Longitudinal Analysis", *Review of Income and Wealth*, 51, 485–503.

- Chiswick, B. R. and Miller, P.W. (2014), "International Migration and the Economics of Language", Discussion Paper 7880, IZA, Bonn.
- Edo, A., Jaquemet, N. and Yannelis, C. (2019), "Language Skills and Homophilous Hiring Discrimination: Evidence from Gender and Racially Differentiated Applications", *Review of Economics of the Household*, 17, 349–376.
- Ek, S., Hammarstedt, M. and Skedinger, P. (2020), *Enkla jobb och kunskaper i svenska – nycklar till integration?*, Centre for Business and Policy Research (SNS), Stockholm.
- Ferrer, A., Green, D. A. and Riddell, W. C. (2006), "The Effect of Literacy on Immigrant Earnings", *Journal of Human Resources*, 41, 380–410.
- Himmeler, O. and Jäckle, R. (2018), "Literacy and the Migrant-Native Wage Gap", *Review of Income and Wealth*, 64, 592–625.
- Husted, L., Nielsen, H. S., Rosholm, M. and Smith, N. (2001), "Employment and Wage Assimilation of Male First-generation Immigrants in Denmark", *International Journal of Manpower*, 22, 39–71.
- Lochmann, A., Rapoport, H. and Speciale, B. (2019), "The Effect of Language Training on Immigrants' Economic Integration: Empirical Evidence from France", *European Economic Review*, 13, 265–296.
- Lockwood, B. (1991), "Information Externalities in the Labour Market and the Duration of Unemployment", *Review of Economic Studies*, 58, 733–752.
- OECD/EU (2018), *Settling In 2018: Indicators of Immigrant Integration*, OECD Publishing, Paris/European Union, Brussels. <https://doi.org/10.1787/9789264307216-en>
- Swedish National Agency for Education (2018), *Kommunal vuxenutbildning i svenska för invandrare*, Stockholm.
- Swedish Public Employment Service (2019), "Var finns jobben? Bedömning för 2019 och på fem års sikt", URA 2019:1, Stockholm.
- Vernby, K. and Dancygier, R. (2019), "Can Immigrants Counteract Employer Discrimination? A Factorial Field Experiment Reveals the Immutability of Ethnic Hierarchies", *PLoS ONE*, 14.
- Yao, Y. and van Ours, J. C. (2015), "Language Skills and Labor Market Performance of Immigrants in the Netherlands", *Labour Economics*, 34, 76–85.

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

	Educational attainment (percent)				
	9 years compulsory schooling or shorter	Upper secondary schooling	University education shorter than 3 years	University education 3 years or longer	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

Note: 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
<i>Males</i>						
Employment rate	86.9	60.9	55.9	62.0	57.6	40.6
Unemployment rate	5.5	33.7	39.2	27.0	38.3	68.1
<i>Females</i>						
Employment rate	85.5	48.8	45.6	50.2	34.7	24.3
Unemployment rate	4.4	31.5	33.6	24.7	41.1	60.5

Note: 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.

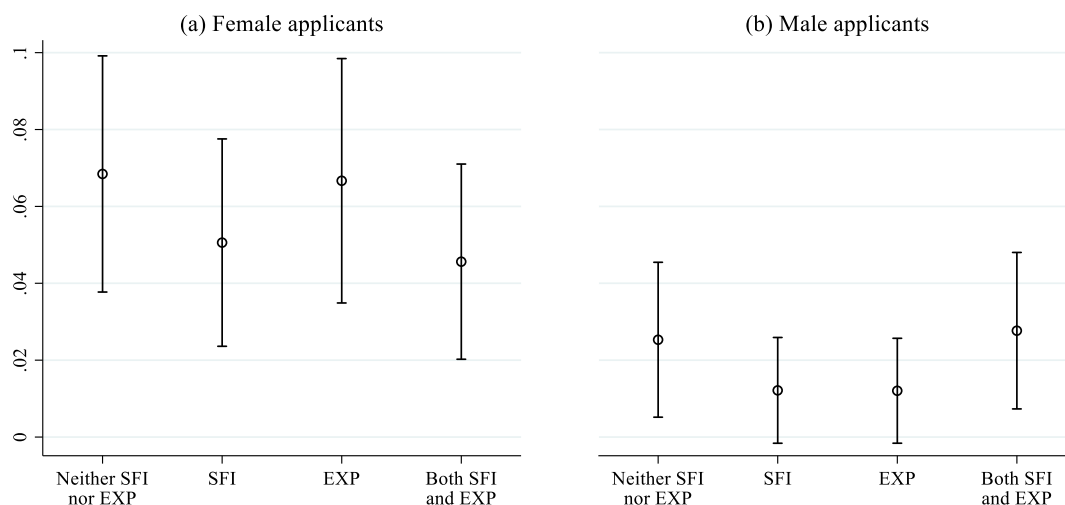
Source: Own calculations, based on register data from Statistics Sweden.

Table 3 Descriptive statistics for the experiment

	Mean	Standard deviation
<i>Type of callback:</i>		
Interview/more information	0.039	0.193
Interview	0.013	0.115
<i>Characteristics of job applicants:</i>		
Completed language training (SFI)	0.508	0.500
Experience as restaurant assistant	0.500	0.500
Female	0.509	0.500
<i>Characteristics of jobs applied for:</i>		
Open-ended contract	0.637	0.481
Full-time schedule	0.449	0.498
Hand packer	0.006	0.080
Home care assistant	0.002	0.050
Restaurant/café assistant	0.685	0.464
Cleaner	0.302	0.459
Newspaper/leaflet deliverer	0.003	0.059

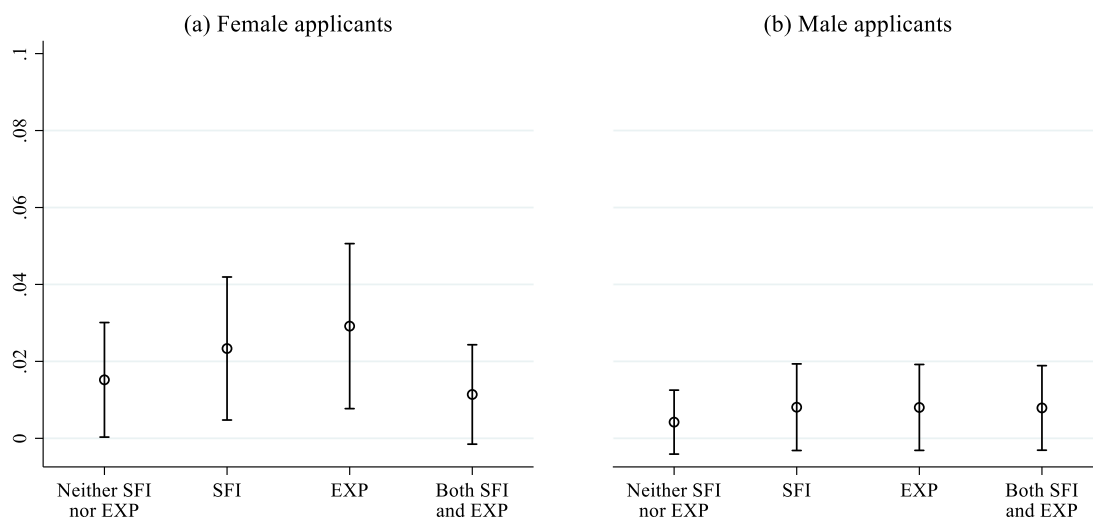
Note: 2,009 observations.

Figure 1 Callback rates according to broad definition of callback, by gender and type of job applicant



Note: 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. 1,023 observations for female applicants and 986 for male. 95 percent confidence intervals.

Figure 2 Callback rates according to narrow definition of callback, by gender and type of job applicant



Note: 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. 1,023 observations for female applicants and 986 for male. 95 percent confidence intervals.

Table 4 Callback regressions, by type of response

	(1)	(2)	(3)	(4)
	Interview/more information		Interview	
	Without interaction	With interaction	Without interaction	With interaction
Language training (SFI)	-0.009 (0.009)	-0.016 (0.012)	-0.001 (0.005)	0.006 (0.007)
Experience as restaurant assistant	-0.001 (0.009)	-0.008 (0.013)	0.002 (0.005)	0.009 (0.008)
SFI × Experience		0.013 (0.017)		-0.015 (0.010)
Female	0.038*** (0.009)	0.038*** (0.009)	0.013** (0.005)	0.013** (0.005)
Fixed-term	-0.017* (0.010)	-0.017* (0.010)	-0.004 (0.006)	-0.004 (0.006)
Full-time	-0.008 (0.009)	-0.009 (0.009)	-0.008 (0.005)	-0.008 (0.005)
Cleaner	-0.001 (0.040)	-0.001 (0.040)	0.013*** (0.005)	0.012** (0.005)
Restaurant/café assistant	-0.005 (0.039)	-0.005 (0.039)	0.013*** (0.004)	0.013*** (0.004)
Constant	0.043 (0.039)	0.046 (0.039)	0.001 (0.005)	-0.003 (0.005)
Number of observations	2,009	2,009	2,009	2,009
R ²	0.013	0.014	0.005	0.006

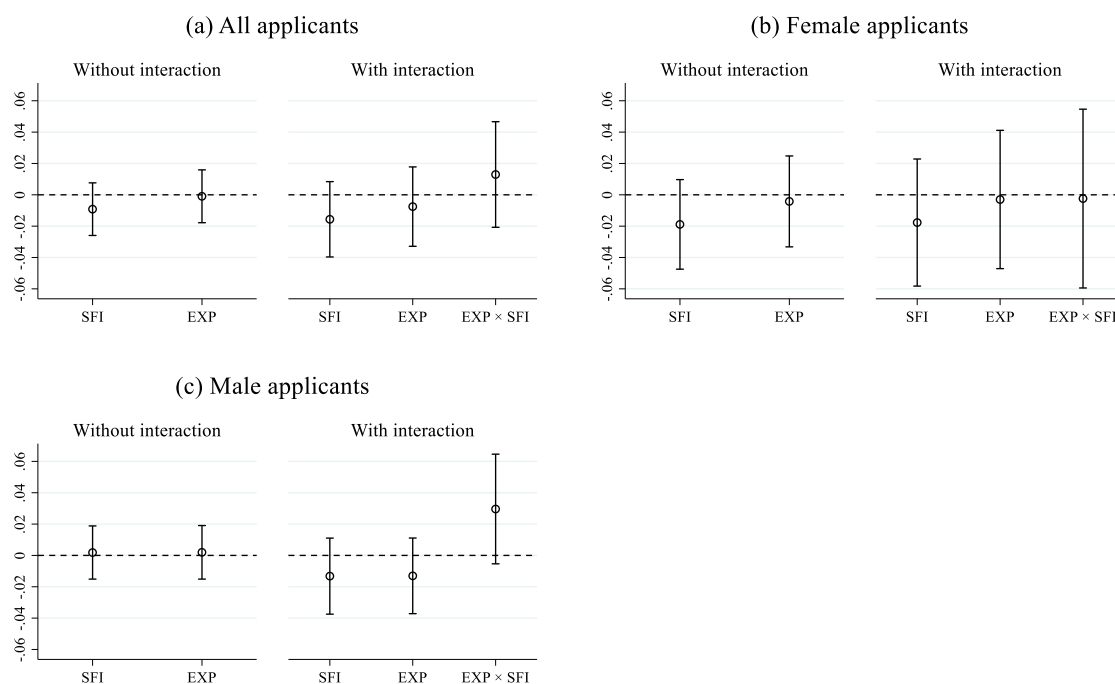
Note: The regression models are estimated with OLS. The reference category for the occupations is Other occupations (hand packers, home care assistants and newspaper/leaflet deliverers). Robust standard errors in parentheses. *, ** and *** indicate statistical significance at the 10-, 5- and 1-percent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

Table 5 Callback regressions for broad definition of callback, by gender

	(1)	(2)	(3)	(4)
	Female applicants		Male applicants	
	Without interaction	With interaction	Without interaction	With interaction
Language training (SFI)	-0.019 (0.015)	-0.018 (0.021)	0.002 (0.009)	-0.013 (0.012)
Experience as restaurant assistant	-0.004 (0.015)	-0.003 (0.023)	0.002 (0.009)	-0.013 (0.012)
SFI \times Experience		-0.002 (0.029)		0.030* (0.018)
Fixed-term	-0.023 (0.016)	-0.024 (0.016)	-0.010 (0.011)	-0.010 (0.011)
Full-time	-0.010 (0.015)	-0.010 (0.014)	-0.007 (0.009)	-0.007 (0.009)
Cleaner	-0.045 (0.105)	-0.045 (0.105)	0.020** (0.010)	0.023** (0.011)
Restaurant/café assistant	-0.056 (0.105)	-0.055 (0.105)	0.025*** (0.007)	0.028*** (0.008)
Constant	0.141 (0.105)	0.140 (0.105)	0.004 (0.010)	0.009 (0.011)
Number of observations	1,023	1,023	986	986
R ²	0.007	0.007	0.003	0.006

Note: 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.

Figure 3 Estimated effects on callback rates according to broad definition of callback, by gender and type of qualification



Note: 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. 2,009 observations for all applicants, 1,023 observations for female applicants and 986 for male. 95 percent confidence intervals.

Table A.1 Callback regressions for broad definition of callback, robustness checks using different subsamples and interacted models

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Stockholm vs. other local labor markets				Heterogeneous effects by occupation			Applications via online forms		
	Interaction with distance to municipality	Interaction with indicator for 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 (0.013)	−0.008 (0.011)	−0.008 (0.014)	−0.008 (0.011)	0.017 (0.015)	−0.021** (0.010)	0.017 (0.016)	−0.011 (0.009)	−0.011 (0.009)	0.017 (0.027)
Experience as restaurant assistant	−0.001 (0.013)	0.002 (0.011)	−0.003 (0.014)	0.001 (0.011)	−0.007 (0.015)	0.001 (0.010)	−0.007 (0.017)	−0.004 (0.009)	−0.004 (0.009)	0.030 (0.029)
Female	0.034** (0.013)	0.044*** (0.011)	0.028** (0.014)	0.045*** (0.011)	0.053*** (0.015)	0.032*** (0.010)	0.053*** (0.016)	0.037*** (0.009)	0.037*** (0.009)	0.061** (0.031)
Fixed-term	−0.019* (0.010)	−0.018* (0.010)	−0.044** (0.022)	−0.006 (0.012)	−0.016* (0.009)	−0.012 (0.012)	−0.024 (0.018)	−0.017* (0.010)	−0.021* (0.011)	0.023 (0.029)
Full-time	−0.010 (0.009)	−0.009 (0.009)	−0.005 (0.014)	−0.010 (0.012)	−0.009 (0.009)	−0.005 (0.010)	−0.017 (0.017)	−0.009 (0.009)	−0.008 (0.009)	−0.022 (0.029)
Cleaner	−0.004 (0.041)	−0.004 (0.041)	0.040** (0.017)	−0.016 (0.057)	−0.004 (0.039)			−0.004 (0.040)	−0.018 (0.057)	0.009 (0.025)
Restaurant/café assistant	−0.008 (0.041)	−0.008 (0.041)	0.043*** (0.014)	−0.026 (0.057)	0.018 (0.042)			−0.008 (0.040)	−0.024 (0.057)	0.027 (0.020)
Constant	0.059 (0.043)	0.041 (0.042)	0.023 (0.021)	0.051 (0.055)						
Main effect	−0.050 (0.043)	0.013 (0.019)						−0.050** (0.023)		
SFI interaction	0.029 (0.044)	−0.001 (0.018)			−0.038** (0.019)			0.024 (0.028)		
EXP interaction	0.004 (0.044)	−0.005 (0.018)			0.008 (0.019)			0.036 (0.030)		
FEMALE interaction	0.020 (0.044)	−0.016 (0.018)			−0.021 (0.019)			0.016 (0.031)		
Number of observations	1,958	1,958	723	1,235	2,009	1,377	632	2,008	1,832	176

R ²	0.015	0.014	0.016	0.016	0.016	0.012	0.024	0.015	0.014	0.036
----------------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

Note: The table reports the results of variations of the regression model reported in the first column of Table 4, estimated by OLS. In column (1), we add the distance, as indicated by Google Maps, between the residential municipality and the municipality in which the job is located as an explanatory variable, named the main effect, as well as interactions between the distance 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 an indicator for if a job is located in the Stockholm area, the main effect, and interactions between this indicator 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 or kitchen 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 e-mail, again referred to as the main effect. 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.