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WORKING PAPER 2020:23

Gig-jobs: stepping stones or dead ends?

Adrian Adermon
Lena Hensvik

IFAU
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Gig-jobs: stepping stones or dead ends?[a]

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Abstract

How useful is work experience from the gig economy for labor market entrants searching for traditional wage jobs? We conducted a correspondence study in Sweden, comparing callback rates for recent high school graduates with (i) gig-experience, (ii) traditional experience, and (iii) unemployment history. We also study heterogeneous responses with respect to perceived foreign background. Our findings suggest that gig-experience is more valuable than unemployment, but less useful than traditional experience for majority applicants. Strikingly however, no form of labor market experience increases the callback rate for minority workers.

Keywords: Gig-jobs, correspondence study, discrimination

JEL classification: J23, J71

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1 Introduction

In many countries, the labor market has become polarized, with marginal groups finding it increasingly difficult to find employment. In particular, low-skilled youth and migrants from refugee countries make up a large and increasing share of the unemployed (Förster et al., 2017). In parallel, there is a rise of a new form of non-traditional work—gig jobs—with considerably lower entry barriers compared to most traditional wage jobs.[1] An important question is therefore if these easily accessible—but low-paying—jobs provide labor market experience that is useful for marginal groups on the traditional labor market.

In this paper, we shed light on this question by studying how employers hiring on the traditional labor market value work experience from the gig-economy. We conducted a correspondence study in the Swedish labor market, submitting fictitious applications to entry-level vacancies. We compare the number of positive responses from employers for young applicants currently (i) employed by a well-known gig company; (ii) employed in a similar job in the traditional labor market; and (iii) in an ongoing unemployment spell lasting 7–15 months. We focus on young applicants since we are interested in the value of gig-job experience for labor market entrants. We also study the heterogeneous responses for applicants with Swedish vs. Arabic-sounding names, since abundant evidence shows that the latter group experiences particular difficulties of finding jobs on the traditional labor market. The choice of applicants is also relevant since youths and immigrant males are overrepresented in the gig-economy in our context (see Section 3).

Compared to unemployment, gig-experience could send a positive signal to employers about applicants' motivation and effort. But, the low entry barriers in gig jobs, which are rarely preceded by a formal screening process, may lower the information value of such past work experience. Gig-experience could also signal a lack of options on the traditional labor market, and the solitary nature of many gig-jobs may make it more difficult for employers to verify the work experience. A priori, it is thus not clear how employers perceive experience from the gig economy, and consequently if gig-jobs are useful as stepping stones to traditional employment or if workers are involuntarily stuck in these lower-paying working arrangements.[2]

[1] The term "gig jobs" refers to (predominantly service) jobs where workers are connected to consumers through a digital platform. Estimates of the size of the gig-economy vary substantially depending on exact definitions and measurement; survey evidence suggests that around 0.5–1 percent of the population in the US and Australia work through an online intermediary (Katz and Krueger, 2019; Stewart and Stanford, 2017; Farrell and Greig, 2016b; Minter, 2017). Using tax returns in the US, Collins et al. (2019) find that the share of earners participating in gig work mediated through online labor platforms grew by 1.9 percentage points from 2000 to 2016, and now accounts for 11.8 percent of the workforce. We describe the Swedish context in Section 3.

[2] Gig-jobs may in addition displace alternative job-search or skill building activities that might have larger long-run payoffs. They are also less likely to provide the sort of social networks that have been shown to help especially young workers find employment (Hensvik and Nordström Skans, 2014, 2016; Kramarz and Nordström Skans,

Our findings suggest that for natives, experience in a gig job is *more* valuable than unemployment, but *less* useful than similar experience from the traditional labor market. More specifically, we find that gig-experience improves the contact rate by around 2 percentage points (or 11 percent) compared to unemployment, while the impact of traditional experience is about twice as large. While this pattern suggests that participation in the gig-economy can lead to a slight improvement on the traditional labor market for the majority group (compared to unemployment), some caution is warranted, as only the difference between traditional employment and unemployment is statistically significant at the 5 percent level.

Consistent with prior evidence from Sweden and elsewhere, we find that the callback rate of applicants with Swedish-sounding names is almost twice as high as the callback rate of applicants with Arabic-sounding names, indicating substantial ethnic discrimination in the Swedish labor market. The average callback rate across all three experience treatments is 10 percent for applicants with Arabic-sounding names, and 19 percent for applicants with Swedish-sounding names. But in stark contrast to the findings for the majority group, we find that the added value of any form of labor market experience (both gig- and traditional) is zero compared to unemployment for applicants with Arabic-sounding names. This striking result is consistent with employers having such strong negative priors against this group that higher qualifications in terms of more experience do not improve the call-back rate. But it could also reflect that recruiters internalize the perceived circumstances faced by the job candidates (e.g., adverse labor market conditions for minorities), generating a less negative signal from past unemployment when the candidate belongs to a minority.[3] While we have to leave further exploration of these mechanisms to future research, we conclude from our findings that gig-jobs do not seem to be an important stepping stone to traditional wage jobs for this group.[4]

Our paper contributes to a growing literature (summarized in Section 2) on the extent and role of non-traditional work arrangements. Recent studies, mainly focusing on taxi drivers, suggest that workers value the flexibility and independence of gig-jobs (Chen et al., 2019; Hall and Krueger, 2018). At the same time, several studies indicate that many temporary and on-call workers would prefer permanent employment with regularly scheduled hours to their current employment arrangements (Boeri et al., 2020; Mas and Pallais, 2017; Datta, 2019).

Despite this, the question of how participation in the gig-economy impacts workers' *future*

2014).

[3]This mechanism is consistent with statistical discrimination models (e.g., Aigner and Cain, 1977) in which the returns to applicant characteristics depend on their majority or minority status. It is also consistent with Behaghel et al. (2015), who study anonymous résumés to show that interrupted labor market histories (possibly signaling unemployment spells) are strongly negatively valued for majority candidates but not for minority candidates.

[4]These results for minority workers are in line with Cahuc et al. (2019), who find that employment periods have no positive impact on the callback rate compared to unemployment for high school dropouts in France who search in labor markets with high unemployment rates.

labor market prospects has received surprisingly little attention. One reason is that gig-workers are difficult to identify in existing data sources (see Abraham et al., forthcoming, for a detailed discussion about measurement of non-traditional workers). However, even if participants in the gig-economy were easily distinguishable from other types of workers, an inherent concern is that it is difficult to separate the effects of working in a gig-job from the effects of other important worker characteristics which are observed by the recruiting firms but not by the researcher, potentially leading to biased estimates due to unobserved heterogeneity. In a recent study, Jackson (2020) combines variation in gig availability driven by the geographic roll-out of gig economy platforms, and individuals' propensity for gig work to estimate the impact of gig work opportunities following job loss. Her results suggest that unemployed workers experience lower earnings losses in the short run, but that the availability of gig jobs is associated with earnings losses two to four years later.[5] In relation to our study she also finds that take-up of platform-based gig work after unemployment leads to lower re-employment rates. Our main contribution is to document precisely the return to gig-experience in the job search process.

We also relate closely to the literature using correspondence experiments to estimate the impact of past unemployment and type of work on the likelihood of being contacted by employers (e.g., Eriksson and Rooth, 2014; Kroft et al., 2013; Farber et al., 2019). To our knowledge, this is the first paper in this vein to inform about employers' valuation of gig vs. traditional wage job experience.

The paper is structured as follows: Section 2 gives an overview of the relevant literature; Section 3 provides a short description of the context—the Swedish labor market; Section 4 describes the experiment; Section 5 presents the empirical model and main results; and Section 6 concludes.

2 Related literature

Research on gig-workers is still relatively limited, but evidence suggests that some workers value the flexibility and independence of gig-jobs (Chen et al., 2017; Hall and Krueger, 2016). At the same time, there is a growing number of studies indicating that some groups engaged in non-traditional work would prefer permanent employment to their current jobs. In particular, Boeri et al. (2018) show that newly self-employed workers, and in particular gig workers, would like to work more hours. Their study is based on survey data across the US, UK, and Italy, suggesting that almost 20 percent of the gig-workers in Italy, and 10–15 percent in the UK

[5]Consistent with this, Koustas (2019) uses personal finance data to show that household income and assets decline prior to entering the gig-economy; and Autor and Houseman (2010) show that temporary-help job placements yield earnings gains in the short-run, but these gains are offset by lower earnings and less frequent employment in the longer run.

state that working in the gig-economy is their only option. Datta (2019) uses an experimental design based on vignettes to estimate the willingness-to-pay over some of the most important characteristics of typical and atypical work arrangements (wage, longevity, holiday and sick pay eligibility, flexibility of work hours, flexibility to work from home, ability to choose tasks performed on-the-job and tax implications). He shows that attributes typically associated with traditional employer-employee relationships are by far the most valued, and that these preferences hold even when analysing just the sub-sample of those in atypical work arrangements.[6] Furthermore, Katz and Krueger (2017) show that workers with prior unemployment histories are over-represented in alternative work arrangements, and that workers in non-traditional jobs earn considerably less per week than do regular employees with similar characteristics and in similar occupations.

On the employer side, several papers have studied the impact of unemployment history on the likelihood of being contacted by employers. These suggest that employers recruiting to low-skilled jobs are insensitive to short unemployment spells but react negatively to longer ones (Eriksson and Rooth, 2014; Kroft et al., 2013; Farber et al., 2019). In particular, Eriksson and Rooth (2014) suggests that the callback rate is reduced by about 20 percent for young, relatively well-qualified applicants for low skilled jobs in Sweden if they have been unemployed for at least 9 months. An interesting exception is Cahuc et al. (2019), who find no detrimental effects of past unemployment on the likelihood of being called back by employers for high-school dropouts in the French labor market.

While no previous study has estimated the value of gig-experience on the likelihood of being contacted by employers, a few papers have looked at other aspects of the type of work experience included in the CV. Farber et al. (2016) and Farber et al. (2019) show that experience from low-level interim jobs lowers the callback rate for college educated women in the US. In addition, Nunley et al. (2017) show that underemployment is associated with lower callback rates for college educated job applicants. While related, these studies do not focus explicitly on gig jobs and also pertain to a different segment of the labor market.

3 Background: The labor market and gig economy in Sweden

The Swedish labor market is generally characterized by high labor force participation and employment rates by international standards. Unemployment among prime-aged workers is low,

[6]Related to this, Mas and Pallais (2017) use a discrete choice experiment among applicants during the hiring process for a call centre in the US to estimate the willingness-to-pay distribution for flexibility attributes for jobs, such as flexibility of hours and work location. They find that the majority of workers are not willing to pay for flexible work arrangements.

but low-performing youths and migrants from refugee countries make up a large and increasing share of the unemployed. Wages are more compressed in Sweden than in other EU countries, and minimum wages are particularly binding for young workers (Forslund et al., 2012). The fraction of entry-level jobs (i.e., those considered to be low-qualified) is lower than in any other EU country. Earnings differentials between the employed and the non-employed have increased dramatically since the beginning of the century. One major reason is that transfers to the non-employed have increased at a slower rate than wages. This means that there are strong incentives to find employment in Sweden, but also that the consequences for failing to enter the labor market can be severe (Nordström Skans et al., 2017).

Around one fifth of the Swedish population is foreign born, and in 2018, a quarter of the foreign-born population was from an Arab League member country (Statistics Sweden). Correspondence studies from Sweden suggest that the callback-rate of job applicants is twice as high for natives as for perceived immigrants. This effect appears very similar for first- and second generation immigrants (Carlsson, 2010).[7]

Estimates of the size of the Swedish gig-economy vary across studies. Survey evidence in Huws et al. (2016) suggest that about twelve percent of all persons aged 16–65 in Sweden have worked through an online platform. Among these, a quarter reported the gig job as their main or single source of income. Another survey indicates that around four percent of working age Swedes had tried to get an assignment via a digital platform in 2016. Applying for gig-jobs through digital platforms was more common among men, youth, and people born outside of Sweden (SOU, 2017).

4 Experimental design

Our study was conducted from March to October 2018. The Swedish economy was in a boom during this period, with an unemployment rate of around 6 percent and high labor demand (Arbetsförmedlingen, 2018).

The experiment was concentrated to the three largest cities of Sweden: Stockholm, Gothenburg and Malmö, because gig-economy jobs are relatively common there.[8] In total, we sent approximately 10,000 job applications to 3,300 job vacancies posted at Sweden's largest job board *Platsbanken*.[9] The applications were sent by email and employer responses were regis-

[7]For further evidence see Carlsson and Rooth (2007) and Bursell (2007) for correspondence studies on the Swedish labor market; Holm (2001) and Ahmed (2005) for evidence from laboratory experiments; Eriksson and Lagerström (2012), who use an internet-based job search channel; and Åslund and Nordström Skans (2012) for evidence from anonymous job application procedures.

[8]We included all municipalities in the regional labor markets of each city, classified by Statistics Sweden.

[9]In our pre-analysis plan we specified a sample of 8,000 applications, based on a power calculation for detecting a 2 percentage point change in the call-back rate from a baseline of 10 percent with 80% power and a test

tered through telephone and email. To reduce the inconvenience experienced by the employer, all invitations to job interviews were immediately declined.

4.1 The choice of job vacancies

The job vacancies chosen were low-skilled jobs, i.e., jobs without requirements of previous experience or post-secondary education. This choice was motivated by our focus on the usefulness of non-traditional work experience for entry into the traditional labor market. To this end, we sampled all employers in Stockholm, Gothenburg, and Malmö who posted vacancies without requirements of previous experience or post-secondary education on the Swedish job board *Platsbanken*. The experience requirement was indicated by the employers when uploading a job ad and could easily be filtered out by job seekers using the job board. The education requirement was specified in the text of the job ad.

Applications were sent by email. This implies that we restricted the sample to all vacancies that included an email-address in the job ad. Employers with their own application procedure on their external webpage were disregarded.[10] Our final data set consists of 9,987 applications. Figure 1 shows the distribution of our applications over broad occupation groups defined by the first digit in the Swedish Standard of Occupations (SSYK). The vast majority (almost 80 percent) of applications were sent to jobs belonging to the broad occupation groups "Service- and shop sales", "Elementary occupations", and "Clerks".[11] In Appendix Table B.1, we also show the 20 most common occupations at the 3-digit occupation level.

4.2 Details about the fictitious applicants

Since we are interested in the value of participation in the gig-economy for labor market entry on the traditional labor market, we designed job applications for young workers who search for a job a year after high school graduation. We also chose to focus on male applicants since men comprise the majority of the workers in the gig-economy.[12] To get a reasonably high callback rate, the applications were designed to signal a relatively well-qualified applicant (for their age). To this aim, place of residence and high school was chosen to signal a middle-class applicant

size of 5%. Because the data collection went faster than expected, we decided to extent the experiment to 10,000 applications. We report the results when we restrict the sample to the first 8,001 applications sent in Appendix C (we use 8,001 applications to ensure that each vacancy was sent three applications). See the AEA RCT Registry, registration number AEARCTR-0002766 for further details.

[10] In the end, we applied to approximately 12 percent of all job ads posted on *Platsbanken* that fulfilled the occupation and experience criteria. See Appendix A for additional details about data restrictions and construction.

[11] The group elementary occupations includes jobs as helpers and cleaners, helpers in restaurants, doorkeepers, newspaper and package deliverers, garbage collectors, mining and construction laborers, manufacturing laborers and transport laborers.

[12] Survey evidence from ILO suggests that around two out of three gig-workers are men (Berg et al., 2018).

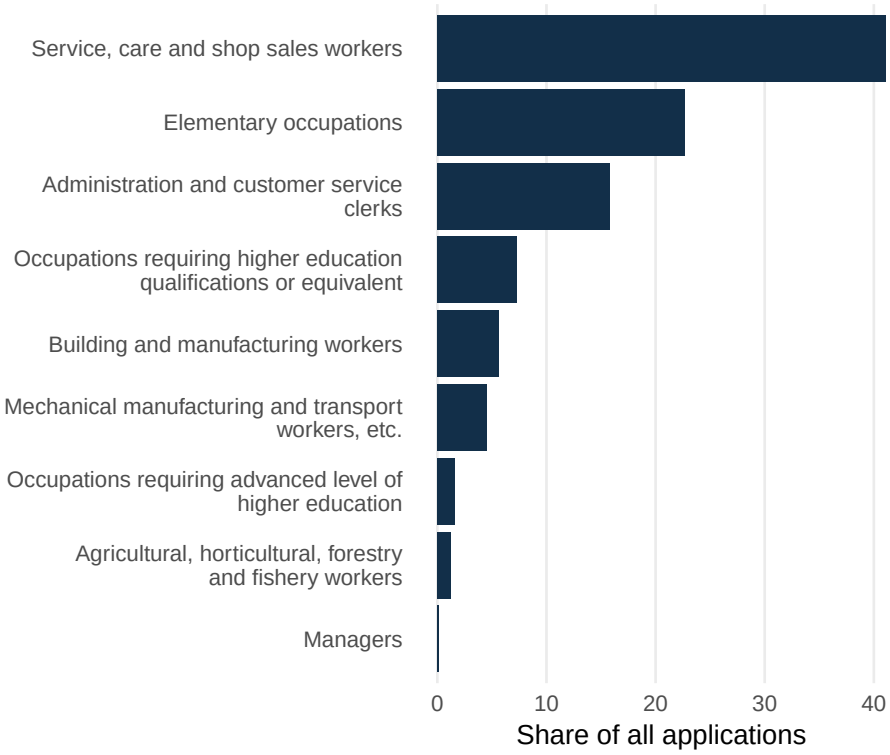

Figure 1: Distribution of applications over occupations

Note: The figure shows the fraction of applications sent over broad occupation groups defined by the first digit in the Swedish Standard of Occupations (SSYK).

with a completed high school degree from a vocational track aimed at the service sector. In the résumés we also included at least 12 weeks of workplace training in a traditional job, which is the mandated amount in vocational high school tracks, and having a driver's license. The age was not stated explicitly in the application but could be inferred by the employer from the year of high school graduation.

We would like to emphasize that the job applications were not designed to reflect the average gig-worker but the type of job-seekers we hope to learn about (labor market entrants with/without foreign background). It could be problematic if our applicants appear unrealistic for their labor market history and the advertised type of job. Unfortunately, reliable information about the characteristics of gig-workers is scarce, both in Sweden and internationally. However, official statistics suggest that young and foreign born workers are over-represented in unskilled work in general on the Swedish labor market (Arbetsmarknadsekonomiska Rådet, 2018; Engdahl and Forslund, 2016). Survey evidence from other countries moreover indicates that gig-workers come from all age and education groups (Boeri et al., 2020). Thus, while evidence on the composition of gig-workers is still very limited, we feel confident that the applicants appear realistic to the employers.

To achieve the desired sample size we followed Eriksson and Rooth (2014) and sent three applications to each posted vacancy in the sampling frame. To this end, we constructed three applications for each city with a high school name, a vocational track, an address, a job training experience and an application layout. These are the applications to which the treatments were randomly assigned. The applications consisted of a cover letter on the first page and a CV on the second page.[13] We also generated four applicant identities, which each comprised a name, an email address, and a phone number.[14]

The applications were sent with a lag of one day between them, weekends excluded. To increase the probability that the employers read the applications they were sent close to the date the vacancy ad was published. The first application was normally sent out the first or second day (weekends excluded) after the job ad was uploaded on *Platsbanken*.

4.3 Definition of treatment

We randomly assigned fictitious job applicants into (i) 7–15 months of non-traditional work experience in the gig-economy; (ii) 7–15 months of traditional work experience; or (iii) 7–15 months of unemployment. The 7-15 months duration corresponds to the time elapsed from August in the year of graduation to the start/end month of the experiment (March to October 2018). Survival analysis in Eriksson and Rooth (2014) suggests that after nine months, around

[13] Appendix E shows three examples of the CVs and cover letters.

[14] Even though we only send three applications to each vacancy, we need four identities—two with Swedish names, and two with Arabic names—in order to stratify the secondary treatment in a balanced way.

70 percent of low-skilled youth have left unemployment for work. In addition, their estimates suggest that employers care about contemporary unemployment lasting at least nine months.

Following earlier studies, unemployment was signalled through a time gap in the CV and by the phrase "right now I am looking for a job" in the cover letter. Hence, it should be kept in mind that some employers may perceive the gaps as signals of absence for other reasons, such as, e.g., travel.[15]

We wanted the job tasks in the gig-job to appear as similar as possible to the job-tasks in the traditional job. Therefore, we compared a gig-job where the task is to deliver food from restaurants to customers to a traditional job of delivering mail.[16] Both these jobs are independent service jobs where the worker moves around the city on bike. The skills acquired on the job are local knowledge and being in good physical shape. However, the the employer-worker relationship differs between the two. To work for the gig job company, the person needs to own a smartphone and a bike, have a temporary or permanent identification number, and be 18 or older.[17] A typical job ad for the traditional employer states that applicants should: be at least 18 years old; have a completed high school degree and a driver's license; be fluent in Swedish; be in good physical shape as well as be positive and service minded. Applicants are also obliged to provide an extract from the police register declaring the type and number of convictions. Thus, while no private gear is needed in the traditional job, the screening process is more formal compared to the gig job.[18]

An important aspect for the experimental design is whether the employers can identify the gig job employer. We chose the gig job food delivery company that had been on the Swedish market for the longest time, and that also operates in all three cities as well as on the international market. To further indicate the character of the company and the job experience, a sentence added to the CV explicitly stated that the company is an app-company: "*Company X* is the dominant app-company for food delivery in *city Y*".

We did not include information about the number of hours worked in the gig/traditional job. Thus, it is possible, or even reasonable, that employers interpret the gig experience as more irregular and intermittent compared to the traditional job.[19] Employer perceptions about the nature of gig- vs. traditional jobs will thus be part of the effect we estimate.

On top of work experience, we randomly assigned applicants a Swedish-sounding or an

[15]Indicating the reason for time gaps other than unemployment is encouraged by the Swedish PES (Eriksson and Rooth, 2014).

[16]Unlike some gig jobs, the gig-job we use does not have a system for consumers to rate the workers on their performance.

[17]A work jacket and a helmet is provided by the employer.

[18]The minimum wage for a mailman is 22,000 SEK (2,400 USD), which is 30 percent below the median wage on the Swedish labor market.

[19]Evidence from Sweden as well as the US iindicates that the nature of platform work is short-term and intermittent (Collins et al. (2019); Farrell and Greig (2016a))

Arabic-sounding name, which we chose according to official statistics over the most common names given to newborns in Sweden in 1998.[20] Given that they have degrees from Swedish high schools and speak fluent Swedish, our applicants with Arabic-sounding names are likely to be perceived either as second-generation immigrants or as first-generation immigrants who arrived in Sweden at a young age. This is a consequence of making these applicants comparable to those with Swedish-sounding names, but one might worry that our treatment effects do not generalize to newly arrived first-generation immigrants. However, as Carlsson (2010) has shown, labor market discrimination in Sweden is remarkably similar for first-generation immigrants with foreign education and second-generation immigrants. For this reason, we believe that our results are also informative about effects for newly arrived immigrants.

4.4 Randomization procedure

We sent three unique fictitious applications to each posted vacancy in the sample. For each application we randomly assigned (without replacement)[21] the applicant into: (i) labor market experience (gig-economy, traditional work, or unemployment), and (ii) one of four applicant identities. Since each vacancy received all three versions of the main treatment (labor market history), this treatment is stratified on the vacancy level. The secondary treatment, Swedish- or Arabic-sounding name, is also stratified on the vacancy level, since each vacancy received at least one application with each treatment. Table B.2 in Appendix B shows the distribution of applications over broad occupations and treatment groups. Reassuringly, this suggests that the number of applications is balanced across treatment groups.

4.5 Definition of callback

Answers from employers were recorded up to two months after the application was sent. Phone calls were not answered and we let the automatic answering machine collect messages. All contacts by phone, i.e., missed phone calls, text messages, or voice messages, were registered as callbacks.[22] Invitations to interviews by email were coded as callbacks, as were invitations

[20]The Swedish-sounding names were Filip Johansson and Erik Andersson. The Arabic-sounding names were Ali Ahmed and Mohammed Hassan.

[21]The randomization was performed using the Node.js package *shuffle-array* (`https://github.com/pazguille/shuffle-array`) by Guille Paz, which uses the JavaScript standard function `Math.random()` internally.

[22]To connect a missed phone call to a vacancy in our, database we used an online search engine to search for the phone number. If the owner of the number was an individual and not a company, we searched for the name on Google, LinkedIn, and Facebook to connect the name to a company. By the end of the experiment a number of telephone numbers could not be matched to a vacancy. We called all non-coded telephone numbers, pretending to be dialing the wrong number, to further improve the callback rate.

to online tests or questionnaires. All questions by email from employers, for example "Do you speak Norwegian?", "Do you have the required electrical skills?" or "Are you willing to commute?" were also registered as callback. However, to make sure that the less well-defined responses from employers do not drive our results, we replicated the analysis using a narrower definition of callback, excluding the cases where employers contact applicants for further questions (see Appendix D).

5 Estimation and results

5.1 Identification and estimation

To measure how labor market experience impacts the call-back rate, we estimate the following linear probability model:

$$y_{i,j,k} = \alpha + \beta_1 E^{trad}_{i,j,k} + \beta_2 E^{gig}_{i,j,k} + \nu_j + \eta_k + \varepsilon_{i,j,k}, \tag{1}$$

where $y_{i,j,k}$ is an indicator variable taking the value one if application i sent to vacancy j with application type k received a call-back, and zero otherwise; $E^{trad}_{i,j,k}$ is an indicator variable taking the value one if the application was given the *traditional work experience* treatment, and zero otherwise. Similarly, $E^{gig}_{i,j,k}$ indicates if the application was given the *gig experience* treatment. The model also includes vacancy and application fixed effects, ν_j and η_k, in order to realize the precision gains from the stratified randomization (these controls are not required for identification); and $\varepsilon_{i,j,k}$ is an error term. The treatment effects are estimated by β_1 and β_2.

Because we are also interested in the interaction between our experience variables and perceived applicant background, we expand equation (1) by interacting the main treatment with the secondary treatment (Swedish- or Arabic-sounding name):

$$y_{i,j,k} = \alpha + \beta_1 E^{trad}_{i,j,k} + \beta_2 E^{gig}_{i,j,k} + \lambda N_{i,j,k} + \delta_1 E^{trad}_{i,j,k} \times N_{i,j,k} + \delta_2 E^{gig}_{i,j,k} \times N_{i,j,k} + \nu_j + \eta_k + \varepsilon_{i,j,k}, \tag{2}$$

where $N_{i,j,k}$ is an indicator variable taking the value one if the application was given an Arabic-sounding name, and zero otherwise. Here β capture the treatment effects for individuals with Swedish-sounding names, while the effect for those with Arabic-sounding names is given by $\beta + \delta$. Standard errors are clustered at the vacancy level.

5.2 Results

Figure 2 and Table 1 show our main results. Figure 2 shows the average callback rate for each treatment (i.e., depending on prior experience and perceived applicant background) and Table

1 shows the estimates of interest from Equations (1) and (2), with and without vacancy and application fixed effects.[23]

Our main contribution lies in the analysis of the relationship between gig-experience and the callback rate. But let us first comment on the stark difference in callback rates for applicants with Swedish- vs. Arabic-sounding names. Figure 2 shows that the average callback rate for the minority group is considerably lower than for majority applicants, irrespective of type of labor market experience. The estimated callback gap with respect to perceived background is 9 percentage points or about 47 percent.[24] While this gap indicates substantial discrimination against minority applicants, it is well in line with estimates from previous correspondence studies on the Swedish labor market as well as other studies on hiring discrimination.[25]

Turning to the impact of gig-experience, our main results presented in columns (1) and (2) of Table 1 suggest that participation in the gig-economy is more valuable than unemployment, but less useful than similar experience from the traditional labor market.[26] However, this pattern masks substantial heterogeneity with respect to perceived applicant background. More specifically, we only see an improvement in the callback rate (compared to unemployment) for the majority group where the difference between applicants in an ongoing unemployment spell and in a gig-job is around 2–2.3 percentage points, or 11–14 percent. Traditional work experience gives a further 1.5–1.7 percentage point increase in callbacks over gig experience, although this difference is somewhat imprecisely estimated.

For applicants with Arabic-sounding names we instead find that the callback rate is the same irrespective of whether the applicant is searching from contemporary unemployment, from a gig-job or from a job on the traditional labor market. Overall, we conclude from this result that higher qualifications in terms of more experience does not improve the callback rate for this minority group.

[23]Results using only the first 8,001 applications, as originally specified in the pre-analysis plan, are shown in Appendix C; and Appendix D show results using the narrow definition of callback, as discussed in Section 4.5. The main results are similar, the main difference being that callback rates in all groups are lower with the narrow callback definition.

[24]The average callback rate is 19.4 percent for applicants with Swedish-sounding names, and 10.3 percent for those with Arabic-sounding names.

[25]Carlsson and Rooth (2007) find that job applicants with a Swedish-sounding male name have a 50 percent higher probability of receiving a callback for a job interview compared to job applicants with a Middle Eastern-sounding male name. Similar evidence has been found for Australia, Belgium, Norway and UK (see, e.g. Booth et al., 2012; Baert et al., 2015; Kaas and Manger, 2012; Drydakis and Vlassis, 2010; Midtbøen, 2016; Fibbi et al., 2006; Wood et al., 2009; Riach and Rich, 2002).

[26]The difference in callback rates for applicants searching from unemployment and employment is consistent with Eriksson and Rooth (2014), who found that unemployment lasting at least nine months have negative effects for young majority workers who look for medium/low skill jobs.

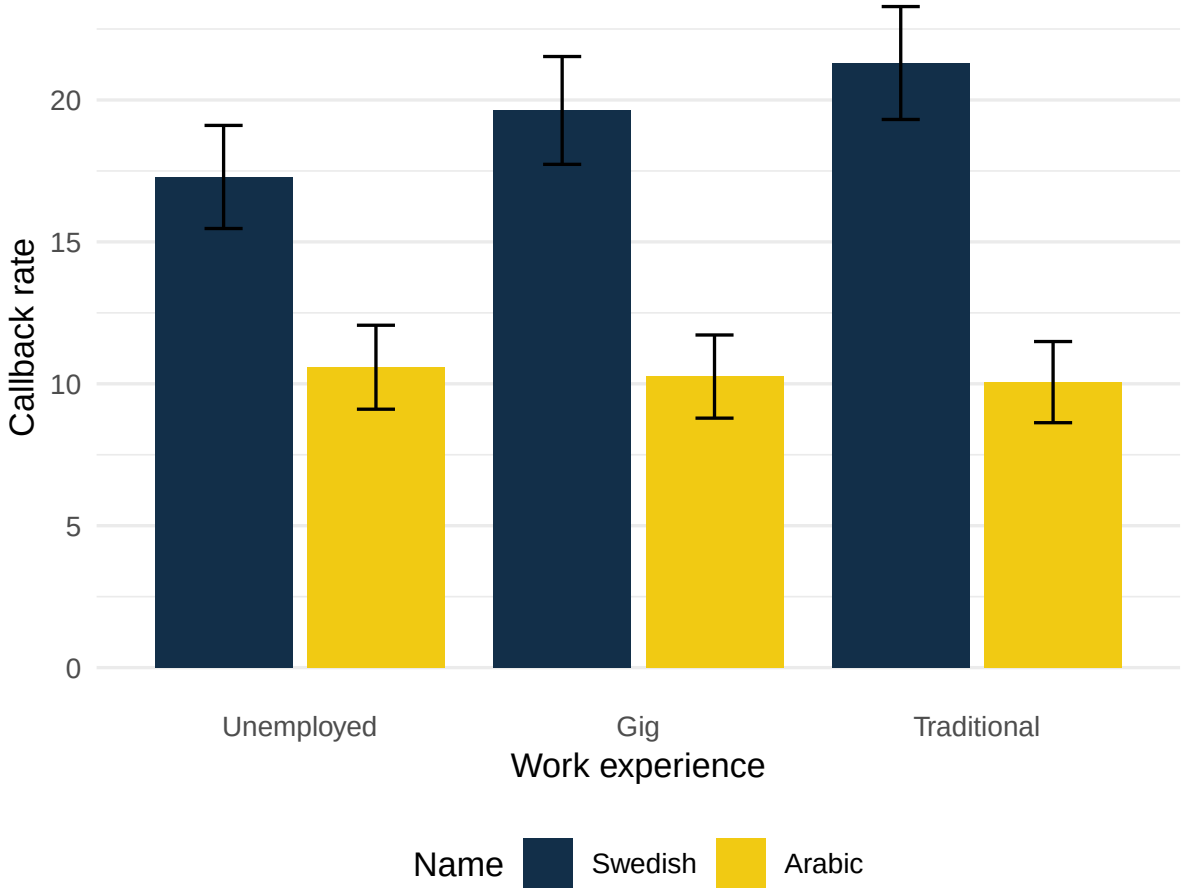

Figure 2: Callback rates by treatment status

Note: Bars show callback rates with 95 percent confidence intervals for each treatment group. Table B.3 shows the number of observations in each bar.

Table 1: Main results

	(1)	(2)	(3)	(4)
Traditional work experience	1.62	1.62	4.01	3.49
	(0.60)	(0.74)	(1.23)	(1.27)
Gig experience	1.05	1.04	2.34	1.97
	(0.61)	(0.75)	(1.19)	(1.25)
Arabic-sounding name			-6.70	-7.00
			(1.20)	(1.24)
Arabic × Traditional			-4.54	-3.51
			(1.82)	(1.83)
Arabic × Gig			-2.67	-1.93
			(1.78)	(1.77)
Intercept	13.94		17.29	
	(0.60)		(0.93)	
P-value, H_0: Trad. = Gig	0.36	0.45	0.18	0.23
Vacancy and application fixed effects	No	Yes	No	Yes
Observations	9,987	9,987	9,987	9,987
R^2	0.000	0.671	0.017	0.685

Note: Dependent variable is an indicator for receiving a callback from the employer. Standard errors in parentheses are clustered by vacancy. All coefficients and standard errors have been multiplied by 100. Columns (2) and (4) include 3,329 vacancy fixed effects and 9 application type fixed effects. The *P-value* row shows p-values from Wald tests of difference between the traditional and gig work coefficients. Overall callback rate is 14.8 percent.

5.3 Discussion

Our results suggest that the majority of young workers benefit from work experience in their search for low-skilled jobs. However, employers seem to attach a lower value to experience obtained in the gig economy, suggesting that the type of job matters. This pattern could reflect that employers perceive gig-experience as a signal of a lack of other options, and thus as indicative of lower worker quality. Given the high entry barriers into traditional wage jobs in Sweden, we believe that the signalling value of wage employment is high in our setting (see Section 3). Another possibility is that employers believe that job seekers employed in traditional jobs are more expensive to hire, due to higher reservation wages. This channel is less plausible in our setting since the applications target entry-level jobs where minimum wages are binding.

We do not know exactly how gig jobs are perceived by employers—e.g., experience in the gig-economy may signal a more irregular and intermittent work experience compared to the traditional wage job, since evidence suggests that platform work is intermittent in nature. This could be one reason for why employers appear to value gig experience below traditional experience. While this makes it hard to say which aspects of gig experience are important to employers, it allows us to recover the full effect of gig experience on the actual labor market. This includes any misconceptions employers might have about the nature of gig experience.

6 Concluding remarks

Recently, one of Sweden's leading newspapers published the following quote from the Swedish Public Employment Services:

> The gig economy will help those who want a permanent position but who have difficulty finding one, for example young people without long experience and those newly arrived in Sweden. For them, it will be easier to find a job in the gig economy and start building a résumé that helps them find a permanent job.[27]

We conducted a field experiment to shed light on this question. More specifically, we sent almost ten thousand fictitious job applications to over three thousand employers looking to hire on the traditional labor market. By randomly varying the applicants' work history, we estimate the value of a gig-job compared to either unemployment or similar work experience from the traditional labor market. Our findings suggest that gig-experience is more valuable than unemployment, but less useful than similar experience from the traditional labor market for young entry-level job applicants who belong to the majority group (i.e., for applicants with Swedish-sounding names).

[27] Erik Sandström, head of digital services at the Swedish Public Employment Services in Dagens Nyheter, February 25, 2018, authors' translation)

For minority applicants, however, we find that the added value of any form of work experience is zero compared with contemporary unemployment. One potential reason for this result is that employers have such strong negative priors against this group that higher qualifications in terms of more experience do not improve the callback rate for minority workers. But the finding could also reflect an attenuation of negative signals from past unemployment/gig-employment when the candidate belongs to a minority. In any case, our results do not support the hypothesis that participation in the gig-economy helps minority workers enter the traditional labor market.

We are fully aware that our study has several limitations. First, like most correspondence studies we are not able to go beyond the first stage in the hiring process. Thus, we cannot conclude whether our results translate into differences in actual hiring rates between job-seekers with different types of work experience/perceived background. Second, it may be argued that the results are specific to the choice of gig/traditional job included in the CV as well as to the Swedish labor market. While this is a valid concern, we believe that our focus on well-known companies that have operated in the market for quite some time enhance the chances that prospective employers are able to distinguish between the gig- and traditional employers. If not, this would lead us to underestimate the differences. In addition, previous studies suggest that the negative impact of unemployment, as well as the callback gap between minority and majority applicants, are rather similar in Sweden compared to, e.g., the US. Third, it should also be kept in mind that the experiment was conducted during an economic boom, when many employers are struggling to fill vacancies. From a theoretical perspective it is not clear how the state of the labor market would affect our findings. On the one hand, we may understate the value of contemporary employment, since employers are potentially less selective in whom to invite for an interview in booms compared to recessions. But employers may at the same time interpret unemployment, and potentially also participation in the gig-economy, as a stronger signal about job-seeker (unobservable) productivity in tight labor markets, which could enhance the signalling value of past experience.[28]

Despite these shortcomings, we believe that our study provides a first important piece of evidence about the value employers attach to gig-experience. With improvements in the measurement of gig-workers in both survey and administrative data, we hope that future research will provide more detailed evidence on who participates in the gig-economy, as well as the selection in and out of these non-traditional work arrangements.

[28] A few studies have considered how ethnic discrimination in hiring varies with labor market tightness, but the findings are not conclusive. Baert et al. (2015) show that discrimination decreases in upturns in the Belgian labor market. In contrast, evidence in Kroft et al. (2013) as well as Carlsson and Rooth (2007) show that the call-back gap with respect to past unemployment and perceived background is higher in tight labor markets.

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Appendix A Further details about the data collection

We restricted the sample to employers who had included an email address in the job ad. If the employer had its own application procedure on their external webpage, and informed about this in their email response, we deleted the vacancy and thereafter excluded vacancies from this company from the sampling frame. In total, 236 employers wrote by email that they did not accept applications by email. During the data collection, more than 900 vacancies or 2,700 applications were deleted for this reason. In May 2018 the EU General Data Protection Regulation (GDPR) came into force and replaced the Swedish Personal Data Act. A number of employers stated that GDPR was the reason for why they did not accept applications by email. With the GDPR, the restrictions on how companies could collect and process personal data were strengthened (Datainspektionen, 2018). Companies that want to store personal data on job applicants can choose to collect applications through their own web site, where they can provide information to the applicant and obtain consent more easily. This could possibly affect the selection of employers and hence the external validity of the study.

Out of considerations for the employers, and in order not to reveal the experiment, we avoided applying for more than one job at the same small company or local department of a large company. Similarly, for large companies with several departments or franchise chains, we let some time pass before applying to the second chain store or local department of a company in a city where we already sent one set of applications.

In total, we sent 10,305 applications. Out of these, 117 applications were deleted because the applications were erroneously sent out without a lag in between them. A number of employers with a high demand for labor or a high turnover repeatedly posted new job vacancies on *Platsbanken*. 129 applications (43 job ads) were sent by mistake to an email address that had already received a set of applications for a different vacancy. We deleted both vacancies if the second set of applications was sent less than 30 days after the first set, otherwise we deleted only the second set of applications. 198 applications were deleted for the aforementioned reason, leading to a final data set of 9,987 applications.

Appendix B Supplementary descriptive statistics

Table B.1: 20 largest occupations

SSYK	Occupation	Share, percent
941	Food Preparation Assistants	12.2
534	Personal Care Workers in Health Services	9.4
522	Shop Salespersons	8.2
524	Other Sales Workers	7.7
422	Client Information Workers	6.5
513	Waiters and Bartenders	5.9
911	Domestic, Hotel and Office Cleaners and Helpers	5.6
411	Clerks and Secretaries	4.4
332	Sales and Purchasing Agents and Brokers	4.4
432	Material Recording and Transport Clerks	4.3
531	Child Care Workers and Teachers' Aides	3.2
832	Car, Van and Motorcycle Drivers	2.3
512	Cooks	1.6
532	Personal Care Workers in Health Services	1.6
912	Vehicle, Window, Laundry and Other Hand Cleaning Workers	1.5
351	Information and Communications Technology Operations and User Support Technicians	1.3
523	Cashiers and Ticket Clerks	1.1
821	Assemblers	1.0
611	Market Gardeners and Crop Growers	0.9
962	Other Elementary Workers	0.9
	Other occupations	16.0

Note: This table shows the fraction of applications sent for the 20 most common occupation groups defined by three-digit Swedish Standard of Occupations (SSYK) code.

Table B.2: Number of applications by occupation

		Swedish name			Arabic name		
Occupation group	Total	Unempl.	Gig.	Trad.	Unempl.	Gig.	Trad.
Service, care and shop sales workers	4,101	686	685	675	681	682	692
Elementary occupations	2,262	376	391	357	378	363	397
Administration and customer service clerks	1,581	263	265	259	264	262	268
Occupations requiring higher education qualifications or equivalent	729	123	125	121	120	118	122
Building and manufacturing workers	564	92	94	86	96	94	102
Mechanical manufacturing and transport workers, etc.	456	71	72	77	81	80	75
Occupations requiring advanced level of higher education	162	27	28	30	27	26	24
Agricultural, horticultural, forestry and fishery workers	120	25	18	22	15	22	18
Managers	12	3	3	2	1	1	2
Total	9,987	1,666	1,681	1,629	1,663	1,648	1,700

Note: Cells show number of applications sent by one-digit Swedish Standard of Occupations (SSYK) group and treatment status.

Table B.3: Callback rates by treatment status

	Swedish name			Arabic name		
	Mean	Std. dev.	Obs.	Mean	Std. dev.	Obs.
Unemployed	17.3	37.8	1,666	10.6	30.8	1,663
Gig	19.6	39.7	1,681	10.3	30.3	1,648
Traditional	21.3	41	1,629	10.1	30.1	1,700

Note: Cells show means, standard deviations, and number of observations for the callback variable by treatment status. Means and standard deviations have been scaled by 100 to correspond to percentage callback rates.

Appendix C Restricting to first 8,001 observations

Table C.1: Callback rates by treatment status, only first 8,001 observations

	Swedish name			Arabic name		
	Mean	Std. dev.	Obs.	Mean	Std. dev.	Obs.
Unemployed	17.1	37.7	1,336	11.1	31.4	1,331
Gig	20.7	40.5	1,359	10.3	30.4	1,308
Traditional	21.8	41.3	1,309	9.94	29.9	1,358

Note: Cells show means, standard deviations, and number of observations for the callback variable by treatment status. Means and standard deviations have been scaled by 100 to correspond to percentage callback rates. Sample is restricted to the first 8,001 observations sent.

Table C.2: Main results, only first 8,001 applications

	(1)	(2)	(3)	(4)
Traditional work experience	1.61	1.61	4.63	3.58
	(0.68)	(0.83)	(1.37)	(1.42)
Gig work experience	1.46	1.46	3.54	2.44
	(0.70)	(0.86)	(1.35)	(1.44)
Arabic-sounding name			-6.02	-7.02
			(1.34)	(1.41)
Arabic * Traditional			-5.81	-3.72
			(2.04)	(2.05)
Arabic * Gig			-4.33	-2.12
			(2.02)	(2.04)
Intercept	14.14		17.14	
	(0.67)		(1.03)	
P-value, H_0: Trad. = Gig	0.83	0.86	0.43	0.43
Vacancy and application fixed effects	No	Yes	No	Yes
Observations	8,001	8,001	8,001	8,001
R^2	0.000	0.666	0.019	0.680

Note: Dependent variable is an indicator for receiving a callback from the employer. Standard errors in parentheses are clustered by vacancy. All coefficients and standard errors have been multiplied by 100. Columns (2) and (4) include 2,667 vacancy fixed effects and 9 application type fixed effects. The *P-value* row shows p-values from Wald tests of difference between the traditional and gig work coefficients. Overall callback rate is 15.2 percent. Sample is restricted to the first 8,001 observations sent.

Appendix D Narrow definition of callback

Table D.1: Callback rates by treatment status, narrow definition of callback

	Swedish name			Arabic name		
	Mean	Std. dev.	Obs.	Mean	Std. dev.	Obs.
Unemployed	14.4	35.1	1,666	8.36	27.7	1,663
Gig	16.6	37.2	1,681	8.8	28.3	1,648
Traditional	18.2	38.6	1,629	7.88	27	1,700

Note: Cells show means, standard deviations, and number of observations for the narrow callback variable by treatment status. Means and standard deviations have been scaled by 100 to correspond to percentage callback rates.

Table D.2: Main results, narrow definition of callback

	(1)	(2)	(3)	(4)
Traditional work experience	1.56	1.57	3.83	2.68
	(0.56)	(0.68)	(1.14)	(1.17)
Gig experience	1.35	1.35	2.19	1.98
	(0.58)	(0.71)	(1.12)	(1.16)
Arabic-sounding name			-6.05	-6.75
			(1.10)	(1.16)
Arabic × Traditional			-4.30	-2.03
			(1.67)	(1.67)
Arabic × Gig			-1.75	-1.33
			(1.65)	(1.64)
Intercept	11.38		14.41	
	(0.55)		(0.86)	
P-value, H_0: Trad. = Non-trad.	0.72	0.76	0.16	0.55
Vacancy and application fixed effects	No	Yes	No	Yes
Observations	9,987	9,987	9,987	9,987
R^2	0.000	0.666	0.016	0.679

Note: Dependent variable is an indicator for receiving a callback from the employer, using the narrow definition of a callback. Standard errors in parentheses are clustered by vacancy. All coefficients and standard errors have been multiplied by 100. Columns (2) and (4) include 3,329 vacancy fixed effects and 9 application type fixed effects. The *P-value* row shows p-values from Wald tests of difference between the traditional and gig work coefficients. Overall callback rate is 12.4 percent.

Appendix E Example CVs

Below we include three examples of personal letters and CVs for vacancies in the Stockholm region (CVs for Gothenburg and Malmö are similar, but with region-appropriate home addresses, schools, and workplace practice locations).

Each of the three CV *types* were combined with all three experience treatments. The examples below show CV type 1 with the *unemployed* treatment, CV type 2 with the *gig job* treatment, and CV type 3 with the *traditional job* treatment. The four identities were inserted in the fields {first_name}, {last_name}, {phone}, and {email}. The job title of the vacancy was inserted in the field {occupation}.

We have marked the places were we signal the primary treatment (experience) using red squares.

Note that the letters and CVs have been machine translated, with some manual adjustments, from Swedish to English. They are thus meant to signal the layout and content, but not the tone of writing, of the applications. In some places, we have placed short explanations of certain names in square brackets (such as a "[high school]" or "[restaurant]"), in order to help non-Swedish readers understand the context of the applications.

Hi!

My name is {first_name} {last_name} and I am very interested in the job opening as {occupation}.

I have a high school diploma from the hotel and tourism program at Stockholms hotell- och restaurangskola [high school], and I'm currently looking for a job. The program gave me valuable knowledge in, among other things, service, conferences, and marketing. I have interned for a total of 18 weeks in three different hotels. I have interned both in the conference department and in reception. From my internships in hotels, I have good knowledge in service, customer interactions, and organization. I had a lot of fun and learned a lot during the internships. I was told by the staff that I'm a quick learner and could keep calm in stressful situations.

During the internships, it was an advantage that I am a social person who likes to meet new people. As a person, I am responsible and find orderliness important. I have several hobbies, among other things I like to play floorball, listen to music, and I have a great interest in cooking. Good references are available on request.

I look forward to your reply!

Sincerely,

{first_name} {last_name}

{first_name} {last_name}

{email} • Postiljonsvägen 32, 122 47 Enskede • {phone}

Education

Hotel and tourism programmet, Stockholms hotell- och restaurangskola [high school]

Fall term 2014 – spring term 2017

High school diploma June 2017, specialization in Hotel och conference.

- Courses in Conference and events, Service and hospitality, Conference, Breakfast and buffet service, Floor service, Reception, Entrepreneurship etc.Praktik

Internship | Scandic Continental [hotel]

Reception - 10 weeks, spring term 2017

I interned at reception and, together with a receptionist, received customers at check-in and check-out. I learned some features of Scandic's computer system. I also ran errands and refill supplies.

Internship | Scandic Malmen [hotel]

Conference department - 4 weeks, spring term 2016

I interned at the conference department and helped prepare conferences. I made coffee and prepared refreshments during the breaks, and I helped clean up afterwards. I got to walk with staff in the conference department and got an insight into what a work day looks like. I learned a lot about customer service and gained a good knowledge of Scandic's concept and idea.

Internship | Quality Hotel Globe [hotel]

Reception and breakfast - 4 weeks, spring term 2015

During mornings I worked as a breakfast host, and during the day I interned with hotel staff at reception. I often got to help if something needed to be taken care of, refilled, or put in order. I got some insight into how the booking system works. I gained good knowledge of the company's concept and customer service.

Language

- Swedish – fluent
- English – good speaking and writing skills

Other

- Driver’s license

Hi!

My name is {first_name} {last_name} and I am very interested in the job opening as {occupation}.

Right now I work as a bicycle courier at [redacted] where I deliver food in central Stockholm. As I am an active person who likes to work independently, the job fits me perfectly. I have a background as a soccer player, and it has been an advantage that I work out a lot because the job is very physically demanding. At [redacted], punctuality, orderliness and good local knowledge have also been important.

Last spring, I graduated from the Business and Administration program at NTI Handelsgymnasiet [high school]. I chose the Business Program because I like working with people and I love service. I have store work experience from my internships at Intersport [sports goods store] and ICA Kvantum [grocery store]. From my internship periods, I have extensive experience of service and contact with customers. I also got to develop my sense of orderliness because this is important at a store. During an internship, it is important to learn quickly and adapt to the regular staff.

As a person, I am stress-resistant, service-minded and have an eye for details. I am flexible and independent and like problem solving. Right now I am eager for new challenges and to be able to develop in a new role! In my free time I like to hang out with my friends and play soccer.

I hope to hear back from you about an interview, and I would be happy to provide references if you like.

Sincerely,

{first_name} {last_name}

{first_name} {last_name}

Polhemsgatan 12,171 58 Solna
{phone}
{email}

Employment

2017-08-10-ONGOING

Bike messenger/ [redacted], Stockholm

My duties consist of delivering food from restaurants to customers. [redacted] is the dominant app firm for food delivery in Stockholm.

Internships

2016/2017 – TWO DAYS A WEEK I TWELFTH GRADE

Shop assistant / Intersport, Mall of Scandinavia [sports goods store]

The internship involved a lot of customer service and interactions. I learned to find goods very quickly, and could therefore guide customers to find the right product. I helped keep the goods in order and put them in the right place. I also helped to provide customers with service when buying shoes in the shoe department.

2015/2016 – 3 WEEKS IN TENTH GRADE & 2 DAYS A WEEK DURING SPRING TERM OF ELEVENTH GRADE

Shop assistant / ICA Kvantum, Solna [grocery store]

I unpacked goods and helped customers in the store. I got to follow several different staff members in their work. I got to work independently from the start. The work involved a great deal of personal responsibility and a lot of service and customer interaction. Of course there was also a lot of cleaning and tidying.

Education

FALL TERM 2014 – SPRING TERM 2017

Business- and administration program / NTI Handelsgymnasiet Stockholm [high school]

Diploma, specialization in Trade and Service. The program prepares for work in trade and service.

Languages

- Swedish – fluent

- English – good speaking and writing skills

Other

- Driver’s license

Hi!

My name is {first_name} {last_name} and I am very interested in the job opening as {occupation}. I am a happy and positive guy who is currently looking for new challenges.

I have worked as a mail deliveryman at [redacted] since August 2017. Being a deliveryman is a free, mobile job with a lot of personal responsibility. It is important to be conscientious and ensure that the shipments are delivered on time. It is also important to have a positive and accommodating attitude towards customers. Such a physical job suits me, since I work out a lot.

My studies in the Restaurant and Food Program at Grillska Gymnasiet [high school] have given me excellent knowledge in cooking, ingredients, and service. I have interned at two different restaurants, a lunch and a dinner restaurant. During the internships, I got to help out in both the kitchen and the dining room. The internship at Mathias Dahlgren's Matbaren [restaurant] was very educational. At first I worked in the prep kitchen and, for example, pick herbs and clean shrimp, but later I got to make my own sauces, smaller dishes and sides. It was easy for me to see what needed to be done in the dining room, if the water needed to be refilled or if a table needed to be wiped. During the internship at Restaurang S [restaurant], I worked in both the buffet and hot dishes kitchens, and at the end of the internship, I got to make a whole dish. I'm not afraid to dig in. At Restaurang S, I washed dirty dishes, cleaned, and lifted large goods deliveries. I like when things happen around me and like to work at a high pace.

My strengths are that I love to provide good service and I’m easy to work with. In my free time I spend a lot of time in the gym, hanging out with friends, and listening to music. I am happy to provide references on request.

Sincerely,

{first_name} {last_name}

E-mail: {email}
Phone: {phone}
Tulegatan 66, 172 72 Sundbyberg

{FIRST_NAME} {LAST_NAME}

EMPLOYMENT

MAIL DELIVERYMAN, [redacted]

August 2017-ongoing

My duties mainly consist of mail delivery in central Stockholm.

INTERNSHIPS

KITCHEN ASSISTANT, MATHIAS DAHLGREN MATBAREN [RESTAURANT]

Twelfth grade – 8 weeks in total
Six weeks in the kitchen and two in the dining room.

KITCHEN ASSISTANT, RESTAURANG S [RESTAURANT]

Eleventh grade – 8 weeks in total
Internship in hot dishes kitchen, buffet kitchen, and waiting.

EDUCATION

RESTAURANT PROGRAM —GRILLSKA GYMNASIET —SUNDBYBERG [HIGH SCHOOL]

Diploma, specialization in kitchen and waiting. Fall term 2014 – spring term 2017.
Three years in the restaurant program have given me good knowledge in cooking, ingredients, and service.

LANGUAGES

- Swedish - fluent
- English – very good at speaking and writing

OTHER

- Driver's license