



Which firms provide jobs for unemployed non-Western immigrants?

Sven-Olov Daunfeldt, Dan Johansson & Hans Seerar Westerberg

To cite this article: Sven-Olov Daunfeldt, Dan Johansson & Hans Seerar Westerberg (2019) Which firms provide jobs for unemployed non-Western immigrants?, The Service Industries Journal, 39:9-10, 762-778, DOI: [10.1080/02642069.2018.1534961](https://doi.org/10.1080/02642069.2018.1534961)

To link to this article: <https://doi.org/10.1080/02642069.2018.1534961>



Published online: 19 Oct 2018.



Submit your article to this journal [↗](#)



Article views: 81



View Crossmark data [↗](#)



Which firms provide jobs for unemployed non-Western immigrants?

Sven-Olov Daunfeldt ^{a,b}, Dan Johansson^{a,c} and Hans Seerar Westerberg^{a,c}

^aHUI Research, Stockholm, Sweden; ^bDalarna University, Falun, Sweden; ^cÖrebro University, Örebro, Sweden

ABSTRACT

Although the refugee immigration crisis is one of the major socio-economic challenges in Europe, we still lack knowledge on what characterizes firms that provide jobs for unemployed immigrants. We provide an answer by investigating firms that recruit unemployed non-Western immigrants using matched employer-employee data from Statistics Sweden. We find large industry differences; firms active in the service sectors, such as the hospitality, transport, and healthcare industries, are much more likely to hire unemployed non-Western immigrants than firms in high-tech and manufacturing industries. In addition, after controlling for educational attainment and industry of occupation, firms with at least one non-Western immigrant manager hire more than four times as many unemployed non-Western immigrants than firms without any non-Western immigrant managers. Public policies that target industries might thus also influence job opportunities for immigrants and, thereby, the possibility of their integration into society.

ARTICLE HISTORY

Received 30 May 2018
Accepted 5 October 2018

KEYWORDS

Immigration; labor market; unemployment; networks; segregation; skill-sorting

JEL CLASSIFICATION CODES

D24; L25; L26

1. Introduction

Over one million refugees applied for asylum in Europe in 2015 and 2016 (European Asylum Support Office, 2017; UNHCR, 2015). The difficulties encountered by earlier immigrants to enter the labor markets, illustrated by their high unemployment rates and low labor market participation rates compared to native-born (Eurostat, 2017), are at the same time one of the most pressing issues facing European policymakers.

We investigate which firms that are recruiting unemployed non-Western immigrants using matched employer-employee data from Statistics Sweden, covering all incorporations and their employees. Non-western immigrants are in Sweden dominated by asylum seekers and their relatives, and these immigrants tend to experience the greatest difficulties in establishing themselves in the Swedish labor market (Lundborg, 2013). Our focus on those that are unemployed also means that we can investigate the recruiting decisions of immigrants that have observed difficulties to enter the labor market.

Sweden is of particular interest to study because it is the European country that received the second greatest number of asylum applicants in relation to its number of inhabitants in 2015, accommodating more than three times as many asylum seekers

per capita as Germany (Eurostat, 2016).¹ Immigrants have also documented difficulties in entering the Swedish labor market (Ekberg, 2009, 2012; Ekberg & Hammarstedt, 2002). Sweden is, for example, among the least successful in the OECD when comparing the percentage point difference in unemployment rates between native- and foreign-born individuals (Eurostat, 2017).

The labor market gap between immigrants and native-born workers is troublesome because employers might use long unemployment periods as a sorting criterion when hiring employees, making it difficult to later reduce the high unemployment rates among immigrants (Arulampalam, Gregg, & Gregory, 2001; Heckman & Borjas, 1980; Phelps, 1972). We also know that the social costs of long-term unemployment are high since these individuals are more likely to suffer from depression, anxiety, low self-esteem, etc. (Paul & Moser, 2009). High unemployment rates among immigrants can thus contribute to the deterioration of their human capital, which further reduces their likelihood to secure a job (Kitao, Ljungqvist, & Sargent, 2017). Undeclared work is also common in many European countries (Williams, 2008, 2010), which might attract illegal immigrants and strengthen the incentives for firms to offer undeclared work for immigrants instead of regular jobs (Camacho et al., 2017).

However, despite its economic and social importance, we still lack knowledge on the types of firms that offer jobs for immigrants with difficulties entering the labor market. Previous studies tend to rely on longitudinal data on individuals and have therefore been focused on individual outcomes for immigrants and native workers, such as differences in earnings (Adsera & Chiswick, 2007) and the effect of immigrants on the wages of native workers (Altonji & Card, 1991; Card, 2005; Ottaviano & Peri, 2012). Some studies (e.g., Hellerstein & Neumark, 2008; Patel & Vella, 2013) have investigated workplace segregation, finding that immigrants tend to be clustered into certain workplaces and industries. Much less attention has been directed toward the characteristics of the employees that firms are recruiting. Notable exceptions are Coad, Daunfeldt, Johansson, and Wennberg (2014) and Dahl and Klepper (2015), who focus on the hiring decision of high-growth firms and start-ups, respectively, rather than on the types of firms that are important for providing jobs for unemployed immigrants.²

Our results show significant differences in where unemployed non-Western immigrants obtain jobs. Firms in service industries, such as hospitality and the healthcare, are in general more likely to hire unemployed immigrants of a non-Western origin compared to high-tech firms. However, policies are often targeted toward firms within high-tech industries because they are considered as more innovative and provide more high-quality jobs (Daunfeldt, Elert, & Johansson, 2016). This kind of policy direction thus comes at a cost because these firms are less likely to provide jobs for immigrants that have difficulties in entering the labor market.

We also find that the decision to recruit unemployed non-Western immigrants depends on firm-specific characteristics. For example, firms with non-Western managers recruit more than four times as many unemployed non-Western immigrants compared to firms that have no managers with non-Western origins. This finding might be explained by the importance of social networks or the fact that employers prefer hiring individuals who are demographically similar to themselves, suggesting that economic policies that increase the number of firms owned and managed by non-Westerners might reduce unemployment rates among non-Western immigrants.

In the next section, we discuss theories that can explain why immigrants are more likely to be hired by certain firms and industries. The matched employee-employer dataset is described in Section 3, while our econometric model is presented in Section 4. The results are reported in Section 5, and finally, Section 6 summarizes and draws conclusions.

2. Theoretical background

Immigrants and native-born workers differ in many aspects, including their country-specific human capital, language fluency, professional networks, and social and cultural knowledge. These differences imply that immigrants and native-born individuals in general are imperfect substitutes and that it is unlikely that they will compete for the same jobs.

There are a number of different mechanisms that might affect why certain employers are more likely to recruit unemployed immigrants, and why the integration process of immigrants can differ among industries (Sargsyan, 2017). Employers may, for example, sort workers based on their skills and perceived productivity (Kremer & Maskin, 1996). Unemployed immigrants often lack higher education and have insufficient on-the-job-training. Many employers, such as those active in knowledge-intensive and high-tech industries, demand particular skills and higher education from their workers, whereas this is less common in low-tech service industries. This suggests that employers who recruit low-skilled workers are expected to have an overrepresentation of immigrants compared to employers that demand high-skilled employees.

Employees might also be sorted into different firms based on their language skills. A number of studies (e.g., García-Pérez, 2009; Hellerstein & Neumark, 2008; Wilson & Portes, 1980) have previously indicated that employers prefer to recruit employees who speak the same language. This implies that immigrants will be recruited by firms where fluency in the native language is of less importance or where the majority of the employees speak their own language.

The matching process on the labor market is typically characterized by both asymmetric information and high search costs, which can also explain why immigrants and native-born individuals are sorted into different occupations (Mortensen & Pissarides, 1999). Asymmetric information occurs because employers have more information about the positions that they offer than job-seekers, while the latter group has more information about their particular skills. Employers have an incentive to hide facts from job-seekers to attract the best applicant, whereas employees have an incentive to hide information that might prevent them from getting the position that they strive for. The time it takes for employers and employees to find each other will result in search costs, which will be determined by how much time employers and employees spend in that search.

Information asymmetries create incentives for employers to recruit through their network in order to reduce search costs (Calvó-Armengol, 2006; Loury, 2006). However, immigrants tend to have more limited professional networks than native-born individuals (Bethoui, 2006). Therefore, it is likely that they have greater information on job positions where other immigrants are employed or run businesses. Employers might also use their employees as referrals and personal contacts to reduce the costs of finding good matches (Holzer, 1987; Montgomery, 1991). Immigrants will then, independent of their

human capital, find jobs where many other immigrants work, resulting in increased workplace segregation.

The presence of asymmetric information in the matching process implies that immigrants' social networks can be of great importance in explaining where they become employed. This explanation is based on the fact that immigrants tend to settle in spatially concentrated areas (Iceland, 2009), which means that neighbors often are important job contacts and references when immigrants search for employment. Immigrants in these areas also tend to interact with other immigrants with similar ethnic and cultural backgrounds. If each employee of a particular group indirectly or directly recruits others from his or her own group, these networks will be important in explaining why immigrants are clustered into certain firms and industries (Patel & Vella, 2013; Waldinger, 1994). This explanation is supported by studies that illustrate the importance of neighborhood network effects by showing that a disproportionate number of employees tend to be from the same neighborhood (Ellis, Wright, & Parks, 2007; Hellerstein, McInerney, & Neumark, 2011; Wright, Ellis, & Parks, 2010).

Employers may finally have preferences for a certain group of employees, which can lead to workplace segregation (Arrow, 1972; Becker, 1957; Rosén, 2003). These discriminatory preferences suggest that employers prefer hiring majority group members; therefore, it becomes difficult for immigrants to get recruited by firms with mostly native-born workers. Theories of homophily (McPherson, Smith-Lovin, & Cook, 2001), for example, suggest that employers prefer socializing with individuals who are demographically similar to themselves. This suggests that native-born employers will be more likely to hire native-born workers, and vice versa (Guiliano, Levine, & Leonard, 2009). Similar hiring patterns can be attributed to the tendency of non-majority ethnic groups to serve their own communities (Klemm & Kelsey, 2004).

To summarize, we expect to find both between and within industry differences when it comes to which firms that are recruiting unemployed non-western immigrants. Theories that emphasize the role of human capital suggest that more unemployed immigrants will be recruited by firms that are active in low-technology service industries. Network theories predict that employers are more likely to recruit individuals from his or her own ethnical group, suggesting that unemployed non-western immigrants are recruited by firms and industries that have disproportionately many non-western managers and workers. In addition, theories that stress the importance of discriminatory preferences also imply that employers prefer hiring majority group members, and that unemployed non-western immigrants therefore are more likely to be recruited by firms with non-western managers.

3. Data and descriptive statistics

3.1. Data

We use matched employer-employee data from Statistics Sweden (*Statistiska centralbyrån*, SCB) that allows us to link information on individuals with information on their employer from 2010 to 2015. The individual data are based on Statistic Sweden's longitudinal integration database for health insurance and labor studies, LISA (*Longitudinell Integrationsdatabas för Sjukförsäkrings- och Arbetsmarknadsstudier*), which covers all legal residents of Sweden that are at least sixteen years old. LISA contains a wealth of demographic and

financial data on each individual that are generated from a number of sources, such as individual tax statements, financial records, birthplace registries, and school records.

Following Mörk, Sjögren, and Svaleryd (2014), we define an individual as unemployed if she is registered as full-time unemployed or participating in a labor market program at the Swedish Employment Agency (*Arbetsförmedlingen*) in November. An individual is defined as employed given that she is not registered as full-time unemployed or participating in a labor market program but has a yearly income from paid work or self-employment that at least equals the national income base amount.³

Information on the immigrant status of the employee is based on information on their region of birth. Immigration to Sweden has been dominated by refugees and individuals who have been reunited with their families after 1972 (Johansson, 2008). The reason is that the Swedish Trade Union Confederation (*Landsorganisationen*) influenced the labor immigration policy through their representation on the government immigration board, encouraging their member organizations to be more restrictive with issuing work permits for foreign workers in February 1972. They motivated this restriction by the need to protect union members from foreign competition and by the claimed difficulties of assimilating labor immigrants into the Swedish society. As a consequence, labor immigration from non-Nordic countries nearly ceased after 1972. The restrictive labor immigration policy of non-European citizens was liberalized in 2008, but labor immigration remains low (The Swedish Migration Board, 2015).

Mainly individuals born in Africa, and Asia have recently applied for asylum in Sweden (The Swedish Migration Board, 2018). Asia is a heterogeneous region, but we know that most immigrants within this group originate from Middle Eastern countries (Statistics Sweden, 2018). Immigrants from South America differ from immigrants from Africa and Asia since they mainly arrived in Sweden in the early 1970s and have in general had a longer time to assimilate to the Swedish society.

We wish to study the inclusion of immigrants who tend to experience difficulties in entering the labor market and therefore focus our analysis on the hiring decision of non-Western immigrants who migrated from Africa and Asia.⁴ As previously discussed, this group of immigrants mostly includes refugees and relatives to refugees. Also note that labor immigrants are uncommon in our sample since we focus our analysis on firms that provide jobs for the non-Western immigrants registered as unemployed.

The information in LISA includes a unique firm identification number, which makes it possible for us to merge the individual data in LISA with firm-specific information from *Företagsdatabasen* (FTG). This database includes information on all limited liability firms in Sweden, excluding the financial sector. To identify exporting firms, we also use data on trade flows from *Intrastat*, which is a database that is collected by Eurostat and contains information on the direction and values of trade flows between countries within the European Union.

3.2. Dependent and independent variables

Our dependent variable ($Non-Western_{it}$) is the number of individuals born in Africa or Asia who were registered as unemployed in year $t-1$ before being hired by a firm in year t . The following firm-specific control variables (variable names in *italics*) are then used to identify what characterizes those firms that hire more unemployed non-Western immigrants:

- *Non-Western manager* – A dummy variable that equals one if the firm has at least one employee with a management position who was born in Africa or Asia, and otherwise, zero. Included in the model to test whether immigrant managers are more likely to hire unemployed non-Western immigrants because they are more likely to recruit individuals with a similar ethnical background.
- *Firm size* – The number of employees. Included to control for the fact that larger firms tend to recruit more employees (Delmar, Davidsson & Gartner, 2003), and consequently also more immigrants.
- *Firm age* – The age of the firm. This variable ranges from 1 to 24 years. The start-up year is defined as the first year the firm hires its first employee. Included to control for the hypothesis that young firms need to take higher risk when recruiting employees, and therefore might be more likely to hire non-Western immigrants that are unemployed.
- *University* – The share of employees that finished at least three years of higher education. Included to test whether firms with higher human capital are less likely to hire unemployed non-Western immigrants.
- *D_group* – A dummy variable that equals one if the firm is part of an enterprise group, and otherwise, zero. Firms that are parts of an enterprise group might have more developed HRM-routines and will thus be less likely to make recruitment decisions based on discriminatory preferences.
- *Operating margin* – Operating results divided by the turnover. Included to test if profitable firms take other recruitment decisions than firms with lower profits.
- *D_Export* – A dummy variable that equals one if the firm has exported services or products valued to at least 4.5 million SEK during the year, and otherwise, zero. Included to test if firms that exporting goods and services are in greater need for immigrant employees, and therefore recruit more unemployed non-Western immigrants.

Note that all firm-specific control variables are defined in year $t-1$ to avoid any simultaneity bias. We also include industry-specific fixed effects to investigate whether certain industries are more likely to hire unemployed immigrants than other industries. Here, we use the one-digit industry group classification⁵ code provided by Statistics Sweden, which is based on the European Union's NACE-standard.

Immigrants are concentrated in large metropolitan areas in Sweden (Statistics Sweden, 2008), suggesting that firms located in larger cities are more likely to recruit immigrants than firms in rural areas. Urban spaces also tend to promote better matching between employer and employees, suggesting that unemployed immigrants can more easily find a job match in larger cities (Andersson, Burgess, & Lane, 2007). To control for such spatial determinants, we include a dummy for the three major metropolitan areas in Sweden (Stockholm, Malmö, and Sweden). All results remain qualitatively similar if we instead use municipality-specific fixed effects (not reported).

3.3. Descriptive statistics

The descriptive statistics (Table 1) show that the average firm hires 0.04 previously unemployed non-Westerners per year during the studied period. This equals to an average of approximately 7,600 unemployed non-Western immigrants hired per year during 2011–2015. This can be compared to the average number of unemployed individuals recruited

Table 1. Descriptive statistics.

	Mean	SD	Min.	Max.	N
<i>Non-Western</i>	0.04	0.93	0	336	1041940
<i>Non-Western manager</i>	0.01	0.11	0	1	1041940
<i>Firm size</i>	12.51	123.22	0	19122	1041940
<i>Firm age</i>	10.97	10.97	1	24	1041940
<i>University</i>	0.22	0.34	0	1	1041940
<i>D_group</i>	0.21	0.41	0	1	1041940
<i>Operating margin</i>	0.06	0.09	-0.19	0.32	1041940
<i>D_Export</i>	0.08	0.27	0	1	1041940
<i>D_Metropolitan</i>	0.04	0.93	0	336	1041940

per firm, which amounts to 0.28 (i.e., approximately 57,000 individuals per year). The hiring of unemployed non-Western immigrants is thus a very marginal event. Note also that the average number of hires per firm-year during the study period was 2.26, which means that the vast majority of all new employees were hired from other companies. The descriptive statistics finally show that only 1% of all firms have a manager born in a non-Western country.

In line with recent findings, (Farmaki & Christou, 2018; Shneikat & Ryan, 2018), service industries appear to be an attractive sector for immigrants. The average share of unemployed immigrants hired in different industries is presented in Table 2, showing that 26.9% of all unemployed individuals hired by firms in the hospitality industry were non-Western immigrants. Firms within the human health and support service, the educational sector, the administration and support service industry, and the transportation industry also recruit a relatively high share of unemployed non-Western immigrants. Overall, firms within the service-industries seem to hire more unemployed non-Western immigrants compared to firms that are active within more capital-intensive industries. As an example, only 4.66% of all newly hired unemployed individuals in the construction industry were born in a non-Western country. Retail is a low-technology industry that is often considered to be an important job source for immigrants (Daunfeldt et al., 2016), also hire a surprisingly low share (8.36%) of unemployed non-Western immigrants.

It is, however, evident from Table 2 (column 2) that the majority of employees are not hired from unemployment but rather from other firms. Approximately 3% of all new hires in administrative and support services are unemployed non-Western immigrants, and the corresponding number for the hospitality industry is 3.59%. For example, <1% of all new hires in the IT industry and the construction industry were unemployed non-Western immigrants. It is thus quite uncommon that firms recruit among the unemployed, and the share of unemployed non-Western immigrants of all hires is very low.

Note, finally, that some of the industries reported in Table 2 are small in terms of employees and number of firms. The manufacturing industry is, for example, a large industry and thus an important job source for immigrants in absolute terms, even though firms within that industry are more reluctant to hire immigrants compared to firms in other industries.

4.1. Empirical model

We investigate the number of non-Western immigrants that were unemployed in $t-1$ and hired by firm i in year t , which means that our dependent variable is a count data variable. A traditional ordinary least squares (OLS) model is not recommended in this case since it is

Table 2 . Average share and number of unemployed non-Western immigrants (*Non-western*) of all individuals hired from of unemployment and of all recruitments, respectively, from 2011 to 2015, by industry.

Industry	Share of immigrants of all hired from unemployment (%)	Share of unemployed immigrants of total hires (%)	Number of individuals hired from unemployment	Number of immigrants hired from unemployment
(A) Agriculture, forestry and fishing	6.30	0.82	2635	166
(B) Mining and quarrying (B)	2.16	0.30	740	16
(C) Manufacturing	8.74	1.44	49255	4307
(D) Electricity, gas, steam and air conditioning supply	6.57	0.40	1051	69
(E) Water supply; sewerage, waste management and remediation	6.48	0.98	2221	144
(F) Construction	4.66	0.55	30300	1413
(G) Wholesale trade and retail trade	9.33	1.09	24153	2253
(G) Retail	8.36	1.13	32671	2731
(H) Transportation and storage	18.00	2.98	27158	4878
(I) Accommodation and food service	26.90	3.59	25271	6797
(J) Information and communication	7.54	0.52	11221	846
(L) Real estate	9.87	1.05	4632	457
(M) Professional, scientific and technical	9.82	0.72	18290	1796
(N) Administrative and support service	15.20	3.06	64648	9799
(P) Education	18.20	2.00	6786	1235
(Q) Human health and support service	23.90	2.81	26325	6279
(R) Arts, entertainment and recreation	4.69	0.51	3838	180
(S) Other service activities	21.10	3.03	4249	895

Note: NACE Rev. 2 classification in parenthesis. Some of the NACE classifications are unavailable in data for integrity or security reasons. These include financial and insurance activities, Public administration and defense; compulsory social security, activities of households as employers; undifferentiated goods- and services-producing activities of households' own use; and activities of extraterritorial organizations and bodies.

based on the assumption that the dependent variable is continuous and can be both positive and negative values. An OLS model might therefore produce biased (Gardner, Mulvey, & Shaw, 1995) and inconsistent estimates (Long, 1997) and predict negative values, which is not possible in our case.

The Poisson regression model is often a starting point when analyzing count data (Long & Freese, 2014). However, an unattractive feature of the Poisson distribution is the restrictive assumption that its variance equals the mean. This feature is seldom observed in practice since count data tend to be overdispersed, which is also the case for us (see Table 1). Following the recommendations by Cameron and Trivedi (2013) and Long and Freese (2014), we instead estimate a negative binominal regression model that can be specified as follows:

$$NonWestern_{it} = a_0 + \beta_k' I_{it} + \theta_j' X_{it-1} + a_T + \varepsilon_{it}, \quad (1)$$

where the dependent variable $NonWestern_{it}$ is the number of immigrants from Africa and Asia that were unemployed in year $t-1$ and hired by firm i in year t ; I_{it} is a vector of industry-specific dummies capturing whether firms within certain industries are more likely to hire unemployed non-Western immigrants; X_{it} is a vector of firm-specific characteristics that might affect the probability of being hired by a firm in a given industry during the study period; β'_k and θ'_j are the corresponding parameter vectors; a_T is a year-specific fixed effect capturing time variant differences in the hiring of unemployed non-Western immigrants; and ε_{it} is the error term. All variables included in equation (1) are described in Section 3. Standard errors are estimated by robust White correction for heteroscedasticity.

The occurrence of immigrants in managerial positions and the share of employees with a university degree are included as control variables in the firm-specific vector, X_{it} . Note that larger firms are more likely to hire a larger number of employees than smaller firms, and we therefore also include firm size (measured as the number of employees in year $t-1$) in the firm-specific vector, X_{it} . This means that the effects of the other variables should be interpreted as their effects on the number of unemployed immigrants hired by firm i after we have held constant for firm size. We also include firm age and operating margin as firm-specific controls.

4.2. Results

We present all results from estimating equation (2) as incidence-rate ratios (Irr). An incidence-rate ratio that is significantly greater than one implies that the underlying variable has a positive effect on the number of unemployed immigrants hired by the firm, while a value below one implies a negative effect on the number of unemployed immigrants. Incidence-rate ratios are easy to interpret, facilitating the discussion of the economic significance of the result. An Irr-estimate of 1.1, for example, suggests that a unit increase in the independent variable increases the number of unemployed immigrants by 10%.

Our results are presented in Table 3; we find that the presence of non-Western immigrant managers has a strong and significantly positive effect on the number of hired unemployed non-Western immigrants. Firms with at least one manager with a non-Western origin hire, on average, more than four times as many unemployed non-Western immigrants than firms with no non-Western managers. This means that firms with at least non-Western manager recruit 0.18 more unemployed non-Western immigrants compared to the average firm.⁶

The number of hired unemployed non-Western immigrants decreases by 38% when the share of employees with a higher education increases by 1%, showing that educational level has a statistically significant negative effect on the number of hired unemployed non-Western immigrants. Unemployed non-Western immigrants thus tend to be hired by firms that have a relatively low share of employees with higher education.

Furthermore, our results indicate that the rate at which unemployed immigrants are hired is significantly higher among large firms. This is expected since large firms, on average, tend to hire more employees in absolute terms than small firms. The results also indicate that younger firms hire more unemployed immigrants. However, the effects of firm size and firm age on the number of hired unemployed immigrants are small.

Table 3. Regression results of count data model, reported by incident rate ratios (Irr). Dependent variable is the number of non-Western immigrants hired from unemployment, 2011–2015.

Variables	Irr	SD
Firm-specific		
<i>Non-Western manager</i>	5.44***	0.30
<i>University</i>	0.62***	0.02
<i>Firm size</i>	1.01***	0.00
<i>Firm age</i>	0.97***	0.00
<i>D_group</i>	1.87***	0.05
<i>Operating margin</i>	1.00	0.00
<i>D_Export</i>	1.39***	0.06
<i>D_Metropolitan</i>	2.01***	0.05
Industries		
(A) Agriculture, forestry and fishing	0.40***	0.09
(B) Mining and quarrying (B)	0.25**	0.12
(D) Electricity, gas, steam and air conditioning supply	0.38**	0.12
(E) Water supply; sewage, waste management and remediation	0.99	0.15
(F) Construction	0.32***	0.02
(G) Wholesale trade and retail trade	0.51***	0.03
(G) Retail	0.60***	0.03
(H) Transportation and storage	1.53***	0.09
(I) Accommodation and food service	3.39***	0.15
(J) Information and communication	0.32***	0.03
(L) Real estate	0.56***	0.05
(M) Professional, scientific and technical	0.31***	0.02
(N) Administrative and support service	2.87***	0.15
(P) Education	1.70***	0.16
(Q) Human health and support service	2.91***	0.20
(R) Arts, entertainment and recreation	0.31***	0.04
(S) Other service activities	1.04	0.10
χ^2	11950.42	
<i>N</i>	780,957	

Note: SD = standard deviation.

*Statistical significance at the 10% level; **statistical significance at the 5% level; and ***statistical significance at the 1% level.

Firm profitability does not seem to have any effect on the number of hired unemployed immigrants, whereas firms that belong to an enterprise group, on average, hire 87% more unemployed non-Western immigrants compared to firms that do not belong to a corporate group. Finally, exporting firms tend to hire significantly more non-Western immigrants from unemployment than firms with no export of goods and services.

The results for the industry dummies support the descriptive results (Table 2), showing that firms in the administration and support service industry, the hospitality industry, and the healthcare sector are the ones that recruiting most unemployed non-Western immigrants. Firms within the administration and support service industry, for example, hire 187% more unemployed non-Western immigrants than firms within the manufacturing industry. The corresponding figures for firms within the accommodation and food industries as well as the human health and support sector are 239% and 191%, respectively.

We find no evidence that retail firms hire more unemployed immigrants who are born in non-Western countries. In contrast, firms within the retail industry hire, on average, 40% fewer unemployed non-Western immigrants compared to firms within the manufacturing industry. Firms within the construction, wholesale, and information technology industries are other examples that recruit few unemployed non-Western immigrants.

As a robustness check, we also estimate industry-specific regressions for a selection of industries. The results are similar to our main findings, with a few exceptions (see Table A1

in the Appendix). Most importantly, the effect of having a non-Western manager recruiting non-Western employees from unemployment varies significantly across industries. The effect of having a non-Western immigrant as a manager is considerably stronger in the construction, retail, transport, and healthcare industries. Within these industries, firms with non-Western managers recruit many more unemployed non-Western immigrants compared to firms within the industry that have no managers with a non-Western origin.

5. Discussion

The purpose of this paper has been to investigate which firms are influential in providing jobs for unemployed non-Western immigrants. This question is of importance because immigrants in Europe tend to have much higher unemployment rates than native-born workers. However, we lack research on what characterizes those firms that hire unemployed immigrants, since previous studies have relied on individual-specific data instead of firm data.

To study which firms are important in providing jobs for non-Western immigrants, we have used matched employer-employee data from Statistics Sweden covering the period 2010–2015. After controlling for individual characteristics, including educational attainment, our results revealed large differences regarding which industries provide employment opportunities for unemployed non-Western immigrants. One of the most important industries was the accommodation and food industry, where almost 27% of all newly hired unemployed individuals were born in Asia or Africa. In general, firms in other industries were much more reluctant to hire unemployed non-Western immigrants. For example, only 4.66% of all unemployed individuals hired within the construction industry from 2011 to 2015 were non-Western immigrants.

Unemployed immigrants of non-Western origin thus tend to cluster in certain industries, and employers within hotels, restaurants, elderly care, staff agencies, etc. seem particularly important regarding providing jobs for immigrants who have experienced difficulties in establishing themselves in the labor market. On the other hand, firms within the construction and commerce industries as well as the professional, scientific and technical activities industries recruit fewer unemployed individuals of non-Western origin.

These industry differences might be explained by skill-sorting and networking structures, with workers of particular skill levels, educational attainment and ethnical background clustering in certain types of firms. Therefore, public policies that target industries might also influence job opportunities for immigrants and, thereby, the possibility of their integration into society. However, many industry policies currently are targeted toward R&D-intensive industries rather than firms within those industries that tend to recruit unemployed non-Western immigrants. Such policies might thus come at a cost because an alternative use of these resources better could have facilitated the labor market entry of unemployed non-Western immigrants.

One possible explanation of the observed industry differences is that unemployed immigrants are more likely to be offered jobs within industries that provide more low-qualified jobs, even after controlling for the educational attainment of the workforce. However, we can also observe large differences in low-technology industries with regard to the likelihood of recruiting unemployed non-Western immigrants. For

example, firms within the accommodation and food industry recruit more unemployed non-Western immigrants compared to firms within the retail industry. In fact, retail firms were found to recruit fewer unemployed non-Western immigrants than manufacturing firms. This suggests that skill-sorting cannot be the only explanation of why unemployed immigrants are more likely to be recruited by firms in certain industries.

Another explanation is that there are more employers with foreign backgrounds in the accommodation and food industry and that they are more likely to hire individuals who originate from the same region of origin. This can be explained by networking effects or preferences to recruit employees with similar ethnical backgrounds. This suggests that immigrants will create networks and clusters voluntarily within the same industries. Our results provide some support for this hypothesis, showing that retail firms with at least one non-Western manager hire significantly more unemployed non-Western immigrants than those retail firms who have no managers that are born in non-Western countries.

Our results suggest that policymakers should improve the conditions for firms in labor-intensive industries if they want to reduce the unemployment rate among non-Western immigrants. This can be done, for example, by policies that reduce labor costs and thus the perceived risk of recruiting non-Western immigrants. Note, however, that this policy recommendation builds on the assumption that these companies are more likely to hire unemployed foreigners in coming periods and under different institutional conditions. Reforms that remove firm growth barriers could, on the margin, have a stronger positive employment effect in industries that recruit few unemployed non-Western immigrants. However, in order to study this question, researchers need to use natural experiments, i.e., partial reforms that affect the cost of hiring non-Western immigrants in some companies (treatment group) but not in others (control group). This approach constitutes an interesting avenue for further research, but is complicated by the fact that natural experiments in practice are unusual.

Studies of first-generation immigrants' difficulties to establish themselves in the labor market have almost exclusively been based on an individual perspective. Even though it is the business owners who ultimately decides on whether to recruit an unemployed first-generation non-Western immigrant, firms' recruitment decisions are something of a 'black box'. Our study should be seen as a first attempt to open this box, and thereby gain knowledge of what characterizes firms that provide jobs for immigrants with proven difficulties to enter the labor market.

Note that our results show which firms that are recruiting unemployed non-Western immigrants in Sweden. Any generalization of our results beyond that should be undertaken with caution. It would be of considerable policy interest to replicate our study in other countries, but such studies are complicated by the fact that longitudinal matched employer-employee data are not readily available in other countries.

More studies are needed to get a better understanding on how the large number of refugees in recent years can enter the European labor markets. Other questions that merit more research are why we observe such large firm- and industry-specific variations regarding the likelihood of hiring unemployed non-Western immigrants, and what the long-run implications are for firms that recruit these immigrants? We also believe that more research is needed on related topics, such as what explains the flows of immigrants to other countries and how undeclared work affects immigrants' opportunities to establish themselves in the regular labor market.

Notes

1. The number of asylum seekers peaked at 163,000 in 2015 (The Swedish Migration Board, 2017), which corresponds to 16.6 asylum applicants per 1000 inhabitants. On June 21, 2016, the Swedish Parliament implemented a temporary law (2016:752) intended to reduce the number of asylum residence permits. Between 2015 and 2016, the number of new asylum applicants was reduced from 163,000 to 29,000 (The Swedish Migration Board, 2017).
2. The lack of studies can most probably be explained by the necessity of using matched employer-employee data to investigate which firms provide jobs for unemployed immigrants, and such data are rarely available for researchers.
3. We have also used the standard ILO definition of employment in where an individual is defined as employed given that she had a registered income corresponding to at least four working hours in November. This requires the use of two different registers and produce conflicting observations in where many individuals with a loose connection to the labor market were defined as both employed and unemployed. However, irrespective of the choice of employment definition, results are similar.
4. We have also investigated the hiring decision of all unemployed immigrants from Africa, Asia and South America. Furthermore, we have also investigated whether the results change if we restrict the sample to only include non-western immigrants that arrived after 1971. The results are very similar and available from the authors upon request
5. As a robustness check, we re-run all regressions with 2- and 3-digit NACE codes. All results remain qualitatively similar and are available from the authors upon request.
6. $5.44 * 0.04$ (average number of unemployed immigrants hired, see Table 1) = 0.22. Thus, firms with non-Western managers hire, on average, $0.22 - 0.04 = 0.18$ more unemployed non-Western immigrants.

Acknowledgements

We gratefully acknowledge comments from the participants of the 87th annual conference of the Southern Economic Association. Handelsrådet (The Swedish Retail and Wholesale Council) is gratefully acknowledged for financial support. A previous version of the manuscript has been published as HUI Working Paper 133, HUI Research: Stockholm.

Disclosure statement

No conflict of interest was present during this project.

ORCID

Sven-Olov Daunfeldt  <http://orcid.org/0000-0002-1013-8623>

References

- Adsera, A., & Chiswick, B. R. (2007). Are there gender and country of origin differences in immigrant labor market outcomes across European destinations? *Journal of Population Economics*, 20(3), 495–526.
- Altonji, J. G., & Card, D. (1991). The effects of immigration on the labor market outcomes of less-skilled natives. In J. Abowd & R. Freeman (Ed.), *Immigration, trade and the labor market* (pp. 201–234). Chicago, IL: University of Chicago Press.
- Andersson, F., Burgess, S., & Lane, J. I. (2007). Cities, matching and the productivity gains of agglomeration. *Journal of Urban Economics*, 61(1), 112–128.

- Arrow, K. J. (1972). Models of job discrimination. In A. H. Pascal (Ed.), *Racial discrimination in economic life* (pp. 83–102). Lexington, MA: Lexington Books.
- Arulampalam, W., Gregg, P., & Gregory, M. (2001). Unemployment scarring. *Economic Journal*, 111(475), 577–584.
- Becker, G. S. (1957). *The economics of discrimination*. Chicago, IL: University of Chicago press.
- Bethoui, A. (2006). *Unequal opportunities, the impact of social capital and recruitment methods on immigrants and their children in the Swedish labour market* (Doctoral dissertation). Department of Social and Welfare Studies, Linköpings Universitet, Linköping.
- Calvó-Armengol, A. (2006). *Social networks and labour market outcomes* (CREI No. 17). Barcelona: The Centre de Recerca en Economia Internacional (CREI).
- Camacho, C., Mariani, F., & Pensieroso, L. (2017). Illegal immigration and the shadow economy. *International Tax and Public Finance*, 24(6), 1050–1080.
- Cameron, A. C., & Trivedi, P. K. (2013). *Regression analysis of count data*. Cambridge: Cambridge University Press.
- Card, D. (1997). Immigrant inflows, native outflows, and the local labor market impacts of higher immigration. *Journal of Labor Economics*, 19(1), 22–64.
- Card, D. (2005). Is the new immigration really so bad? *The Economic Journal*, 115(507), F300–F323.
- Coad, A., Daunfeldt, S.-O., Johansson, D., & Wennberg, K. (2014). Whom do high-growth firms hire? *Industrial and Corporate Change*, 23(1), 293–327.
- Dahl, M. S., & Klepper, S. (2015). Whom do new firms hire? *Industrial and Corporate Change*, 24(4), 819–836.
- Daunfeldt, S.-O., Elert, N., & Johansson, D. (2016). Are high-growth firms overrepresented in high-tech industries? *Industrial and Corporate Change*, 25(1), 1–25.
- Daunfeldt, S.-O., & Fergin Wennberg, E. (2018). *Unemployment risk among newly hired immigrants* (HUI Working Paper No. 126). Stockholm: HUI Research.
- Delmar, F., Davidsson, P., & Gartner, W. B. (2003). Arriving at the high-growth firm. *Journal of Business Venturing*, 18(2), 189–216.
- Ekberg, J. (2009). *Invandringen och de offentliga finanserna* (ESO report No. 3) [*Immigration and the public finances*]. Stockholm: Finansdepartementet.
- Ekberg, J. (2012). Invandrare på arbetsmarknaden i Sverige under den globala krisen. [Immigrants on the labor market during the global crisis]. *Arbetsmarknad & Arbetsliv*, 18(1): 43–51.
- Ekberg, J., & Hammarstedt, M. (2002). 20 år av allt sämre arbetsmarknadsintegrering av invandrare [20 years of increasingly inferior labor market integration of immigrants]. *Ekonomisk Debatt*, 30(4), 343–353.
- Ellis, M., Wright, R., & Parks, V. (2007). Geography and the immigrant division of labor. *Economic Geography*, 83(3), 255–281.
- European Asylum Support Office. (2017). *Latest asylum trends – 2016 overview*. Retrieved from European asylum support office website: <https://www.easo.europa.eu/sites/default/files/Latest20Asylum20Trends20Overview202016%20final.pdf>
- Eurostat. (2016). *Eurostat news release 44/2016*. Retrieved from Eurostat website: <http://ec.europa.eu/eurostat/documents/2995521/7203832/3-04032016-AP-EN.pdf/>
- Eurostat. (2017). *Migrant integration statistics – labor market indicators*. Retrieved from the Eurostat website: http://ec.europa.eu/eurostat/statistics-explained/index.php/Migrant_integration_statistics_E280%93_labour_market_indicators
- Farmaki, A., & Christou, P. (2018). Refugee migration and service industries: Advancing the research agenda. *The Service Industries Journal*. Advance online publication.
- García-Pérez, M. (2009). *Does it matter who I work for and who I work with? The impact of owners and coworkers birthplace and race on hiring and wages* (Working Paper No. 19). St. Cloud, MN: Department of Economics, St. Cloud State University.
- Gardner, W., Mulvey, E. P., & Shaw, E. C. (1995). Regression analyses of counts and rates: Poisson, over-dispersed Poisson, and negative binomial models. *Psychological Bulletin*, 118(3), 392.
- Giuliano, L., Levine, D. I., & Leonard, J. (2009). Manager race and the race of new hires. *Journal of Labor Economics*, 27(4), 589–631.

- Heckman, J. J., & Borjas, G. (1980). Does unemployment cause future unemployment? Definitions, questions and answers from a continuous time model of heterogeneity and state dependence. *Economica*, 47(187), 247–283.
- Hellerstein, J. K., McInerney, M., & Neumark, D. (2011). Neighbors and coworkers: The importance of residential labor market networks. *Journal of Labor Economics*, 29(4), 659–695.
- Hellerstein, J. K., & Neumark, D. (2008). Workplace segregation in the United States: Race, ethnicity and skill. *Review of Economics and Statistics*, 90(3), 459–477.
- Holzer, H. (1987). *Hiring procedures in the firm: Their economic determinants and outcomes* (NBER Working Paper No. 2185). Cambridge, MA: National Bureau of Economic Research.
- Iceland, J. (2009). *Where we live now: Immigration and race in the United States*. Berkeley/Los Angeles: University of California Press.
- Johansson, J. (2008). *Så gör vi inte här i Sverige. Vi brukar göra så här: Retorik och praktik i LO:s invandrarpolitik 1945–1981* [This is not how we do it in Sweden: We do it like this: Rhetoric and practice in LO's immigration politics 1945–1981] (Doctoral dissertation). Växjö: Växjö University Press.
- Kitao, S., Ljungqvist, L., & Sargent, T. J. (2017). A life-cycle model of trans-Atlantic employment experiences. *Review of Economic Dynamics*, 25, 320–349.
- Klemm, M. S., & Kelsey, S. J. (2004). Ethnic groups and the British travel industry: Servicing a minority? *The Service Industries Journal*, 24(4), 115–128.
- Kremer, M., & Maskin, E. (1996). *Wage inequality and segregation by skill*. Cambridge, MA: National Bureau of Economic Research.
- Long, J. (1997). *Regression models for categorical and limited dependent variables (advanced quantitative techniques in the social sciences)*. Thousand Oaks, CA: Sage Publications.
- Long, J., & Freese, J. (2014). *Regression models for categorical dependent variables using Stata*. College Station, TX: Stata Press.
- Loury, L. D. (2006). Some contacts are more equal than others: Informal networks, job tenure, and wages. *Journal of Labor Economics*, 24(2), 299–318.
- Lundborg, P. (2013). Refugees' employment integration in Sweden: Cultural distance and labor market performance. *Review of International Economics*, 21(2), 219–232.
- McPherson, M., Smith-Lovin, L., and Cook, J. M. (2001). Birds of a feather: Homophily in social networks. *Annual Review of Sociology*, 27(1), 415–444.
- Montgomery, J. (1991). Social networks and labor market outcomes: Toward an economic analysis. *American Economic Review*, 81(5), 1408–1418.
- Mörk, E., Sjögren, A., & Svaleryd, H. (2014). Parental unemployment and child health. *CESifo Economic Studies*, 60(2), 366–401.
- Mortensen, D. T., & Pissarides, C. A. (1999). New developments in models of search in the labor market. In O. C. Ashenfelter & D. Card (Eds.), *Handbook of labor economics* 3 (pp. 2567–2627). Amsterdam: Elsevier.
- OECD/EU. (2015). *Indicators of immigrant integration 2015: Settling in*. Paris: OECD Publishing.
- Ottaviano, G. I., & Peri, G. (2012). Rethinking the effect of immigration on wages. *Journal of the European Economic Association*, 10(1), 152–197.
- Patel, K., & Vella, F. (2013). Immigrant networks and their implications for occupational choice and wages. *Review of Economics and Statistics*, 95(4), 1249–1277.
- Paul, K. I., & Moser, K. (2009). Unemployment impairs mental health: Meta-analyses. *Journal of Vocational Behavior*, 74(3), 264–282.
- Peri, G. (2012). The effect of immigration on productivity: Evidence from U.S. states. *Review of Economics and Statistics*, 94(1), 348–358.
- Phelps, E. S. (1972). The statistical theory of racism and sexism. *The American Economic Review*, 62(4), 659–661.
- Rosén, Å. (2003). Search, bargaining, and employer discrimination. *Journal of Labor Economics*, 21(4), 807–829.
- Sargsyan, V. (2017). Treatment-related naturalization premiums in two European countries: evaluation and comparison. *International Journal of Economic Perspectives*, 11(2), 192–196.
- Shneikat, B., & Ryan, C. (2018). Syrian refugees and their re-entry to 'normality': The role of service industries. *The Service Industries Journal*, 38(3–4), 201–227.

- Statistics Sweden. (2008). *Invandrares flyttmönster [Movement pattern of immigrants]*. (Demografiska rapporter 2008:4). Örebro: SCB-Tryck.
- Statistics Sweden. (2018). *Utrikes födda efter län, kommun och födelseland 31 December 2017*. Retrieved from the Statistics Sweden website: <https://www.scb.se/hitta-statistik/statistik-efter-amne/befolkning/befolkningens-sammansattning/befolkningsstatistik/>
- The Swedish Migration Board. (2015). *Temporary permits 2000–2014, labour market*. Retrieved from the Swedish Migration Board website: <https://www.migrationsverket.se/download/18.36084ac214622cf65991384/1485556053506/Tab%205%20-%20Temporary%20permits%202000-2014-labour%20market.pdf>
- The Swedish Migration Board. (2018). *Asylsökande till Sverige under 2000–2017*. Retrieved from the Swedish Migration Board website: <https://www.migrationsverket.se/download/18.4a5a58d51602d141cf41003/1515076326490/Asyls%C3%B6kande%20till%20Sverige%202000-2017.pdf>.
- UNHCR. (2015). *A million refugees and migrants flee to Europe in 2015*. Press release. Retrieved from the UNHCR website: <http://www.unhcr.org/567918556.html>
- Waldinger, R. (1994). The making of an immigrant niche. *International Migration Review*, 28(1), 3–30.
- Williams, C. C. (2008). Cross-national variations in undeclared work: Results from a survey of 27 European countries. *International Journal of Economic Perspectives*, 2(2), 46–63.
- Williams, C. C. (2010). Evaluating competing theories of the shadow economy: Some lessons from an English locality. *International Journal of Economic Perspectives*, 4(2), 391–402.
- Wilson, K. L., & Portes, A. (1980). Immigrant enclaves: An analysis of the labor market experiences of Cubans in Miami. *American Journal of Sociology*, 86(2), 295–319.
- Wright, R., Ellis, M., & Parks, V. (2010). Immigrant niches and the intrametropolitan spatial division of labour. *Journal of Ethnic and Migration Studies*, 36(7), 1033–1059.

Appendix

Table A1 . Regression results of count data model per industry, reported by incident rate ratios (Irr).

	Transport	Construction	Retail	Transport	Accommodation/Food	IT	Admin/Support	Health
<i>Non-Western manager</i>	5.216*** (1.03)	6.234*** (1.99)	7.189*** (1.08)	6.127*** (1.15)	2.366*** (0.14)	3.780*** (0.91)	3.374*** (0.53)	7.280*** (0.88)
<i>University</i>	1.162 (0.13)	2.160*** (0.30)	0.892 (0.12)	8.305*** (1.77)	1.119 (0.10)	0.945 (0.12)	0.855 (0.09)	0.034*** (0.00)
<i>Firm size</i>	1.005*** (0.00)	1.003 (0.00)	1.005*** (0.00)	1.013*** (0.00)	1.015*** (0.00)	1.003** (0.00)	1.010*** (0.00)	1.006*** (0.00)
<i>Firm age</i>	0.997 (0.00)	0.977*** (0.00)	0.966*** (0.00)	0.940*** (0.01)	0.980*** (0.00)	1.004 (0.01)	0.990 (0.01)	0.934*** (0.01)
<i>D_group</i>	1.814*** (0.12)	2.906*** (0.25)	1.685*** (0.14)	2.056*** (0.23)	1.444*** (0.08)	1.862*** (0.22)	2.072*** (0.20)	2.256*** (0.23)
<i>Operating margin</i>	0.991** (0.00)	1.001 (0.00)	0.991 (0.01)	1.030 (0.03)	0.998 (0.01)	1.002 (0.00)	1.062 (0.03)	0.987* (0.01)
<i>D_Export</i>	2.203*** (0.18)	1.980** (0.44)	1.346* (0.19)	0.716 (0.13)	1.223 (0.23)	2.798*** (0.56)	0.456*** (0.10)	0.723 (0.35)
<i>D_Metropolitan</i>	1.562*** (0.12)	2.946*** (0.23)	2.903*** (0.22)	2.112*** (0.19)	1.519*** (0.07)	2.109*** (0.28)	2.156*** (0.16)	2.217*** (0.22)
χ^2	678.984	603.880	802.290	586.566	668.609	327.997	511.657	1623.814
<i>N</i>	81,065	129,204	74,082	48,815	38,978	44,294	32,619	27,723

Dependent variable is the number of hired unemployed non-Western immigrants within the industry under study, 2011–2015 (standard deviation in parenthesis). *Statistical significance at the 10% level; **statistical significance at the 5% level; and ***statistical significance at the 1% level.