Received: 19 November 2018 | Revised: 5 May 2020 | Accepted: 26 May 2020

DOI: 10.1111/jors.12504

ORIGINAL ARTICLE

JOURNAL OF REGIONAL SCIENCE WILEY

Getting the first job: Size and quality of ethnic enclaves and refugee labor market entry

Johan Klaesson[1] | Özge Öner[1,2,3] | Dieter Pennerstorfer[4]

[1]Jönköping International Business School, Jönköping, Sweden

[2]Department of Land Economy, University of Cambridge, Cambridge, UK

[3]Research Institute of Industrial Economics, Stockholm, Sweden

[4]Johannes Kepler University Linz, Linz, Austria

Correspondence
Özge Öner, Department of Land Economy, University of Cambridge, 19 Silver Street, Cambridge CB3 9EP, UK.
Email: oo263@cam.ac.uk

Abstract

We analyze the relationship between residence in an ethnic enclave and immigrants' labor market integration with respect to finding a first job in the receiving country. The analysis distinguishes between the size and the quality of the ethnic enclaves, where quality is measured in terms of employment rate among ethnic peers in the same neighborhood. We use longitudinal geo-coded registry data for two distinct groups of immigrants arriving in the Stockholm metropolitan area to investigate their initial labor market contact. The first group of immigrants moved from the Balkans in the early 1990s following the Yugoslavian war, and the second group arrived from the Middle East following the second Iraq War in 2006. We estimate the probability of finding a first job using probit regressions and complement the analysis with additional duration models. To draw causal inference, we use instrumentation that combines initial neighborhood variables with citywide variation over time. We provide empirical evidence that the employment rate of the respective immigrant group in the vicinity facilitates labor market integration of new immigrants. The influences of the overall employment rate and the share of conationals in the neighborhood tend to be positive, but less robustly so. Our results are

consistent with the notion that the qualitative nature of an enclave is at least as important as the sheer number of ethnic peers in helping new immigrants find jobs.

KEYWORDS
ethnic enclave quality, labor market outcomes, refugee immigrants

JEL CLASSIFICATION
F22; J15; J60; R23

1 | INTRODUCTION, BACKGROUND, AND MOTIVATION

Since the great surge of immigration to Europe around 2015 following the Syrian civil war, public debate has been dominated by immigration, and in particular, the challenges related to the labor market integration of the newly arrived. It is often seen as the most important stage in labor market integration when immigrants attain their first employment in the receiving country and become labor market insiders. To overcome some of the obstacles to immigrants achieving their first contact with the labor market, policy makers in different countries focus on different schemes involving language training, education, employer subsidies and tax cuts, and various macroscale labor market interventions.

We know from previous research that immigrants chiefly concentrate spatially in larger cities and that different immigrant groups cocluster in different neighborhoods (Bartel, 1989; Borjas, 1998; Cutler, Glaeser, & Vigdor, 2008; Edin, Fredriksson, & Åslund, 2003). In relation to the factors that facilitate immigrants' labor market integration, an extensive body of empirical work has emerged that tries to identify whether and to what extent living in an ethnic enclave is related to labor market success for immigrants. This literature, however, provides mixed results. A number of competing arguments exist regarding how ethnic enclaves may lead to different outcomes for the immigrants residing in them. On the one hand, coclustering of ethnic peers may facilitate employment through social network effects (e.g., Bayer, Ross, & Topa, 2008; Cutler et al., 2008; Edin et al., 2003; Patacchini & Zenou, 2012). On the other hand, it may also mean separation from the natives, and by way of a lock-in effect, residing in an enclave may keep the immigrant at an undesirable distance from the labor market and labor market-related information (Borjas, 2000; Wixe & Pettersson, 2020).

Taking account of ethnic enclave characteristics, we examine the probability of immigrants moving from unemployment to their first employment. In the literature, many arguments support the notion that immigrant enclaves play a key role in how immigrants are sorted into the labor market; by sheer size of the enclave and/or by way of its qualitative aspects. Our results show that employed ethnic peers in the neighborhood matters at least as much as the overall ethnic enclave size and more than unemployed conationals to help newly arrived immigrants in entering the labor market.

We contribute to the existing literature by emphasizing enclave quality in addition to enclave size. To that end, while the literature regarding the importance of ethnic enclaves for labor market-related outcomes is rich, only a handful of papers explicitly focus on the qualitative nature of the ethnic enclaves (see, e.g., H. Andersson, 2020; M. Andersson, Larsson, & Öner, 2017; Cutler et al., 2008; Damm, 2014). Focusing on two distinct immigrant groups and using an instrumental variable approach reduce concerns on potentially biased results due to sorting and enable us to elaborate on the effect size and its importance. Additionally, using geo-coded data mitigates some of the problems associated with using administrative boundaries and allow us to capture the variation at the neighborhood level, where the neighborhood size is standardized. Considering

neighborhoods within the same local labor market region also implies that some of the mechanisms that operate at the regional level are constant across our units of observation. We are thus able to isolate mechanisms that operate at a microspatial scale (such as peer effects) relative to channels effective at the city or regional level (like employment opportunities).

Initially, most of the focus in the literature about ethnic enclaves rested on the traditional supply and demand mechanisms. In this line of thinking, places that are ethnically dense may host a different set of economic activities, for example, due to immigrants' demand for a set of services that are distinct to their taste, which would lead to a greater supply of jobs for the immigrants themselves. There is also some evidence that immigrant business owners have a stronger preference for immigrant employees (Åslund, Hensvik, & Skans, 2014), so an ethnically dense milieu would include ventures with jobs that are more suitable for immigrants (M. Andersson et al., 2017). Another supply-related argument is that the immigrant-dense labor markets may also have an industrial structure that is more suited to the skill set of the immigrants, so the underlying mechanism influencing the coclustering of immigrants may be the same mechanism causing the very availability of jobs for them.

More recently, the empirical work aimed to quantify the effect originating from the qualitative nature of the ethnic enclaves that have the potential to influence immigrants' labor market outcomes. These mechanisms work in a rather different way. The discussion of enclave quality focuses on the constituent parts making up the enclave. Depending on how the enclave is built up, there can be both negative and positive results for the people living in them (M. Andersson et al., 2017; Cutler et al., 2008; Edin et al., 2003). What is often discussed as a quality aspect is the transfer of useful information between conational peers within an enclave. Some information may be quite tacit. For example, it may entail information about the (formal or informal) institutions surrounding the search for a job. Other information may be more tangible, such as information about an existing job opportunity or contact information of a potential employer, and can be accessed through ethnic peers living in the same enclave. The ethnic enclaves may facilitate access to the labor market through information channels that are specific to the ethnic group in question. To that end, the ability to pass on the relevant information related to the job market would require that some of the ethnic peers in close proximity already have employment. The qualitative nature of the network is particularly important for individuals with no former experience in the respective labor market, and for whom, the information about the functioning of the labor market is noisy (Kramarz & Skans, 2014). However, empirical evidence that this is actually the case is rather limited, with only few exceptions. Cutler et al. (2008) is probably one of the earliest papers presenting evidence of how different aspects of the enclaves benefit different types of immigrants (e.g., those with high human capital benefit from proximity to ethnic peers more than their counterparts with lower education do). More recently, M. Andersson et al. (2017) present evidence that the probability of self-employment is influenced by the number of self-employed among the ethnic peers but not by the sheer size of the enclave, using a microgeographical approach with Swedish registry data. They show that the effect of the entrepreneurial rate among the ethnic peers trumps the effect of the entrepreneurial rate among the natives. H. Andersson (2020) finds similar results at the municipal level that confirm the importance of the qualitative aspects of ethnic coclustering rather than the sheer size for self-employment propensity. To our knowledge, the only other paper that explicitly addresses the importance of the enclaves' qualitative nature for employment probability in its empirical design is Damm (2014), who exploits an exogenous residential assignment scheme in Denmark between 1986 and 1998 and provides evidence for the ethnic stratification of residence-based job information networks. She shows that the employment rate among ethnic peers in the neighborhood is more important than the employment rate among natives.

Our work distinguishes itself from these relatively few papers in a number of ways. First, rather than exploiting a placement scheme executed by the authorities, which often operate at the municipal level, we use a microgeographical approach to identify neighborhoods that are small enough to capture some of the within-city

variation of network effects discussed in the literature that manifest themselves through interaction between people in close proximity. Such effects attenuate sharply with distance, making larger geographical areas problematic spatial units of reference in an empirical setup (see e.g., the respective discussions and applications in M. Andersson, Klaesson, & Larsson, 2016; M. Andersson, Larsson, & Wernberg, 2019; Klaesson & Öner, 2020; Pennerstorfer & Pennerstorfer, 2019). Exogenous assignment of immigrants is certainly a way to mitigate a potential sorting bias, which we do not dismiss. Immigrants are generally attracted to areas with previous immigrant concentration (Nowotny & Pennerstorfer, 2019). We address the issues related to endogeneity by constructing two instruments for our main variables of interest using a Card-type approach (Altonji & Card, 1991; Card, 2001). Our instruments are based on the neighborhood conditions of the immigrants' places of residence in their year of arriving to Sweden, which are exogenous to individual characteristics because the sample is restricted to immigrant cohorts dominated by refugees, who can hardly influence the location of their first residence. We combine this initial neighborhood conditions with the citywide variations of the respective variables over time. Second, the probability of finding a job may also be a function of the knowledge spillovers coming from the central business district (CBD). For that reason, we explicitly factor in a neighborhood's place in the urban hierarchy by including a measure of the distance to the CBD. Third, as an important extension to Damm (2014), we explore the differences between men and women and how gender interplays with the benefits associated with the enclave. We find that the ethnic enclave effect dramatically differs between men and women. Fourth, in addition to the standard probabilistic approach in this strand of literature, we also model the timing of finding a job by applying duration models that produce some useful insights. We estimate these duration models for getting jobs with different wage levels, as well as for different durations of employment to capture different degrees of labor market integration.

In our analysis, we use individual-level microdata covering the Stockholm metropolitan area (equivalent to the Stockholm functional labor market region) for the period from 1992 to 2013. The data are geo-coded, which allows us to pinpoint each individual's dwelling place to a 1 km^2 grid cell. In identifying the connections between individuals and peer groups, we use two distinct immigration groups. The first group consists of people arriving from the Balkans between 1992 and 1993 following the Balkan wars. The second group, from the Middle East, arrived in Sweden between 2005 and 2006 following the Iraqi war.

2 | RELATED LITERATURE: ENCLAVES AND LABOR MARKET ENTRY

It is a common and well-known pattern that immigrants in many countries live segregated from natives as a group. However, each immigrant group is sorted into different places (Borjas, 1995, 2000). This kind of geographical sorting may be voluntary if immigrants prefer places with a large share of conational inhabitants with the same ethnic and cultural background and the same language. But geographical sorting can also be the result of institutional mechanisms and/or path-dependence. The institutions may work at the national or subnational level and may change the geographical distribution for some subpopulations. Sometimes this is the result without any explicit intentions at hand. For example, land-use regulations or zoning laws may render some places and some parts of the housing market too expensive for a certain income group. In much the same manner, rent control may reduce churn in some attractive and/or central locations. This limits the availability of affordable dwellings in central locations. Centrally placed (i.e., by the authorities) newly arrived immigrants (refugees) in some places may also initiate path-dependence and the development of clusters of specific minorities that may evolve and grow over time.

These different explanations do not exclude one another and may coexist. At the same time, they are not universal in their manifestation. In reality, a combination of mechanisms likely contributes to the formation of ethnic enclaves and the development of segregation. Throughout history, many great cities (or parts of them) have been characterized by concentrated diasporas. Using the existence of such areas, we examine how the character of

segregation and concentration relate to labor market outcomes of individual immigrants: How does living in an ethnic enclave relate to the labor market entry of immigrants?

Labor market sorting of immigrants and its connection to segregation and ethnic enclaves is a well-researched field (Edin et al., 2003; Musterd & Andersson, 2006; Musterd, Andersson, Galster, & Kauppinen, 2008). Edin et al. (2003) make a seminal contribution by using a Swedish government placement policy for refugee immigrants. The policy was in place from 1985 to 1994. The authors conclude that ethnic enclaves improve labor market outcomes for less skilled immigrants. At the same time, they find that high-income immigrants gain more from living in an ethnic enclave compared to those with low incomes. Cutler et al. (2008) similarly find that for first-generation immigrants, ethnic enclaves and segregation prove useful. Also, in the U.S. context, Beaman (2012) examines the dynamic consequences of social networks for the labor market outcomes of refugees. Beaman finds that a one-standard deviation [*SD*] increase in the network size lowers his probability of being employed by 4.8%. For the Canadian labor market, Warman (2007) studies the effect of living in an ethnic enclave on income increase among immigrants. The author finds generally negative effects on immigrant's weekly income.

Estimating the effect of segregation leads to the obvious problem of the potential endogeneity. It is hard to tease out how much of the estimated effect comes from ethnic peers in the neighborhood (Manski, 1993). The estimated effects of ethnic enclaves and segregation might be biased due to potential common factors that influence both the labor market outcomes of the residents and the segregation of themselves. Another problem is to find an appropriate benchmark to compare the estimated effects on labor market outcomes. A common method is to use natives to determine whether estimates are large or small. This approach may, however, be problematic since the mechanisms at work may differ widely with respect to immigrants' and natives' reasons for settling in a specific area (Warman, 2007). An alternative is to examine several immigrant groups in the same framework. In the present study, we follow this approach and study immigrants originating from both the Balkans and the Middle East.

The "dark side of social capital" embedded within ethnic networks is explored by a relatively young but rapidly growing literature (see, e.g., Graeff, 2009; Li, 2004; Nannestad, Lind Haase Svendsen, & Tinggaard Svendsen, 2008). Here the term "dark side" may refer to a lock-in effect that constraints the access of an immigrant from the outside alternatives. Also, it may be difficult to acquire the necessary skills for successful integration into the labor market from within the network, for example, language proficiency (Borjas, 2000). Concerning the negative effects of ethnic enclaves and networks, Borjas (2000) states that low-skilled individuals have a harder time realizing opportunities in the labor market outside the enclave. They address this lack of opportunity by substituting existing possibilities within the enclave. Skills, such as relevant education, are an important variable when assessing the effect on the labor market outcome of ethnic enclaves. Both Edin et al. (2003) and Borjas (2000) find smaller wage effects of living in a segregated neighborhood for highly educated individuals. In an earlier work, Borjas (1998) provides a theoretical and an empirical analysis of the determinants influencing the choice of whether or not to reside in a segregated residential area. The findings show that there are differences within and across ethnic groups concerning the probability of living in segregated neighborhoods, and that factors such as income, parenting skills, and ethnic capital decide the ethnic mix of neighborhoods where people choose to live.

3 | DATA AND EMPIRICAL STRATEGY

In this section, we describe the data source used in the empirical analysis and discuss how we select the sample of immigrants, delineate neighborhoods (or enclaves), and calculate neighborhood characteristics. Furthermore, we outline our empirical strategy to link the probability of obtaining a first job and the length of time until obtaining a first job to neighborhood characteristics. We are interested in immigrants' first contacts with the labor market and we consider them employed if they receive some wage income in the main specification. Alternatively, we also apply more restrictive definitions (regarding wage levels or length of employment relations) to gain a comprehensive picture of the link between neighborhood characteristics and immigrants' labor market success.

3.1 | Data

The empirical analysis is based on full population registry microdata[1] at the individual level maintained by Statistics Sweden. The data is a yearly panel covering the entire population living in Sweden from 1993 to 2013. We have access to a number of individual characteristics, including age, gender, family status, education, country of birth,[2] place of residence (at a 1 km^2 grid level, see below), and wage income. The data allow us to track all individuals over time and we are thus able to observe the labor market career as well as changes in the place of residence of every person living in Sweden. All variables used in the empirical analysis are constructed based on this exhaustive data set.

3.1.1 | Sample selection and individual characteristics

We restrict our analysis to immigrants from the Balkans, arriving in Sweden in 1993 and 1994, and immigrants from the Middle East, arriving in 2005 and 2006.[3] The Yugoslavian wars (and in particular, the Bosnian War from 1992 to 1995) and the Second Iraq War (Third Gulf War, 2003–2011) led to a strong increase in immigration to Europe, including Sweden. Figure 1 shows the migration patterns to Sweden of these two immigrant groups over the past 25 years. Restricting the sample to these two waves of immigration ensures that the immigrants under investigation consist almost exclusively of refugees, which is important for our empirical strategy (see Section 3.2 below). The figure shows very different patterns of migrant flows from these two regions over time and thus allows us to evaluate heterogeneity of potential enclave effects across immigrant groups. In our empirical analysis, we focus on immigrants settling in the Stockholm metropolitan area upon arrival in Sweden. We include all working-age immigrants and end up with a population size of 12,656 individuals.

The average yearly wage of these immigrants is just over 90,000 Swedish crowns[4] (SEK; about 8,300 euro) as reported in Table 1. The low mean and the large variation of this variable can be partially explained by the fact that nearly half of the observed immigrants in the sample do not earn wages at all. The main dependent variable, whether immigrants have a job or not (labeled as "Employed1" in Table 1), takes an average value of 0.503, which means that about 50% of all immigrants in the sample period are employed.[5] In addition to relying on positive wage income, we use the salary requirement for a work permit imposed by the Swedish Migration Agency as a reference point, which is 156,000 SEK (about 14,300 Euro) per year. This wage is considered by the authorities to be the minimum amount of wage that enables the immigrant to support herself.[6] To test not only the sorting of an immigrant into the labor market in a binary fashion, but also the level of self-sufficiency, we explore different wage threshold based on this reference point. If we increase the threshold wage to count individuals as employed from 78,000 SEK (about 7,200 euro; "Employed2") to 312,000 SEK (about 29,000 euro; "Employed5"), the share of individuals considered employed falls from 36.1% to 7.4%.

[1]The database LISA, administrated by the public authority Statistics Sweden. It is a registry of all individuals in Sweden of 16 years of age and older that were registered in Sweden as of December 31 for each year. For further information see Statistics Sweden: https://www.scb.se/en/services/guidance-for-researchers-and-universities/vilka-mikrodata-finns/longitudinella-register/longitudinal-integrated-database-for-health-insurance-and-labour-market-studies-lisa/

[2]Information about the country of birth is provided at an aggregate level, classified into 17 regions worldwide (outside Sweden).

[3]Individuals appear in the database for the first time when they have obtained a residence permit that allow them to find a job.

[4]We do not have access to hours worked in our data, which requires cautious treatment of different wage cut-offs we explore.

[5]Self-employed are included only if they have a positive wage income.

[6]Among the requirements for a work permit, the Swedish Migration Agency considers 156,000 SEK per year (or 13,000 SEK per month) to be the minimum wage for self-sufficiency: "You must be offered a position that will enable you to support yourself. To satisfy this support requirement, you need to work to an extent that will result in a salary of at least SEK 13,000 per month before taxes." See: https://www.migrationsverket.se/English/Private-individuals/Working-in-Sweden/Employed/Work-permit-requirements.html

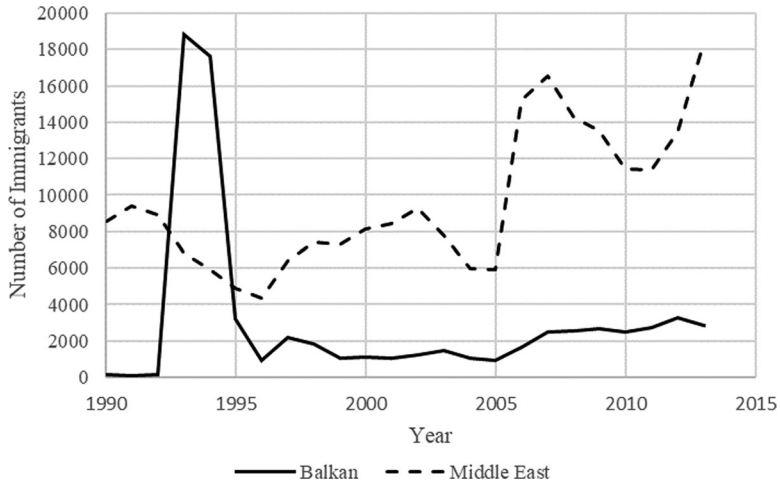

FIGURE 1 Immigrants from two regions to Sweden by entry year 1990–2015. Data: Statistics Sweden, figure made by authors

The information available in the data set allows us to control for a number of individual characteristics. The analysis includes variables such as mobility (whether the individual has moved in the past year or at least once since arriving in Sweden), gender, age, family status (single parent or family with children), education (seven categories regarding the highest level of education attainment), and the year of arrival in Sweden. Summary statistics on these variables are also provided in Table 1.

3.1.2 | Neighborhood characteristics

Neighborhoods are defined as grid cells of 1 km^2. Statistics Sweden uses a geographical grid covering the entire territory of Sweden and assigns each individual to one grid cell based on his/her place of residence. Using these identically sized squares to delineate neighborhoods is practical because *size* and *density* (population and population per square kilometer) can be used interchangeably. To characterize neighborhoods, registry microdata on all individuals are aggregated to this grid cell level. Swedish geo-coded data has previously been used to address several issues such as the effect of sorting in agglomeration gains (e.g., M. Andersson et al., 2016), colocation patterns across different services (e.g., Larsson & Öner, 2014), as well as for entrepreneurial clusters (i.e., M. Andersson & Larsson, 2014). The grids we use in this study are smaller in scale than the standard units of observations that are typically employed in the related literature (e.g., districts or cities). The use of grids allows for a standardized definition of neighborhoods which makes the interpretation of the effects straightforward (Ciccone and Hall, 1996). The use of geo-coding to define grid cells that are used as neighborhoods rather than an administrative or historical definition of a neighborhood does not only bring an advantage in terms of the standardization of physical size. It also means that the definition of the neighborhoods is exogenous, meaning that it is not contingent on the pre-existing conditions related to population density or the existence of an enclave (M. Andersson et al., 2016).

Immigrants are not evenly spread across space, the 12,656 individuals in our sample inhabit 701 different neighborhoods (based on the immigrants' first places of residence). Figure 2 below shows three maps, where Figure 2a displays the spatial distribution of total population in the Stockholm metropolitan area, Figure 2b and Figure 2c display the population within the central parts of Stockholm for Balkan and Middle Eastern immigrants, respectively.

TABLE 1 Summary statistics

Variable	Description	Mean	*SD*	Min	Max
Wage	Wage in SEK	90,863	133,569	0	2,470,700
Employed1	Dummy = 1 if positive wage	0.503	0.500	0	1
Employed2	Dummy = 1 if wage > 78000SEK	0.361	0.480	0	1
Employed3	Dummy = 1 if wage > 156000SEK	0.272	0.445	0	1
Employed4	Dummy = 1 if wage > 234000SEK	0.167	0.373	0	1
Employed5	Dummy = 1 if wage > 312000SEK	0.074	0.262	0	1
Location characteristics (for 1 × 1 km cells)					
Population	Number of inhabitants	3,552	2,339	1	22,910
Employment rate (overall)	Employed over population in percent	60.91	8.49	0	100
Share immigrant group	Immigrant group over population in percent	13.13	15.73	0.01	100
Employment rate (immigrant group)	Employed of immigrant group over immigrant group population in percent	53.33	18.50	0	100
Distance CBD	Distance to CBD of municipality	5.8	4.4	0	89.3
Individual characteristics					
Moved last year	=1 if changed residence previous year	0.164	0.371	0	1
Moved at least once	=1 if changed residence at least once after arrival	0.600	0.490	0	1
Female	=1 if female	0.438	0.496	0	1
Age	Years since birth	38	11	16	64
Family with children	=1 if family with children	0.430	0.495	0	1
Single parent with children	=1 if single parent with children	0.045	0.208	0	1
Education 1	Primary and lower secondary education, less than 9 years	0.123	0.329	0	1
Education 2	Primary and lower secondary education, 9 (or 10) years	0.145	0.352	0	1
Education 3	Upper secondary education, less than three years	0.076	0.264	0	1
Education 4	Upper secondary education, 3 years	0.161	0.367	0	1
Education 5	Postsecondary education, less than 2 years	0.163	0.370	0	1
Education 6	Postsecondary education, 2 years or longer	0.146	0.353	0	1
Education 7	Postgraduate education	0.186	0.389	0	1
Number of observations	105,946				

Abbreviations: CBD, central business district; *SD*, standard deviation.

The first neighborhood-specific variable used in the analysis simply totals all inhabitants residing in the respective neighborhood to detect size-related effects. For instance, the total amount of information about job opportunities may be greater in densely populated areas. The standardization of using same-size squares circumvents the issue of having to differentiate between the number and the density of people in the neighborhood.

The three variables we are most interested in are related to the size of the ethnic enclave and to the quality of the neighborhood. The first is the overall employment rate in the neighborhood. The idea is that a higher share of employed individuals increases the availability of labor market-related information in general, and job openings in particular. The theoretical literature on immigration and networks suggests that information may be disseminated more easily between conational peers because ethnic peers are often members of the same social networks

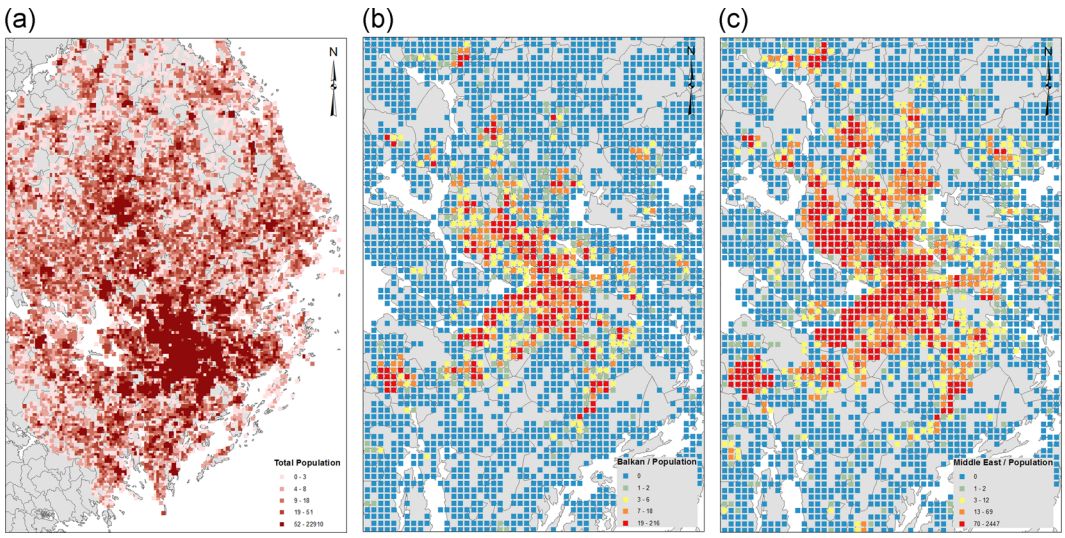

FIGURE 2 (a) Total population in Stockholm functional region. (b) Population of Balkan immigrants in Central Stockholm. (c) Population of Middle Eastern immigrants in Central Stockholm, 2013. Data: Statistics Sweden. Maps are done by the authors [Color figure can be viewed at wileyonlinelibrary.com]

(M. Andersson et al., 2017; Cutler & Glaeser, 1997; Cutler et al., 2008; Damm, 2006, 2014; Edin et al., 2003; Patacchini & Zenou, 2012). New immigrants may thus benefit from labor market-related information transmitted through this network. We account for this by introducing two variables related to an immigrant's own ethnic group. The first is the share of immigrants that belong to the same group. That is, the more peers immigrants have around them, the likelier it is that they can receive some useful information through this group. The second variable related to ethnic peers measures the employment rate of that particular ethnic group.[7] Members of the ethnic network already active in the labor market are expected to have more valuable information to share. These variables can serve as proxies for information potentially available to the individual immigrant. Additionally, the intensity of labor market integration of the ethnic network may change the social norms in this group regarding working or work ethics, and may thus influence individual behavior, for example, through role models or peer pressure (Bertrand, Luttmer, & Mullainathan, 2000). The higher the employment rate in a neighborhood—in particular among the same ethnic group—would signal a norm towards employment and the possibility to have a job, which in turn may create some social pressure in favor of looking intensively for a job and some stigma for those who have been unemployed for an extended period. We will refer to the share of the immigrant group and the immigrant group's employment rate in the neighborhood as enclave size and enclave quality, respectively, in the remainder of the article.[8] We want to stress that employed conationals contribute to both the enclave size and the enclave quality. The variable on enclave quality thus measures the additional effect from ethnic peers, who not only live in the immigrant's neighborhood but also are already integrated in the labor market.

Note that we investigate the immigrants' labor market integration in the Stockholm metropolitan area only, that is we focus on a single labor market region. By including time as well as municipality level fixed effects

[7]In our analysis, employment rates for the two ethnic groups are calculated separately, that is, employment rate among the Balkan immigrants and employment rate among the Middle Eastern immigrants.

[8]The neighborhood characteristics are not entirely orthogonal to each other: A larger share of the immigrant group is negatively associated with the employment rate in the neighborhood. The correlation with the overall employment rate takes a value of −0.61 and is thus larger (in absolute terms) compared to the employment rate of the immigrant group (with a correlation coefficient of −0.27). The immigrant group specific and the overall employment rate are positively correlated, as expected.

(see Section 3.2 below), we control for omitted variables at the regional level influencing both the local employment rate as well as the new immigrants' labor market prospects. We are thus able to isolate mechanisms working at a microspatial scale, like the peer effects discussed above, from effects operating at a larger spatial scale, like overall or immigrant group specific labor market opportunities.

We finally include the distance between the neighborhood and the CBD of the municipality to control for possible knowledge spillovers that may come from the CBD. Since the CBD represents the central parts of the local community, the further away a neighborhood is located, the more peripheral it is relative to the other parts of the municipality. In essence, we control for the neighborhood's place in the urban hierarchy.

Table 1 reveals significant heterogeneity across neighborhoods: The average population size is about 3,500 inhabitants, but the largest neighborhood accommodates over 22,000 people. The average share of immigrants from the same region of origin is about 13%. Again, the variation between squares is very large, going from virtually zero to 100%. The average employment rate among immigrants is only about 53% and thus considerably (nearly eight percentage points) lower compared to the overall employment rate, accompanied by a much larger variation across space. The distances from neighborhoods to the municipality CBD vary from zero to almost 90 km, with an average of 6 km.

3.2 | Empirical strategy

Below we outline the empirical approaches pursued in this article to shed light on the relationship between immigrants' labor market integration and individual and (in particular) neighborhood characteristics.

We start by investigating the immigrants' probabilities of finding their first job. The dependent variable, $y_{imn,t}$, is binary and takes the value 1 if individual i belonging to ethnic group m living in neighborhood n finds a first job at time t. Immigrants are discarded from the data after finding their first job. The empirical model can be represented by the following function:

$$p_{imn,t} \equiv Pr\left(y_{imn,t} = 1 | X_{mn,t-1}, Z_{imn,t-1}\right) = \Phi\left(X_{mn,t-1}\beta^n + Z_{imn,t-1}\beta^i\right) \tag{1}$$

with $X_{mn,t-1}$ and $Z_{imn,t-1}$ comprising neighborhood- and individual-specific variables, respectively, and β^n and β^i as the corresponding vectors of parameters to be estimated. All explanatory variables are lagged by 1 year. The explanatory variables include year- and municipality-fixed effects to account for business cycle effects and unobserved regional heterogeneity. The probability Pr of finding a job (i.e., $y_{imn,t} = 1$) is assumed to be determined by the standard normal cumulative distribution function φ. The relationship described in Equation (1) is thus estimated by a probit model.[9] The standard errors are clustered at the individual level throughout the analysis when using this approach, as observations of individual immigrants are not independent over time.

When estimating the probability of finding a job, neighborhood characteristics will be endogenous if immigrants self-select into neighborhoods in such a way that (a) neighborhood characteristics are correlated with unobserved individual heterogeneity and (b) unobserved individual heterogeneity influences the probability of getting a job. To identify causal effects of neighborhood characteristics on labor market integration, we thus follow an instrumental variables approach. The instruments used in this analysis combine initial neighborhood characteristics with citywide variation over time, two variables that are plausibly exogenous to unobserved individual heterogeneity in the present context.

While the (contemporaneous) neighborhood characteristics may be endogenous (in particular if immigrants move to different neighborhoods), we are confident that an immigrant's first place of residence is exogenous in this empirical

[9]We prefer a probit over a logit model since the former lends itself more easily to using the instrumental variables approach that will be discussed below.

application because the sample is restricted to immigrant cohorts dominated by refugees. Refugees face a very limited choice set regarding their places of residence and their optimizing behavior is thus very constrained. Their first place of residence is almost entirely determined by government authorities and depends heavily on the availability of social housing.[10] As individual refugees cannot determine their initial place of residence, the neighborhood characteristics of their first residence are orthogonal to individual characteristics, such as observed ability (i.e., educational attainment).[11] We thus follow other empirical studies investigating neighborhood effects that also focus on individuals where the places of residence are not chosen by themselves, but by the government (Damm, 2009; Edin et al., 2003) or by the individuals' parents (e.g., Collins & Margo, 2000; Cutler & Glaeser, 1997; Cutler et al., 2008).

Variables indicating the initial neighborhood conditions are combined with citywide shifts of these variables to account for economy-wide trends. The aggregated variation of these variables over time can be influenced only marginally by an individual immigrant and can thus be considered exogenous. In the immigration literature, it is quite common to combine initial (or past) conditions at a local level with variation (shifts) over time at an aggregate level to predict variables of interest. Instrumental variables of this type are commonly labeled "shift-share instruments."[12] The resulting measures are orthogonal to individual heterogeneity and thus exogenous when investigating the immigrants' probabilities of finding a first job.

In the present study, the two main variables of interest are the share of the relevant immigrant group that resides in the neighborhood (enclave size) and the employment rate of this group (enclave quality). The instrument for the share of the immigrant group m in neighborhood n at time t, $I^S_{mn,t}$, is defined as

$$I^S_{mn,t} = \left(\frac{P_{mn,t_0}}{P_{n,t_0}}\right) \cdot \left(\frac{P_{m,t}}{P_t} / \frac{P_{m,t_0}}{P_{t_0}}\right), \tag{2}$$

where t_0 refers to initial period values (i.e., in the immigrant's year of arrival in Sweden). P_{mn,t_0} is the population of immigrant group m in neighborhood n in the initial period t_0, and P_{n,t_0} measures the total population in this neighborhood. $P_{m,t}$ is the total (citywide) population of immigrant group m, and P_t indicates the total (citywide) population. P_{m,t_0} and P_{t_0} refer to the initial values of the respective variables. The term in the first set of brackets in Equation (2) above represents the initial value of the instrumented variable, and the term in the second set of brackets captures the citywide changes of this variable over time. In this way, the initial values are scaled or weighted by aggregate trends.

The second variable we instrument is enclave quality, defined as the ratio between the number of employed individuals of the respective immigrant group and the number of residents of this immigrant group in the neighborhood. The instrument is constructed analogously to the one above. Formally, the instrument for the employment rate of immigrant group m in neighborhood n at time t, $I^E_{mn,t}$, is defined as

$$I^E_{mn,t} = \left(\frac{EP_{mn,t_0}}{P_{mn,t_0}}\right) \cdot \left(\frac{EP_{m,t}}{P_{m,t}} / \frac{EP_{m,t_0}}{P_{m,t_0}}\right), \tag{3}$$

where t_0 again refers to initial period values. EP_{mn,t_0} is the employed population of immigrant group m in neighborhood n in the initial period t_0, and P_{mn,t_0} measures the total population in immigrant group m in this

[10]Placement of a refugee is not random with respect to place-specific characteristics, but depends mainly on housing availabilities. However, individual characteristics are not taken into account when deciding where a refugee should be placed. See Wennström and Öner (2020) for a review of the refugee placement procedure in Sweden.

[11]Correlations are less than 10% for all combinations of neighborhood characteristics at $t0$ (year of arrival) and "observed ability" (i.e., educational attained before arrival).

[12]The idea of constructing instrumental variables by combining spatial variation in the past settlement structure with temporal variation at an aggregate level dates back to Altonji and Card (1991) and Card (2001). See Jaeger, Ruist, and Stuhler (2018) for a comprehensive review of different versions of the Card- or shift-share-type instrumentation in the immigration literature.

neighborhood. $EP_{m,t}$ is the total (citywide) employed population of immigrant group m, and $P_{m,t}$ indicates the total (citywide) population of immigrant group m. EP_{m,t_0} and P_{t_0} refer to the initial values of the respective variables.

In their study, Jaeger et al. (2018) heavily criticize the customary use of Card-type or shift-share instrumentation. In our application, we are not plagued with the same kind of problems that many studies may suffer from. The reason is that we study individual outcomes that have very limited influences on aggregate and long run effects. The literature surveyed in Jaeger et al. (2018) is concerned with the adjustment mechanism of local labor markets that are exposed to supply shocks due to immigration. The issue is that immigrants are attracted to regions with higher wages (in the short run), but at the same time influence those wages (in the long run). In the present study, we consider the effect of neighborhood variables on individual outcomes and those outcomes have very limited effects on neighborhood variables. This means that we do not have to worry about equilibrium effects that influence our dependent variable.

To complement the probit approach described above, we also apply a duration model to consider explicitly the time it takes until people find a job. We thus model "getting a first job" as the end of an unemployment (or, precisely, out of employment) spell that started at the time an immigrant arrived in Sweden.

We start this part of the analysis in an exploratory fashion by evaluating how the most important variables influence the time until immigrants obtain a first job. This is accomplished by estimating so-called survival functions for different subsamples. Kaplan and Meier (1958) suggested a nonparametric estimator of the survival function $S(t)$, $\hat{S}(t)$, indicating the estimated share of individuals remaining unemployed until t years after arriving in Sweden. The survival function $S(t)$ is given by

$$\hat{S}(t) = \prod_{j|t_j \le t} \left(1 - \frac{D_j}{N_j}\right) \tag{4}$$

with j indicating the time (years) elapsed after the immigrants' arrival in Sweden. D_j denotes the number of individuals finding a job exactly j years after arrival, implying the end of their unemployment spells and transition into employment. N_j indicates the number of immigrants who are exposed to the event of finding their first job j years after arriving (i.e., all immigrants remaining unemployed for the first $j-1$ years after arrival). $1 - \frac{D_j}{N_j}$ thus indicates the probability of remaining unemployed in year j, conditional on being unemployed throughout the first $j-1$ years in Sweden.

The survival function $S(t)$ is equal to 1 at t_0 and decreases as t increases, showing that the probability of an individual remaining unemployed at all times until year t_j decreases over time. Differences in the probability of transition from unemployment to employment between immigrants living in neighborhoods with different employment rates, coming from different regions (Middle East and Balkan), and characterized by different education levels (low, medium, and high) and gender will be reported in so-called Kaplan–Meier graphs.

To explain the transition to employment using a larger number of covariates, we then estimate a proportional hazards model as outlined in Cox (1972). In this model, the hazard rate $h(t)$, defined as the probability of obtaining a job t years after arrival in Sweden and conditional on being unemployed for the first $t-1$ years, depends on neighborhood- and individual-specific variables, X_{mn,t_0} and Z_{imn,t_0}, in the following way:

$$h(t|X_{mn,t_0}, Z_{imn,t_0}) = h_0(t)e^{X_{mn,t_0}\delta^n + Z_{imn,t_0}\delta^i}, \tag{5}$$

where h_0 is the baseline hazard and δ^n and δ^i are vectors of parameters for neighborhood- and individual-specific variables to be estimated. Note that variables for neighborhood characteristics capture the initial conditions in the area and can thus be considered exogenous (see the discussion above), allowing a causal interpretation of the results.

4 | RESULTS: ENCLAVE SIZE, NEIGHBORHOOD QUALITY, AND LABOR MARKET INTEGRATION

After introducing the data and discussing the methods, we present our empirical results in this section. We begin by developing the baseline probit model. To interpret the parameter estimates in a causal way, we pursue an instrumental variable approach afterward and contrast the findings of the IV estimations with the results of the (uninstrumented) probit model. This section also includes subsample analyses to investigate the heterogeneity of neighborhood effects across immigrant groups, immigrants' educational attainments, and gender. Finally, the section includes duration analyses and presents exploratory Kaplan–Meier graphs as well as results of proportional hazard models. In this final step of the empirical analysis, we use more restrictive definitions of "being employed" (in terms of wage levels and length of the employment relations) to gain a comprehensive insight into the relationship between the size and quality of enclaves and immigrants' labor market success.

As stated previously, we investigate immigrants until they find their first jobs. Out of 12,656 individuals we discard 2,516 immigrants because they found their first jobs in their year of arrival. The neighborhood characteristics—that are lagged by 1 year in the regressions—cannot be observed in these cases. This leaves us with a sample of 10,140 individuals and 38,711 observations for our main specifications. The employment probability in this sample is 17.2%.[13]

4.1 | Preliminary evidence

The parameter estimates from different variants of the probit model are reported in Table 2. We start with a very sparse model and build up the main specification. The first three models include individual-level characteristics only to determine whether the parameter estimates of individual characteristics are sensitive to controlling for neighborhood heterogeneity. In the first specification, we even exclude the variables for individual mobility (*Moved in the past year* and *Moved at least once*). Women have lower probability of obtaining a job, while age is positively related (at a decreasing rate) to labor market integration. Belonging to a family with children reduces the probability of getting a job, while being a single parent with children is insignificant. Including only the two variables related to mobility in the regression (Model 2) suggests that changing the place of residence within the past year or at least once is positively associated with labor market integration. However, once we include all variables at the individual level, the estimated coefficients of moving decrease in size and become insignificant (Model 3). The parameter estimates of the other individual level variables are very similar compared to Model 1.

In the following specifications (Models 4–7), we include location characteristics in a stepwise manner. First, we include more general neighborhood characteristics, namely the neighborhood population (in logarithmic terms) and the distance to the municipality CBD (Model 4). Note that heterogeneity across municipalities is controlled for by respective fixed effects, while the distance to the CBD of the municipality refers to a neighborhood's place in the urban hierarchy within each municipality. Both the residential population and the neighborhood's distance to the municipality CBD are insignificant in explaining an immigrant's probability of obtaining a first job. Including the overall employment rate in Model 5 shows that the estimated coefficient of this variable is positive and significantly different from zero. We interpret this result as a first evidence that it is not the (population) size, but the quality of the location that is important. In the following, we include the two main variables of interest, namely the population share and the employment rate of the immigrant group. When including the size of the enclave only, the estimated parameter is significantly positive (Model 6). Including both variables for the size and the quality of the enclave

[13]The sample is slightly reduced if the distance to the CBD is zero and the log of this variables cannot be calculated. Note that the sample is larger when we apply more restrictive definitions of being employed, as fewer immigrants pass the respective threshold wages in their first year after arriving to Sweden.

TABLE 2 Immigrant probability of getting a first job—standard probit model

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Location characteristics							
Population (in log)				0.00164	0.01051	0.00645	−0.00431
				(0.01485)	(0.01558)	(0.01543)	(0.01552)
Employment rate (overall)					0.00292**	0.00582***	0.00408***
					(0.00119)	(0.00148)	(0.00151)
Share immigrant group						0.00350***	0.00407***
						(0.00100)	(0.00102)
mployment rate (immigrant group)							0.00388***
							(0.00095)
Distance to municipality CBD (in log)				−0.01031	−0.00257	−0.00784	−0.00305
				(0.01529)	(0.01561)	(0.01569)	(0.01570)
Individual characteristics							
Moved last year		0.05197*	0.00312	0.00244	0.00114	0.00156	0.00063
		(0.02721)	(0.02813)	(0.02815)	(0.02814)	(0.02814)	(0.02815)
Moved at least once		0.06215***	0.03447	0.03583	0.03714	0.03985	0.03961
		(0.02410)	(0.02572)	(0.02573)	(0.02574)	(0.02577)	(0.02577)
Female	−0.44528***		−0.44291***	−0.44317***	−0.44379***	−0.44401***	−0.44661***
	(0.01715)		(0.01720)	(0.01722)	(0.01723)	(0.01724)	(0.01726)
Age	0.02859***		0.02861***	0.02825***	0.02827***	0.02842***	0.02853***
	(0.00498)		(0.00498)	(0.00498)	(0.00498)	(0.00498)	(0.00499)
Age squared	−0.00076***		−0.00076***	−0.00076***	−0.00076***	−0.00076***	−0.00076***
	(0.00007)		(0.00007)	(0.00007)	(0.00007)	(0.00007)	(0.00007)
Family with children	−0.05117***		−0.05035***	−0.05066***	−0.05052***	−0.05114***	−0.05025***
	(0.01789)		(0.01791)	(0.01791)	(0.01791)	(0.01792)	(0.01792)
Single parent with children	0.05772		0.05635	0.05541	0.05728	0.05786	0.05915
	(0.03684)		(0.03683)	(0.03691)	(0.03691)	(0.03690)	(0.03690)

(Continues)

TABLE 2 (Continued)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Constant	−0.89107*** (0.12112)	−1.06112*** (0.07766)	−0.89423*** (0.12119)	−0.88959*** (0.16372)	−1.15741*** (0.20329)	−1.31984*** (0.20960)	−1.16669*** (0.21133)
Observations	38,711	38,711	38,711	38,649	38,649	38,649	38,649
Education dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Arrival year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Municipality fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Location characteristics	($t-1$)	($t-1$)	($t-1$)	($t-1$)	($t-1$)	($t-1$)	($t-1$)
Number of individuals	10,140	10,140	10,140	10,132	10,132	10,132	10,132
Log-likelihood	−15,968	−17,021	−15,967	−15,946	−15,943	−15,937	−15,928

Note: Endogenous variable: $y_{imn,t} = 1$ if individual i of ethnic group m living in neighborhood n finds a first job in year t (and 0 else). Robust standard errors in parentheses (clustered at the individual level).

*$p < .1$.

**$p < .05$.

***$p < .01$.

shows that both respective parameter estimates are positive and highly significant (Model 7). In sum, we have found three neighborhood variables that seem important to explain the probability that immigrants get a first job, namely the overall employment rate, the share of the respective immigrant group over all residents (enclave size), and the employment rate of the immigrants' own immigrant group (enclave quality). Note that including neighborhood characteristics in Models 4–7 hardly affects the parameter estimates of the individual characteristics, as reported in Column 3 of Table 2.

Regarding the size of the partial correlations between neighborhood characteristics and labor market integration, the marginal effects (calculated at means) of the size of the immigrant group and of the overall and immigrant-group-specific employment rates are about 0.0009 in Model 7. This indicates that an increase in the share of the immigrant group in the neighborhood by one *SD* (i.e., by 15.7 percentage points) is associated with a 1.4 percentage point higher employment probability (of a currently unemployed immigrant) in the next year. A one-*SD* increase in the immigrant group's employment rate (i.e., by 18.5 percentage points) is associated with a 1.6 percentage point higher probability of finding a job. As the unconditional employment probability in the sample is 17.2%, an increase of 1.4 and 1.6 percentage points implies an increase in the employment probability of about 8% and 9%, respectively. These results suggest that the partial correlations between the size and the quality of the enclave on the one hand, and immigrants' labor market integration on the other hand, are sizable (in addition to being statistically robust).

4.2 | Instrumental variables approach

To interpret the results in a causal rather than a descriptive way, we follow an instrumental variables approach (outlined in Section 3.2) and estimate an IV-probit model. The regression results using instrumental variables based on initial neighborhood conditions and aggregate changes over time are reported in Table 3 (Model 8). The results show that the parameter estimates of both instrumented variables, namely *Share immigrant group* and *Employment rate (immigrant group)*, are significantly positive at least at the 5% significance level, indicating that both the size and the quality of the enclave have positive causal effects on labor market integration. The corresponding results of the first-stage regressions on the share and the employment rate of the immigrant group, reported in Table A1 in the appendix, show that the excluded instruments contribute significantly to explaining the endogenous variables. *F* tests on the excluded instruments reject the null-hypothesis that the excluded instruments are jointly zero even at the 1% significance level. The Kleibergen-Paap Wald rk test on weak instruments reports an *F* statistic that is many times higher than the critical values reported in Stock and Yogo (2005), indicating that combining initial neighborhood conditions with citywide trends results in strong instruments.

For ease of comparison, Table 3 reprints the results of the final specification of the uninstrumented probit regressions (model 7). Contrasting the regression results indicates that the IV-estimates of the parameters for enclave size and quality are marginally larger, although the differences are statistically insignificant. Given the strength of our instruments, similar point estimates in the IV-regressions and in the standard probit model combined with a low value of the Wald test on the exogeneity of the instrumented variables (reported in Table A1) suggest that the potential bias in the uninstrumented probit model due to immigrants' self-selection into neighborhoods is (at most) marginally small. The parameter estimates of the other variables are hardly affected by instrumenting enclave size and enclave quality (neither in size nor in statistical significance).

The marginal effects (calculated at means) of the size and the quality of the enclave are 0.0009 and 0.0008, respectively. An increase in the share of the immigrant group in the neighborhood by one *SD* thus increases the probability of finding a job by 1.4 percentage points, while a one-*SD* increase in the immigrant group's employment rate enhances the probability by 1.5 percentage points. The effects are sizeable and very similar to the marginal effects based on the uninstrumented probit model (see section 4.1).

In the final column in Table 3 (Model 9), the variables for enclave size and quality are instrumented by the initial neighborhood characteristics only, but not scaled by aggregate trends. The parameter estimate of the

TABLE 3 Immigrant probability of getting a first job—instrumenting variables approach

	Model 7	Model 8	Model 9
Location characteristics			
Population (in log)	−0.00431	−0.00503	−0.00703
	(0.01552)	(0.01594)	(0.01711)
Employment rate (overall)	0.00408***	0.00409**	0.00314
	(0.00151)	(0.00206)	(0.00231)
Share immigrant group	0.00407***	0.00423**	0.00369**
	(0.00102)	(0.00198)	(0.00183)
Employment rate (immigrant group)	0.00388***	0.00413***	0.00496*
	(0.00095)	(0.00153)	(0.00258)
Distance to municipality CBD (in log)	−0.00305	−0.00293	−0.00095
	(0.01570)	(0.01591)	(0.01611)
Individual characteristics	Yes	Yes	Yes
Observations	38,649	38,649	38,649
Education dummies	Yes	Yes	Yes
Arrival year dummies	Yes	Yes	Yes
Municipality fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Method	Probit	IV-Probit	IV-Probit
Instruments	None	Weighted initial values	Initial Values
Intercept	Yes	Yes	Yes
Number of individuals	10,132	10,132	10,132
Log-likelihood	−15,928	−266,560	−279,383

Note: Endogenous variable: $y_{imn,t} = 1$ if individual *i* of ethnic group *m* living in neighborhood *n* finds a first job in year *t* (and 0 else). Individual characteristics: moved last year, moved at least once, female (dummy), age, age squared, family with children (dummy), single parent with children (dummy). Robust standard errors in parentheses (clustered at the individual level).

*$p < .1$.

**$p < .05$.

***$p < .01$.

variable *Share immigrant group* is slightly smaller, but still significantly positive at the 5% level. For the variable *Employment rate* (*immigrant group*), the estimated coefficient is slightly larger, but statistically significant at the 10% level only. The *F* test in the first-stage regression on the immigrant group's employment rate suggests that the excluded instruments are jointly significant (see Table A1), but the *F* statistic is only about half the size compared to the respective first-stage regression using instruments based on weighted initial values. While the point estimates do not differ significantly from either the preferred IV specification (model 8) or from the uninstrumented probit regression (Model 7), the parameter is less precisely estimated when relying only on initial neighborhood characteristics as instruments. This result suggests that interacting the initial neighborhood conditions with citywide trends is important and considerably increases the strength of the instruments.

We interpret the results as evidence for local peer effects, like information dissemination or social norms evolving within ethnic networks (as discussed in Section 3.1), because mechanisms operating at a larger spatial scale (like labor market opportunities) are controlled for by municipality level fixed effects. If characteristics of

the grid cells surrounding the neighborhood of residence are included in the regression, the parameter estimates on the neighborhood specific variables hardly change. Even if labor market opportunities worked at a more local level, the surrounding grid cells (covering a much larger area) should capture labor market conditions better than the grid cell of residence. All parameter estimates on the surrounding grid cells' characteristics, however, are smaller in size and only one of them is significantly different from zero. These results are thus relegated to Table A2 in the appendix.

4.3 | Subsample analysis

The results presented so far suggest that our main variables of interest, namely the size (*Share immigrant group*) and the quality (*Employment rate* [*immigrant group*]) of the enclave are important to the probability of labor market entry of immigrants in Sweden. Here we investigate the heterogeneity of these effects for different subgroups. When discussing the results, we focus on the parameter estimates of enclave size and enclave quality and contrast the respective estimates with our preferred model 8 for the entire sample, reported in Table 3. We will use the instrumentation technique introduced above throughout this section. We start by investigating the two immigrant groups under scrutiny separately. Finally, the database is divided based on the educational attainment of the immigrants and by gender.

4.3.1 | Country of origin

Regression results when investigating immigrants from the Balkans and from the Middle East separately are reported in Table 4 (see Models 10 and 11). The parameter estimates of the size and the quality of the enclave are positive for both immigrant groups, but not significantly different from zero. This may be due to the drastic reduction in sample size.

The other three specifications reported in Table 4 (Models 12–14) additionally account for the size and the labor market integration of foreigners in the neighborhood to investigate whether the effects documented previously indeed stem from the immigrants' ethnic peers rather than from foreigners in general. To test this, we add two variables to our model, namely the share and the employment rate of other immigrants in the neighborhood, that is of immigrants not originating from the Balkans or the Middle East, respectively. The results for the size and the labor market integration of the ethnic peers, however, are hardly affected by including these variables: For the entire sample (Model 12), the size and the employment rate of the immigrant group are positive and significantly different from zero (at least at the 10% level). The respective parameters are always positive if we divide the immigrants depending on their country of origin (see Model 13 and Model 14), but only the parameter estimate of the employment rate for immigrants from the Middle East is significantly different from zero (at the 10% level).

4.3.2 | Gender and educational attainment

In the second part of the analysis of subsamples, we allow for heterogeneous effects for immigrants with different individual characteristics and split the sample along educational attainment[14] and gender lines. The respective regression results are summarized in Table 5.

[14]Education is measured at the time of arrival for an immigrant, although at times it may take a year or 2 of lag before it is registered in the data. The variable is updated as/if the immigrant attains further education in Sweden.

TABLE 4 Immigrant probability of getting a first job—heterogeneity between countries of origin

	Model 8	Model 10	Model 11	Model 12	Model 13	Model 14
Location characteristics						
Population (in log)	−0.00503	0.00849	0.00114	−0.00745	0.00549	−0.00113
	(0.01594)	(0.05559)	(0.01837)	(0.01600)	(0.06233)	(0.01855)
Employment rate (overall)	0.00409**	0.00105	0.00467	0.00181	−0.00353	0.00268
	(0.00206)	(0.00537)	(0.00408)	(0.00298)	(0.00416)	(0.00468)
Share immigrant group	0.00423**	0.01176	0.00430	0.00393*	0.01167	0.00406
	(0.00198)	(0.06637)	(0.00305)	(0.00206)	(0.07756)	(0.00303)
Employment rate (immigrant group)	0.00413***	0.00176	0.00255	0.00393**	0.00144	0.00275*
	(0.00153)	(0.00179)	(0.00165)	(0.00153)	(0.00185)	(0.00165)
Distance to municipality CBD (in log)	−0.00293	−0.02899	−0.00212	−0.00927	−0.03124	−0.00776
	(0.01591)	(0.03021)	(0.01964)	(0.01618)	(0.03552)	(0.01977)
Share other immigrants				0.00079	0.00007	0.00066
				(0.00092)	(0.00320)	(0.00126)
Employment rate (other immigrants)				0.00405**	0.00593	0.00304
				(0.00200)	(0.00524)	(0.00251)
Individual characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Observations	38,649	10,339	28,067	38,644	10,338	28,063
Education dummies	Yes	Yes	Yes	Yes	Yes	Yes
Arrival year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Municipality fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Sample	Full sample	Balkan	Middle East	Full Sample	Balkan	Middle East
Method	IV-Probit	IV-Probit	IV-Probit	IV-Probit	IV-Probit	IV-Probit
Instruments	Weighted initial values					
Intercept	Yes	Yes	Yes	Yes	Yes	Yes
Number of individuals	10,132	2,338	7,794	10,129	2,337	7,792
Log-likelihood	−266,560	−55,523	−111,806	−265,417	−54,822	−111,602

Note: Endogenous variable: $y_{imn,t} = 1$ if individual i of ethnic group m living in neighborhood n finds a first job in year t (and 0 else). Individual characteristics: moved last year, moved at least once, female (dummy), age, age squared, family with children (dummy), single parent with children (dummy). Robust standard errors in parentheses (clustered at the individual level).

*$p < .1$.

**$p < .05$.

***$p < .01$.

Regarding educational attainments, immigrants are divided into three different educational groups (low, medium and high, see Models 15–17). While the parameter estimates of enclave size and quality are positive for all groups, they are significantly different from zero (at least at the 10% level) for highly educated immigrants only (Model 17). Note that the point estimates are not systematically smaller compared to the results based on the full sample (see Model 8, reported in Table 3), but standard errors increase considerably due to a smaller sample size, impeding the ability to derive statistically robust parameter estimates for individuals with low or medium levels of education.

TABLE 5 Immigrant probability of getting a first job—heterogeneity between education groups and gender

	Model 15	Model 16	Model 17	Model 18	Model 19
Location characteristics					
Population (in log)	0.00098	0.01619	−0.03562	0.03449	−0.03931*
	(0.03900)	(0.03260)	(0.02631)	(0.02126)	(0.02358)
Employment rate (overall)	0.00997	0.00589	0.00839**	0.00493*	0.00342
	(0.00624)	(0.00383)	(0.00400)	(0.00271)	(0.00307)
Share immigrant group	0.00772	0.00167	0.01014***	0.00420	0.00291
	(0.00548)	(0.00486)	(0.00386)	(0.00276)	(0.00280)
Employment rate (immigrant group)	0.00198	0.00420	0.00395*	0.00128	0.00520**
	(0.00359)	(0.00260)	(0.00230)	(0.00204)	(0.00202)
Distance to municipality CBD (in log)	0.01393	0.06101*	−0.03745	0.00579	−0.01633
	(0.03728)	(0.03136)	(0.02796)	(0.02184)	(0.02258)
Individual characteristics	Yes	Yes	Yes	Yes	Yes
Observations	8,992	8,686	11,472	17,325	21,324
Education dummies	Yes	Yes	Yes	Yes	Yes
Arrival year dummies	Yes	Yes	Yes	Yes	Yes
Municipality fixed effects	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Method	IV-Probit	IV-Probit	IV-Probit	IV-Probit	IV-Probit
Instruments	Weighted initial values				
Intercept	Yes	Yes	Yes	Yes	Yes
Individual group characteristics	Low education	Medium education	High education	Male	Female
Number of individuals	2,418	2,574	3,350	5,367	4,765
Log-likelihood	−60,004	−59,654	−80,359	−121,764	−144,209

Note: Endogenous variable: $y_{imn,t} = 1$ if individual *i* of ethnic group *m* living in neighborhood *n* finds a first job in year *t* (and 0 else). Individual characteristics: moved last year, moved at least once, female (dummy), age, age squared, family with children (dummy), single parent with children (dummy). Robust standard errors in parentheses (clustered at the individual level).

*$p < .1$.

**$p < .05$.

***$p < .01$.

Turning to the issue of gender, the results reported in Table 2 show that the probability of women obtaining a job is significantly lower compared to men. There are a number of explanations for this result: There may be more obstacles in the labor market for females, while a larger share of women is probably not looking for jobs at all, as women still bear the main burden of domestic and child-rearing responsibilities. Although the level of labor force participation is lower for women, it is nevertheless interesting to investigate whether neighborhood effects are different for men than for women. The results for the respective subsamples are reported in Model 18 for men and in model 19 for women.

The results suggest that the overall employment rate has a larger influence on men's labor market integration compared to the employment rate of ethnic peers (both in size and statistical significance), while we find the opposite for women. The parameter estimates of the size of the immigrant group in the neighborhood are positive,

but not significantly different from zero for both men and women. From these results, one may conclude that men are more dependent on the general neighborhood quality, while women are more influenced by the specific immigrant group in the area.

4.4 | Duration analysis

In this part of our analysis, the timing of obtaining a job is related to individual heterogeneity and neighborhood characteristics by applying duration models. To do so, we model "finding a first job" as the end of an unemployment spell. The essential difference of this methodology is that it takes into account the duration between arriving in Sweden and finding a first job for each individual immigrant.

Following the empirical strategy outlined in Section 3.2, the analysis provided in this section comprises two parts: Initially, we present estimated survival functions depending on the time it takes to obtain a job for different subsamples. In these univariate analyses, we rely on Kaplan–Meier graphs. Finally, a Cox's (1972) proportional hazard model is estimated containing all the explanatory variables used in the probit models discussed previously.

4.4.1 | Kaplan–Meier survival estimates

The four graphs presented in Figure 3 illustrate the share of immigrants remaining without a job relative to the period after arriving in Sweden. We split the sample depending on the employment rate in the neighborhood, the

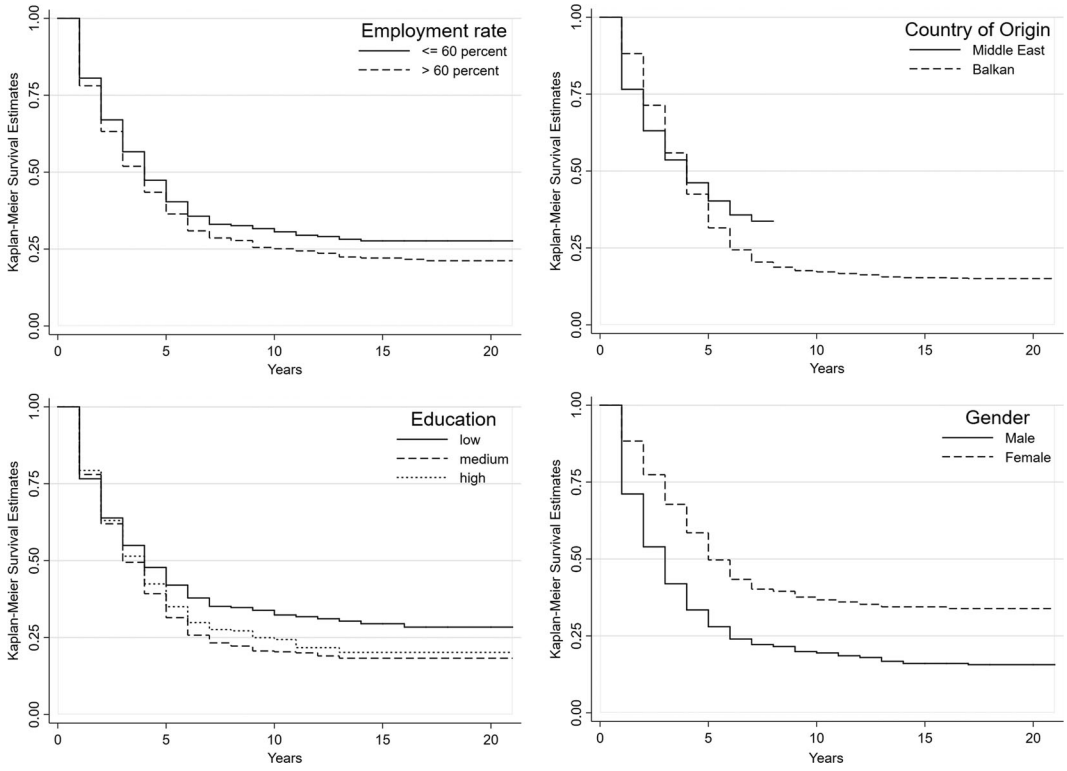

FIGURE 3 Duration in unemployment for different subsamples

immigrants' region of origin, highest level of educational attainment, and gender. Immigrants living in a neighborhood with a high employment rate (over 60%) find a job more quickly. During the first 5 years after entering Sweden, the fraction of people without a job diminishes rather rapidly, but afterward the curve flattens and stabilizes at around 25%. The differences between the two types of neighborhoods remain fairly constant during the time period under scrutiny. Comparing immigrants from the two different regions of origin reveals an interesting pattern: The share of immigrants originating from the Middle East finding jobs is higher compared to people coming from the Balkans in the first years, but the pattern is reversed about 4 years after they arrive in Sweden. Note that the graph indicating the unemployment probability of people from the Middle East is shorter than the one referring to immigrants from the Balkans because immigrants from the Middle East arrive only seven or 8 years before the end of our sample period. The third graph compares the outcomes for people with different levels of education. The picture shows that people with relatively low education continue without a job the longest, as expected. People with medium education find jobs the fastest, but the differences between immigrants with medium and high education levels are small. Investigating differences between men and women clearly suggests that men find jobs much faster than women. The difference is as great as 20–25% and remains somewhat constant throughout the time period.

4.4.2 | Cox proportional hazard model

Results from a Cox (1972) proportional hazard model are reported in Table 6. The hazard in this context is the "risk" of finding a job. Positive parameter estimates thus indicate that the chances of finding a first job are positively associated with the respective variable. This approach allows us to control for a larger number of covariates, and all explanatory variables are determined in the immigrant's year of arrival to Sweden. As the initial neighborhood characteristics are exogenous to unobserved individual heterogeneity in our context (see the discussion in section 3.2), we can interpret the results for neighborhood specific variables causally.

The results presented in the first column of Table 6 (Model 20) rely on the same definition of being employed as before, namely that immigrants have to receive a positive wage income. In the other model specifications reported in Table 6, we apply more restrictive definitions of "having a job" to gain a comprehensive picture of how neighborhood characteristics influence immigrants' labor market integration. We thus consider immigrants employed if they earn more than 78,000 SEK (about 7,200 euro, Model 21), 156,000 SEK (Model 22), 234,000 SEK (Model 23), and 312,000 SEK (Model 24). In the final specification (Model 25) the end of the unemployment spell is defined as having a job for 2 consecutive years to focus on immigrants who are "permanently" integrated into the labor market. In Sweden, even an income level of 312,000 SEK is not very high compared to the average income of about 400,000 SEK. However, we refrain from using higher levels because the number of immigrants passing the threshold of 312,000 SEK is already quite low. While 6,643 individuals pass the lowest income threshold and earn some wage income (see "number of successes" in Table 6), only 2,178 immigrants earn more than 312,000 SEK (about 29,000 euro) at least once in the sample period.[15]

Focusing on the neighborhood characteristics, the results suggest that the size of the enclave (*Share immigrant group*) does not significantly influence immigrants' labor market success in any of the duration models presented in Table 6. The quality of the enclave, that is the employment rate of the immigrant group, has a significantly positive effect on an immigrant's labor market success (if employment is defined as receiving a positive wage income). The point estimate of 0.00337 means that the probability of finding a job in the subsequent year is scaled by exp(0.00337) = 1.0034 if the employment rate of the ethnic peers increases

[15]Note that the number of observations (i.e., the number of individuals in the sample) increases if we apply a more restrictive definition of being employed. This is because immigrants finding a job in the year of arrival are excluded from the analysis. A higher threshold income reduces the number of individuals passing this income threshold in their first year in Sweden and thus increases the sample size.

TABLE 6 Duration analysis—time period until immigrants find a job

Variables	Model 20 Duration until income >0	Model 21 Duration until income >78 K	Model 22 Duration until income >156 K	Model 23 Duration until income >234 K	Model 24 Duration until income >312 K	Model 25 Duration until Job for 2 years
Location characteristics						
Population (in log)	−0.00047	0.05409**	0.07419***	0.06779**	0.07336**	0.01674
	(0.02126)	(0.02143)	(0.02334)	(0.02744)	(0.03662)	(0.02272)
Employment rate (overall)	0.00170	0.00135	0.00037	0.00469	0.01036***	0.00014
	(0.00234)	(0.00237)	(0.00254)	(0.00292)	(0.00386)	(0.00249)
Share immigrant group	0.00178	0.00099	−0.00222	−0.00234	−0.00096	0.00129
	(0.00163)	(0.00166)	(0.00180)	(0.00215)	(0.00295)	(0.00177)
Employment rate (immigrant group)	0.00337**	0.00336**	0.00228*	0.00136	0.00114	0.00292*
	(0.00155)	(0.00134)	(0.00136)	(0.00152)	(0.00190)	(0.00163)
Distance to municipality CBD (in log)	0.01431	0.01727	0.05897**	0.06554**	−0.03497	0.03714
	(0.02164)	(0.02200)	(0.02397)	(0.02796)	(0.03646)	(0.02325)
Individual characteristics						
Female	−0.65676***	−0.76179***	−0.81021***	−0.87897***	−0.86523***	−0.69870***
	(0.02631)	(0.02738)	(0.03046)	(0.03690)	(0.05039)	(0.02864)
Age	0.07338***	0.13834***	0.16406***	0.15938***	0.13141***	0.09893***
	(0.00810)	(0.00902)	(0.01034)	(0.01291)	(0.01797)	(0.00905)
Age squared	−0.00165***	−0.00255***	−0.00288***	−0.00283***	−0.00245***	−0.00203***
	(0.00012)	(0.00014)	(0.00016)	(0.00020)	(0.00028)	(0.00013)
Family with children	0.04050	0.00974	0.00501	0.07689**	0.03277	0.06685**
	(0.02728)	(0.02806)	(0.03069)	(0.03634)	(0.04962)	(0.02955)
Single parent with Children	0.15160***	0.03723	−0.00312	0.06629	0.14269	0.15020**
	(0.05448)	(0.05965)	(0.06840)	(0.08165)	(0.10857)	(0.05966)
Observations	10,125	11,525	11,805	11,942	11,981	10,112
Education dummies	Yes	Yes	Yes	Yes	Yes	Yes
Arrival year dummies	Yes	Yes	Yes	Yes	Yes	Yes

TABLE 6 (Continued)

Variables	Model 20 Duration until income >0	Model 21 Duration until income >78 K	Model 22 Duration until income >156 K	Model 23 Duration until income >234 K	Model 24 Duration until income >312 K	Model 25 Duration until Job for 2 years
Municipality fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Method	Cox proportional hazard model	Cox proportional hazard model	Cox proportional hazard model	Cox proportional hazard model	Cox proportional hazard model	Cox proportional hazard model
Intercept	Yes	Yes	Yes	Yes	Yes	Yes
Number of Successes	6,643	6,500	5,501	3,939	2,178	5,673
Pseudo-R^2	0.0173	0.0188	0.0200	0.0224	0.0281	0.0194
Log-likelihood	−57,278	−56,697	−47,796	−33,299	−18,068	−49,114

Note: Endogenous variable: $y_{imn,t}$ = 1 if individual *i* of ethnic group *m* living in neighborhood *n* finds a first job in year t (and 0 else).
*$p < .1$.
**$p < .05$.
***$p < .01$.

by one percentage point. An increase in the immigrant group's employment rate by one *SD* (i.e., by 18.5 percentage points) thus increases the probability of finding a job in the next year by about 6.4%. Given an unconditional employment probability of 17.2% in this sample, an increase by 6.4% implies an increase in the probability of finding a job within the next year by 1.1 percentage points, which is a bit less compared to the estimated effects of about 1.5 percentage points in the probit models. Similar to the probit models discussed above, the effect of enclave quality on immigrants' labor market integration is both sizable and statistically robust.

If we use more restrictive definitions of "having a job," the estimated parameters of enclave quality remain positive, but become smaller as the applied definition becomes narrower. The parameter estimates are still significantly positive (at least at the 10% level) when using income thresholds of 78,000 SEK or 156,000 SEK or when focusing on "permanent" jobs, but are not significantly different from zero for higher income levels. The overall employment rate in the neighborhood, on the other hand, appears to become more important for more restrictive definitions of "having a job." In particular, when applying a threshold income of 312,000 SEK, the parameter estimate on the overall employment rate is large (and in fact much larger than the immigrant groups specific employment rate in any specification) and significantly different from zero at the 1% significance level. However, such result should be interpreted with caution, as the number of immigrants who get their first job through which he/she earns above a certain wage is very limited compared to other threshold levels.

Regression results on subperiods and on model specifications allowing enclave size and quality to vary over time (results that are not reported for brevity), suggest that the effect of enclave quality is stronger in the first years after arriving in the receiving country, whereas the overall quality of the neighborhood (i.e., the overall employment rate) dominates afterward. The findings that the overall neighborhood quality is more important both for better paid jobs and in later years are consistent, as immigrants typically find well-paid jobs only after a longer period in the receiving country.

5 | CONCLUDING REMARKS

Several significant immigration waves into Europe over the past two decades in the form of forced migration altered the course of public debate. Among other issues, policymakers and academics alike increasingly aim at addressing the challenges associated with the labor market integration of the newly arrived. The essential step in the integration process is widely seen as the first contact immigrants have in the labor markets of the receiving countries, and thereby transition from labor market outsiders to labor market insiders. While there has been an emphasis on several policy measures such as providing adequate language training and education or applying some market-wide interventions, there is also the consideration of how the residential location of the newly arrived may interplay with their labor market success.

Ethnic coclustering at the neighborhood level is a common and rather persistent phenomenon across the world. The empirical literature that investigates how such residential coclustering may dictate various labor market-related outcomes initially focused on the size of the ethnic cluster, that is share or the absolute number of ethnic peers living in close proximity. We contribute to the literature on ethnic enclaves where we specifically address how the qualitative nature of the residential ethnic clusters may explain the probability that an immigrant finds his/her first job. We are particularly interested in isolating this effect to understand its efficacy over and above the sheer size of the ethnic network in the neighborhood. To do so, we employ full population, longitudinal, geo-coded Swedish registry data, which allows us to differentiate the effects from the ethnic employment rate in the neighborhood from the effects that originate from total employment rate or the overall size of the ethnic network in the neighborhood. We define the neighborhoods by way of exogenously assigned grids of one square kilometer exploiting geo-coded data. The use of exogenously determined

identically sized grids puts limits on some of the cross-enclave variation in different dimensions. In this setting scale (size, population) and density (people per square kilometer) are interchangeable, as both types of variables measured as per square-kilometer. In our empirical design, neighborhoods have been characterized by total population and immigrant population (for each group of immigrants, respectively), as well as by their distance to the CBD in the Stockholm metropolitan area. The latter allows us to control for the importance of a neighborhood's place in the urban hierarchy. The relevant enclave quality for getting the first job is, then, captured both by the overall employment rate, and the employment rate of the relevant immigrant group. We also complement the probabilistic approach we use, which is more akin to the existing body of literature, with a number of duration models to address varying degrees of labor market integration for different wage levels, as well as for different durations of employment. Using two distinct immigrant groups that arrived in Sweden through forced migration, that is those that moved from the Balkans and from the Middle East, respectively, as well as using an instrumental variable approach, we are able to infer on the size and importance of enclave effects across different immigrant groups. Controlling for many individual characteristics and using a variety of model specifications, we show that the probability that an immigrant finds a job is related to enclave quality and—to a weaker and less robust extent—to enclave size. The population share of conationals also plays a positive role, but this result is less robust.

The identification of an effect from a qualitative characteristic of an ethnic enclave on the labor market integration of immigrants is our objective. Our evidence for the importance of the employment rate among the ethnic peers—over and above the sheer size of the enclave or the overall employment rate—implies that the channels through which information is disseminated related to the labor market in a neighborhood are ethnically stratified. This result bears great weight for policy design, particularly for people that are exposed to labor market frictions associated with lack of information compared to the native population. The qualitative nature of ethnic clusters should be taken into account when the spatial distribution of immigrants is guided or otherwise facilitated the policymakers. Potential implications include but are not limited to the efficiency of ethnic network building exercises that may facilitate the dissemination of labor market experiences of previously employed ethnic peers to those newly arrived, both through spatial and nonspatial channels.

ACKNOWLEDGMENTS

Johan Klaesson thanks for financial support from Forte (grant number: 2019-01320).

ORCID

Johan Klaesson http://orcid.org/0000-0001-8752-0428
Özge Öner http://orcid.org/0000-0001-9590-8019
Dieter Pennerstorfer http://orcid.org/0000-0002-6191-4397

REFERENCES

Altonji, J. G., & Card, D. (1991). The effects of immigration on the labor market outcomes of less-skilled natives. In J. M. Abowd & R. B. Freeman, (eds.), *Immigration, trade, and the labor market* (pp. 201–234). Chicago, IL: University of Chicago Press.

Andersson, H. (2020). Ethnic enclaves, self-employment, and the economic performance of refugees: Evidence from a swedish dispersal policy. *International Migration Review*, 0197918320912195.

Andersson, M., Klaesson, J., & Larsson, J. P. (2016). How local are spatial density externalities? Neighbourhood effects in agglomeration economies. *Regional Studies*, *50*(6), 1082–1095.

Andersson, M., & Larsson, J. P. (2014). Local entrepreneurship clusters in cities. *Journal of Economic Geography*, *16*(1), 39–66.

Andersson, M., Larsson, J. P., & Wernberg, J. (2019). The economic microgeography of diversity and specialization externalities–firm-level evidence from Swedish cities. *Research Policy*, *48*(6), 1385–1398.

Andersson, M., Larsson, J. P., & Öner, Ö. (2017). *Ethnic enclaves and immigrant self-employment: A neighborhood analysis of enclave size and quality* (No. 1195). IFN Working Paper.

Åslund, O., Hensvik, L., & Skans, O. N. (2014). Seeking similarity: How immigrants and natives manage in the labor market. *Journal of Labor Economics*, *32*(3), 405–441.

Bartel, A. P. (1989). Where do the new US immigrants live? *Journal of Labor Economics*, *7*(4), 371–391.

Bayer, P., Ross, S., & Topa, G. (2008). Place of work and place of residence: Informal hiring networks and labor market outcomes. *Journal of Political Economy*, *116*(6), 1150–1196.

Beaman, L. A. (2012). Social networks and the dynamics of labour market outcomes: Evidence from refugees resettled in the US. *The Review of Economic Studies*, *79*(1), 128–161.

Bertrand, M., Luttmer, E. F. P., & Mullainathan, S. (2000). Network effects and welfare culture. *The Quarterly Journal of Economics*, *115*(3), 1019–1055.

Borjas, G. J. (1995). Ethnicity, neighborhoods, and human capital externalities. *American Economic Review*, *85*, 365–390.

Borjas, G. J. (1998). To ghetto or not to ghetto: Ethnicity and residential segregation. *Journal of Urban Economics*, *44*(2), 228–253.

Borjas, G. J. (2000). Ethnic enclaves and assimilation. *Swedish Economic Policy Review*, *7*(2), 89–122.

Card, D. (2001). Estimating the return to schooling: Progress on some persistent econometric problems. *Econometrica*, *69*(5), 1127–1160.

Ciccone, A., & Hall, R. E. (1996). Productivity and the density of economic development. *American Economic Review*, *86*, 55–70.

Collins, W. J., & Margo, R. A. (2000). Residential segregation and socioeconomic outcomes: When did ghettos go bad? *Economics Letters*, *69*(2), 239–243.

Cox, D. R. (1972). Regression models and life tables (with discussion). *Journal of the Royal Statistical Society*, *34*(2), 187–220.

Cutler, D. M., & Glaeser, E. L. (1997). Are ghettos good or bad? *The Quarterly Journal of Economics*, *112*(3), 827–872.

Cutler, D. M., Glaeser, E. L., & Vigdor, J. L. (2008). When are ghettos bad? Lessons from immigrant segregation in the United States. *Journal of Urban Economics*, *63*(3), 759–774.

Damm, A. P. (2009). Ethnic enclaves and immigrant labor market outcomes: Quasi-experimental evidence. *Journal of Labor Economics*, *27*(2), 281–314.

Damm, A. P. (2014). Neighborhood quality and labor market outcomes: Evidence from quasi-random neighborhood assignment of immigrants. *Journal of Urban Economics*, *79*, 139–166.

Edin, P. A., Fredriksson, P., & Åslund, O. (2003). Ethnic enclaves and the economic success of immigrants—Evidence from a natural experiment. *The Quarterly Journal of Economics*, *118*(1), 329–357.

Graeff, P. (2009). Social capital: The dark side. In G. T. Svendsen & G. L. H. Svendsen (Eds.), *Handbook of social capital* (pp. 143–161). Cheltenham: Edward Elgar.

Jaeger, D. A., Ruist, J., & Stuhler, J. (2018). *Shift-share instruments and the impact of immigration*. National Bureau of Economic Research. (No. w24285).

Kaplan, E. L., & Meier, P. (1958). Nonparametric estimation from incomplete observations. *Journal of the American Statistical Association*, *53*(282), 457–481.

Klaesson, J., & Öner, Ö. (2020). Ethnic enclaves and segregation—Self-employment and employment patterns among forced migrants. *Small Business Economics*. https://doi.org/10.1007/s11187-019-00313-y

Kramarz, F., & Skans, O. N. (2014). When strong ties are strong: Networks and youth labour market entry. *Review of Economic Studies*, *81*(3), 1164–1200.

Larsson, J. P., & Öner, Ö. (2014). Location and co-location in retail: A probabilistic approach using geo-coded data for metropolitan retail markets. *The Annals of Regional Science*, *52*(2), 385–408.

Li, P. S. (2004). Social capital and economic outcomes for immigrants and ethnic minorities. *Journal of International Migration and Integration/Revue de l'integration et de la Migration Internationale*, *5*(2), 171–190.

Manski, C. F. (1993). Identification of endogenous social effects: The reflection problem. *The Review of Economic Studies*, *60*(3), 531–542.

Musterd, S., & Andersson, R. (2006). Employment, social mobility and neighbourhood effects: The case of Sweden. *International Journal of Urban and Regional Research*, *30*(1), 120–140.

Musterd, S., Andersson, R., Galster, G., & Kauppinen, T. M. (2008). Are Immigrants' earnings influenced by the characteristics of their neighbours? *Environment and Planning A*, *40*, 785–805.

Nannestad, P., Lind Haase Svendsen, G., & Tinggaard Svendsen, G. (2008). Bridge over troubled water? Migration and social capital. *Journal of Ethnic and Migration Studies*, *34*(4), 607–631.

Nowotny, K., & Pennerstorfer, D. (2019). Network migration: Do neighbouring regions matter? *Regional Studies*, *53*(1), 107–117.

Patacchini, E., & Zenou, Y. (2012). Ethnic networks and employment outcomes. *Regional Science and Urban Economics*, *42*(6), 938–949.

Pennerstorfer, A., & Pennerstorfer, D. (2019). How small are small markets? Local market size for child care services. *Regional Science and Urban Economics*, *77*, 340–355.

Stock, J. H., & Yogo, M. (2005). Testing for weak instruments in linear IV regression. In D. W. K. Andrews & J. H. Stock (Eds.), *Identification and Inference for Econometric Models: Essays in Honor of Thomas Rothenberg* (pp. 80–108). Cambridge: Cambridge University Press.

Warman, C. (2007). Ethnic enclaves and immigrant earnings growth. *Canadian Journal of Economics/Revue canadienne d'économique*, *40*(2), 401–422.

Wennström, J., & Öner, Ö. (2020). Political hedgehogs: The geographical sorting of refugees in Sweden. *Statsvetenskaplig tidskrift*. (forthcoming).

Wixe, S., & Pettersson, L. (2020). Segregation and individual employment: A longitudinal study of neighborhood effects. *The Annals of Regional Science*, *64*(1), 9–36.

SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.

How to cite this article: Klaesson J, Öner Ö, Pennerstorfer D. Getting the first job: Size and quality of ethnic enclaves and refugee labor market entry. *J Regional Sci*. 2021;61:112–139. https://doi.org/10.1111/jors.12504