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Factors Shaping Workplace Segregation Between Natives and Immigrants

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Abstract Research on segregation of immigrant groups is increasingly turning its attention from residential areas toward other important places, such as the workplace, where immigrants can meet and interact with members of the native population. This article examines workplace segregation of immigrants. We use longitudinal, georeferenced Swedish population register data, which enables us to observe all

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immigrants in Sweden for the period 1990–2005 on an annual basis. We compare estimates from ordinary least squares with fixed-effects regressions to quantify the extent of immigrants' self-selection into specific workplaces, neighborhoods, and partnerships, which may bias more naïve ordinary least squares results. In line with previous research, we find lower levels of workplace segregation than residential segregation. The main finding is that low levels of residential segregation reduce workplace segregation, even after we take into account intermarriage with natives as well as unobserved characteristics of immigrants' such as willingness and ability to integrate into the host society. Being intermarried with a native reduces workplace segregation for immigrant men but not for immigrant women.

Keywords Workplace segregation · Residential segregation · Intermarriage · Longitudinal analysis · Sweden

Introduction

Studies on segregation of immigrants tend to privilege the time people spend in the neighborhood of residence (Ellis et al. 2004). This neighborhood is an important social arena that provides a collective milieu influencing social interactions and individual life careers (Blasius et al. 2007; Galster 2012; Miller et al. 2009; Musterd et al. 2012; Wang 2010). Contact with natives in neighborhoods of residence plays an important role in the learning processes that enable newly arrived immigrants to overcome the challenges of living in a new country. In particular, sharing a neighborhood with members of the native population has a positive effect on the earnings of immigrants (Musterd et al. 2008). Although living in the same neighborhood as natives is associated with higher earnings, an even greater earnings premium is enjoyed by immigrants who work with natives in the same establishment (Carrington and Troske 1998; Kmec 2003; Tammaru et al. 2010).

Despite the positive outcomes that can come from working with natives, little is known about what determines the extent to which immigrants are segregated from natives in their place of work.[1] In the light of the potential positive outcomes of working with natives, it is important that we gain a better understanding of how segregation in the workplace comes about and how it is related to segregation in the neighborhood of residence. From a comparison of the levels of segregation of native-born and immigrant groups in Los Angeles, Ellis et al. (2004) found that almost half of segregation in the workplace neighborhood is due to segregation in the residential neighborhood. Moreover, Hellerstein et al. (2011) showed that for the United States in general, segregated residential neighborhoods lead to segregation in the actual workplace establishments as a consequence of neighborhood-based job-finding networks. Both studies used cross-sectional data, and the associations found could equally be the result of a sorting of immigrant or minority groups into certain residential areas and

[1] In this article, we use the terms "workplace segregation" and "immigrant exposure to natives at workplaces" synonymously. When highlighting high exposure to natives at places of work, we also use the term "workplace integration," following a recent change in the residential segregation research (e.g., Hall 2013).

workplaces on the basis of unobserved characteristics that pertain to the willingness and ability to integrate.

This article contributes to the literature on workplace segregation by seeking answers to three fundamental research questions:

1. What roles do residential segregation and intermarriage play in immigrant segregation in the workplace?

   Here, we are interested specifically in whether there is a positive effect of living among natives on working with natives when we control for immigrant-native intermarriage. Previous research has established that intermarriage is related closely to living outside immigrant neighborhoods (Ellis et al. 2006; Feng et al. 2012; Martinovic et al. 2009; Tammaru and Kontuly 2011); hence, failing to control for intermarriage with natives may lead to bias when investigating the effect of residential segregation (Ellis et al. 2012; Ellis and Wright 2005).
2. To what extent do unobserved immigrant characteristics, such as willingness and ability to integrate, explain the sorting of immigrants into intermarriage as well as into residential neighborhoods and workplaces with low levels of segregation?

   Previous studies in the field are based on cross-sectional data (Ellis et al. 2004; Hellerstein et al. 2011; Hellerstein and Neumark 2008; Hou 2009). We expand these studies by applying a longitudinal research design that allows us to follow complete immigrant cohorts over time. By applying fixed-effects (FE) estimates, we can eliminate time-invariant individual characteristics, which are partly unobservable and may bias ordinary least squares (OLS) estimates.
3. Do the determinants of workplace segregation differ between more-developed countries of the Global North (GN) and less-developed countries of the Global South (GS) immigrants?[2]

   This distinction between the GN and GS regions is valuable because we expect immigrants from each region to differ with respect to the unobserved ability to integrate and the likelihood that they will face discrimination in the labor market. Immigrants from GS are especially disadvantaged when progressing into host-country workplaces that are better-paying and less immigrant-dense (Åslund and Nordström Skans 2010; Barth et al. 2012).

The remainder of this article is structured as follows. We begin by reviewing the literature on the links between residential segregation and workplace segregation. We then present the data, methods, and results. In the descriptive part of the article, we define *residential neighborhoods* and *workplace neighborhoods* at a spatial resolution that is comparable to census tracts—an approach used in previous comparable studies in the United States (e.g., Ellis et al. 2004). We compare changes in the patterns in residential neighborhood segregation and workplace neighborhood segregation by applying exposure indices that are traditionally used in segregation research. In the main analytical part of the article, we define workplaces as *workplace establishments* where immigrants actually work and where the actual social interaction takes place and inequalities are produced (e.g., Baron and Bielby 1980; Stainback and Tomaskovic-Devey 2012; Tomaskovic-Devey et al. 2006; Wellman 1996). We conduct an individual-level longitudinal analysis of factors shaping immigrant workplace

[2] We define these descriptors in the Data and Methods section.

segregation from natives, separately for GN and GS immigrants. The article concludes with a discussion of the factors influencing the workplace segregation and integration of immigrants, with particular reference to the effects of residential neighborhoods, having a native partner, and gender differences in workplace segregation.

Links Between Residential and Workplace Segregation

Residential segregation of immigrants tends to be especially high upon their arrival in the host country (Ellis and Wright 2005; Hall 2009; Wright et al. 2005). In Sweden, residential segregation is the highest among GS immigrants who are also mainly recent arrivals; they often live in immigrant-dense residential neighborhoods that contain a mix of people from different GS origin countries but very few natives (Åslund et al. 2010). Previous studies conducted in U.S. context lead us to expect that neighborhood of residence could be a key determinant of workplace segregation of immigrants at the level of both workplace neighborhood (Ellis et al. 2004) and workplace establishment (Hellerstein et al. 2011). Three principal and complementary explanations have been suggested to account for this phenomenon: (1) lack of economic resources to settle in the same neighborhoods as natives; (2) effects of social networks and residential preferences among immigrants to live close to members of their own group; and (3) discrimination against immigrants in the housing market (Andersson et al. 2010b; McPherson et al. 2001; Semyonov and Glikman 2009). We turn now to a discussion of those explanations in greater detail.

Proximity Effect

The proximity effect suggests that distance matters in matching home and work. From the perspective of the worker, the decision to accept a job offer further away from home is subject to time and financial constraints resulting from the high costs of long-distance commuting or the need to relocate to a more expensive residential neighborhood (Åslund et al. 2010; Parks 2004; van Ham 2001; Wright et al. 2010). Employers sometimes prefer to hire workers who live within a certain travel time/distance in order to reduce absenteeism and lateness; one recruitment strategy that attempts to ensure that applicants meet this criterion is to advertise job vacancies locally (Hanson and Pratt 1992). In addition, ethnic enterprises, which often operate in immigrant-dense residential neighborhoods, provide local jobs for immigrants. Research has also shown that the level of residential segregation varies significantly by immigrant group (Hall 2013), so the existence of the proximity effect suggests that workplace segregation at neighborhoods and establishments also varies by immigrant group. The literature on gender differences in home–work associations further reveals that women generally work closer to home than men both because they bear a larger share of domestic responsibilities within households and because they face more space-time constraints than men (Hanson and Pratt 1992; Wang 2010; Wright et al. 2010). We may therefore hypothesize that residential segregation results in higher levels of workplace segregation for immigrant women than for immigrant men.

Network Effect

The network effect suggests that immigrant residential concentration enhances local social networks that act as important conduits for information about jobs (Wright et al. 2010). A large fraction of the job-search process is referral-based (Bayer et al. 2008; Bygren 2013; Dustmann et al. 2011; Parks 2004), which saves time and money for employers. Informal job search networks have built-in mechanisms, such as "bounded solidarity" and "enforceable trust," which explains why immigrants tend to recommend members of their own group to their own employer (Ellis et al. 2007; Waldinger 1994). Neighborhood-based networks are especially important for newly arrived immigrants because earlier-arrived immigrant neighbors are often the first ones they contact for job information and referrals (Andersson et al. 2010a; Musterd et al. 2008). Note that immigrant own-group social networks—comprising friends, relatives, and acquaintances (Ioannides and Datcher Loury 2004)—can extend beyond the residential neighborhood. It follows that segregated workplaces could also emerge elsewhere in the city. However, the social networks of immigrants that extend into native social networks could also facilitate workplace integration with natives. The effectiveness of social networks is often differentiated with respect to gender because women do not always tap the same migration information systems as men (Wright and Ellis 2000), the social networks of women are smaller and more residential neighborhood–based than those of men (Moore 1990; Wang 2010), and people tend to interact more often with others of the same gender (Hanson and Pratt 1992). Further, women may have less to gain from extended social networks than men because, as discussed earlier, they are often more limited in their spatial reach in job search because of household-induced constraints. Parks (2004:591) therefore concluded that "if immigrant women's social networks are more rooted in immigrant neighborhoods than men's, then residential segregation may be a more important determinant of labor market segregation for women than for men."

Discrimination Effect

The discrimination effect suggests that people living in certain lower income and immigrant-dense residential neighborhoods could experience stigmatization in the labor market (Galster 2012; Magee et al. 2007; van Ham and Manley 2012). Such residential neighborhood–based discrimination occurs as a result of the interaction of place and group membership; being an immigrant and living in a segregated residential neighborhood can cumulate into a double disadvantage, interpreted by some employers as an indicator of low worker productivity (Reskin et al. 1999). As a result of discrimination, immigrants are more likely to work in immigrant-dense workplaces. However, residential neighborhood–based discrimination is just one aspect of the discrimination faced by immigrants seeking a job; just a mild bias in favor of members of one's own group can result in substantial discrimination of immigrants in the hiring process (Arrow 1973; Barth et al. 2012; Rydgren 2004). In Sweden, a study by Rooth (2002) demonstrated that even adopted children who were born in the GS but who have been raised in Swedish native families, have attended Swedish schools, and are part of native social networks perform significantly worse in the labor market than natives. Other studies confirm that visible minorities from the GS face significant difficulties in the Swedish labor market (Attström 2007; Hedberg and Tammaru 2013).

Other Factors Shaping Workplace Segregation

Residential segregation and related factors—such as proximity to jobs, residential neighborhood–based networks, and employer discrimination—can all contribute to workplace segregation at neighborhoods and establishments. In addition to these factors, labor market segmentation contributes to workplace segregation. There is substantial evidence of immigrant sorting into certain types of jobs (Andersson et al. 2010a; Bygren 2013; Kremer and Maskin 1996). Important reasons for this sorting relate to the labor demand in the host country, productive characteristics of immigrants, and the tendency of employers to discount the education and previous country-of-origin work experience of recently arrived immigrants (Andersson et al. 2010a; Buzdugan and Halli 2009; Damas de Matos 2012; Hayfron 2001). Employers with an immigration background themselves might not have this bias; ethnic enterprises that provide specific ethnic goods and services (such as restaurants) often employ immigrants rather than natives (Åslund and Nordström Skans 2010). All these factors contribute to the niching of immigrants in certain segments of the labor market (Gratton 2007; Schrover et al. 2007). Further, such employment niching is inherently spatial; immigrant workers tend to concentrate not only into certain jobs and industries but also into workplaces located in certain areas within the city (Ellis et al. 2007; Wright et al. 2010).

Two important factors could reduce workplace segregation compared with residential segregation. First, the spatial distribution of employment opportunities does not necessarily match the residential distribution of immigrants (Ellis et al. 2004). The availability of jobs elsewhere in the city could potentially trigger immigrants to search for jobs away from immigrant-dense residential neighborhoods and own-group networks, especially when their skills allow them to compete with natives in the labor market. Second, employment discrimination of minorities and immigrants is illegal in many countries. In Sweden, the most important laws that explicitly aim to counter employment discrimination emerged in the 1990s along with the increased immigration from GS. These laws include the Equal Opportunities Act (1991); the Act on Measures against Discrimination in Working Life on Grounds of Ethnicity, Religion or Other Belief (1999); and the Swedish Discrimination Act (2008). Despite these initiatives, the first study in Sweden to document changes in workplace segregation of immigrants in the establishments revealed an increase, rather than a decrease, in segregation between 1985 and 2003 (Åslund and Nordström Skans 2010). This has been explained by the increasing numbers of migrants from the GS since the mid-1980s and their higher initial levels of workplace segregation at establishments compared with GN immigrants (Åslund and Nordström Skans 2010), and by the sorting of immigrants into workplaces (Bygren 2013).

To summarize, residential segregation is an important factor in generating workplace segregation of immigrants both in workplace neighborhoods and workplace establishments, but the link between residential and workplace segregation is not a simple one. Evidence from previous studies suggests that the extent of workplace-neighborhood segregation is less than that of residential-neighborhood segregation, but that the latter is one of the major determinants of both workplace-neighborhood (Ellis et al. 2004) and workplace-establishment (Hellerstein et al. 2011) segregation. Our study sheds new light on the link between residential and workplace segregation of immigrants, taking into account immigrant origin, intermarriages with natives, and other relevant background factors.

Data and Methods

Most research on the relationship between residential and workplace segregation comes from the United States (Patacchini and Zenou 2012), which has a much longer history of immigration and a different ethnic, racial, and immigrant landscape than Sweden. In Sweden, because immigration from the GS is a recent phenomenon that started only in the mid-1980s, most ethnic and racial minorities consist of recent immigrants. However, the findings of this study have a wider relevance given our focus on the early post-immigration adaptation in the labor market—a process of interest to any country that experiences ongoing immigration on a larger scale. Furthermore, the population register data available in Sweden allow us to extend previous cross-sectional research on factors shaping workplace segregation into a longitudinal research design, following full immigrant cohorts over a longer period. Because the Swedish population register data are also relational, we are able to match each individual with his/her partner and coworkers and thus to trace changes in residential segregation, workplace segregation, and intermarriages with natives.

Our empirical analysis consists of two parts. In the descriptive part, we present an overview of segregation patterns at the level of residential neighborhood and workplace neighborhood, and trace changes in immigrant-native intermarriages during the first five years after arrival in Sweden. Neighborhoods (both workplace and residential) are defined by SAMS areas, which are similar to census tracts used in previous comparable studies in the United States (e.g., Ellis et al. 2004). SAMS areas are Swedish statistical units that are based mainly on municipal planning zones and voting districts and that aim to define homogenous neighborhoods of about 1,000 inhabitants.[3]

In the main part of the empirical analysis, we focus on workplace segregation in establishments because this is where important social interaction takes place. Similar to other studies based on census and register data, our study is limited in that we cannot observe actual interactions between immigrants and natives in the residential neighborhood, the workplace neighborhood, and the workplace establishment; thus, we can make statements only about the potential for interaction in those three important domains of daily life. However, meeting in these domains is an important precondition for social interaction between immigrants and natives.

Descriptive Analysis

Swedish population register data allow us to include in our research population all immigrants who entered Sweden during the years 1990, 1995, and 2000. To be included in our sample, immigrants have to meet the following six criteria: they (1) were born outside Sweden, (2) held a citizenship other than Swedish on arrival, (3) were 18–62 years old in the year of immigration, (4) did not die during the five years following immigration, (5) had not immigrated during a previous study year,[4] and (6) had some work income (i.e., wages and/or income from self-employment) during the period under study. Because data on race and ethnicity are not available from the

[3] There are 9,208 SAMS areas in Sweden.

[4] In other words, an immigrant who, for example, entered Sweden in both 1990 and 1995 is included only in the 1990 cohort.

Swedish population register, we capture the diversity of immigrants in Sweden by controlling for their origin.[5] Given our criteria 1 and 2, we believe that almost all immigrants will have ethnicities other than Swedish. These selection criteria leave us with a sample of 86,057 individuals, 41 % of whom arrived in 1990, 27 % in 1995, and 32 % in 2000.

Immigrants from the GN account for 57 %, and thus immigrants from the GS 43 %, of the research population. The GN/GS classification of immigrant origin is further broken down into the following finer categories that reflect the ethnic and racial diversity of immigrants to Sweden: for GN, (1) North (the Nordic countries), (2) West (Western Europe, the United States, Canada, Australia, New Zealand, and Japan), (3) East (Eastern Europe, as well as Russia and some more-developed former Soviet Union republics); and for GS, (4) Middle East (including North Africa), (5) Asia, (6) Africa, and (7) South America. Previous research shows that it is more difficult for GS immigrants than for GN immigrants to establish themselves in the Swedish labor market (Attström 2007; Hedberg and Tammaru 2013; Rydgren 2004). Note that the Swedish economy was undergoing different stages of the economic cycle at the arrival times of our three immigration cohorts, which may have affected the absorption capacity of the labor market. In 1990, Sweden experienced a recession, and the country started to recover in the mid-1990s. In 2000, the economy was characterized by strong GDP growth.

We compute indices of the exposure of immigrants to members of the native population in residential neighborhoods and workplace neighborhoods (SAMS areas) in order to trace changes in the segregation patterns in those two life domains. The most widely used measure of the exposure dimension of segregation is the P^* index proposed by Lieberson (1981). The index describes a group's potential interaction with another group in a manner that accounts for both the spatial dissimilarity and the relative sizes of the groups in the region (Lieberson and Carter 1982). Because P^* is sensitive to the relative size of subgroups, it should be interpreted relative to the size of the relevant group in the total population in order to avoid misleading conclusions (Cutler et al. 1999; Peach 2009). The maximum value of P^* is context-bound; in our case, the share of native Swedes constitutes its maximum value. Because the share of foreign-born persons in Sweden has increased over time, this change in population composition will, *ceteris paribus*, reduce the exposure of immigrants to natives over time. We therefore also use the modified version of the exposure dimension of segregation (MP^*), which always ranges from 0 to 1. MP^* can be interpreted as a measure of the gap between the actual exposure of group X to Y and the exposure that would be experienced if group Y were distributed uniformly across the region. In other words, the higher the value of MP^*, the lower the actual, experienced exposure compared with the exposure that could be achieved, given the population composition at a particular point in time and space.

In addition to calculating the neighborhood exposure indices, we examine the exposure of immigrants to natives within the household by means of immigrant-native intermarriage. Adjusted and unadjusted indices of exposure,[6] as well as

[5] The 133 cases for which information on geographic origin was missing were excluded from the study.
[6] For ease of understanding the results presented, the P^* and MP^* index values are multiplied by 100.

intermarriage statistics, are calculated for each cohort every five years from year of arrival until 2005. Statistics are computed separately for GN and GS immigrants.

Individual-Level Analysis

In the individual-level analysis, we model the determinants of the share of native coworkers at the actual workplace establishments. The analysis is based on a panel data set, with annual observations at the end of each calendar year. In addition to the aforementioned criteria, we apply the following restrictions for inclusion in the panel data set that relate to the duration and characteristics of employment. Immigrants from the initial sample are included if (1) they have at least two years of work income during the five years following the year of arrival, provided that (2) information on workplace address is available, and (3) the workplace establishment has five or more employees. Work experience of selected immigrants is omitted from the panel data set unless criteria 2 and 3 are fulfilled.

A total of 34,192 individuals were included in the panel data set, of which 41 % arrived in 1990, 24 % arrived in 1995, and 35 % arrived in 2000. The share of immigrants from GN countries was 61 % of the population, and that of GS immigrants was 39 %. The panel data set includes a total of 119,493 observations: 9,730 immigrants are included for two years; 7,873, for three years; 6,531, for four years; and 10,058, for five years.[7] We start with OLS regressions of workplace segregation. The basic regression model has the following form:

$$Y_i = \beta_0 + \beta_1 NeighExposure_i + \beta_2 NativePartner_i + \mathbf{X}'\gamma + \kappa + \lambda + \varepsilon_i, \qquad (1)$$

where $i = 1, \ldots, n$. The dependent variable Y represents the share of native coworkers at the workplace establishment (defined by address) where immigrant i works. Among the independent variables (see Table 1), those of principal interest for studying workplace-establishment segregation are (1) residential-neighborhood segregation—that is, the share of native Swedes in individual i's neighborhood of residence (SAMS area) (*NeighExposure*), and (2) immigrant-native intermarriages (*NativePartner*), a dummy variable that takes the value of 1 if an immigrant has a native Swede partner and 0 otherwise. According to our earlier discussion, having more intense everyday interaction with members of the native population and having access to the job networks of natives should lead to a reduction in segregation in the workplace establishment, so we expect β_1 and β_2 to have positive signs. Because immigrant exposure to natives in the residential neighborhood is an aggregated variable, we cluster standard errors in all our regressions at the SAMS level.

We further control for an array of individual characteristics as well as neighborhood size, which in Eq. (1) are subsumed under **X**. Neighborhood size is a continuous variable, representing the population in respective SAMS areas of residence for a particular year. The individual immigrant attributes taken into account are origin, Swedish citizenship, gender, age at arrival in Sweden (continuous), years since arrival, education (compulsory, secondary, or university), and industry/line of business. The

[7] Our results are robust with respect to the use of a balanced panel with five observations.

Table 1 Descriptive statistics for the micro-level research population

		Full Sample	Global North	Global South
Workplace Exposure	Mean	72	76	65
Neighborhood Exposure	Mean	79	82	75
Native Partner (%)		19	20	17
Neighborhood Population Size	Mean	3,523	3,211	4,057
Macro Region (%)	Stockholm	43	38	50
	Gothenburg	13	13	12
	Malmö	11	12	8
	Large regional centers	25	26	23
	Rest of Sweden	9	10	7
Industry (%)	Manufacturing	26	29	20
	Wholesale and retail	8	9	6
	Hotels and restaurants	11	7	18
	Transport and communication	5	5	5
	Financial and business services (low-skilled)	10	8	14
	Financial and business services (high-skilled)	8	10	5
	Public administration	2	2	2
	Education	10	10	9
	Health, social, and other services	20	20	21
	Undefined	0.4	0.3	0.6
Swedish Citizen (%)		5	4	7
Sex	Female	55	53	57
	Male	45	47	43
Age at Arrival	Mean	30	30	29
Education (%)	Compulsory	29	26	36
	Secondary	30	31	29
	University	40	43	36
Year of Arrival (%)	1990	41	41	42
	1995	24	26	22
	2000	35	34	37
Immigrant Origin (%)	North	23	36	
	West	18	28	
	East	23	36	
	Middle East	12		33
	Asia	12		33
	Africa	6		17
	South America	7		18
Observations		119,493	75,500	43,993
Number of Individuals		34,192	20,913	13,279

Source: Authors' calculations from Swedish population register data.

latter variable is included to control for labor market segmentation shaping workplace segregation. Our data do not contain information on occupations. However, previous studies have shown that in the U.S. context, occupational and industrial indices of dissimilarity are highly correlated (.91). The industry variable has been preferred because it encapsulates the possibility that immigrants work in different occupations in the same workplace (Ellis et al. 2007:260). Furthermore, Andersson et al. (2010a), among others, found that industry is one of the most important variables explaining immigrant workplace segregation in the United States. Following previous studies in Sweden (e.g., Tammaru et al. 2010), we report nine industry categories in our final model. As a robustness check, we also reestimated the models, using 60 industry dummy variables. The results for the main variables of interest remained robust to these alternative model specifications.

Our regressions also include fixed effects κ for Swedish macro regions to account for time-invariant region-specific peculiarities, such as different settlement structures, housing characteristics, and labor market conditions. We distinguish the following macro regions: (1) Stockholm, (2) Gothenburg, (3) Malmö, (4) large regional centers, and (5) the rest of Sweden. Finally, λ represents the year of immigration fixed effects, which eliminate countrywide macroeconomic effects. Recall that each immigrant cohort in our study experienced very different macroeconomic conditions upon arrival (in 1990, 1995, or 2000). In addition, because the share of immigrants increased significantly in Sweden during the study period, more-recent immigrant cohorts are more likely to live and work with other immigrants than earlier cohorts.

Estimating Model 1 with OLS is problematic because exposure to natives in the residential neighborhood and intermarriages are not random. These variables are likely correlated with unobservable individual characteristics that might also affect workplace segregation, such as an individual's cognitive ability or willingness to integrate. Clearly, immigrants who want to integrate into the host society and have a greater ability to learn the language will be more likely to live among natives than are immigrants who are less willing or able. In Eq. (1), such unobservable factors were absorbed in the error term ε, thereby causing a bias in our estimates. We assume that these omitted variables are positively correlated with both the dependent and independent variables of interest, so we expect estimates of β_1 and β_2 from OLS to be upwardly biased. As a result, we estimate the following FE regression model:

$$Y_{it} = \beta_0 + \beta_1 NeighExposure_{it} + \beta_2 NativePartner_{it} + \mathbf{X}'\gamma + \alpha_i + \varepsilon_{it}. \quad (2)$$

Previously omitted variables that do not change over time (such as willingness and ability to integrate) will enter the individual fixed effect α_i and hence will no longer bias our estimates of β_1 and β_2.[8] We start our analysis with restricted models that include as explanatory variables on the right side only residential-neighborhood exposure, native partner, and the time dimension. In a second step, we remove all parameter

[8] We track immigrants from the first moment of their arrival, so we are confident that our FE model eliminates the largest fraction of immigrants who self-select into specific residential neighborhoods. To test whether post-hire self-selection into immigrant neighborhoods influences our results, we also split our sample into a group of immigrants who moved across SAMS borders and a group who did not. The results are qualitatively very similar for both subsamples, which suggests that exogenous changes in residential-neighborhood exposure affect the chance of working with natives at the workplace establishment.

restrictions on our covariates and estimate the full models. Using the full models, we also carry out separate analyses for GN and GS immigrants.

Results

Descriptive Analysis of Changing Patterns of Residential and Workplace Segregation and Intermarriage

We start by tracing changes in the patterns of residential segregation. The results reveal that as expected, GN immigrants' scores for exposure (P^*) are higher than those of GS immigrants (Table 2). Newcomers from GN countries initially settle in residential neighborhoods that have a larger share of natives compared with GS immigrants. This difference in GN and GS initial exposure to natives in residential neighborhoods increases over immigrant cohorts that arrived in 1990, 1995, and 2000. Although the level of all immigrants' exposure to the native population in residential neighborhoods tends to decrease in the first five years after arrival in Sweden, this is more noticeable in the case of GS immigrants. However, after the first lustrum in Sweden, both groups' exposure to natives largely stabilizes. The standardized exposure (MP^*) index confirms these findings on residential segregation.

Immigrants' exposure to natives (P^*) is considerably higher in workplace neighborhoods than in residential neighborhoods. This is similar to the findings in the United States in that immigrant segregation in the workplace neighborhood is less than that in the residential neighborhood (Ellis et al. 2004). The difference in workplace-neighborhood segregation between GN and GS immigrants is much less

Table 2 Residential-neighborhood and workplace-neighborhood exposure (P^* and MP^*) to natives by year of arrival and immigrant origin

			Residential Neighborhood				Workplace Neighborhood			
Year of Arrival	Exposure Index	Origin[a]	1990	1995	2000	2005	1990	1995	2000	2005
1990	P^*	GN	83	80	80	79	86	88	86	85
		GS	82	72	70	70	87	87	83	82
	MP^*	GN	8	11	10	10	10	9	7	6
		GS	10	20	21	20	9	10	10	9
1995	P^*	GN		80	77	77		87	85	85
		GS		74	70	69		87	83	82
	MP^*	GN		10	13	13		10	8	8
		GS		17	22	21		10	10	10
2000	P^*	GN			81	79			86	85
		GS			71	68			84	83
	MP^*	GN			9	10			7	6
		GS			20	23			9	9

[a] GN = Global North; GS = Global South.

Source: Authors' calculations from Swedish population register data.

pronounced than residential-neighborhood segregation (Table 2). In addition, the decrease in exposure to natives in the workplace neighborhood over time is less than the decrease of exposure in the residential neighborhood for both GN and GS immigrants in each immigrant cohort. When we take into account changes in population composition during the study period, the level of exposure to natives in workplace neighborhoods is relatively stable for GS immigrants (MP^*).

Interesting trends can be found in rates of intermarriage with natives. Upon arrival, the proportion of intermarriages is comparable among GN and GS immigrants in the 1995 and 2000 cohorts. Differences exist in the earliest (1990) cohort with 9 % of GN immigrants being intermarried compared with 6 % of GS immigrants (Table 3). However, significant differences emerge over time between the two immigrant origin groups. In each cohort, we can observe a relatively rapid increase in the proportion of GN immigrants who are intermarried with natives, for example, from a baseline of 9 % up to 21 % for the 1990 cohort during their 15-year stay in Sweden. In contrast, the intermarriage rates of GS immigrants with natives do not increase during their stay in Sweden.

Individual-Level Analysis of Segregation in the Workplace Establishment

The centerpiece of this article is the analysis of factors shaping immigrant-native workplace segregation at the level of workplace establishment. The results of the OLS regression show that higher exposure to natives in the residential neighborhood is significantly and positively related to immigrant exposure to natives in the workplace establishment (Model 1, Table 4). A 10 percentage point higher fraction of natives in an immigrant's residential area is associated with a 5 percentage point higher fraction of natives at the establishment level. At average exposure levels, this implies an elasticity of 0.55. In other words, immigrants' workplace integration tends to proceed much slower than residential integration. In addition, having a native partner is associated with a significantly higher exposure to natives at the establishment level, by roughly 2 percentage points. Although these are naïve OLS correlations, the effects are in line with our expectation that living together with natives in the residential neighborhood or having a native partner increases exposure to natives in the workplace establishment (i.e., workplace integration of immigrants).

Table 3 Intermarriage with natives (%) by year of arrival and immigrant origin

Year of Arrival	Origin[a]	1990	1995	2000	2005
1990	GN	9	17	20	21
	GS	6	6	6	6
1995	GN		9	13	15
	GS		9	10	9
2000	GN			8	15
	GS			8	8

[a] GN = Global North; GS = Global South.

Source: Authors' calculations from Swedish population register data.

Table 4 Ordinary least squares (OLS) and fixed-effects (FE) regressions of workplace exposure to natives, all immigrants

		(Model 1) OLS	(Model 2) OLS	(Model 3) FE	(Model 4) FE
Neighborhood Exposure		0.500**	0.230**	0.056**	0.031**
(continuous)		(0.020)	(0.012)	(0.008)	(0.008)
Native Partner		1.825**	2.324**	0.608*	0.629**
(ref. = otherwise)		(0.247)	(0.199)	(0.249)	(0.236)
Year Since Arrival	2nd year	0.630**	0.531**	0.645**	0.534**
(ref. = 1st year)		(0.155)	(0.139)	(0.105)	(0.102)
	3rd year	1.061**	0.767**	1.091**	0.837**
		(0.194)	(0.168)	(0.131)	(0.126)
	4th year	2.042**	1.097**	1.461**	1.106**
		(0.216)	(0.192)	(0.139)	(0.134)
	5th year	2.642**	1.313**	1.637**	1.155**
		(0.228)	(0.191)	(0.152)	(0.150)
Neighborhood Population Size			-1.54×10^{-4} **		-1.36×10^{-5}
(continuous)			(3.96×10^{-5})		(2.79×10^{-5})
Macro Region	Gothenburg		6.077**		1.377†
(ref. = Stockholm)			(0.397)		(0.788)
	Malmö		6.328**		1.203
			(0.422)		(0.809)
	Large regional centers		10.146**		4.670**
			(0.346)		(0.555)
	Rest of Sweden		10.214**		7.087**
			(0.554)		(0.699)
Industry	Wholesale and retail		2.055**		1.463*
(ref. = manufacturing)			(0.409)		(0.580)
	Hotels and restaurants		–12.374**		–5.717**
			(0.438)		(0.624)
	Transport and communication		1.906** (0.485)		2.662** (0.720)
	Financial and business services (low-skilled)		–21.598** (0.575)		–15.645** (0.693)
	Financial and business services (high-skilled)		3.190** (0.408)		–0.740 (0.571)
	Public administration		4.334**		2.792**
			(0.592)		(0.852)
	Education		3.147**		4.263**
			(0.393)		(0.570)
	Health, social, and other services		4.067** (0.275)		3.892** (0.513)

Table 4 (continued)

		(Model 1) OLS	(Model 2) OLS	(Model 3) FE	(Model 4) FE
	Undefined		–3.961**		–0.036
			(1.166)		(1.292)
Swedish Citizen			0.256		–0.141
(ref. = otherwise)			(0.328)		(0.273)
Sex Is Female			0.392*		
(ref. = male)			(0.177)		
Age at Arrival			–0.046**		
(continuous)			(0.012)		
Education	Secondary		1.291**		
(ref. = compulsory)			(0.231)		
	University		3.754**		
			(0.240)		
Year of Arrival	1995		–2.012**		
(ref. = 1990)			(0.246)		
	2000		–3.863**		
			(0.260)		
Immigrant Origin	West		–1.213**		
(ref. = North)			(0.280)		
	East		–4.446**		
			(0.290)		
	Middle East		–7.770**		
			(0.373)		
	Asia		–8.893**		
			(0.410)		
	Africa		–5.013**		
			(0.436)		
	South America		–4.648**		
			(0.378)		
Constant		30.872**	55.150**	66.722**	67.596**
		(1.765)	(1.189)	(0.662)	(0.808)
Observations		119,493	119,493	119,493	119,493
R^2		.119	.332	.004	.085
Number of Individuals		34,192	34,192	34,192	34,192

Notes: Dependent variable is exposure to native Swedes at the workplace (in %). Standard errors, clustered at the SAMS level, are shown in parentheses.

Source: Authors' calculations from Swedish population register data.

$^{\dagger}p < .10$; $*p < .05$; $**p < .01$

In the second model (Model 2, Table 4), we add all other control variables. The parameter estimates for residential-neighborhood exposure, native partner, and year of arrival change somewhat, but their qualitative interpretation remains the same. Most importantly, both living in neighborhoods with a higher share of natives and being intermarried with a native relate to higher levels of exposure of immigrants to natives at the workplace establishment. In addition, immigrants living in larger neighborhoods are less exposed to natives in workplace establishments than immigrants living in smaller neighborhoods. The size effect repeats at the regional level. Immigrants working in the capital city, Stockholm, are most segregated in workplace establishments; immigrants working in the rest of Sweden are most integrated in workplace establishments. In terms of industry, immigrants working in manufacturing are more exposed to natives at workplaces than those working in hotels and restaurants and in low-skilled financial and business services, but they are less exposed than those working in the public administration, education, health, social, and other services, or in high-skilled financial and business services.

Model 2 further shows that women are more integrated in workplaces than men (at 5 % significance level). We will discuss the results on gender differences in more detail when we present separate models for GN and GS immigrants. There is also a significant effect of age at arrival: older arriving immigrants are more segregated in workplace establishments than younger ones. Education is highly important as well: the better-educated immigrants have a higher level of workplace integration than the less-educated. As highlighted earlier, every new immigrant arrival cohort enters a more immigrant-dense environment, and this comes along with higher levels of workplace segregation. Finally, the results for immigrant origin show that those who arrive from North (Nordic countries, Western Europe, and North America) are employed in workplaces with the highest shares of natives, whereas immigrants from the Middle East and Asia are employed in workplaces with the lowest shares of natives. Also important is that having Swedish citizenship does not affect workplace segregation.

The remaining two models in Table 4 present the results from the FE regressions in which we control for time-invariant unobserved characteristics. Looking at column 3, the most important observation is that the size of the coefficient on residential-neighborhood exposure variable decreases to only roughly one-ninth of the OLS coefficient, but it remains positive and highly significant. This indicates that most of the effect of residential-neighborhood segregation found in the OLS models can be attributed to migrants' self-selection as a result of unobserved willingness and ability to integrate. These results fully reflect our intuition about the omitted variables causing an upward bias in the estimated effect of neighborhood exposure on workplace exposure. Similarly, the effect of having a native partner is smaller in the FE model, but the point estimate drops to only about one-third compared with the OLS model and remains highly significant. In the fourth model in Table 4, we again include all control variables; time-invariant variables are omitted because of the nature of the FE model. As in the OLS model, including the control variables causes the coefficient on residential-neighborhood exposure to decrease to almost one-half that in Model 3. The results of the control variables in Model 4 are qualitatively similar to those of the OLS models, but the parameter sizes are generally smaller in the FE model.

As shown in Table 4, segregation in workplace establishments differs significantly by region of immigrant origin. Therefore, we present separate models for immigrants

from the GN and the GS to shed more light on how the effects of residential-neighborhood segregation and having a native partner differ for these two immigrant origin groups. The OLS models (Models 5 and 7 in Table 5) show that both living in a residential neighborhood with a high share of natives and having a native partner increase workplace integration for both GN and GS immigrants. Evaluated at sample means, the response of workplace exposure to a 1 % increase in residential exposure is 0.28 % for GN immigrants and 0.20 % for GS immigrants. In the FE models (Models 6 and 8), exposure in the residential neighborhood still affects workplace integration positively for both GN and GS immigrants (the elasticity shrinks to 0.03 % for both groups), but having a native partner remains significant only for GS immigrants. This implies that the selection into intermarriages with natives is less important for GS immigrants in shaping workplace segregation than for GN immigrants. It also means that the positive intermarriage effect on workplace integration for GN immigrants, as found in the OLS model, spuriously picks up the positive effect of unobservable variables (e.g., willingness or ability to integrate), whereas intermarriage promotes workplace integration of GS immigrants even after we take into account these previously omitted variables in the FE model.

The results for some of the control variables are qualitatively very similar for GN and GS immigrants in both the OLS and the FE models. The share of native coworkers increases for GN and GS immigrants with the number of years lived in Sweden. Workplace segregation is higher for GN and GS immigrants living in larger neighborhoods and in larger cities (Stockholm, Gothenburg, and Malmö). Having Swedish citizenship has no effect for either GN or GS immigrants. There are some differences between GN and GS immigrants by industry and education. GN immigrants working in wholesale and retail industries are more exposed to native Swedes at workplace establishments than GN immigrants working in manufacturing, but no such difference could be observed for GS immigrants. Workplace integration of GS immigrants with secondary education is higher than for GS immigrants with primary education, whereas no such difference exists for GN immigrants. The highest levels of workplace segregation occur among immigrants from Asia and the Middle East.

The final issue of interest in Table 5 relates to gender. The pooled regression (Table 4) shows that women experience higher levels of workplace integration than men. The separate models for GN and GS immigrants (Table 5) show that this gender effect is entirely driven by GS immigrants. A possible explanation for the fact that GS immigrant women are working at the establishments with higher shares of natives than GN immigrant women is that the group of working GS immigrant women is highly selective in terms of willingness to integrate in the Swedish society. Because the gender variable automatically drops from the FE model that takes into account the underlying willingness of immigrants to integrate, this model cannot provide more insight into this matter. Another possible explanation is that the relatively high workplace integration of GS female immigrants arises from the occupational differences between immigrant men and women; GS immigrant women might do low-skilled service jobs (such as cleaning) in workplaces with a high share of natives. We control for industry in our model, which partly captures this effect, but some of the GS immigrant women performing low-skilled service jobs may be hired by establishments that are coded into a different industry than services. For example, cleaning workers directly employed by universities fall into the "education" category in the industry classification rather than "health, social, and other services."

Table 5 Ordinary least squares (OLS) and fixed-effects (FE) regressions of workplace exposure to natives, by immigrant origin

		Global North		Global South	
		(Model 5) OLS	(Model 6) FE	(Model 7) OLS	(Model 8) FE
Neighborhood Exposure		0.262**	0.029**	0.176**	0.028*
(continuous)		(0.015)	(0.010)	(0.014)	(0.013)
Native Partner		1.728**	0.307	4.522**	1.041*
(ref. = otherwise)		(0.232)	(0.244)	(0.378)	(0.514)
Year Since Arrival	2nd year	0.459**	0.517**	0.714**	0.567**
(ref. = 1st year)		(0.151)	(0.109)	(0.275)	(0.204)
	3rd year	0.816**	0.893**	0.864**	0.742**
		(0.182)	(0.130)	(0.313)	(0.246)
	4th year	1.363**	1.379**	0.810*	0.637*
		(0.203)	(0.148)	(0.362)	(0.251)
	5th year	1.522**	1.582**	1.066**	0.426
		(0.212)	(0.168)	(0.351)	(0.288)
Neighborhood Population Size		-1.54×10^{-4}**	4.68×10^{-6}	-1.59×10^{-4}**	-4×10^{-5}
(continuous)		(4.52×10^{-5})	(3.63×10^{-5})	(5.38×10^{-5})	(5×10^{-5})
Macro Region	Gothenburg	4.819**	0.325	7.668**	2.918*
(ref. = Stockholm)		(0.433)	(1.001)	(0.607)	(1.234)
	Malmö	5.738**	1.386	6.886**	0.821
		(0.423)	(0.910)	(0.704)	(1.664)
	Large regional centers	9.575**	4.353**	10.790**	4.901**
		(0.368)	(0.696)	(0.559)	(0.920)
	Rest of Sweden	8.467**	6.935**	13.361**	7.211**
		(0.632)	(0.849)	(0.754)	(1.201)

Table 5 (continued)

		Global North		Global South	
		(Model 5) OLS	(Model 6) FE	(Model 7) OLS	(Model 8) FE
Industry	Wholesale and retail	3.115**	2.236**	–0.832	–0.510
(ref. = manufacturing)		(0.402)	(0.674)	(0.943)	(1.199)
	Hotels and restaurants	–8.876**	–5.709**	–15.012**	–6.607**
		(0.523)	(0.815)	(0.653)	(0.899)
	Transport and communication	1.713**	1.867†	2.157**	3.101**
		(0.576)	(0.961)	(0.786)	(1.034)
	Financial and business	–18.369**	–10.168**	–24.670**	–21.327**
	services (low-skilled)	(0.678)	(0.794)	(0.681)	(1.019)
	Financial and business	2.701**	–0.928	3.954**	–0.571
	services (high-skilled)	(0.440)	(0.641)	(0.850)	(1.057)
	Public administration	6.513**	4.017**	0.202	0.395
		(0.613)	(0.901)	(1.091)	(1.515)
	Education	0.625	1.716**	7.544**	7.454**
		(0.422)	(0.666)	(0.565)	(0.903)
	Health, social, and other	3.988**	3.281**	3.872**	3.875**
	services	(0.294)	(0.597)	(0.522)	(0.850)
	Undefined	–4.892**	–1.364	–3.058†	0.192
		(1.414)	(1.720)	(1.754)	(1.813)
Swedish Citizen		0.518	–0.002	0.371	–0.090
(ref. = otherwise)		(0.440)	(0.368)	(0.471)	(0.393)
Sex Is Female		–0.268		1.453**	

Table 5 (continued)

		Global North		Global South	
		(Model 5) OLS	(Model 6) FE	(Model 7) OLS	(Model 8) FE
(ref. = male)		(0.195)		(0.307)	
Age at Arrival		–0.051**		–0.039	
(continuous)		(0.014)		(0.024)	
Education	Secondary	0.372		2.780**	
(ref. = compulsory)		(0.265)		(0.392)	
	University	3.072**		4.565**	
		(0.265)		(0.396)	
Year of Arrival	1995	–0.732**		–3.866**	
(ref. = 1990)		(0.259)		(0.451)	
	2000	–1.421**		–7.238**	
		(0.266)		(0.397)	
Immigrant Origin	West	–1.849**			
(ref. = North)		(0.282)			
	East	–4.916**			
		(0.302)			
(ref. = Middle East)	Asia			–1.374**	
				(0.483)	
	Africa			2.498**	
				(0.444)	
	South America			2.905**	
				(0.408)	
Constant		52.985**	71.076**	51.573**	62.916**

Table 5 (continued)

	Global North		Global South	
	(Model 5) OLS	(Model 6) FE	(Model 7) OLS	(Model 8) FE
	(1.380)	(0.962)	(1.566)	(1.352)
Observations	75,500	75,500	43,993	43,993
R^2	0.263	0.049	0.343	0.141
Number of Individuals	20,913	20,913	13,279	13,279

Notes: Dependent variable is exposure to native Swedes at the workplace (in %). Standard errors, clustered at the SAMS level, are shown in parentheses.

Source: Authors' calculations from Swedish population register data.

$^{\dagger}p < .10$; $*p < .05$; $**p < .01$

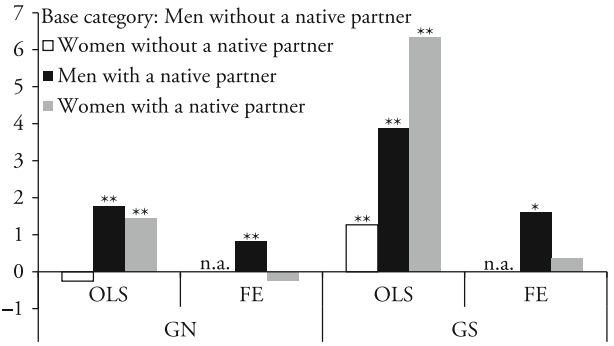

Fig. 1 Differential effect of having a native partner on male and female immigrants from GN and GS. The figure displays the total effect of having a partner on workplace exposure for GN and GS men and women in two different estimation strategies. The base category (men without native partner) is compared with women without native partner, men with native partner, and women with native partner. Technically, the effects for the three groups of individuals are defined as $\beta_{female}, \beta_{partner}$ and the sum of $\beta_{female} + \beta_{partner} + \beta_{female \times partner}$, respectively. *Source:* Authors' calculations from Swedish population register data. Significance levels reported for differences to the base category are indicated by asterisks, as follows: $*p < .05$; $**p < .01$

We explore the gender dimension of segregation in the workplace establishment further by interacting gender with (1) residential neighborhood exposure and (2) intermarriage (regression results not shown). There are no differences in how strongly residential neighborhood segregation affects workplace segregation by gender. However, gender differences emerge with respect to intermarriage. Figure 1 illustrates the differential effect of having a native partner on male and female immigrants, separately for immigrants from GN and GS. The base category in Fig. 1 is men without a native partner. In the OLS models, being intermarried with a native facilitates the workplace integration of both men and women, but in the FE[9] models, there is a positive effect only for men. The drop in parameter estimates is smallest for GN men and largest for GS women. Hence, after we control for unobserved heterogeneity (FE model results), immigrant men with native partners are better integrated in workplaces than immigrant women with native partners. Intermarriage is less important in facilitating workplace integration with natives for men if they come from GN and more important for women if they come from GS.

Discussion and Conclusions

Most studies on immigrant segregation tend to focus on residential segregation. However, direct and firsthand contact with members of the native population often also takes place at workplaces and/or in the family. The key innovation of this article is that it clarifies the role of immigrants' residential segregation and intermarriage in determining workplace segregation. This is achieved by using the longitudinal and georeferenced data of the Swedish population registers. The results confirm findings

[9] Owing to the nature of the FE model, the category "women without native partner" is not shown in Fig. 1 because gender is a time-invariant characteristic.

from previous studies conducted in the United States (Ellis et al. 2004; Wright et al. 2010): namely, that immigrant workplace-neighborhood segregation is lower than residential-neighborhood segregation. The scattered locations of jobs across various parts of cities, as well as policies that facilitate desegregation in the workplace, have been considered important mechanisms that increase workplace integration relative to residential integration (Åslund et al. 2010; Ellis et al. 2004). The results in relation to the effect of intermarriage with natives reveal interesting differences between GN and GS immigrants. Upon arrival, intermarriage rates with natives are comparable for these two immigrant origin groups. However, the share of GN immigrants living with a native partner increases substantially with the number of years in Sweden, but no comparable change is observed for GS immigrants.

However, the centerpiece of this article is the individual-level analysis, which reveals that living in less-segregated residential neighborhoods reduces segregation at the workplace level. To confirm this finding, we go beyond the previous literature on workplace segregation by controlling for immigrant-native intermarriages because estimated effects of residential segregation on workplace segregation are hard to interpret as long as the presence of a native partner—who normally shares the same residential neighborhood—is not accounted for (cf. Ellis et al. 2012). When we take into account the sorting of immigrants into residential neighborhoods and partnerships with natives that stem from unobserved willingness and ability to integrate (FE models), the effect of exposure in the residential neighborhood that is obtained from OLS decreases by a factor of almost 9; however, it remains positive and highly significant. Sharing a neighborhood of residence with natives is important for workplace integration both for GN and GS immigrants. The OLS regression reveals that integration with natives at workplace establishments increases for both GN and GS immigrants when they are intermarried with natives, but in FE models, the intermarriage effect remains significant only for GS immigrants. It follows that the unobserved characteristics are less important in shaping native workplace segregation for GS immigrants than for GN immigrants.

Gender differences in workplace segregation are complex. Our study shows that immigrant women from GS are more integrated in workplace establishments than immigrant men, but no such differences exist for GN immigrants. These results for workplace segregation are in line with the results obtained by Wright and Ellis (2000) in their study of the occupational niching of immigrants in Los Angeles: gender differences are not necessarily universal and depend on the particular immigrant group under investigation. The geographies of home and work and also the household context (intermarriages with natives) shape gender differences in workplace segregation. Most importantly, the results of our study show that the gender effect on workplace integration varies between those who are married to a native partner and those who are not. We show that immigrant men from both GS and GN who are intermarried with a native partner work in establishments with higher share of Swedes compared with immigrant men who are not intermarried with a native, but this intermarriage effect is not evident for immigrant women. There is an increasing trend of Swedish (mostly working-class) men finding a partner from Eastern Europe and Southeast Asia. The women they partner with may find it hard to reap the benefits from intermarriage, either because they might not gain significantly from the social networks of their husbands, or because they potentially face a relatively higher risk of being subordinated within the household and distanced from the labor market (cf. Niedomysl et al. 2010; Olofsson 2012).

Because this explanation to our finding might be specific to Sweden and to recently arrived immigrants, we would welcome studies of gender differences in the intermarriage effect on workplace segregation in other countries with a high share of immigrants and over longer observation periods in order to better understand how the integration of immigrants evolves across the different domains of daily life.

Because the Swedish population registers do not contain information regarding race or ethnicity, we can shed light on workplace segregation only according to immigrants' different regions of origin. The results indicate that, as expected, segregation at the workplace level is lower for GN immigrants than for GS immigrants. This is indirect evidence in support of previous studies that show that having a nonwhite skin color is a powerful factor explaining difficulties to integrate in the Swedish labor market (Hedberg and Tammaru 2013; Rooth 2002; Rydgren 2004). This finding is usually interpreted as evidence of discrimination by natives. It could also result partly from the fact that the work experience, knowledge, and formal qualifications of the recently arrived immigrants are not equally applicable in the host country compared with the country of origin (Hayfron 2001). Further, it is well known from studies of cross-cultural psychology that immigrants experience adaptive stress after arrival in their new country (Berry 2006). It takes time for newcomers to overcome this adaptive stress and to acquire both formal skills and tacit knowledge of country-specific norms and attitudes in order to become more competitive with the natives in the host country labor market (Damas de Matos 2012; Tammaru et al. 2010). It is reasonable to assume that such diverse challenges, in addition to discrimination, necessitate a longer adaptation period for GS immigrants, thus contributing to their higher level of workplace segregation. Our study provides evidence that such a learning process is more efficient for both GN and GS immigrants who have the potential to meet native neighbors in the residential neighborhood (for both men and women) and who are intermarried with a native (for men only).

To conclude, self-selection into residential neighborhoods, partnerships, and workplace establishments is very important for the workplace integration of immigrants. When we take into account the unobserved abilities that shape these sorting processes, we find that higher exposure to natives in the household and residential neighborhood is still important for immigrants in facilitating integration in the workplace. These results have important policy implications: residential desegregation is likely to increase the integration of immigrants in workplaces by having a positive effect on the probability of finding a job in less-segregated workplaces. This is important because working with natives leads to higher incomes for immigrants (Catanzarite and Aguilera 2002; Tammaru et al. 2010). Thus, our results imply that lower levels of residential segregation facilitate lower levels of segregation at workplace establishments, which, in turn, improves immigrants' economic success in the host country.

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