

**Are residential and workplace concentration correlated for immigrants?
Evidence for Sweden**

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Abstract

In immigrant-receiving countries, immigrants are often concentrated in residential neighbourhoods with high concentrations of immigrants. In addition, they are concentrated in workplaces with high concentrations of immigrants. Many researchers have assumed that these are two sides of the same coin, so that policy affecting residential segregation could be expected to influence workplace segregation. Using Swedish register data for 2007 we directly assess whether immigrants who live in residential neighbourhoods concentrated with immigrants also work in firms concentrated with immigrants. We find that there is very little correlation between residential and workplace segregation, suggesting that policy could profitably target both types of segregation separately.

Keywords: immigration, segregation, enclaves.

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1. Introduction:

There is a great deal of research in economics, sociology and geography assessing the degree to which immigrants live or work in segregated environments – aka enclaves – and the impact of doing so. These studies generally argue that living in an enclave offers a host of benefits, such as familiar institutional structures that may ease social integration, but possibly at the expense of broad job and information networks that may connect with economic integration. Some researchers (see, Portes and Jensen 1989, 2002; Zhou and Logan 1989) point to positive economic returns to working in an enclave. Most researchers, however, argue that working in an enclave may offer job opportunities unavailable in the general labour market, but possibly at the expense of occupational mobility and wages (Musterd et al 2008; Kaplan and Douzet 2011; Raaum, Salvanes and Sørensen 2006; Stromgren et al 2014). Thus, while immigrants often work in firms with high concentrations of immigrants, they typically have poor earnings (see, e.g., Pendakur and Woodcock 2010; Barth, Bratsberg and Raaum 2012).

Recently, in a study that considers both workplace and residential segregation, Stromgren et al (2014) show that workplace segregation is less severe than residential segregation in Sweden. These two types of segregation (where immigrants live and where they work) are often linked in explanations of poor economic outcomes. An implicit assumption underlying these studies appears to be that living in an enclave increases the probability of working with a co-ethnic population (see, e.g., Bolt et al 2010). Indeed, many researchers have assumed that these two facets of segregation are two sides of the same coin.

In this paper we use Swedish register data from 2007 to directly assess the degree to which immigrants who live in residential enclaves also work in labour market enclaves. These data provide information on the country-of-birth composition of *both* each immigrant's neighbourhood *and* each immigrant's workplace as well as individual level socio-demographic characteristics. This means that we can directly measure the correlation between immigrant residential segregation and immigrant workplace segregation at the individual level.

We find that there is very little correlation between residential and workplace immigrant segregation in Sweden. Unconditionally, the observed correlation at the individual level between indices of residential and workplace segregation is about 0.24. Stromgren et al (2014) also find a positive correlation. Conditional on individual characteristics that affect the segregation of individuals, such as education and years of residence in Sweden etc., the estimated correlation is

only about half as large, equal to 0.14. If we narrow our definition of concentration to equal the proportion of immigrants who share the same place-of-birth (the preferred definition of an enclave among sociologists) the unconditional correlation is 0.11, and, conditional on the characteristics of immigrants, it is only 0.04. If residential and workplace correlation really are two sides of the same coin, these correlations would be closer to 1. Thus, our results suggest that policy should target both types of segregation separately rather than assume that residential and workplace segregation are essentially one and the same.

We next discuss the state of the literature on residential and workplace concentration of immigrants in Sweden and around the world, and then move on to our empirical methodology and a detailed analysis of our results.

Residential and workplace concentration

Recent research in Canada (Hiebert 2009), the United States (Card, 2009; Iceland 2009), Sweden (Bevelander and Pendakur, 2012), Denmark (Anderson 2010) and other immigrant-receiving countries has established that immigrants often concentrate in residential neighbourhoods.

Sociologists list a broad range of reasons why immigrants may choose to live in neighbourhoods dominated by co-ethnics (see Bonacich and Modell 1980; Wilson and Portes 1980; Breton, 1974; Hansen, J et al 2010). Within the context of labour markets, cultural communities may be closely connected to labour market enclaves for three reasons (see Bonacich and Modell 1980; Wilson and Portes 1980, Akbari and Aydede 2011). First, labour market enclaves may offer a degree of social comfort through language and shared identity that is not available outside the enclave. Second, ethnically defined enclaves may buffer the effects of ethnically based discrimination on the part of mainstream society. Third, Breton (1974) introduces the concept of “institutional completeness,” which in part describes the variety of services available within an ethnic or cultural enclave. Enclaves that are institutionally complete offer a wide variety of services and employment opportunities to group members. Large enclaves are more likely to be institutionally complete than small enclaves. We may then expect workers in large enclaves to earn more than workers in small enclaves because of the greater degree of choice that exists. Pendakur and Pendakur (2002) assess the labour market impact of three types

of enclaves in Canada (ethnic, linguistic, and ethno-linguistic) and conclude that the size of the ethnic enclave is important in reducing earnings differentials across minority groups.

Within the enclave literature are two long-standing debates revolving around two interrelated conceptual issues. The first concerns the scope (or definition) of the enclave itself: does it revolve around the place of work or place of residence? And, what is the level of analysis? Is it the city or the neighbourhood; is it the firm, the workplace or the work team? The second issue concerns the direction of impact – does working within an enclave have a positive or negative effect on socio-economic outcomes, such as employment probabilities or earnings?

Looking first at issues of scope, Portes and Jensen (1989) define ethnic enclaves on commercial grounds, focusing on businesses dominated by an ethnic minority group (see also Bernabé-Aguilera 2009). The argument here is that these business enclaves can improve employment outcomes for members of the ethnic group (see Portes and Jensen, 1989; Light 1984; Waldinger 1986; Zhou and Logan 1989). The counter argument suggests that such enclaves are actually exploitative, with benefits flowing primarily to middlemen within the enclave, resulting in lower wages and poorer working condition (see, for example, Bonacich, 1980; Sanders and Nee, 1987). Gilbertson and Gurak (1993) looking at outcomes for Colombian and Dominican men in New York conclude that working in an enclave also results in lower benefits such as health care and insurance (pp: 218). Raaum et al (2006) assess earnings in Norway and conclude that earnings are affected by neighbourhood characteristics.

Many studies focus on place of residence, perhaps because place of residence is often available on public-use datasets, but the characteristics of the workplace are often not so available (Xi and Gough, 2011). But, there are also theoretical rationales for concentrating on where people live as compared to where they work. Sanders and Nee (1987) assess outcomes for Cubans in Florida and Texas, running regressions for selected municipalities. They thus define the enclave from a residential/municipal as opposed to a commercial perspective. Portes and Jensen (1992) countered by arguing that while business owners may have started out living in a residential enclave, they often move out as economic circumstance improves. Nonetheless, the idea of residential enclaves has persisted. Davis (2004), for example, analyse the American 1990 Public Use Microdata Set (PUMS) using this definition of enclaves and concludes that Cuban immigrants earn more working outside the enclave as compared to inside the enclave. Gronqvist (2006) defines enclaves at the municipal rather than neighbourhood level to examine outcomes

for immigrant children concluding that growing up in an enclave can negatively affect schooling, but not earnings.

Xi and Gough (2011) use a life course approach and model enclaves both at a residential and place of work level (using language at work as a proxy for working in the enclave). They find few significant results using either definition.

Enclaves in Sweden?

In 2007 Sweden's foreign born population was nearly 14 percent of the total. Of this, nearly 50 percent were born outside Europe. About 70 percent of all immigrants in Sweden live in the three largest cities of Sweden (Stockholm, Gothenburg and Malmoe), and between 25-35 percent of the residents of these cities are immigrants (Bevelander, 2010).

There has been some work on link between work and residential enclaves. Musterd and Andersson (2006) show that the composition of the neighborhood has a significant but moderate effect on the employment prospects of immigrants (see also Musterd et al 2008). Hedberg and Tammaru (2012) looking at outcomes in Sweden over time find, not surprisingly, that the probably of employment increases while the probability of living in an immigrant neighbourhood. Andersson and Hammarstedt (2012) assess the link between enclaves and self-employment, concluding that the presence of enclaves increases the propensity to be self-employed.

In an attempt to measure the causal effect of the "enclave", Edin et al. (2003) measured the effect of the dispersal policy towards new arrived refugees between 1985 and 1989 applied by the Swedish government in contrast to refugees that came during 1981-1984, who could freely choose where to settle. They conclude that living in an enclave seems to increase earnings.

Overall these studies suggest that there is a link between living in an enclave and working in an enclave. However they do not test the correlation directly. Rather these studies look at the impact of either living or working in an enclave on job prospects. In this paper, we look specifically at the controlled correlation between living and working in an enclave. Unlike previous studies, this approach allows to assess the degree to which living in an enclave may affect the probability of also working in an enclave – two distinctly different environments.



Data & Methodology

Our data are drawn from the 2007 STATIV database, which includes a record for every legal resident in Sweden and matches information of the population register to information from the employment register. These data are matched to workplace identifiers for all employed workers. Because we have (nearly) the universe of all workers in Sweden, we are able to completely characterize the immigrant/place-of-birth composition of each workplace and each residential neighbourhood. This enables us to model both neighbourhood segregation and workplace segregation.

These data include information for a total of 4,720,641 individuals aged 25 to 64 spread across 9231 neighbourhoods and 412,262 workplaces. We restrict our sample to include only working non-Nordic immigrants who live in a municipality with more than 1000 residents and more than 50 immigrants. We drop people working in a workplace with only 1 worker. We also drop all respondents who do not report a level of schooling or a year of immigration. This leaves us with 279,936 immigrants living in 8085 neighbourhoods² and working across 45,250 workplaces with more than 1 person (top three lines of Table 1). In all, we use about 5 per cent of all observations.

The remaining lines of table 1 provide statistics at the individual level, starting with the dependent variables and continuing with the regressors. For all our dependent variables, the standard deviation is similar in magnitude to the average level, so there is a lot of variation to ‘explain’.

Our objective is to use these microdata on individual workplace and residential location choices to illuminate the question of whether or not these choices are correlated. The simplest way to investigate this is to measure the raw (or, Pearson) correlation coefficient at the individual level between a measure of workplace segregation and a measure of residential segregation. But the raw correlation coefficient leaves something to be desired---it does not control for the characteristics of individuals.

To control for the characteristics of individuals, we specify an equation for each outcome---workplace and neighbourhood segregation---based on individual characteristics and

² Our measure of neighbourhoods is based on Statistics Swedens Small Areas for Market Statistics groupings and is a division based on sub-divisions in larger municipalities and on electoral districts in the smaller municipalities. There are around 9,200 SAMS areas across Sweden (Statistics Sweden 2014).

ask whether or not the error terms in these equations are correlated. We have data with many observations of individuals in each workplace and neighbourhood. Let R_i and W_i be the residential and workplace concentration, respectively, of individuals $i=1, \dots, N$. These variables capture the degree to which individual i lives in a neighbourhood or works in a workplace with few or many individuals similar to themselves. We will use two concentration measures, based on definitions of who is similar to whom. In the first, denoted *immigrant concentration*, we say two workers are similar to each other if they are both immigrants. Then, for an immigrant R_i is equal to the proportion of the residents of person i 's neighbourhood who are immigrants and W_i is the proportion of workers at person i 's firm who are immigrants. In the second, denoted *place of birth concentration*, we say that two workers are similar to each other if they are immigrants from the same country.

Let X_i be a vector of characteristics of person i , and assume a linear model for both residential and workplace concentration with bivariate normally distributed errors:

$$R_i = X_i\beta_1 + \epsilon_{1i} \tag{1}$$

$$W_i = X_i\beta_2 + \epsilon_{2i} \tag{2}$$

$$\begin{pmatrix} \epsilon_{1i} \\ \epsilon_{2i} \end{pmatrix} \sim N \begin{pmatrix} \sigma_1^2 & \rho\sigma_1\sigma_2 \\ \rho\sigma_1\sigma_2 & \sigma_2^2 \end{pmatrix} \tag{3}$$

The raw (Pearson) correlation coefficient measures the correlation between R_i and W_i . The “controlled” correlation coefficient ρ measures the correlation between ϵ_{1i} and ϵ_{2i} , which controls for observables X and asks the correlation between what remains after the effect of X is taken out.

Another way to think about the controlled correlation is that it breaks the raw correlation into two pieces: one driven by observables and another driven by unobservables (given by ρ). Indeed, because ϵ_{1i} and ϵ_{2i} are independent of X by assumption, the square of the raw correlation decomposes into the square of ρ and the square of the raw correlation between $X_i\beta_1$ and $X_i\beta_2$.

In all regressions, we include as X_i the following regressors: highest level of schooling (7 categories), sex (2 categories), age (4 categories in 10-year intervals), years in Sweden less 10 and its square. In some regressions, we additionally include 37 country-of-birth dummies.

In the empirical work that follows, we will present raw and controlled correlations for models in which concentration measures are based on either immigrant status or country of birth.

All estimated standard errors are clustered at the level of workplace times neighbourhood. Estimation of the model (1)-(3) is by maximum likelihood seemingly unrelated regression.

Findings

Table 2 shows the correlation between residential and workplace concentration at the broadest level. Here, we give a two-way cross-tabulation of an indicator variable of immigrant concentration being above or below the median value in the sample for both residential and workplace concentration. If there was no correlation, each cell would hold 25 per cent of the sample. In our data, the diagonal elements of the cross-tabulation hold about 60 per cent of the sample, and the off-diagonal elements only about 40 per cent of the sample. The next lines show that this is roughly the same when we consider place of birth concentration. This distribution is quite close to the ‘no correlation’ distribution: we would only have to move 10 per cent of the immigrants from one cell to another to achieve an even distribution. So, at this level, we see only a slight correlation. At the top of each panel of Table 2, we report the raw Pearson’s correlation coefficient for residential and workplace immigrant concentration and for residential and workplace place of birth concentration. The raw Pearson’s correlation for immigrant concentration is 0.237 and for place-of-birth concentration is 0.114. This suggests that the proportion of immigrants living in an enclave explains (in a statistical sense) about 6 per cent (the square of 0.24) of the variance in a firm’s proportion of immigrant workers. For place-of-birth concentration, the explanatory power is close to 1 per cent. These correlations are low enough that one could not profitably use policy affecting one to manipulate the other. The Pearson’s r is uncontrolled – we do not know how large the correlation is conditionally on control variables such as age, sex and schooling. If the correlation were much higher conditional on observable variables, which were fixed from the point of view of the policy-maker, then there might yet be a role for policy that focused on just one type of segregation. The controlled correlation provides this information.

Table 3 gives selected parameter estimates from four sets of seemingly unrelated regression models that assess the relationship between the propensity to live in an enclave and the propensity to work in an enclave (Tables A1 to A4 in the Appendix provide all parameter estimates). The left-hand columns give estimated controlled correlations for models that control for age, education, sex and years since migration along with either the proportion of immigrants living in the neighbourhood or working in a firm, or the proportion of people who share the

respondent's place of birth living in the neighbourhood or working in the firm. The right-hand columns give estimated controlled correlations for models that control for these variables plus dummy variables for 37 places of birth. The upper row gives estimates for models where the dependent variables are immigrant concentrations, and the lower row gives estimates for models where the dependent variables are place of birth concentrations.

The model for immigrant concentration without place of birth controls results in a controlled correlation equal to 0.178. Since this number is somewhat smaller than the raw Pearson correlation, the controls eat up some of the positive correlation between residential and workplace segregation. That is, the covariates tend to push both segregation measures in the same direction.

The square of the controlled correlation is about 4 per cent, suggesting that the overall correlation of 0.24 (top panel of Table 2) which explains 6 per cent of the variance can be divided into two parts: about 2 percentage points for the observables X and about 4 percentage points for the unobserved variables. Turning to the model for immigrant concentration with place of birth controls, we see a controlled correlation of 0.142. Here, even less correlation is left after we control for the observed characteristics and places of birth of immigrants.

Sociologists studying segregation tend to have a working hypothesis that immigrants cannot be lumped together, but rather that we should look for segregation at the level of place-of-birth groups. For example, Portes and Jensen (1989) and Bernabé-Aguilera (2009) focus on the importance of home-country networks in economic success. This narrower definition is analogous to most definitions of residential ethnic enclaves in sociology and geography. We consider this in the lower row of Table 3.

In Table 2, we saw that the raw Pearson correlation coefficient is small, equal to 0.114, indicating that living in a neighbourhood with a lot of coethnics only explains about one per cent of the variance in coethnic concentration in workplaces. In the second line of Table 3, we see that the estimated controlled correlations are only 0.072 and 0.042 for models that do not and do control for place-of-birth, respectively. In the upper line of Table 3, we saw controlled correlations between the proportion of residential neighbours who are immigrants and the proportion of co-workers who are immigrants of around 0.15. When we instead ask for the controlled correlation between the proportion of residential neighbours who are from one's own country of birth and the proportion of co-workers from that country of birth, we see the

correlation drop to around 0.04. Thus, when we consider workplace and residential concentration where enclaves are defined on the basis of country-of-birth, there is essentially no correlation between residential and workplace concentration.

Recall that the correlation coefficient is a scale-free statistic, so it is not influenced by the fact that the overall levels of concentration are lower when we look at a narrower concentration definition. From a policy standpoint, these correlations are close enough to zero to suggest that residential coethnic concentration and workplace coethnic concentration are each caused by fundamentally different drivers.

Recent Immigrants

Now we investigate whether or not patterns are different for recent immigrants. Table 4 presents estimates analogous to the Pearson correlations in Table 2 and the estimates in Table 3. We estimated the models for the subsample of immigrants arriving in 1996 or after (with 10 years or less of residence in Sweden) from the 14 source countries that had more than 100 recent immigrants each in the sample.

Looking at the results for recent immigrants we see that the Pearson correlation is similar as for all immigrants. However when we look at the controlled correlation, we see that difference between it and the Pearson correlation is smaller than for the entire population of immigrants. This difference is only 0.014 (0.228-0.214) when we do not control for place of birth, about one-third of the difference seen for the full population of immigrants seen in Table 3. The difference is 0.031 (0.228-0.197) when we do control for place of birth, less than half the difference seen for the full population of immigrants reported in Table 3. This means that the observable characteristics of recent immigrants are much less informative as to the correlation of residential and workplace segregation than for other immigrants.

These findings are revealing in two ways. First, recent immigrants do not display a higher correlation between living and working in an enclave than less recent immigrants – the Pearson correlations are the roughly same. If integration really were unidimensional so that living and working in an enclave were highly correlated, we would expect to see this most strongly for recent immigrants. That we do not see this provides further evidence that integration is not unidimensional.

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Second, the observable characteristics of recent immigrants eat up less of the covariation between living and working in an enclave than do those of less recent immigrants. One interpretation is that over time the unobserved characteristics of immigrants become less important to that correlation.

Correlations by country of birth

Table 5 presents just the Pearson and controlled correlations for seemingly unrelated regression models analogous to the right-hand columns of Table 3, where the dependent variables are defined off of place of birth. The left-hand columns give estimates for 37 places of birth for immigrants. The right-hand columns provide estimated coefficients for recent immigrants for the 8 largest recent immigrant country-of-birth groups (these had at least 130 people each in our sample).

The results provided in Table 5 point to some real differences in the relationship between living and working in an ethnic enclave by different place-of-birth groups. Overall, however, in evaluating the correlation separately for each birthplace, we have allowed for the possibility that the small correlation reported in table 2 masks important variation across places of birth. However this does not appear to be the case. No birthplace shows a large correlation, and consequently, our finding that residential and workplace segregation are largely separate phenomena seems true regardless of birthplace or recency of immigration.

Most European groups (with the exception of Poland, the Netherlands, Germany and Greece) have controlled correlations that are close to zero. The controlled correlations for immigrants from the Netherlands and Greece are the highest (0.21 and 0.11 respectively) suggesting that 1 to 4 per cent of the variance in where these immigrants work is explained by where they live. Most non-European groups have quite low controlled correlations (less than about 0.1). Immigrants from Turkey and Morocco, for example, have controlled correlations of 0.08. Immigrants from Somalia have the highest controlled correlation among the non-European groups (0.14). Turning to results for recent immigrants, we see that the Pearson and controlled correlations are not particularly large in comparison with those of all immigrants. Indeed, the controlled correlation for Syrian immigrants is negative (-0.14).



Conclusions

In this paper we have assessed the link between living and working in an immigrant enclave with a goal toward determining the correlation across the two domains. We find that the correlation between residential segregation and workplace segregation for individuals is generally low. Thus, as the concentration of immigrants or co-ethnics increases in a neighbourhood, the probability of working in an ethnic enclave does not increase. That said, the controlled correlation does tend to be higher for more recent groups. Even here, though, the correlations are less than .22, suggesting that only about 4 percent of the variance in workplace concentration is related to variance in residential concentration.

These findings run counter to literature which suggests that neighbourhood and workplace enclaves are closely tied (see for example: Beckhusen: 2006; Breton: 1979; Kaplan and Douzet: 2011) but does not exclude the possibility that earnings are lower for residents in immigrant and minority enclaves. These findings suggest that policies which target segregation in the workplace will likely not affect segregation at the residential level (or vice versa) since the two appear to operate separately.

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TABLES

Table 1: Descriptive Statistics

Variable	Value	# values	mean	sd	min	max
n=279936						
Neighbourhoods	N; stats for number of immigrants within	8,085	34.62	84.98	1.00	2,263
Firms	N; stats for number of immigrants within	45,250	6.18	69.08	1.00	8,020
Neighbourhood	immigrant concentration		0.30	0.22	0.01	1.00
	place of birth concentration		0.03	0.04	0.00	1.00
Firm	immigrant concentration		0.29	0.27	0.01	1.00
	place of birth concentration		0.11	0.22	0.00	1.00
Schooling	compulsory education less than 9 years		0.08		0.00	1.00
	compulsory education 9 years		0.09		0.00	1.00
	secondary education up to 2 years		0.23		0.00	1.00
	secondary education 3 years		0.20		0.00	1.00
	post-secondary education less than 3 yrs		0.14		0.00	1.00
	post-secondary education 3 years + graduate		0.24		0.00	1.00
Sex	male		0.52		0.00	1.00
	female		0.48		0.00	1.00
Age	25-34		0.29		0.00	1.00
	35-44		0.33		0.00	1.00
	45-54		0.26		0.00	1.00
	55-64		0.12		0.00	1.00
Years in Sweden	Years less 10		7.39	10.74	-10.00	53.00
	Years less 10 squared		169.84	292.07	0.00	2809.00

Table 2: Cross-Tabulation of Residential and Workplace Concentration

Immigrant Concentration		above median workplace concentration		
Pearson's r: 0.2365		no	yes	Total
Above median residential concentration	no	31.01	19	50.01
	yes	19.35	30.64	49.99
	Total	50.36	49.64	100

Place-of-Birth Concentration		above median workplace concentration		
Pearson's r: 0.1138		no	yes	Total
Above median residential concentration	no	29.96	20.04	50
	yes	20.05	29.94	50
	Total	50.01	49.99	100

Table 3: Selected Estimates from Immigrant and Place-of-Birth Concentration Regressions

		without controls for place-of-birth		with controls for place-of-birth	
		controlled r	std err	controlled r	std err
concentration measure	immigrant concentration	0.178	0.004	0.142	0.004
	place-of-birth concentration	0.072	0.004	0.042	0.004

Table 4

Selected Estimates from Immigrant Concentration Regressions, Recent Immigrants

variable	Without controls for Place of birth				With controls for place of birth			
	neighbourhood		firm		neighbourhood		firm	
	coef.	s.e.	coef.	s.e.	coef.	s.e.	coef.	s.e.
observations	7,255				7,255			
pearson r	0.228				0.228			
controlled r	0.214	0.013			0.097	0.013		

Note: Comparison category in parentheses.

Table 5

Summary statistics from 45 Seemingly Unrelated Regressions Assessing the Correlation Between Living and Working in an Ethnic Enclave by place of birth, Sweden, 2007

pob	all				recent			
	Count	Pearsons'r	Controlled r	s.e.	Count	Pearsons'r	Controlled r	s.e.
Estonia	1,539	0.05	0.04	0.03				
Germany	12,428	0.08	0.08	0.01				
Austria	1,930	0.02	0.02	0.02				
UK	8,046	0.03	0.05	0.01				
Netherlands	2,491	0.22	0.21	0.05				
Poland	22,831	0.13	0.10	0.01				
France	2,544	0.03	0.04	0.02				
Russia / USSR	5,940	0.05	0.04	0.01	209	0.19	0.17	0.07
Hungary	4,696	0.00	-0.01	0.00				
Italy	2,302	0.03	0.04	0.02				
Romania	6,361	0.05	0.04	0.03				
Czechoslovakia	2,650	0.00	0.00	0.02				
Greece	3,378	0.15	0.11	0.03				
Yugoslavia (former)	28,166	0.01	0.01	0.01	911	0.07	0.08	0.05
Bosnia- Hercegovina	26,225	0.08	0.06	0.01	928	0.19	0.19	0.07
Croatia	2,524	-0.01	-0.02	0.02				
Turkey	14,298	0.11	0.08	0.01				
Lebanon	7,738	0.07	0.05	0.02				
Morocco	2,378	0.09	0.08	0.03				
Iraq	19,317	0.07	0.05	0.01	3,831	0.08	0.08	0.02
Iran	23,723	0.06	0.04	0.01	303	0.16	0.22	0.08
Syria	6,146	0.05	0.03	0.02	133	-0.09	-0.14	0.07
Afghanistan	1,825	-0.01	-0.01	0.03	431	-0.02	-0.03	0.04
Somalia	3,379	0.15	0.14	0.03	201	0.12	0.09	0.07
Ethiopia	5,767	0.04	0.03	0.02				
India	5,447	0.10	0.05	0.03				
Sri Lanka	2,773	0.08	0.07	0.03				
Pakistan	1,616	0.08	0.06	0.05				
S. Korea	4,608	0.00	0.00	0.01				
China	3,683	-0.02	0.00	0.01				
Vietnam	5,251	0.01	-0.01	0.02				
Thailand	8,154	0.03	0.02	0.02				
Philippines	3,769	0.01	0.01	0.01				
USA	4,943	0.00	0.00	0.01				
Colombia	2,738	0.01	0.01	0.01				
Chile	15,203	0.08	0.07	0.01				
Peru	2,908	0.10	0.08	0.02				

Appendix: Complete Regression Results

Table A1: Immigrant Concentration, without Place-of-Birth Controls

		Coef	Robust SE	t	sig
	% immigrants in the neighbourhood				
Schooling	9 yrs	-0.02	0.00	-9.13	0.00
(< 9 years)	< 3 yrs 2ndary	-0.05	0.00	-22.91	0.00
	3 yrs 2ndary	-0.08	0.00	-29.88	0.00
	< 3 yrs ps	-0.10	0.00	-36.79	0.00
	3 yrs + ps	-0.14	0.00	-47.28	0.00
	university degree	-0.19	0.00	-48.80	0.00
Gender	female	-0.03	0.00	-13.52	0.00
Age (25-34)*	35 to 44	-0.01	0.00	-5.43	0.00
	45 to 54	0.00	0.00	-2.21	0.03
	55 to 64	0.00	0.00	-0.72	0.47
	Years in Sweden	0.00	0.00	-9.39	0.00
	Yrs in Sweden squared	0.00	0.00	-26.80	0.00
	constant	0.42	0.00	142.97	0.00
	% immigrants in the firm				
Schooling	9 yrs	-0.02	0.00	-5.80	0.00
(< 9 years)	< 3 yrs 2ndary	-0.10	0.00	-40.46	0.00
	3 yrs 2ndary	-0.13	0.00	-47.37	0.00
	< 3 yrs ps	-0.14	0.00	-50.48	0.00
	3 yrs + ps	-0.19	0.00	-69.35	0.00
	university degree	-0.25	0.00	-74.88	0.00
Gender	female	-0.07	0.00	-58.19	0.00
Age (25-34)*	35 to 44	0.01	0.00	10.45	0.00
	45 to 54	0.02	0.00	12.03	0.00
	55 to 64	0.01	0.00	5.69	0.00
	Years in Sweden	-0.01	0.00	-49.06	0.00
	Yrs in Sweden squared	0.00	0.00	18.37	0.00
	constant	0.46	0.00	162.23	0.00
	/sigma1_1	0.05	0.00	68.90	0.00
	/sigma1_2	0.01	0.00	45.71	0.00
	/sigma2_2	0.06	0.00	162.34	0.00
	controlled r	0.18	0.00	41.48	0.00

Table A2: Immigrant Concentration, with Place-of-Birth Controls

		Coef	Robust SE	t	sig
	% immigrants in the neighbourhood				
Schooling	9 yrs	-0.01	0.00	-4.58	0.00
(< 9 years)	< 3 yrs 2ndary	-0.03	0.00	-15.42	0.00
	3 yrs 2ndary	-0.05	0.00	-21.99	0.00
	< 3 yrs ps	-0.06	0.00	-27.96	0.00
	3 yrs + ps	-0.09	0.00	-39.74	0.00
	university degree	-0.11	0.00	-34.87	0.00
Gender	female	-0.01	0.00	-4.26	0.00
Age (25-34)*	35 to 44	-0.01	0.00	-5.10	0.00
	45 to 54	0.00	0.00	1.78	0.08
	55 to 64	0.02	0.00	8.78	0.00
	Years in Sweden	0.00	0.00	-27.47	0.00
	Yrs in Sweden squared	0.00	0.00	-3.59	0.00
Place of birth (Afghanistan)	Bosnia-Herzegovina	-0.10	0.01	-13.50	0.00
	Chile	-0.08	0.01	-10.93	0.00
	Columbia	-0.15	0.01	-18.75	0.00
	Estonia	-0.18	0.01	-20.47	0.00
	Ethiopia	0.01	0.01	1.16	0.25
	Philippines	-0.18	0.01	-22.93	0.00
	France	-0.21	0.01	-27.85	0.00
	Greece	-0.10	0.01	-11.09	0.00
	India	-0.16	0.01	-20.58	0.00
	Iraq	0.00	0.01	-0.03	0.98
	Iran	-0.11	0.01	-15.17	0.00
	Italy	-0.19	0.01	-24.64	0.00
	Yugoslavia (former)	-0.10	0.01	-13.81	0.00
	China	-0.12	0.01	-14.57	0.00
	S. Korea	-0.20	0.01	-26.49	0.00
	Croatia	-0.14	0.01	-16.45	0.00
	Lebanon	-0.02	0.01	-3.03	0.00
	Morocco	-0.05	0.01	-6.28	0.00
	Netherlands	-0.25	0.01	-32.70	0.00
	Peru	-0.10	0.01	-11.81	0.00
	Poland	-0.15	0.01	-20.03	0.00
	Pakistan	0.01	0.01	0.76	0.45
	Russia/USSR	-0.15	0.01	-19.78	0.00
	Spain	-0.14	0.01	-18.11	0.00
	Romania	0.13	0.01	10.35	0.00
	Somalia	-0.19	0.01	-23.11	0.00
	Sri Lanka	-0.16	0.01	-19.30	0.00
	UK N. Ireland	-0.23	0.01	-30.54	0.00
	Syria	0.02	0.01	2.59	0.01
	Thailand	-0.22	0.01	-27.90	0.00
	Czechoslovakia	-0.18	0.01	-22.97	0.00

Turkey	0.01	0.01	1.78	0.07
Germany	-0.22	0.01	-29.82	0.00
Hungary	-0.15	0.01	-19.54	0.00
USA	-0.22	0.01	-29.24	0.00
Vietnam	-0.09	0.01	-10.96	0.00
Austria	-0.19	0.01	-24.03	0.00
_cons	0.48	0.01	65.64	0.00

	% immigrants in the firm				
Schooling (< 9 years)	9 yrs	0.00	0.00	-1.32	0.19
	< 3 yrs 2ndary	-0.07	0.00	-28.39	0.00
	3 yrs 2ndary	-0.08	0.00	-31.74	0.00
	< 3 yrs ps	-0.10	0.00	-38.58	0.00
	3 yrs + ps	-0.15	0.00	-57.14	0.00
	university degree	-0.21	0.00	-62.33	0.00
Gender	female	-0.06	0.00	-51.56	0.00
Age (25-34)*	35 to 44	0.02	0.00	13.46	0.00
	45 to 54	0.03	0.00	18.77	0.00
	55 to 64	0.03	0.00	17.51	0.00
	Years in Sweden	-0.01	0.00	-58.09	0.00
	Yrs in Sweden squared	0.00	0.00	33.86	0.00
Place of birth (Afghanistan)	Bosnia-Hercegovina	-0.10	0.01	-12.50	0.00
	Chile	-0.05	0.01	-6.86	0.00
	Columbia	-0.05	0.01	-6.05	0.00
	Estonia	-0.05	0.01	-4.84	0.00
	Ethiopia	-0.04	0.01	-4.96	0.00
	Philippines	-0.07	0.01	-8.30	0.00
	France	-0.08	0.01	-9.88	0.00
	Greece	0.02	0.01	2.00	0.05
	India	-0.04	0.01	-4.98	0.00
	Iraq	0.03	0.01	3.33	0.00
	Iran	-0.02	0.01	-2.83	0.01
	Italy	-0.07	0.01	-7.23	0.00
	Yugoslavia (former)	-0.08	0.01	-10.17	0.00
	China	0.10	0.01	10.20	0.00
	S. Korea	-0.07	0.01	-9.36	0.00
	Croatia	-0.08	0.01	-9.50	0.00
	Lebanon	0.06	0.01	7.02	0.00
	Morocco	-0.02	0.01	-2.20	0.03
	Netherlands	-0.12	0.01	-13.07	0.00
	Peru	-0.01	0.01	-1.25	0.21
	Poland	-0.03	0.01	-4.15	0.00
	Pakistan	0.02	0.01	1.54	0.12
	Russia/USSR	-0.05	0.01	-5.99	0.00
	Spain	-0.07	0.01	-8.78	0.00
	Romania	-0.04	0.01	-3.86	0.00
	Somalia	-0.08	0.01	-9.55	0.00
	Sri Lanka	-0.09	0.01	-10.78	0.00
	UK N. Ireland	-0.08	0.01	-10.41	0.00
	Syria	0.08	0.01	8.67	0.00
	Thailand	0.00	0.01	0.01	0.99

Czechoslovakia	-0.07	0.01	-8.50	0.00
Turkey	0.13	0.01	15.04	0.00
Germany	-0.12	0.01	-14.84	0.00
Hungary	-0.07	0.01	-8.47	0.00
USA	-0.09	0.01	-11.19	0.00
Vietnam	0.06	0.01	6.08	0.00
Austria	-0.10	0.01	-11.39	0.00
_cons	0.45	0.01	56.97	0.00
/sigma1_1	0.04	0.00	83.86	0.00
/sigma1_2	0.01	0.00	35.49	0.00
/sigma2_2	0.06	0.00	171.45	0.00
controlled r	0.14	0.00	32.94	0.00

Table A3: Place-of-Birth Concentration, without Place-of-Birth Controls

		Coef	Robust SE	t	sig
Schooling (< 9 years)	% immigrants in the neighbourhood				
	9 yrs	-0.01	0.00	-15.11	0.00
	< 3 yrs 2ndary	-0.01	0.00	-21.79	0.00
	3 yrs 2ndary	-0.01	0.00	-24.52	0.00
	< 3 yrs ps	-0.02	0.00	-32.38	0.00
	3 yrs + ps	-0.02	0.00	-42.46	0.00
	university degree	-0.03	0.00	-52.48	0.00
Gender	female	-0.01	0.00	-18.69	0.00
	Age (25-34)*				
	35 to 44	0.00	0.00	4.81	0.00
	45 to 54	0.00	0.00	7.56	0.00
	55 to 64	0.00	0.00	-1.54	0.12
	Years in Sweden	0.00	0.00	-13.67	0.00
	Yrs in Sweden squared	0.00	0.00	-23.32	0.00
	constant	0.05	0.00	82.79	0.00
Schooling (< 9 years)	% immigrants in the firm				
	9 yrs	-0.01	0.00	-3.17	0.00
	< 3 yrs 2ndary	-0.06	0.00	-27.80	0.00
	3 yrs 2ndary	-0.07	0.00	-31.10	0.00
	< 3 yrs ps	-0.08	0.00	-34.56	0.00
	3 yrs + ps	-0.11	0.00	-46.34	0.00
	university degree	-0.16	0.00	-58.76	0.00
Gender	female	-0.07	0.00	-76.08	0.00
	Age (25-34)*				
	35 to 44	0.01	0.00	4.69	0.00
	45 to 54	0.00	0.00	0.55	0.58
	55 to 64	-0.01	0.00	-7.65	0.00
	Years in Sweden	0.00	0.00	-33.32	0.00
	Yrs in Sweden squared	0.00	0.00	20.84	0.00
	constant	0.23	0.00	88.19	0.00
/sigma1_1		0.00	0.00	49.04	0.00
/sigma1_2		0.00	0.00	18.97	0.00
/sigma2_2		0.05	0.00	121.61	0.00
controlled r		0.07	0.00	18.17	0.00

Table A4: Place-of-Birth Concentration, with Place-of-Birth Controls

		Coef	Robust SE	t	sig
	% immigrants in the neighbourhood				
Schooling	9 yrs	0.00	0.00	-8.83	0.00
(< 9 years)	< 3 yrs 2ndary	-0.01	0.00	-14.36	0.00
	3 yrs 2ndary	-0.01	0.00	-18.00	0.00
	< 3 yrs ps	-0.01	0.00	-23.42	0.00
	3 yrs + ps	-0.01	0.00	-30.94	0.00
	university degree	-0.01	0.00	-28.65	0.00
Gender	female	0.00	0.00	-2.49	0.01
Age (25-34)*	35 to 44	0.00	0.00	-0.79	0.43
	45 to 54	0.00	0.00	1.50	0.14
	55 to 64	0.00	0.00	3.05	0.00
	Years in Sweden	0.00	0.00	-22.00	0.00
	Yrs in Sweden squared	0.00	0.00	4.76	0.00
Place of birth (Afghanistan)	Bosnia-Herzegovina	0.03	0.00	25.89	0.00
	Chile	0.01	0.00	8.11	0.00
	Columbia	-0.01	0.00	-7.46	0.00
	Estonia	-0.01	0.00	-9.25	0.00
	Ethiopia	0.00	0.00	4.14	0.00
	Philippines	-0.01	0.00	-8.59	0.00
	France	-0.01	0.00	-7.19	0.00
	Greece	0.00	0.00	-0.83	0.41
	India	0.00	0.00	-3.67	0.00
	Iraq	0.06	0.00	41.64	0.00
	Iran	0.02	0.00	21.23	0.00
	Italy	-0.01	0.00	-7.83	0.00
	Yugoslavia (former)	0.03	0.00	25.85	0.00
	China	0.00	0.00	-0.91	0.36
	S. Korea	0.00	0.00	-2.71	0.01
	Croatia	-0.01	0.00	-7.08	0.00
	Lebanon	0.01	0.00	13.26	0.00
	Morocco	-0.01	0.00	-7.49	0.00
	Netherlands	-0.01	0.00	-6.40	0.00
	Peru	-0.01	0.00	-6.10	0.00
	Poland	0.01	0.00	9.58	0.00
	Pakistan	0.00	0.00	-0.87	0.39
	Russia/USSR	0.00	0.00	-4.24	0.00
	Spain	0.00	0.00	0.39	0.70
	Romania	0.04	0.00	11.62	0.00
	Somalia	-0.01	0.00	-8.24	0.00
	Sri Lanka	-0.01	0.00	-6.77	0.00
	UK N. Ireland	-0.01	0.00	-5.60	0.00
	Syria	0.03	0.00	13.68	0.00
	Thailand	-0.01	0.00	-9.28	0.00

Czechoslovakia	-0.01	0.00	-5.12	0.00
Turkey	0.04	0.00	30.15	0.00
Germany	0.00	0.00	-0.64	0.52
Hungary	0.00	0.00	-3.22	0.00
USA	0.00	0.00	-3.90	0.00
Vietnam	0.02	0.00	10.17	0.00
Austria	-0.01	0.00	-5.64	0.00
_cons	0.02	0.00	22.60	0.00

	% immigrants in the firm				
Schooling	9 yrs	0.00	0.00	1.03	0.30
(< 9 years)	< 3 yrs 2ndary	-0.04	0.00	-17.81	0.00
	3 yrs 2ndary	-0.04	0.00	-18.71	0.00
	< 3 yrs ps	-0.06	0.00	-24.76	0.00
	3 yrs + ps	-0.08	0.00	-37.62	0.00
	university degree	-0.14	0.00	-50.96	0.00
Gender	female	-0.07	0.00	-69.71	0.00
Age (25-34)*	35 to 44	0.01	0.00	6.93	0.00
	45 to 54	0.01	0.00	5.08	0.00
	55 to 64	0.00	0.00	1.10	0.27
	Years in Sweden	0.00	0.00	-40.42	0.00
	Yrs in Sweden squared	0.00	0.00	29.99	0.00
Place of birth (Afghanistan)	Bosnia-Herzegovina	0.00	0.01	-0.16	0.87
	Chile	0.00	0.01	-0.21	0.83
	Columbia	-0.01	0.01	-1.19	0.23
	Estonia	0.02	0.01	2.10	0.04
	Ethiopia	-0.03	0.01	-5.01	0.00
	Philippines	-0.01	0.01	-1.89	0.06
	France	0.00	0.01	0.62	0.53
	Greece	0.05	0.01	7.63	0.00
	India	0.03	0.01	4.78	0.00
	Iraq	0.07	0.01	11.07	0.00
	Iran	0.05	0.01	8.99	0.00
	Italy	0.01	0.01	1.76	0.08
	Yugoslavia (former)	0.01	0.01	0.90	0.37
	China	0.16	0.01	17.83	0.00
	S. Korea	0.02	0.01	3.74	0.00
	Croatia	-0.03	0.01	-4.19	0.00
	Lebanon	0.10	0.01	13.93	0.00
	Morocco	-0.02	0.01	-3.01	0.00
	Netherlands	0.00	0.01	-0.02	0.99
	Peru	0.01	0.01	1.16	0.25
	Poland	0.07	0.01	11.18	0.00
	Pakistan	0.03	0.01	3.04	0.00
	Russia/USSR	0.03	0.01	4.14	0.00
	Spain	0.01	0.01	1.41	0.16
	Romania	-0.03	0.01	-4.33	0.00
	Somalia	-0.02	0.01	-2.42	0.02
	Sri Lanka	-0.01	0.01	-1.61	0.11
	UK N. Ireland	0.01	0.01	2.21	0.03
	Syria	0.10	0.01	13.45	0.00

Thailand	0.07	0.01	10.22	0.00
Czechoslovakia	0.02	0.01	2.69	0.01
Turkey	0.19	0.01	26.34	0.00
Germany	0.00	0.01	-0.17	0.87
Hungary	0.01	0.01	1.52	0.13
USA	0.01	0.01	1.78	0.08
Vietnam	0.12	0.01	14.96	0.00
Austria	-0.01	0.01	-1.10	0.27
_cons	0.16	0.01	26.94	0.00
/sigma1_1	0.00	0.00	48.21	0.00
/sigma1_2	0.00	0.00	10.62	0.00
/sigma2_2	0.04	0.00	128.20	0.00
controlled r	0.04	0.00	10.36	0.00