Neighborhood Effects on Labor Market Outcomes of First- and Second-Generation Migrants in Germany

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Abstract. This paper examines the effects of neighborhood characteristics on wages and unemployment probabilities of first- and second-generation migrants in Germany, paying particular attention to the regional concentration of immigrant minorities. We take advantage of the opportunity to combine individual-level data from the German Socio-Economic Panel (SOEP) with economic and demographic postcode-level data from German administrative records. We find that a higher share of migrants in the neighborhood results in a wage increase for native workers - even after controlling for non-random sorting of migrants into neighborhoods. We do not find an effect of the share of foreigners in the neighborhood on migrants' wages. Our findings further suggest that the regional concentration of migrants in postcode areas does not affect individual unemployment probabilities.

JEL-Classification: F22, J31, J64, R23

Keywords: international migration, neighborhood effects, wages, unemployment, second-generation migrants

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1 Introduction

Location choices of migrants may have considerable effects on their social and economic integration. In particular, the geographic clustering of foreign-born populations in metropolitan areas may help explain why different groups of migrants are more or less well integrated. Although we may expect that the regional concentration of migrants has an effect on their labor market outcomes, the direction of this effect is unclear. While ethnic enclaves may help migrants to escape labor market discrimination through networks, they may also reduce migrants' incentives to acquire skills that are useful in the labor market of the host country (Borjas, 2000; Cutler et al., 2008b).

Immigrant enclaves are often located in central cities or inner-ring suburbs (Cutler et al., 2008b) and migrants disproportionately rely on public transport (Cutler et al., 2008a; Heisz and Schellenberg, 2004). Moreover, empirical evidence suggests that native-born residents often move out as immigrants move in (Filer, 1992; Saiz and Wachter, 2006; Card et al., 2008). Unfortunately, we know very little about the extent to which neighborhood characteristics affect the social and economic integration of migrants.

While the economic migration literature has typically focused on the extent to which labor market outcomes (such as earnings and employment status) vary over the settlement process of first-generation migrants, less is known about the economic integration of second-generation migrants who have become a sizeable fraction of the population in many immigration countries.

Our objective is to fill a void in the literature by studying the effect of neighborhood characteristics on the integration of first- and second-generation migrants. We take advantage of the opportunity to combine individual-level data from the German Socio-Economic Panel (SOEP) with economic and demographic postcode-level data from German administrative records. Germany is one of the most important examples for the analysis of second-generation migrants. While empirical studies have shown that children of immigrants are typically well integrated in traditional

immigration countries, such as Australia, Canada and the United States (Khoo et al., 2002; Aydemir and Sweetman, 2006), economic outcomes of second-generation migrants in Germany increasingly lag behind those of the native population (Fertig and Schmidt, 2002; Riphahn, 2003; Worbs, 2003; Corak et al., 2008). The unique German immigration experience and the resulting composition of the migrant population in Germany may partly explain why many second-generation migrants are less well integrated into the German society (and the labor market).[1]

Our empirical analysis focuses in a first step on the effect of the regional concentration of migrants on wages and unemployment probabilities of the three population groups natives, first- and second-generation migrants in Germany. We are particularly interested in addressing the following questions: How do socioeconomic characteristics affect wages and unemployment probabilities of native workers and workers with migration background? How does the share of foreigners in the neighborhood affect these outcomes? How important are other neighborhood characteristics, such as the unemployment rate, the share of highly educated workers and the share of older workers in the neighborhood? To what extent do these effects differ across the three groups of workers?

An investigation of these questions is relevant because knowledge about the neighborhood characteristics that affect wages and unemployment may help explain why different groups of migrants are more or less well integrated. A better understanding of the extent to which neighborhood characteristics affect labor market outcomes of migrants is a prerequisite for an effective integration policy. If missing access to well-informed native networks is for example a reason for a higher unemployment rate among migrants, the government could try to improve the access of information about job openings for migrants.

[1]Immigration to Germany was dominated by the migration of (so-called) "guest workers" from Southern Europe during the post-war period until the early 1970s. These low-skilled workers were typically very different from their higher-skilled European counterparts who migrated to the traditional immigration countries after the Second World War. The inflow of immigrants from Central and Eastern Europe after the reunification and the inflow of refugees and asylum seekers during the civil war in Yugoslavia were responsible for a substantial change in the ethnic composition of the immigrant population in Germany. As a result, the German society today contains a large and heterogeneous population of first- and second-generation migrants (Bauer et al., 2005).

To our knowledge, we are the first to study the relationship between neighborhood characteristics and labor market outcomes of first- and second-generation migrants in Germany. When analyzing the effect of ethnic residential segregation, we account for the non-random sorting of individuals into neighborhoods by employing an instrumental variable approach. Our findings indicate that a higher share of migrants in the neighborhood results in a wage increase for native workers, even after controlling for relevant neighborhood characteristics and accounting for non-random sorting of migrants into neighborhoods. Migrants' wages are however not affected. Moreover, we find that the regional concentration of migrants in postcode areas does not affect individual unemployment.

In Section 2, we review the evidence regarding neighborhood effects on labor market outcomes of immigrants. We discuss the data and the empirical strategy in detail in Section 3. Section 4 presents the empirical findings, while our conclusions and suggestions for future research are detailed in Section 5.

2 Neighborhood Characteristics and Labor Market Outcomes

There is a quite extensive literature on the impact of neighborhood characteristics on educational attainment and labor market outcomes of first-generation migrants. Particularly causes and consequences of regional concentration of immigrants have been in the focus of research. Living in ethnic enclaves is related to benefits and costs for the migrant population. Beneficial effects lie mainly in the provision of information about labor market opportunities and the escape from discrimination which migrants might face in the labor market outside their enclave. However, there are as well costs related to living in an enclave. Sticking to an ethnic enclave might separate migrants from alternative job opportunities and reduce incentives to acquire country-specific human-capital like e.g. the language (Borjas, 2000). The physical location of ethnic enclaves might restrict migrants as well. Migrants tend to settle in older residential areas which are further from suburban areas of job growth and

which are often served by relatively strained suburb governments (Cutler et al., 2008b). This spatial mismatch might be caused by discrimination in the housing market which forces migrants to choose more disadvantageous neighborhoods (Edin et al., 2003).

An empirical study by Cutler et al. (2008a) finds that the resurgence of segregation in the US is mainly due to large differences in the socioeconomic status and linguistic differences between migrants and the native population which is due to a changed country of origin composition of migrants. Damm (2009) finds evidence that the reason for the regional concentration of migrants in large cities in Denmark lies in a lack of rental housing and a lack of institutions for qualifying education for migrants elsewhere. City size per se seems to be insignificant. Furthermore, a high share immigrants in a neighborhood decreases the probability of migrants moving to another municipality.

Balancing the costs and benefits of segregation, the direction of the impact on labor market outcomes is *a priori* unclear. Empirical studies of ethnic or racial residential segregation have produced rather mixed results concerning the direction and the extent of neighborhood effects (see, e.g., Cutler and Glaeser, 1997; Borjas, 2000; Edin et al., 2003; Bayer et al., 2004; Saiz and Wachter, 2006; Cutler et al., 2008b; Damm, 2009).

Borjas (2000) finds adverse effects of segregation on the wages of migrants in the US. In particular less educated workers are disadvantages by living in an ethnic enclave while no adverse effects are found for highly educated. Furthermore, Borjas controls for the possible endogeneity of location choice by a restriction of the analysis on refugees whose location choice is restricted in the US. He assumes that adverse effects of segregation are underestimated in empirical studies that do not control for the self-selection of migrants into certain neighborhoods. Migrants might be for example more prone to move into high-wage areas. However, controlling for endogeneity does not alter the results.

Cutler and Glaeser (1997) find as well evidence for a negative impact of segregation on educational and labor market outcomes for blacks in the US. A more recent

US study by Cutler et al. (2008b) – using segregation indices as measures of average group concentration – detects a significant positive impact of concentration on wages at least for higher educated migrants. These results point to a negative selection of low-skilled immigrants into more segregated neighborhoods.

Edin et al. (2003) consider neighborhood effects in Sweden using quasi-experimental data based on a government placement policy for refugee immigrants. The analysis indicates that high-skilled migrants are more likely to reside outside of an enclave and therefore neighborhood effects are downward biased without controlling for the self-selection of migrants into certain neighborhoods. Furthermore, a positive impact of living in an enclave for the group of lower educated migrants is revealed. The positive impact of living in an enclave is increasing with the "quality" of an enclave measured by the ethnic income or the ethnic self-employment rate. Whereas the sorting assumption is in line with the results of Cutler et al. (2008b), the conclusions of the two studies differ with regard to the direction of the effect for lower educated migrants. While Cutler et al. reveal adverse impacts for lower educated migrants living in more segregated neighborhoods, Edin et al. see in particular this group as beneficiaries of living in an enclave.

While the economic migration literature has typically focused on the extent to which labor market outcomes vary over the settlement process of first-generation migrants, less is known about the neighborhood effects on economic integration of second-generation migrants.

Turning to the traditional immigration countries, different studies indicate a quite successful assimilation process of migrant children. Aydemir and Sweetman (2006) compare educational and labor market outcomes for different migrant generations in the US and Canada. Concerning labor market outcomes, their analysis reveals excellent earning outcomes for migrants who arrived at a very young age and second-generation migrants. This is mainly attributable to the educational attainment and the urban residence of migrant children. Overall the educational and labor market outcomes of migrants in the US and Canada are significantly better than those of first-generation migrants. For Australia, Khoo et al. (2002) find similar evidence

for a successful integration of second-generation migrants in terms of educational attainment.

Riphahn (2003) analyzes the educational attainment of second-generation migrants in Germany. One might assume that the gap between natives and children of migrants has declined over time as Germany could have adapted to the needs of migrant children and in particular younger birth cohorts might have have better assimilated parents. Using data from the German Mikrozensus, Riphahn shows that second-generation migrants are less likely to be enrolled in advanced schooling than natives. Furthermore, this gap is not – as hypothesized – declining over birth cohorts but even increasing. Fertig and Schmidt (2002) find as well evidence for shortcomings in the educational attainment of second-generation migrants. Their study reveals that the share of second-generation migrants with a higher schooling degree is lower than that of natives and even lower than that of first-generation migrants. However, comparisons between first- and second generation migrants' educational degrees turn out to be problematic due to limits in the transferability of human capital between countries (Basilio and Bauer, 2010).

One of the few studies combining the analysis of second-generation migrants and neighborhood effects is conducted by Entorf and Lauk (2008). The impact of the German schooling system with its early tracking on segregation is analyzed. Early tracking might enfoster prevailing differences as the interaction between migrant children – who have a higher probability to attend the lowest-level secondary school – and native children – with a more favorable parental background – is limited. Entorf and Lauk show that beside the language spoken at home, the average attainment of the native peer group exceeds a large influence on the schooling results of native and migrants thus the existing schooling system magnifies the existing gap between natives and migrants in Germany.

This study shall contribute to the economic migration literature by analyzing neighborhood effects on labor market outcomes, comparing natives, first- and second-generation migrants in Germany.

3 Data and Empirical Strategy

The analysis is based on individual-level data from the German Socio-Economic Panel (GSOEP)[2] provided by the DIW Berlin, combined with economic and demographic postcode-level data from German administrative records[3]. The GSOEP is a longitudinal study of private households which started in 1984 and which samples more than 20,000 persons each year, including Germans, foreigners and recent immigrants. The data from German administrative records contain aggregated information about the labor force in each postcode region like employment characteristics, the share of foreigners, the educational background of the labor force, etc. For our analysis, the years 2000 to 2005 are considered. The sample is restricted to West Germany (including Berlin) as only a small share of immigrants is located in East Germany. Furthermore, the sample is restricted to men in the labor market-relevant age of 16 to 65 years.

The GSOEP contains information on whether a person migrated to Germany after 1949. A first-generation migrant is defined as a person who migrated to Germany regardless of his nationality. A second-generation migrant is defined as a person who is born in Germany and who does not have German nationality. Furthermore, Germans, i.e. persons born in Germany who have a German nationality, are defined as second-generation migrants if both of their parents have a foreign nationality or are both migrants.[4] Finally, children who migrated to Germany before the age of 6 are included in this group. This is a common proceeding, based on the assumption that knowledge acquired before school is not relevant for the labor market outcome.

[2]The data used in this paper were extracted using the Add-On package PanelWhiz v2.0 (Nov 2007) for Stata. PanelWhiz was written by Dr. John P. Haisken-DeNew (john@panelwhiz.eu). The PanelWhiz generated DO file to retrieve the SOEP data used here and any Panelwhiz Plugins are available upon request. Any data or computational errors in this paper are my own. Haisken-DeNew and Hahn (2006) describe PanelWhiz in detail.

[3]The "SOEP neighborhood" is a joint project of the Research Data Centre (FDZ) at the Institute for Employment Research (IAB), the German Institute for Economic Research (DIW) and the Rheinisch-Westfälisches Institut für Wirtschaftsforschung (RWI). The data set is unique in its structure, combining generated data from the Federal Employment Agency (BA) and the SOEP on a low regional level. Currently, the data set is not free disposable. Special thanks goes to the SOEP group of the DIW and Stefan Bender of the IAB.

[4]This group might comprise individuals who have obtained German nationality by naturalization.

The remaining persons are defined as natives.

The analysis is restricted to persons in the labor force, i.e. regularly full- or part-time employed persons and persons who are currently registered unemployed. Self-employed persons, persons in armed forces, persons in vocational training, marginally employed and persons near retirement are dropped. After the exclusion of persons with missing values for analysis-relevant characteristics, the sample of labor force participants contains 10,269 natives, 2,472 first-generation migrants and 783 second-generation migrants. The subsample of workers used for the wage regression includes 9,445, 2,018 and 647 respectively.

Descriptive statistics are reported in Table 1. The group of second-generation migrants is by far the youngest of the three population groups (natives: 42.5 years, first-generation migrants: 43.6 years, second-generation migrants: 32.7 years). These differences in the average age is obviously due to the fact that second-generation migrants are the children of first-generation migrants and the peaks of immigration of first-generation migrants were in the 1960s and 1970s and after 1989. Compared to natives, first- and second-generation migrants have less years of education (12.1 years for natives compared to 10.9 and 11.3 years for first- and second-generation migrants) and the group of second-generation migrants has much less potential labor market experience (15.4 years compared to 24.4 years for natives and 26.7 years for first-generation migrants). Furthermore, the share of unemployed persons is much higher in both migrant groups compared to natives, accounting for 9.8% for natives, around 20.7% for first-generation migrants and 22.3% for second-generation migrants.

Regarding the aggregated neighborhood characteristics, both migrants group tend to live in neighborhoods with slightly higher local unemployment rates compared to native neighborhoods. The differences concerning the share of foreigners in the postcode region are more pronounced. The share of foreigners in the labor force constitutes 11% for the neighborhood of natives, whereas the shares are 14.2% and 14.7% for first- and second-generation migrants' neighborhoods. This is in line with theoretical assumption that migrants tend to settle in neighborhoods where already

former migrants have settled [5]. Concerning the educational background of workers in the postcode region, natives live in neighborhoods with a lower share of untrained in the labor force. The differences in the share of workers with university degree as well as the differences in shares of older workers in the labor force are negligible.

Regarding the sample of gainfully employed workers, the table shows that that natives derive hourly gross wages above those of the two migrant groups, i.e. 16.64€ compared to 13.8€ for first-generation migrants and 14.34€ for second-generation migrants. We control for the occupational position in the wage regression. An striking observation is that the share of professionals is remarkably lower for both migration groups (18.1% of natives are occupied as professionals while only 4.7% of first-generation migrants and 9.1% of second-generation migrants work as professionals). In contrast, a much higher share of migrants is employed as craft, related trade workers, plant and machine operators or assemblers.

In a first step, our analysis of neighborhood effects on labor market outcomes will focus on the impact of the concentration of migrants in a postcode region. We conduct two analyses. The first is concerned with the influence of neighborhood characteristics on wages. Therefore, we estimate a simple Mincer equation including some additional neighborhood information. We include the length of education in years, potential labor market experience, potential labor market experience squared, a dummy on whether a person is married and a dummy whether the person works part-time. We estimate the equation for the three population groups separately to allow the economic returns on education and potential labor market experience to vary between the three population groups. The reason for this is that economic returns might differ based on whether schooling and labor market experience was gained in Germany or abroad (Basilio and Bauer, 2010). For the group of first-generation migrants we add years since migration and the square of years of migration as explanatory variables. For the group of second-generation migrants we include a dummy whether the person has immigrated as a child to differentiate between German-born and non-German-born second-generation migrants.

[5] Unfortunately, we cannot observe the country-of-origin composition of the share of foreigners.

The variable in focus of our analysis is the share of foreigners in the labor force in the postal code region. Based on previous research, we assume that migrants are affected in a different way by a higher concentration of foreigners in a neighborhood than natives. We control for further neighborhood characteristics which might be correlated with the share of foreigners and affect the wages or the unemployment probabilities. These characteristics are the local unemployment rate, the share of untrained workers, the share of workers with a college degree, the share of younger workers (20-30 years) and the share of older workers (50-65 years) in the labor force. Finally, we control for the occupation of the workers in the wage regression and include year fixed effects in both regressions.

Therefore, we estimate the following wage equation:

$$\ln(w_{ijc}) = X_{ijc}\alpha_j + N_{ijc}\beta_j + S_{ijc}\gamma_j + u_{jc} + v_{ijc},$$

where w_{ijc} is wage rate of individual i of group j ($j = \{\text{native,migrant}\}$) in neighborhood c, X_{ijc} are individual-specific characteristics, N_{ijc} neighborhood characteristics, S_{ijc} is a segregation index (share of foreigners in postal code region), u_{jc} common error term of individuals in group j in neighborhood c and v_{ijc} is an individual-level error with $E(v_{ijc}) = 0$. Our proceeding concerning the unemployment outcomes of natives and migrants is analogue to the above stated wage regression, excluding occupation fixed effects and the part-time dummy. We estimate a linear probability model with the unemployment probability as the dependent variable.[6]

For both specifications we apply as well an instrumental variable approach as we assume that the location choice of foreigners is endogenous. This endogeneity might be due to self-selection of migrants into certain neighborhood (Cutler and Glaeser, 1997). One might assume that migrants who are less willing or less capable to assimilate to the host country – maybe due to unobserved characteristics like motivation, cultural distance, etc. – are more likely to settle into neighborhoods with a higher concentration of migrants. This reduces the assimilation costs as the

[6]The coefficients of a probit estimation did not differ regarding significance and magnitude.

acquisition of country-specific human capital like the language can be avoided (Bauer et al., 2005). Because of this possible self-selection mechanism, we instrument for the share of foreigners. For the time being, we use the one-year lagged value of the share of foreigners in the postcode region as an instrument. We assume that the share of foreigners in the previous period does not affect the wages or the unemployment probability but is an important explanatory variable in the settlement process of migrants. There is large evidence that migrants tend to settle where already former migrants have settled.

4 Results

In Table 2 we present estimation results for a basic wage and a basic unemployment regression including neighborhood characteristics. The coefficients of the socioeconomic characteristics in the wage regression have the expected signs, i.e. wages are increasing with the length of education, potential labor market experience has a positive but decreasing impact on wages and married men receive higher wages. Part-time employed men have significantly lower gross hourly wages. First-generation migrants earn significantly less than natives while there is no significant difference for the group of second-generation migrants in general. However, the group of second-generation migrants who are not born in Germany have lower wages than natives. The gap between natives and first-generation migrants is decreasing in a decreasing rate with years since migration. Concerning the neighborhood characteristics, the table reveals that wages are higher in postcode regions with a high share of foreigners and on average lower in neighborhoods with a relatively young labor force. The unemployment rate has a significant and negative impact on wages.

The picture concerning differences in the unemployment probabilities of natives, first- and second-generation migrants is quite different. The coefficients of the socioeconomic characteristics have the expected opposite sign compared to the wage regression, i.e. education, labor market experience and being married reduce the probability of being unemployed. No significant difference in the unemployment

probability between natives and first-generation migrants can be found. In contrast, second-generation migrants who are born abroad have a significantly higher probability of being unemployed. The share of foreigners in the labor force has no significant impact on the unemployment probability whereas the regional unemployment rate and a young labor force increase the probability of being unemployed.

We will now turn to the separate estimations for the three population groups. The results are presented in Table 3 and Table 4. Table 3 reports the ordinary least squares estimation results and Table 4 reports IV-estimation results.

The coefficients of the socioeconomic characteristics show as in the basic wage model the expected signs. Considering first-generation migrants, the table reveals that migrant have much lower returns to labor market experience than natives and second-generation migrants. The coefficient of squared labor market experience has even turned insignificant. This might be due to the fact that migrants might have gained at least part of their labor market experience abroad. Therefore, this observation is in line with findings by Basilio and Bauer (2010) who show that foreign labor market experience yields low to zero returns in the German labor market. Unfortunately, we cannot observe in our data where the labor market experience has been gained.

Turning to the impact of neighborhood characteristics, we find a significant and positive effect of the share of foreigners in the labor force on wages of natives. We do not detect an effect on the wages of migrants. We included several neighborhood control variables in our regression which might be correlated with the share of foreigners. The unemployment rate has a strong and significantly negative impact on the wages of natives and first-generation migrants. This might be a labor supply effect or due to a lower bargaining position of workers in case of more unemployed persons in the labor force. For natives we find a negative effect on wages for living in neighborhoods with a larger share of untrained workers and a negative effect of living in neighborhoods with a large share of younger workers. However, neither the educational background of the neighborhood, proxied by the share of untrained in the labor force and the share of workers with a university degree, nor the age

structure of the neighborhood has an effect on the wages of migrants.

As we assume, that there is a non-random sorting of migrants in certain neighborhoods, we implemented an instrumental variable approach. We use a one-year lag value of the share of foreigners as an instrument for the current share of foreigners. However, this does not alter the results. We still find an significant and positive impact of the share of foreigners in the labor force on the natives' wages while no effect can be found for the two migrant groups.

It is interesting to compare these results to the estimation results of the unemployment probabilities of the three population groups. Even though having a large share of foreigners in the neighborhood might not support or hinder other foreigners to find better-paid jobs, migrant concentration might affect the job-finding process of migrants. On the one hand, there might be positive network effects caused by the provision of labor market information by other foreigners in the neighborhood while on the other hand, there might be "ghetto-effects", i.e. foreigner networks which are more segregated from the native population might even adversely affect the employment probabilities of migrants. The regression results can be found in Table 5 and Table 6. Considering the coefficients of the socioeconomic characteristics first, education, labor market experience and being married have the same sign as in the basic model, i.e. they reduce the probability of being unemployed. However, while the coefficients for labor market experience and labor market experience squared is not significant for the group of second-generation migrants, the coefficient of being married is insignificant for the group of first-generation migrants. Again we find a difference within the group of second-generation migrants where the group of second-generation migrants who are born abroad have a higher probability of being unemployed.

We do not find any evidence for neighborhood effects on employment outcomes of first-generation migrants. The unemployment probability of natives and second-generation migrants is significantly positively affected by the unemployment rate in the neighborhood and the share of younger workers, whereas the extent of the adverse effect is much larger for second-generation migrants than for natives. Again, these

results do not change using an IV-approach instrumenting the share of foreigners in the neighborhood with the lag value of the share of foreigners.

5 Conclusions

This paper examines the neighborhood effects on the labor market outcomes of natives, first- and second-generation migrants in Germany. Neither theoretical nor empirical work in the field of residential segregation has delivered unambiguous results concerning the direction of the segregation effect on labor market outcomes on migrants.

Our first estimation results provide no evidence for segregation effects neither for first- nor for second-generation migrants. We address the issue of endogeneity of location choice by using an IV-approach instrumenting the share of foreigners in a postcode region.

We find a strong and significantly positive impact of a large share of foreigners on wages of natives. While on the one hand, second-generation migrants' wages seem to be unaffected by neighborhood characteristics, on the other hand, we do not observe a significant impact of neighborhood characteristics on first-generation migrants' unemployment probabilities.

However, further research is needed to identify causal effects of neighborhood characteristics on labor market outcomes. The IV-approach using a one-year lag of the share of foreigners does not alter the estimation results which is in indication that there is not much variation in the share of foreigners between two years. Therefore, a strong and valid instrument must be found to control for the possible endogeneity of location choice of natives and migrants. As presented in Section 2, former research delivers strong evidence for a sorting process. Furthermore, former empirical research indicates that neighborhood effects differ for persons with different educational backgrounds. The model specification should capture this aspect. Finally, concentration of migrants is not the only neighborhood characteristic which might exceed a different impact on natives and migrants. The model should be ex-

tended to include a more differentiated analysis of more neighborhood characteristics like for example the local unemployment rate. Bratsberg et al. (2006) find evidence for the US that the wages of migrants are more sensitive to changes in the local unemployment rate than are the wages of natives. The reason for this lies in the fact that in contrast to natives, not only the wage bargaining position of migrants is affected by the local unemployment rate but as well their incentives to acquire country-specific human capital. A consideration of this issue for the German case would be interesting.

As second-generation migrants make up a growing share of the German population and their lack of educational assimilation is very alarming, it is very important to identify factors which support or hinder their integration process. In particular, comparisons with first-generation migrants might reveal weaknesses of the German integration policy. Therefore, further structural research on reasons for the relatively weak performance of second-generation migrants in terms of educational attainment and labor market outcomes in Germany is needed. Neighborhood effects are very likely to constitute a source for the different labor market outcomes for natives and migrants and this suggests further research on this issue.

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Figures and Tables

Table 1: Descriptive Statistics

	Natives		First Generation		Second Generation	
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**
	Sample of Labor Force Participants					
Socioeconomic Characteristics						
Age	42.5	10.4	43.6	10.9	32.7	8.6
Length of education in years	12.1	2.5	10.9	2.3	11.3	2.7
Potential labor market experience	24.4	10.9	26.7	11.2	15.4	8.5
Married	0.586	0.493	0.811	0.391	0.531	0.499
Full-time employed	0.870	0.336	0.769	0.421	0.770	0.421
Part-time employed	0.032	0.176	0.024	0.153	0.007	0.084
Currently registered unemployed	0.098	0.298	0.207	0.405	0.223	0.416
Neighborhood Characteristics						
Share of foreigners in the labor force	0.110	0.068	0.142	0.083	0.147	0.082
Unemployment rate	0.083	0.039	0.085	0.041	0.086	0.042
Share of employed untrained workers	0.158	0.045	0.176	0.051	0.172	0.046
Share of employed workers with university degree	0.081	0.045	0.079	0.045	0.084	0.050
Share of younger workers (20-30 years)	0.213	0.025	0.218	0.025	0.221	0.028
Share of older workers (50-65 years)	0.231	0.029	0.230	0.024	0.224	0.026
Number of observations	10269		2472		783	
	Sample of Workers					
Hourly gross wage	16.64	6.86	13.80	5.38	14.34	5.12
Occupation						
Legislators, senior officials and managers	0.059	0.236	0.017	0.130	0.056	0.229
Professionals	0.181	0.385	0.047	0.212	0.091	0.288
Technicians and associate professionals	0.216	0.412	0.070	0.255	0.190	0.392
Clerks	0.096	0.295	0.033	0.180	0.078	0.269
Service workers and shop and market sales workers	0.045	0.208	0.039	0.193	0.024	0.152
Skilled agricultural and fishery workers	0.007	0.084	0.010	0.102	0.008	0.088
Craft and related trades workers	0.217	0.412	0.385	0.487	0.282	0.450
Plant and machine operators and assemblers	0.106	0.307	0.249	0.433	0.149	0.357
Elementary occupations	0.050	0.218	0.125	0.330	0.074	0.262
Number of observations	9445		2018		647	

NOTE.–Weighted numbers based on weights provided by the SOEP.

TABLE 2: Basic Wage and Unemployment Models with Neighborhood Characteristics

	Wages		Unemployment	
	Coef.	**SE**	**Coef.**	**SE**
Socioeconomic characteristics				
Length of education in years	0.041***	0.003	-0.019***	0.002
Potential labor market experience	0.029***	0.003	-0.020***	0.003
Potential labor market experience squared	-0.043***	0.005	0.044***	0.005
Married	0.084***	0.015	-0.058***	0.013
Part-time employed	-0.154***	0.050		
First-generation immigrant	-0.327***	0.064	0.052	0.064
First-generation immigrant ×				
Years since migration	0.017***	0.006	0.006	0.006
Years since migration squared	-0.025**	0.012	-0.017	0.012
Second-generation immigrant	-0.039	0.029	0.045	0.031
Second-generation immigrant ×				
Immigrated as child	-0.248***	0.077	0.159*	0.088
Neighborhood characteristics				
Share of foreigners in the labor force	0.598***	0.131	-0.075	0.145
Unemployment rate	-1.361***	0.218	0.859***	0.196
Share of employed untrained workers	-0.325	0.241	-0.111	0.227
Share of employed workers with university degree	0.081	0.222	-0.205	0.197
Share of older workers (50-65 years)	-0.132	0.255	0.053	0.302
Share of younger workers (20-30 years)	-0.768**	0.327	0.609*	0.356
Constant	2.104***	0.133	0.344**	0.146
Occupation fixed effects	Yes		No	
Year effects	Yes		Yes	
R^2	0.328		0.108	
N	12110		13524	
F	49.498		14.222	

NOTE.–Weighted regression based on weights provided by the SOEP. Standard errors were adjusted for repeated observations within postcode areas.
* $p<0.10$, ** $p<0.05$, *** $p<0.01$

TABLE 3: Wage Regression (OLS)

	Natives		First Generation		Second Generation	
	Coef.	**SE**	**Coef.**	**SE**	**Coef.**	**SE**
Socioeconomic characteristics						
Length of education in years	0.043***	0.004	0.029***	0.006	0.056***	0.008
Potential labor market experience	0.032***	0.003	0.010*	0.006	0.046***	0.009
Potential labor market experience squared	-0.046***	0.006	-0.021	0.013	-0.064***	0.020
Married	0.077***	0.016	0.085***	0.033	0.054	0.044
Part-time employed	-0.093**	0.044	-0.425***	0.068	-0.218	0.198
Years since migration			0.017***	0.006		
Years since migration squared			-0.017	0.014		
Immigrated as child					-0.012	0.041
Neighborhood characteristics						
Share of foreigners in the labor force	0.614***	0.138	0.186	0.242	0.641	0.455
Unemployment rate	-1.408***	0.226	-1.706***	0.587	-0.621	0.568
Share of employed untrained workers	-0.411*	0.247	0.308	0.582	0.219	0.805
Share of employed workers with university degree	0.082	0.251	0.524	0.503	0.052	0.695
Share of older workers (50-65 years)	-0.151	0.271	-0.875	0.740	1.415	1.004
Share of younger workers (20-30 years)	-0.850**	0.372	0.010	0.708	-1.196	1.001
Constant	2.076***	0.149	2.098***	0.344	1.309***	0.413
Occupation fixed effects	Yes		Yes		Yes	
Year effects	Yes		Yes		Yes	
R^2	0.304		0.394		0.522	
N	9445		2018		647	
F	47.121		38.264		19.599	

NOTE.–Weighted regression based on weights provided by the SOEP. Standard errors were adjusted for repeated observations within postcode areas.
p<0.10, ** p<0.05, *** p<0.01

TABLE 4: Wage Regression (IV)

	Natives		First Generation		Second Generation	
	Coef.	**SE**	**Coef.**	**SE**	**Coef.**	**SE**
Length of education in years	0.043***	0.004	0.029***	0.006	0.056***	0.008
Potential labor market experience	0.032***	0.003	0.010*	0.006	0.046***	0.008
Potential labor market experience squared	-0.046***	0.006	-0.021	0.013	-0.065***	0.019
Married	0.077***	0.016	0.087***	0.032	0.054	0.043
Part-time employed	-0.093**	0.044	-0.423***	0.067	-0.218	0.193
Years since migration			0.017***	0.006		
Years since migration squared			-0.017	0.014		
Immigrated as child					-0.013	0.040
Neighborhood characteristics						
Share of foreigners in the labor force	0.619***	0.142	0.252	0.253	0.595	0.510
Unemployment rate	-1.408***	0.226	-1.743***	0.585	-0.596	0.573
Share of employed untrained workers	-0.416*	0.247	0.253	0.585	0.264	0.823
Share of employed workers with university degree	0.078	0.252	0.460	0.508	0.094	0.698
Share of older workers (50-65 years)	-0.153	0.270	-0.915	0.732	1.457	0.982
Share of younger workers (20-30 years)	-0.852**	0.371	-0.066	0.691	-1.140	1.015
Constant	2.078***	0.149	2.132***	0.338	1.282***	0.421
Occupation fixed effects	Yes		Yes		Yes	
Year effects	Yes		Yes		Yes	
R^2	0.304		0.394		0.522	
N	9445		2018		647	
F	47.075		38.331		19.715	
Shea	0.885		0.893		0.762	
Ffirst	4646.994		874.210		217.353	

NOTE.–Weighted regression based on weights provided by the SOEP. Standard errors were adjusted for repeated observations within postcode areas. The share of foreigners is instrumented using a one-year lag of the share of foreigners. * p<0.10, ** p<0.05, *** p<0.01

TABLE 5: Unemployment Regression (OLS)

	Natives		First Generation		Second Generation	
	Coef.	**SE**	**Coef.**	**SE**	**Coef.**	**SE**
Socioeconomic characteristics						
Length of education in years	-0.019***	0.002	-0.017**	0.007	-0.035***	0.008
Potential labor market experience	-0.017***	0.003	-0.028***	0.008	-0.013	0.011
Potential labor market experience squared	0.036***	0.006	0.069***	0.014	0.020	0.026
Married	-0.053***	0.013	-0.041	0.050	-0.141**	0.060
Years since migration			0.006	0.007		
Years since migration squared			-0.023	0.015		
Immigrated as child					0.181***	0.062
Neighborhood characteristics						
Share of foreigners in the labor force	-0.097	0.137	0.097	0.316	-0.296	0.553
Unemployment rate	0.805***	0.179	1.164	0.707	2.012**	0.847
Share of employed untrained workers	-0.100	0.232	-0.046	0.574	-1.102	1.077
Share of employed workers with university degree	-0.143	0.189	-0.114	0.642	-0.994	0.823
Share of older workers (50-65 years)	0.101	0.309	-0.230	1.018	2.734	1.917
Share of younger workers (20-30 years)	0.886**	0.395	-1.016	0.894	2.856*	1.667
Constant	0.256	0.160	0.756*	0.406	-0.383	0.718
Year effects	Yes		Yes		Yes	
R^2	0.085		0.123		0.188	
N	10269		2472		783	
F	10.446		5.023		3.379	

NOTE.–Weighted regression based on weights provided by the SOEP. Standard errors were adjusted for repeated observations within postcode areas.
* p<0.10, ** p<0.05, *** p<0.01

TABLE 6: Unemployment Regression (IV)

	Natives		**First Generation**		**Second Generation**	
	Coef.	**SE**	**Coef.**	**SE**	**Coef.**	**SE**
Socioeconomic characteristics						
Length of education in years	-0.019***	0.002	-0.017**	0.007	-0.034***	0.008
Potential labor market experience	-0.017***	0.003	-0.028***	0.008	-0.013	0.011
Potential labor market experience squared	0.036***	0.006	0.069***	0.014	0.020	0.025
Married	-0.052***	0.013	-0.040	0.050	-0.142**	0.060
Years since migration			0.005	0.007		
Years since migration squared			-0.023	0.015		
Immigrated as child					0.181***	0.061
Neighborhood characteristics						
Share of foreigners in the labor force	-0.051	0.140	0.122	0.326	-0.235	0.573
Unemployment rate	0.808***	0.178	1.152	0.704	1.980**	0.842
Share of employed untrained workers	-0.152	0.232	-0.068	0.575	-1.163	1.073
Share of employed workers with university degree	-0.185	0.191	-0.136	0.647	-1.048	0.832
Share of older workers (50-65 years)	0.085	0.308	-0.245	1.016	2.689	1.921
Share of younger workers (20-30 years)	0.863**	0.395	-1.046	0.895	2.786*	1.644
Constant	0.271*	0.160	0.769*	0.407	-0.352	0.721
Year effects	Yes		Yes		Yes	
R^2	0.085		0.123		0.188	
N	10269		2472		783	
F	10.336		5.026		3.363	
Shea	0.881		0.894		0.787	
Ffirst	4246.055		1068.777		319.412	

NOTE.–Weighted regression based on weights provided by the SOEP. Standard errors were adjusted for repeated observations within postcode areas. The share of foreigners is instrumented using a one-year lag of the share of foreigners.
* p<0.10, ** p<0.05, *** p<0.01