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Ethnic Residential Segregation and Immigrants' Perceptions of Discrimination in West Germany

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Abstract: Using survey data from the German Socio-Economic Panel, this study shows that immigrants living in segregated residential areas are more likely to report discrimination because of their ethnic background. This applies to both segregated areas where most neighbors are immigrants from the same country of origin as the surveyed person and segregated areas where most neighbors are immigrants from other countries of origin. The results suggest that housing discrimination rather than self-selection plays an important role in immigrant residential segregation.

JEL: J15, J61, R23, R30.

Keywords: Segregation, Immigrants, Housing Discrimination, Self-Selection.

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1. Introduction

Immigrant residential segregation has been a long-standing concern in many developed countries. This also holds true for Germany where concerns about the lack of immigrant integration and fears of "parallel societies" play an important role. In the policy debate, it is widely assumed that immigrants prefer to live in segregated residential areas (Münch 2009). This view accords with theories suggesting that immigrants sort themselves into ethnic enclaves as those enclaves enable the consumption of ethnic goods (Chiswick and Miller 2005) and reduce the need to assimilate to the host country (Lazear 1999).

Yet, it is an open question whether or not self-selection is indeed the driving force of immigrant residential segregation. A contrasting view is that housing discrimination plays an important role (Galster 1992, Yinger 1998). This view emphasizes that immigrants live in segregated neighborhoods not because they prefer to live there but because natives restrict immigrant location choices to specific areas. This view is supported by field studies.[1] However, while field studies provide evidence of discrimination in the housing market, they usually do not provide evidence of a relationship between housing discrimination and residential segregation.[2]

Using survey data from the German Socio-Economic Panel (SOEP), our study examines the association between residential segregation and immigrants' perceptions of discrimination.[3] This allows investigating whether self-selection or housing discrimination plays the crucial role in immigrant residential segregation. If immigrants voluntarily sort themselves into ethnic enclaves, there should be no association between segregation and perceived discrimination. Yet, if housing discrimination plays the crucial role in residential segregation, there should be a significant association.

Moreover, we can examine the potential channels of discrimination in more detail. On the one hand, immigrants may experience increased discrimination and outright hostility from prejudiced native neighbors if they live in residential areas where natives are most present. As a consequence, they are more or less forced to settle in areas with other immigrants to escape "everyday" discrimination in their neighborhood. Hence, immigrants living in segregated areas should be less likely to report discrimination than immigrants living in neighborhoods with a high share of natives.[4]

On the other hand, discrimination by landlords rather than outright hostility by native neighbors may drive residential segregation. Natives may, to a greater or lesser extent, tolerate the immigrants living in their neighborhood. In this case, immigrants may prefer to live in native-dominated areas as these areas allow them to participate in the social and cultural life of the host country. Landlords may nonetheless exclude immigrants from native-dominated residential areas if the introduction of immigrants reduces the willingness of native tenants to pay high rents.[5] Moreover, landlords may restrict immigration location choices if they are themselves prejudiced or their experience indicates that immigrants are on average tenants with unstable rent payments and less diligence in maintaining the dwelling in appropriate condition. In this situation, immigrants who are forced to live in segregated areas should be more likely to report discrimination than those who are able to avoid such areas.

Our estimates for West Germany show that living in a highly segregated area is positively associated with perceived discrimination. This suggests that discriminatory treatment by landlords is an important factor driving ethnic residential segregation. Importantly, the positive link between segregation and perceived discrimination applies

to both segregated areas where most neighbors are immigrants from the same country of origin as the surveyed person and segregated areas where most neighbors are immigrants from other countries of origin. Particularly, the positive link between the first type of segregated area and perceived discrimination corroborates the interpretation that housing discrimination rather than self-selection plays an important role in immigrant residential segregation. If self-selection would be the driving force behind immigrant segregation, areas with neighbors from the same country of origin should be specifically attractive as immigrants can share the same culture and language. Yet, even immigrants living in these areas are more likely to report discrimination. Our results hold true even when controlling for other influences such as household income, rent payment, and quality of the dwelling.

The rest of the paper is organized as follows. Section 2 describes the data. Section 3 discusses the variables. Section 4 presents the results. Section 5 concludes.

2. Data

Our empirical analysis uses data from the SOEP (Wagner et al. 1993). The SOEP is a large representative longitudinal survey of private households in Germany. The survey is administered by the German Economic Institute (DIW Berlin). Infratest Sozialforschung, a professional survey and opinion institute, conducts the interviews. Based on face-to-face interviews, a nucleus of socio-economic and demographic questions is asked annually. Different 'special' topics are sampled in specific waves. The first wave of interviews started in 1984 with the collection of data in the former West Germany. While the survey has been extended to East Germany after German reunification, the number of foreigners in the East German subsample is too small to allow a separate analysis. Hence, our examination is restricted to West Germany.

Immigrants are oversampled in the SOEP. The initial cohort of immigrants included persons from the former guest worker countries Italy, Greece, Spain, Turkey, and Yugoslavia. During the latter half of the 1950s the German government started actively recruiting guest workers in response to a labor shortage prompted by very high economic growth rates. In 1973 the government stopped the recruitment of further guest workers as Germany entered a period of economic recession. In the subsequent years, the inflow of immigrants from the former guest worker countries consisted mainly of family members of those guest workers who remained in Germany (family reunification). We focus on first generation immigrants from Italy, Greece, Spain and Turkey. Immigrants from the former Yugoslavia are excluded from the analysis because of Yugoslavia's diverse ethnic and religious groups.

The 1996 wave of the SOEP includes information on the immigrants' perceptions of discrimination. Information on the ethnic composition of the neighborhood is available in the 1994 wave. Hence, we regress perceived discrimination in 1996 on factors observed in 1994. Immigrants who changed their place of residence in the period 1994 to 1996 are excluded from the analysis.

3. Variables

Table 1 provides definitions of the variables and descriptive statistics. In our basic regressions, the dependent variable is a dummy equal to 1 if the immigrant answers that he or she is very often discriminated against because of his or her ethnic background. The dummy is equal to 0 if the immigrant answers that he or she is never or only sometimes discriminated against. 13 percent of the interviewees answer that they are very often discriminated against. As the dependent variable is a dichotomous variable, we use the

probit procedure to estimate the determinants of perceived discrimination. An advantage of the probit model is that the results are relatively easy to interpret. However, as a check of robustness we also estimate a generalized ordered probit with a categorial variable that comprises three outcomes: 0 never discriminated against, 1 sometimes discriminated against, 2 very often discriminated against.

The key explanatory variables are constructed using two pieces of ordered information. First, interviewees are asked if foreigners live in their neighborhood. Second, those who live in residential areas with foreign neighbors are asked if they share the same country of origin with their foreign neighbors. Combining the two pieces of information yields a classification of five different types of residential areas. The first type is a residential area where most or all of the neighbors are foreigners and most or all of them are from the same country of origin as the respondent. 8 percent of respondents live in such a neighborhood. The second type is a residential area where most or all of the neighbors are foreigners and most or all of them are from other countries of origin as the respondent. 40 percent of respondents live in this type of neighborhood. Considering the two types of residential areas together, 48 percent of immigrants in our sample live in a highly segregated neighborhood. The third and the fourth type are residential areas with some foreign neighbors. In the third type of residential area, most or all of the foreign neighbors are from the same country of origin as the respondent. In the fourth type of residential area, most or all of the foreign neighbors are from other countries of origin as the respondent. The fifth type is the reference category. In this type of residential area, all of the neighbors are Germans.

As emphasized, if self-selection plays the dominant role in immigrant residential

segregation, there should be no significant link between living in a segregated residential area and perceived discrimination. It is the immigrant's choice to live in such area. By contrast, if discrimination is the driving force of segregation, we should observe a significant association between living in a segregated area and perceived discrimination. The sign of the association depends on the type of discrimination. On the one hand, outright hostility by native neighbors in native dominated areas may force immigrants to settle in areas with other immigrants to escape "everyday" discrimination. In this case, immigrants living in segregated areas should be less likely to report discrimination than those living in native dominated areas. On the other hand, discrimination by landlords rather than hostility by native neighbors may play an important role in residential segregation. If natives to a greater or lesser extent tolerate foreign neighbors, immigrants may prefer to live in native-dominated areas as this allows them to integrate into the host country. Yet, landlords may restrict immigrant location choices if they are themselves prejudiced or suspect that the introduction of immigrants results in lower rental income. In that case, immigrants who are forced to live in a segregated residential area should be more likely to report discrimination than those who are able to find housing in a native-dominated area.[6]

The survey provides a rich set of control variables. In our initial specification, we control for federal states and demographic characteristics of the interviewee. The immigrant's education may play a role in perceived discrimination. On the one hand, negative attitudes toward foreigners are more prevalent among low-educated Germans (Gang and Rivera-Batiz 1994, Cornelissen and Jirjahn 2011). To the extent higher-educated immigrants are less likely to interact with low-educated Germans, they face a

lower risk of discrimination. On the other hand, higher-educated immigrants are likely to have higher expectations and requirements. Hence, they may tend to be more sensitive with respect to discrimination. Similarly, expectations may rise with the years the immigrant lives in Germany. The immigrant's income is also likely to play a role. Immigrants with a higher income have more financial opportunities to avoid discrimination. Furthermore, we account for gender, presence of children and country of origin.

We expand the specification by including variables for neighborhood characteristics. The expanded specification accounts for urban areas, contacts to neighbors, satisfaction with environmental conditions in the neighborhood, and satisfaction with the availability of goods and services in the neighborhood. This allows examining whether or not the ethnic composition of the neighborhood is just a proxy for other neighborhood characteristics (Swaroop and Krysan 2011).

In a final step, we include variables for housing characteristics. Immigrants may be concentrated in residential areas with poor quality housing. As housing satisfaction can influence perceived discrimination, it is important to control for the characteristics of the dwelling in order to check whether or not a possible link between segregation and perceived discrimination is driven by the quality of the dwelling. We account for size of dwelling, year of construction, and rent paid for the dwelling.

4. Empirical Analysis

4.1 Basic Results

Table 2 provides the probit estimates of the determinants of high perceived discrimination. In regression (1), several of the variables for demographic characteristics

emerge with statistically significant coefficients. Income is a negative covariate of the probability that an immigrant reports being highly discriminated against. Education, years since immigration and a Turkish origin are positive covariates.

Most importantly in our context, the regression shows that immigrants living in highly segregated areas are more likely to report high discrimination. This conforms to the hypothesis that discrimination by landlords plays an important role in immigrant residential segregation. The association between residential segregation and high perceived discrimination applies to both highly segregated areas where most of the foreign neighbors are from the same country of origin as the immigrant and highly segregated areas where most of the foreign neighbors are from other countries of origin. Particularly the association between the first type of segregated area and perceived discrimination corroborates the interpretation that housing discrimination rather than self-selection is the driving force behind immigrant residential segregation. If self-selection would be the driving force, areas with neighbors from the same country of origin should be most attractive as immigrants can share the same culture and language. Immigrants who sort themselves into these areas would not report discrimination. Yet, even immigrants living in these areas have an increased probability of reporting high discrimination.

In column (2), we expand the specification by including variables for other neighborhood characteristics. Three of the four neighborhood variables take statistically significant coefficients. Satisfaction with environmental conditions, living in an urban area, and contacts with neighbors are negative covariates of perceived discrimination. Nonetheless, even when including variables for other neighborhood characteristics, we

still find that both types of highly segregated areas are positively associated with perceived discrimination. This suggests that the positive link between living in a segregated area and perceived discrimination is not simply due to other neighborhood characteristics such as environmental conditions. The concentration of foreigners itself appears to drive the link.

In column (3), we additionally include variables for the quality of dwelling. A small size of dwelling and living in a recently constructed home are positively associated with perceived discrimination. Most importantly, even when accounting for the quality of dwelling, living in a segregated area is a positive covariate of perceived discrimination. This suggests that the link between segregation and perceived discrimination is not simply driven by poor quality of dwellings in segregated areas. The coefficients on the segregation variables are not only statistically but also quantitatively significant. The probability of high perceived discrimination increases by 10 percentage points if an immigrant lives in a segregated area where most neighbors are from the same country of origin. Compared to the mean of 13 percent, this implies an increase by 77 percent. The probability of high perceived discrimination increases by 8 percentage points if the immigrant lives in a segregated area where most neighbors are from other countries of origin. Compared to the mean, this is an increase by 62 percent.

4.2 Robustness Check

So far we used a dummy dependent variable for high perceived discrimination. The reference group comprised both immigrants with no and immigrants with moderate perceived discrimination. As a check of robustness, we now consider an ordered variable which differentiates between three outcomes. Let y_i denote the extent of immigrant *i*'s

perceived discrimination (0 = *i* never feels discriminated against; 1 = *i* sometimes feels discriminated against; 2 = *i* very often feels discriminated against). An ordered probit model would be the standard procedure to estimate the determinants of the extent of perceived discrimination. In this model, y_i depends on a latent variable y_i^*:

$$y_i^* = \boldsymbol{\beta}' \boldsymbol{x}_i + \varepsilon_i, \tag{1}$$

where $\boldsymbol{x}_i$ is the vector of explanatory variables, and $\boldsymbol{\beta}$ the vector of coefficients. The error term ε_i has a normal distribution with zero mean and a variance equal to one. Taking the latent variable into account, the extent of perceived discrimination is

$$y_i = \begin{cases} 0 \text{ if } y_i^* \le \mu_1, \\ 1 \text{ if } \mu_1 < y_i^* \le \mu_2, \\ 2 \text{ if } y_i^* > \mu_2. \end{cases} \tag{2}$$

The threshold values μ_1 and μ_2 are estimated jointly with $\boldsymbol{\beta}$. However, a shortcoming of the simple ordered probit approach is that it has constant threshold values and only a single coefficient vector for all outcome categories of the dependent variable. A generalized ordered probit model stands as an alternative to the rather restrictive ordered probit model (Boes and Winkelmann 2010). It provides more flexibility as it does not treat the thresholds as constant but makes them dependent on the explanatory variables. As it allows for different coefficient vectors, the generalized model takes into account that the effects of the explanatory variables may vary with the categories of the dependent variable. The model makes the thresholds linear functions of the explanatory variables:

$$\mu_{ij} = \tilde{\mu}_j + \boldsymbol{\gamma}_j' \boldsymbol{x}_i \quad (j = 1, 2), \tag{3}$$

where $\tilde{\mu}_j$ is a constant term, $\boldsymbol{x}_i$ again the vector of establishment characteristics, and $\boldsymbol{\gamma}_j$

a vector of coefficients. Substituting μ_{ij} for μ_j in (2) and taking the standard normal distribution $\Phi(.)$ into account, we obtain the probabilities:

$$\Pr(y_i = 0) = \Phi(\tilde{\mu}_1 - \boldsymbol{\beta}_1' \boldsymbol{x}_i), \tag{4a}$$

$$\Pr(y_i = 1) = \Phi(\tilde{\mu}_2 - \boldsymbol{\beta}_2' \boldsymbol{x}_i) - \Phi(\tilde{\mu}_1 - \boldsymbol{\beta}_1' \boldsymbol{x}_i), \tag{4b}$$

$$\Pr(y_i = 2) = 1 - \Phi(\tilde{\mu}_2 - \boldsymbol{\beta}_2' \boldsymbol{x}_i), \tag{4c}$$

where $\boldsymbol{\beta}_j = \boldsymbol{\beta} - \boldsymbol{\gamma}_j$ as we cannot identify $\boldsymbol{\beta}$ and $\boldsymbol{\gamma}_j$ separately. The coefficient vectors are now allowed to vary across outcomes and we have a vector $\boldsymbol{\beta}_j$ for each threshold.

Table 3 provides the estimation results of the generalized ordered probit model. All control variables listed in column (3) of Table 2 are included in the estimation. In order to save space, we only report the coefficients on our key explanatory variables. Equation (4c) helps interpret the results. It shows that the probability of high perceived discrimination is only influenced by vector $\boldsymbol{\beta}_2$. Against this background, it can be seen that the generalized ordered probit model confirms our basic finding. Both types of highly segregated areas are associated with an increased probability of high perceived discrimination.

5. Conclusions

In the policy debate, it is often believed that a lack of immigrant assimilation is due to self-selection of immigrants into segregated residential areas. The results of this study suggest that housing discrimination rather than self-selection plays an important role in immigrant residential segregation. Immigrants living in highly segregated areas are much more likely to report high discrimination than those living in non-segregated areas.

The positive link between segregation and perceived discrimination also indicates

a specific mechanism of discrimination. It suggests that discriminatory restrictions of immigrant location choices rather than outright hostility of native neighbors are the driving force of residential segregation. In the latter case we would have found that immigrants living in segregated areas are less likely to report discrimination as those areas provide protection against "everyday" discrimination by native neighbors. Yet, our estimates suggest the opposite relationship. Of course, our finding does not mean that immigrants living in native-dominated areas experience no discrimination at all in their neighborhood. It rather means that from the immigrants' viewpoint the advantages of living in a native-dominated neighborhood outweigh the disadvantage of discriminatory treatment by prejudiced native neighbors. As a consequence, immigrants perceive the restrictions that force them to live in segregated areas as discrimination.

We note that our analysis applies to West Germany. It would be interesting to extend the analysis to East Germany as xenophobic tendencies appear to be particularly high in East Germany (Krueger and Pischke 1997). This requires that sufficient information will be available in future waves of the SOEP.

Table 1: Variable Definitions and Descriptive Statistics (N = 771)

Variable	Description (Mean, Std. dev.)
High perceived discrimination	Dummy = 1 if the person feels very often discriminated against because of his or her ethnic background (.1258, .3319).
Modest perceived discrimination	Dummy = 1 if the person feels sometimes discriminated against because of his or her ethnic background (.4643, .4990).
High share of foreigners & same country of origin	Dummy = 1 if most or all neighbors are foreigners and most or all of them are from the same country of origin as the immigrant (.0778, .2681).
High share of foreigners & other countries of origin	Dummy = 1 if most or all neighbors are foreigners and most or all of them are from other countries of origin as the immigrant (.4008, .4904).
Some foreigners & same country of origin	Dummy = 1 if some neighbors are foreigners and most or all of them are from the same country of origin as the immigrant (.0558, .2300).
Some foreigners & other countries of origin	Dummy = 1 if some neighbors are foreigners and most or all of them are from other countries of origin as the immigrant (.3554, .4789).
Year of construction 1949-1971	Dummy = 1 if the property was constructed between 1949 and 1971 (.4100, .4921).
Year of construction 1972-1980	Dummy = 1 if the property was constructed between 1972 and 1980 (.1076, .3101).
Year of construction 1981-1990	Dummy = 1 if the property was constructed between 1981 and 1990 (.0337, .1806).
Education	Years of schooling ranging from 7 to 18 years (9.074, 1.829).
Greece	Dummy = 1 if the immigrant is from Greece (.1764, .3814).
Italy	Dummy = 1 if the immigrant is from Italy (.2180, .4131).
Turkey	Dummy = 1 if the immigrant is from Turkey (.5253, .5000).
Female	Dummy = 1 if the immigrant is a woman (.4578, .4985).
Equivalence income/100	Real equivalence net income of the household in Euro. The Household income is divided by the weighted sum of individuals living in the household (7.39, 2.77).
Size of dwelling	Dwelling area in square meter divided by the number of people living in household (22.70, 11.67).
Rent/100	Rent paid for the dwelling in Euro (3.24, 1.56).
Urban area	Dummy = 1 if the immigrant lives in an urban area (.1414, .3486).
Availability of goods and services in neighborhood	Satisfaction with the availability of goods and services in the neighborhood coded from 0 lowest to 10 highest (7.224, 2.057).
Environmental conditions	Satisfaction with the environmental conditions in the neighborhood coded from 0 lowest to 10 highest (6.545, 1.967).

Contacts with neighbors	Ordered variable for the immigrant's contacts with neighbors coded from 1 "almost no contact" to 5 "very close" (2.966, .8506).
Children	Dummy = 1 if children live in the household (.5460, .4982).
Years since immigration	Years since the person immigrated to Germany (20.92, 7.384).
Federal state dummies	Dummy variables to account for the eleven federal states in West Germany.

Table 2: Determinants of High Perceived Discrimination; Probit Estimates

	(1)	(2)	(3)
High share of foreigners & same country of origin	.5985 [.0891] (1.99)**	.6543 [.0952] (2.09)**	.8035 [.1009] (2.56)**
High share of foreigners & other countries of origin	.5199 [.0730] (2.06)**	.5304 [.0702] (2.05)**	.6759 [.0763] (2.57)**
Some foreigners & same country of origin	.4007 [.0513] (1.14)	.3965 [.0471] (1.07)	.5128 [.0501] (1.39)
Some foreigners & other countries of origin	.2740 [.0316] (1.04)	.2718 [.0291] (0.99)	.4243 [.0383] (1.56)
Female	-.1494 [-.0243] (1.09)	-.1360 [-.0210] (0.99)	-.1450 [-.0206] (1.04)
Education	.0577 [.0094] (1.70)*	.0531 [.0082] (1.54)	.0583 [.0083] (1.65)*
Years since immigration	.0180 [.0029] (1.71)*	.0170 [.0026] (1.61)	.0194 [.0028] (1.84)*
Equivalence income/100	-.0914 [-.0149] (3.22)***	-.0954 [-.0147] (3.26)***	-.1000 [-.0143] (3.28)***
Turkey	.6581 [.0765] (1.90)*	.6526 [.0717] (1.89)*	.6610 [.0574] (1.78)*
Italy	.2672 [.0218] (0.74)	.2377 [.0179] (0.65)	.3361 [.0211] (0.86)
Greece	.4341 [.0415] (1.21)	.4534 [.0417] (1.27)	.5349 [.0411] (1.39)
Children	.0796 [.0130] (0.59)	.0705 [.0109] (0.52)	-.0678 [-.0097] (0.41)
Urban area	---	-.3220 [-.0497] (1.72)*	-.2500 [-.0357] (1.35)
Availability of goods and services	---	-.0156 [-.0024] (0.50)	-.0262 [-.0037] (0.84)
Environmental conditions	---	-.0843 [-.0130] (2.31)**	-.0844 [-.0121] (2.25)**
Contacts with neighbors	---	-.1448 [-.0223] (2.02)**	-.1507 [-.0216] (1.97)**
Size of dwelling	---	---	-.0143 [-.0020] (1.83)*
Rent/100	---	---	-.0178 [-.0025] (0.32)
Year of construction 1949-1971	---	---	-.1611 [-.0215] (1.07)
Year of construction 1972-1980	---	---	-.0323 [-.0047] (0.13)
Year of construction 1981-1990	---	---	1.091 [.2981] (3.33)***

Constant	-2.566 (3.52)***	-1.402 (1.79)*	-1.144 (1.41)
Federal state dummies	Yes	Yes	Yes
Observations	771	771	771
Pseudo R^2	0.1295	0.1503	0.1783

The table shows the estimated coefficients. Robust z-statistics are in parentheses and marginal effects are in square brackets. Marginal effects of dummy variables are evaluated for a discrete change from 0 to 1. Marginal effects of the dummies for neighborhood segregation (dummies for country of origin) are changes in probability compared to the reference group of persons living in a neighborhood without foreigners (reference group of people from Spain). Marginal effects of variables other than the dummy variables are evaluated at the mean values. *** Statistically significant at the 1% level; ** at the 5% level; * at the 10% level.

Table 3: Determinants of the Extent of Perceived Discrimination; Generalized Ordered Probit Estimation

	β_1	β_2
High share of foreigners & same country of origin	-.4285 (1.86)*	.7970 (2.59)***
High share of foreigners & other countries of origin	.1958 (1.15)	.6166 (2.29)**
Some foreigners & same country of origin	-.0934 (0.36)	.5257 (1.41)
Some foreigners & other countries of origin	.2313 (1.37)	.2597 (0.93)
Log Likelihood	-648.57	
Observations	771	

The table shows the estimated coefficients. Robust z-statistics are in parentheses. *** Statistically significant at the 1% level; ** at the 5% level; * at the 10% level. The regression includes all control variables listed in column (3) of Table 2.

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Endnotes

[1] Specifically in the US, a series of audit studies has been conducted (Ondrich et al. 1999, Page 1995, Yinger 1999). Testers from two different ethnic groups are matched and trained so that they make equivalent enquiries when speaking to prospective landlords. Moreover, there are recent field studies from several countries which use written applications (Ahmed and Hammarstedt 2008 and Ahmed et al. 2010 for Sweden, Bosch et al. 2010, 2011 for Spain, Carpusor and Loges for the U.S.). Fictitious persons with distinctive sounding ethnic names apply for vacant rental apartments via the Internet. The results of the various field studies point in the same direction: Members of ethnic minority groups are shown and offered fewer housing units.

[2] An exception is the field study by Bosch et al. (2011). They find that the discrimination of applicants with foreign sounding names is more severe in areas with a low presence of immigrants.

[3] Dill et al. (2011) examine the relationship between residential segregation and immigrants' neighborhood satisfaction in Germany. This study complements their examination by using a more direct measure of discrimination.

[4] Studies by Hunt et al. (2007) and Dailey et al. (2010) suggest that this holds true for African Americans in the US.

[5] Prejudiced natives may try avoiding areas with a high share of immigrant neighbors instead of showing outright hostility. Saiz and Wachter (2011) show that the growth of a neighborhood's immigrant share is associated with slower housing value appreciation. Card et al. (2008) provide evidence of a flight of whites once the minority share exceeds a critical level.

[6] Note that finding housing is usually also a stochastic process. This holds true for both housing discrimination and self-segregation. In case of housing discrimination, an immigrant is subject to discrimination with some exogenous probability (less than 1). The immigrant can avoid housing discrimination with the complementary probability. In case of self-segregation, an immigrant has an exogenous probability (less than 1) of finding vacant housing in a preferred segregated neighborhood. He or she fails to find vacant housing in such a neighborhood with the complementary probability.