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Abstract

This study analyzes the effects of right-wing extremism on the well-being of immigrants based on data from the German Socio-Economic Panel (SOEP) for the years 1984 to 2006 merged with state-level information on election outcomes. The results show that the life satisfaction of immigrants is significantly reduced if right-wing extremism in the native population increases. Moreover, the life satisfaction of highly educated immigrants is affected more strongly than that of low-skilled immigrants. This supports the view that policies aimed at making immigration more attractive to the high-skilled have to include measures that reduce xenophobic attitudes in the native population.

JEL Classification Codes: I31, R23, J15

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1. Introduction

Immigration from developing countries to developed economies can generate substantial positive effects for the host countries. One of the reasons is that the growth of the labor force in developed countries is expected to slow down, and that the labor force will eventually decline, within the next 20 years. This will lead to rising dependency ratios, i.e. the ratio of the non-working to the working population will increase, which puts a strain on public budgets. In Germany, the situation is even worse than in most other developed economies. The share of the working-age population (20-60) has already been shrinking since the 1980s. Without immigration, the dependency ratio is expected to rise from 45.2 (people ≥ 60 years per 100 persons aged 20-59) in 2005 to 101.3 in 2050 (Statistisches Bundesamt 2006). Migration could help to reduce dependency ratios. In order to have a noticeable impact on dependency ratios, however, the volume of immigration would have to be substantial. Even with an annual net migration of 300,000 persons, the German dependency ratio would still increase to 80.3 in 2050.¹ This raises the need for selective migration policies (cf. World Bank 2006). If migration can be restricted to skilled and experienced workers, the fiscal cost of a rapidly aging population could be mitigated. Examining the interplay of immigrants' economic performance and immigration policy in Europe, Constant and Zimmermann (2005) find that, in particular, Germany could benefit from targeting its integration policies more at immigrants with strong economic performance, i.e. selecting skilled migrants.²

In recent years, many developed countries have implemented selective migration policies, using systems of quotas, points, and targeted programs (cf. OECD 2007). Some countries, such as Italy, have opted for quotas. Other countries, for example the Netherlands, have chosen a points-system along the lines of the ones long in use in Canada, Australia and New Zealand. Japan introduced a targeted program to increase the opportunities for immigration of researchers and engineers specializing in information systems. In 2000, Germany implemented a policy (named "Green Card" after the US model) which was supposed to attract IT-specialists to fill an urgent supply gap of this type of workers. One of the requirements to obtain a "Green Card" was a minimum annual salary of 50,000 Euros. The

¹ In 2007, 680,766 persons immigrated to Germany, while 636,854 left the country. Thus, net migration amounted to 43,912 persons (Statistisches Bundesamt 2009).

² Germany refused until the late 1990s to consider itself an immigration-receiving country but experienced more immigration per capita than the US in almost all years after World War II (Schmidt and Zimmermann, 1992). In 2006, 7.3 million foreigners were living in Germany. In addition, about 2.5 million ethnic Germans immigrated between 1990 and 2006. In 2000, a new naturalization law was passed in Germany which relaxed barriers to naturalization. Between 2000 and 2006, more than 1 million foreigners became German citizens. Today, about one-fifth of the population are either foreign-born or descendants of foreign-born.

European Union is also pursuing plans to create an “EU Blue Card”. This program is supposed to make immigration to the EU more attractive for highly qualified workers by creating a fast-track to obtain work permits and by granting favorable conditions for family reunification and movement across the EU. As these examples show, attracting high-skilled workers is one of the core aims of immigration policies in developed economies.

Despite the potential benefits of immigration to developed economies, public opinion with respect to immigration has deteriorated in the face of high unemployment and strained welfare systems in many European countries. Native populations are concerned that migrants, as recipients of generous social transfers, are more of a fiscal burden than contributors to the domestic economy. Boeri (2009) reports that the fraction of EU natives in favor of repatriating migrants if they are long-term unemployed has increased threefold in Spain, twofold in France and Italy, and between one third and one quarter in the UK and Germany between 2002 and 2009. An extreme manifestation of this development is the growing prevalence of right-wing and xenophobic political attitudes and increasing support for right-wing political parties among native populations. In Germany, the number of right-wing extremists has more than doubled between 1990 and 2005 (Siedler, 2007). The number of violent and non-violent right-wing crimes has increased accordingly.

From an economic perspective, right-wing activities may have a number of negative effects. First, anti-foreign sentiments in the host population may deter immigration. On the one hand, sentiments may feed into the political process through the enactment of laws that are disadvantageous to migrants. On the other hand, they may lead to more experiences of personal hostility. Both reasons could be expected to harm the economic development and integration of immigrants. However, incomplete economic integration could also imply negative effects for the host population. For example, Epstein and Gang (2006) provide evidence that ethnic networks play a role in international trade, particularly in overcoming informal barriers (information costs, risk, and uncertainty) to trade by building trust and substituting for the difficulty of enforcing contracts internationally.

Second, the prevalence of right-wing attitudes may influence patterns of migration. If certain regions of a country are (in)famous for xenophobic attitudes of the native population, immigrants may leave these areas or people may be deterred from moving into those regions. In a recent survey among 300 German companies (Bussmann and Werle 2004), 5 (11) percent of West (East) German firms reported that regional xenophobia and right-wing violence already had an impact on their business, and 17 (28) percent of all firms expect that these factors could influence future business decisions (again). Up to 40 percent of all firms stated

that xenophobia in the region affected their recruitment strategies. 4 (11) percent of West (East) German firms reported that prospective employees declined job offers explicitly because of fear of xenophobia in the firm's region, and even more firms suspect that the prevalence of right-wing attitudes is the real reason behind declined job offers. Bussmann and Werle (2004) also show that firms with R&D departments are especially sensitive to right-wing extremism because they rely on high-skilled international personnel. Finally, right-wing extremism may limit the attractiveness of regions as locations for business investment; hence, this may hamper economic growth.

A number of studies has analyzed the determinants of anti-foreign perceptions and right-wing crime, e.g. Krueger and Pischke (1997), Dustmann and Preston (2001), Fertig and Schmidt (2002), and Siedler (2007). These studies consistently show that, in addition to a person's level of education, the economic situation of one's home region plays a decisive role in determining the strength of anti-foreign sentiments. To the best of our knowledge, existing studies concentrate on the native population's economic well-being and political attitudes only. They do not consider how the attitudes and the behavior of the native population affect the economic and subjective well-being of immigrants. This latter question is important, however, because it determines the attractiveness of a country for high-skilled immigrants.

In this paper, we want to study how xenophobia and right-wing extremism affect a region's attractiveness for migrants with different skill levels. As a measure for the prevalence of xenophobia in a region and this region's attractiveness for (high-skilled) immigration, we use the share of votes received by political parties on the extreme right in parliamentary elections at the state level and the life satisfaction of (high-skilled) migrants living in the respective state. The empirical analysis is based on data from the German Socio-Economic Panel (SOEP) for the years 1984 to 2006 merged with state-level information on election outcomes. We estimate how the voting behavior of the residents' population affects immigrants' life satisfaction. Using data on right-wing voting behavior has two advantageous features for the question at hand: first, it is an exogenous variable in the estimation of foreigners' life-satisfaction because foreigners are not allowed to vote in Germany; second, it provides a good approximation of right-wing attitudes in the native population that is not influenced by subjective perceptions reported by the migrants themselves.

Our paper contributes to the existing literature in the following respects. First, this study explores the effects of right-wing extremism of the host country's population on the well-being of immigrants. Thus, it extends existing studies that restrict their attention to the resident population when analyzing attitudes towards immigration and related issues. Second,

by distinguishing between high-skilled and low-skilled immigrants, we are able to analyze to what extent recent policy reforms that aim at increasing the share of high-skilled immigrants through targeted immigration programs are offset by deterrent right-wing attitudes.

Our results show that immigrants in Germany experience, on average, lower life-satisfaction than natives. We also find that the life satisfaction of immigrants is significantly reduced if right-wing attitudes in the native population increase, i.e. higher vote shares for the extreme right are associated with lower subjective well-being of immigrants. The results are robust to changes in the estimation method applied or the specification of the model. Moreover, we can clearly establish an educational effect: the life satisfaction of highly educated immigrants is affected more strongly by right-wing attitudes of the host population than that of low-skilled immigrants. This supports the view that policies aimed at making immigration more attractive to the high-skilled have to include measures that reduce xenophobic attitudes in the native population.

The paper is structured as follows. The next section presents a review of the relevant literature. In section 3, we present the empirical methodology. Section 4 contains a description of the data and the empirical results are provided in section 5. The final section concludes.

2. Related Literature

Xenophobia and other hostile attitudes to immigrants and issues related to immigration are potentially important determinants of the social exclusion and the welfare of ethnic minorities. They may reduce the life satisfaction of immigrants, on the one hand, indirectly through their impact on the political process (e.g. represented by votes, laws and prejudices), and, on the other hand, directly through experiences of personal hostility (Dustmann and Preston, 2001). From an economic perspective, this may result in reduced economic performance of the immigrants and may affect the patterns of migration inasmuch as people may fear to move to certain locations or decide to leave those areas. In addition, anti-foreign sentiments may limit a region's attractiveness for business investment, reducing economic growth and trade (Siedler, 2007).

Previous research on attitudes to immigration has focused on the residents' population. Fertig and Schmidt (2002) study the perceptions of native Germans with respect to foreigners and Jews using data of the 1996 ALLBUS survey (a large German opinion survey). Based on the estimation of a structural model to take account of unobserved heterogeneity, their results show that perceptions only depend on the level of education (where those with better

education have a more positive attitude), while labor market situation or age turn out to be insignificant. A similar question is analyzed by Dustmann and Preston (2001, 2005). In their 2001 study (based on the British Social Attitudes Survey), they estimate the determinants of attitudes of ethnic majority populations towards ethnic minorities in England using ethnic concentration in the region as the variable of interest. To take account of ethnic concentration in the locality, which may be a determinant, but also an outcome, of the attitudes of the majority population, they suggest the use of a spatial estimator. Their results indicate that high concentrations of ethnic minorities could lead to more hostile attitudes, but that the relationship will be overestimated if the endogeneity of ethnic concentration is not addressed seriously in the estimation. In addition, Dustmann and Preston (2005) analyze the effects of labor market competition, which is frequently perceived as one of the main driving forces determining public attitudes towards immigration. In particular, they hypothesize that those for whose skills immigrant labor is likely to be a substitute may oppose immigration whereas those to whose skills it is complementary may view immigration more sympathetically. Moreover, they argue that the formation of opinions and attitudes towards immigration should be addressed with a broadening of the economic argument: not only factors relating to labor market competition, but also factors relating to the public budget and economic efficiency considerations should be taken into account. Based on data from the European Social Survey (ESS), their estimates show a strong relationship between education and more positive attitudes towards various issues relating to migration.

Other studies analyze the determinants of right-wing extremism. Krueger and Pischke (1997) investigate the causes of crime against foreigners in Germany shortly after German unification based on a regional analysis (county-level) where anti-foreign incidents are collected from newspaper recordings. Their results show clear differences in the incident rates between East and West Germany; in the East, incidents occur mostly in rural regions farther from the western part, in the West, incidents occur in urban/metropolitan areas. Moreover, the incidence of anti-foreigner crime is unrelated to the unemployment rate in the region (as a proxy for local economic conditions) when controlling for East-West differences. This is similar to findings for the US, e.g. Land et al. (1990). Although the findings of Krueger and Pischke (1997) indicate no direct connection between violence against foreigners and poor economic conditions in the East, the authors are cautious with respect to the robustness of their findings as the relationship between both may be more complex. Falk and Zweimüller (2005) reinvestigate a closely related question using a larger data base covering official recordings of violent and non-violent crime against foreigners. In particular, using state-level

monthly data, they analyze empirically whether unemployment plays a crucial role for the occurrence of right-wing extremist crime, allowing for a non-linear effect of the unemployment rate. The results support the supposed non-linear relationship, i.e. if the unemployment rate is above the median, the number of non-violent crimes increases significantly; however, similar to the findings of Krueger and Pischke (1997), they could not establish comparable results with respect to violent crimes. In a recent paper, Siedler (2007) studies the driving forces behind right-wing extremism with a particular focus on family background and intergenerational transmission of values. His analysis examines the effects of paternal and maternal unemployment during a person's childhood on right-wing attitudes and behavior later in life. Right-wing extremism is measured by information on the affinity to right-wing parties, participation in right-wing extremist groups, and anti-foreign sentiments. His results establish a strong and positively significant association between parental unemployment and various right-wing extremist outcomes for young Germans.

While the effect of immigration on the native population has received a lot of attention, analyses of the well-being of immigrants are scarce in the economic literature. Sociological research, however, provides some evidence. A thorough analysis of immigrants' life satisfaction in 13 European countries based on three waves of the ESS is provided by Safi (2009). In the empirical analysis, she tests two hypotheses. The first is the so-called assimilation paradigm. Immigrants are expected to assimilate into the host country's population over time (see e.g. Chiswick, 1978, and Borjas, 1985). Hence, one would expect to measure lower levels of life-satisfaction of immigrants, compared to that of natives, shortly after arrival in the host country, but differences should diminish with immigrants' length of stay. In contrast to that, the second hypothesis assumes discrimination. Here, assimilation is assumed to be not only a matter of time. Instead, the host society also plays an active role through mechanisms of discrimination against some groups of immigrants. The hostility immigrants may experience in the receiving society not only solidifies their inferior position but also has a detrimental effect on their psychological well-being. The discrimination hypothesis predicts persisting differences in life satisfaction levels between immigrants and natives that would be more salient for the most stigmatized groups. Safi's results suggest that there is no improvement of immigrants' well-being over time; even after more than 20 years spent in the host country immigrants still report significantly lower life satisfaction than natives. When discrimination is controlled for, almost all coefficients of the ethnic variables decrease in magnitude or become statistically insignificant. Non-European immigrants, especially Africans, Turkish or Asians, seem to experience a lower life satisfaction directly

related to their perception of discrimination. Thus, discrimination damages immigrants' well-being and strongly accounts for their lower levels of life satisfaction.

3. Methodology

For the empirical analysis, we use the first 23 waves (1984-2006) of the SOEP.³ We include all individuals residing in West Germany (incl. Berlin) and aged between 18 and 65. We restrict the sample to West Germany, since in 2008 only 3.5 percent of all foreigners living in Germany were residing in the East (Statistisches Bundesamt 2008), and because data for East Germany is only available since 1991. The age interval was chosen in order to evaluate the effects of right-wing extremism on the well-being of the working-age population in particular.

The focus of our study is the effect of right-wing attitudes in the native population on the well-being of immigrants. Hence, we divide the sample into two subgroups: persons with German citizenship and foreigners with non-German nationality. This yields roughly 160,000 observations for natives and 38,000 observations for foreigners. Our dependent variable is life satisfaction, which is measured on a 0 to 10 scale (where 0 denotes "not satisfied at all" and 10 stands for "completely satisfied").

In order to explain life satisfaction, we use a set of socio-demographic variables covering employment status, net household income, marital status, and level of education. Further individual heterogeneity is taken into account with a number of personal control variables comprising a person's age, number of children, and having a household member in need of care. Finally, to control for other regional factors that may affect well-being we also include state-level GDP per capita and the state-level unemployment rate as control variables.

For our study, we need a measure for the prevalence of right-wing and xenophobic attitudes at the regional level. As a proxy, we use state-level election results from elections to the federal parliament (*Bundestag*) and state legislatures (*Landtage*). Our measure of right-wing attitudes is the combined share of all votes given to any of the four major German right-wing parties (*Deutsche Volkunion*, *Republikaner*, *Nationaldemokratische Partei Deutschlands*, *Partei Rechtsstaatlicher Offensive*) in the respective state at the last federal or state election. The *Deutsche Volkunion* (*DVU*), the *Republikaner* (*REP*), the *Nationaldemokratische Partei Deutschlands* (*NPD*), and the *Partei Rechtsstaatlicher Offensive* (*Schill-Partei* – named after its founder Ronald Schill; dissolved in 2007) represent the far right of the Germany party

³ The data used in this publication were made available by the German Socio-Economic Panel Study (SOEP) at the German Institute for Economic Research (DIW), Berlin. The data were extracted using the Add-On-package PanelWhiz for STATA; see Haisken-DeNew and Hahn (2006) for details.

system. They postulate nationalistic and racist ideas against racial, ethnic or religious minorities, especially against foreigners. The German domestic intelligence agency (*Verfassungsschutz*) observes the activities of the *DVU*, the *NPD*, and parts of the *REP* because they are considered a threat to the free and democratic basic order of the Federal Republic of Germany (Verfassungsschutz 2008). Since we know the precise date a person was interviewed, we can match each observation to the closest past election in the respective state. Using election results has the advantage that they are strictly exogenous for foreigners because they are not eligible to vote.

To estimate the effects of right-wing extremism on the well-being of immigrants, we estimate the following equation:

$$LS_{it} = \alpha_i + \beta_1 RW_{it} + \gamma' X_{it} + \mu_t + \varepsilon_{it} \quad (1)$$

where LS_{it} denotes person i 's life satisfaction at time t , α_i is an individual fixed effect that takes account of individual unobserved heterogeneity, and RW_{it} represents the percentage of votes given to right-wing parties in the preceding federal or state election in the person's state of residence. The vector X_{it} denotes the set of control variables that may potentially be correlated with individual well-being. μ_t represents the year dummies, and ε_{it} is a random error term. Since we are interested in the differential effect of right-wing extremism on German nationals and foreigners, we estimate equation (1) for both groups separately.

We have two prior hypotheses regarding equation (1):

$\beta_1^{Foreigner} < 0$ Foreigners are less satisfied with their life when the prevalence of right-wing extremism in their state of residence increases.

$\beta_1^{Foreigner} < \beta_1^{Native}$ The life satisfaction loss is stronger for foreigners than for Germans, whereas the sign of the coefficient for German nationals is *a priori* ambiguous.

The second question we want to answer empirically is whether the effects of right-wing attitudes in the host society vary with the immigrants' level of education. In light of the recent changes in immigration law in order to increase recruitment of high-skilled foreigners, this question has important consequences for the effectiveness of such migration schemes if there are strong anti-foreign, xenophobic sentiments in the native population. If the life satisfaction

of high-skilled immigrants reacts more strongly than that of foreigners with lower skills, this could have substantial economic consequences. These would apply to other countries trying to attract high-skilled foreign workers as well (such as the US or Australia; see Bauer et al., 2009, for an overview of the different attempts).

To test for the right-wing influence on the life satisfaction of the better-educated foreigners, we estimate the following specification:

$$LS_{it} = \alpha_i + \beta_1 RW_{it} + \beta_2 (RW_{it} \cdot HighEduc_{it}) + \gamma' X_{it} + \mu_t + \varepsilon_{it} \quad (2)$$

where $HighEduc_{it}$ is a dummy variable with value 1 if the individual has an education time of more than 11 years (corresponding to a German high school diploma or a leaving qualification from an intermediary school plus vocational training) and 0 otherwise. Hence the interaction term with RW_{it} describes the effect of an increase in right-wing votes on highly educated individuals in addition to the effect of β_1 .

Our hypotheses regarding equation (2) are:

$\beta_1^{Foreigner} < 0$	A rise in the share of right-wing votes reduces the life satisfaction of foreigners.
$\beta_2^{Foreigner} < 0$	The life satisfaction loss is higher for highly educated foreigners than those with lower levels of education.

If the data confirm our hypotheses, right-wing attitudes and the resulting voting behavior could cause high economic costs and would operate against many industrialized countries' efforts to increase immigration of high-skilled workers.

4. Descriptive Statistics

We start the empirical analysis with some descriptive statistics regarding our key variables. Table 1 provides descriptive statistics of the voting results for right-wing parties broken down by West German states. As can be seen, there is a substantial variance in the share of votes going to the far right. In federal elections, which are held roughly every four years, the mean percentage of votes going to right-wing parties was between 1.1 percent (in Lower Saxony and North Rhine-Westphalia) and 2.9 percent in Berlin over the period 1983-2008. In all federal elections, the far right received at least some votes in all states (the minimum is

strictly positive). Right-wing parties received their largest vote share in Bavaria (5.2 percent in 1990, of which 5.0 percent went to the *Republikaner*).

Table 1: Vote shares received by right-wing parties, by state (1983-2008)

state	federal elections			state elections		
	mean	max	min	mean	max	min
Berlin	2.9%	4.9%	1.9%	3.2%	7.5%	0.0%
Schleswig- Holstein	1.2%	2.0%	0.2%	2.4%	7.5%	0.0%
Hamburg	1.8%	4.5%	0.2%	4.7%	20.2%	0.0%
Lower Saxony	1.1%	1.6%	0.2%	1.9%	3.9%	0.0%
Bremen	1.7%	2.7%	0.3%	4.2%	7.7%	1.2%
North Rhine-Westphalia	1.1%	2.0%	0.2%	1.1%	1.8%	0.0%
Hesse	1.9%	3.6%	0.2%	1.5%	2.9%	0.0%
Rhineland-Palatinate	1.8%	3.1%	0.3%	2.1%	3.9%	0.1%
Baden-Wuerttemberg	2.4%	4.8%	0.3%	5.3%	11.8%	0.0%
Bavaria	2.2%	5.2%	0.3%	3.5%	4.9%	2.2%
Saarland	1.4%	2.4%	0.3%	2.2%	4.0%	0.7%

Source: German Federal Returning Officer (www.bundeswahlleiter.de), own calculations.

On average, right-wing parties receive more votes in state elections than in federal elections. In most states, elections to state legislatures are also held about every four years, but are typically not synchronized with federal elections. Mean vote shares for the far right range between 1.1 percent (North Rhine-Westphalia) and 5.3 percent (Baden-Württemberg). In some state elections, none of the right-wing parties participated. Hence, the minimum vote received is strictly zero in some states. The maximum vote, however, is as high as 20.2 percent in the city state of Hamburg (2001; the *Schill-Partei* received 19.4 percent) and 11.8 percent in Baden-Württemberg (1992; 10.9 percent was given to the *Republikaner*).

Table 2 shows some descriptive statistics of the sample. Since we restrict our attention to persons who are between 18 and 65 years old, the average age in our sample is 40.1 years for German nationals, while foreigners are, on average, almost two years younger. The average German national has 11.8 years of schooling (including vocational training). Foreigners have attended schools for only 9.7 years. The statistics further show that German nationals' net household income (divided by the number of household members) is about 54 percent higher than that of foreigners. Foreigners have more children and live in larger households than German nationals. Moreover, their unemployment rate is higher and the employment rate lower. The share of persons who are married or cohabitating as well as the share of people who are living with a household member in need of care are very similar between both subpopulations.

Table 2: Descriptive statistics

variable	German nationals		foreigners	
	mean value / share	standard error	mean value / share	standard error
age	40.1	(0.029)	38.2	(0.057)
years of education	11.8	(0.006)	9.7	(0.011)
net household income p.c. (in Euro)	1027.1	(1.950)	666.6	(2.441)
married/cohabiting	0.80		0.78	
number of children	0.7	(0.002)	1.1	(0.006)
persons living in household	3.0	(0.003)	3.8	(0.008)
household member in need of care	0.03		0.03	
share unemployed	0.05		0.09	
share employed	0.67		0.61	

Table 3 shows the mean life satisfaction of foreigners and German nationals broken down by education. Within each educational group, German nationals report higher life satisfaction scores than foreigners (7.06 vs. 6.96 for the low-educated, and 7.30 vs. 7.17 for the highly educated). Education is positively related with life satisfaction among both German nationals and foreigners. The differences between the life satisfaction scores of any two of the four groups are all significant at the 1%-level.

Table 3: Mean life satisfaction scores (full sample: 1984 to 2006), by education

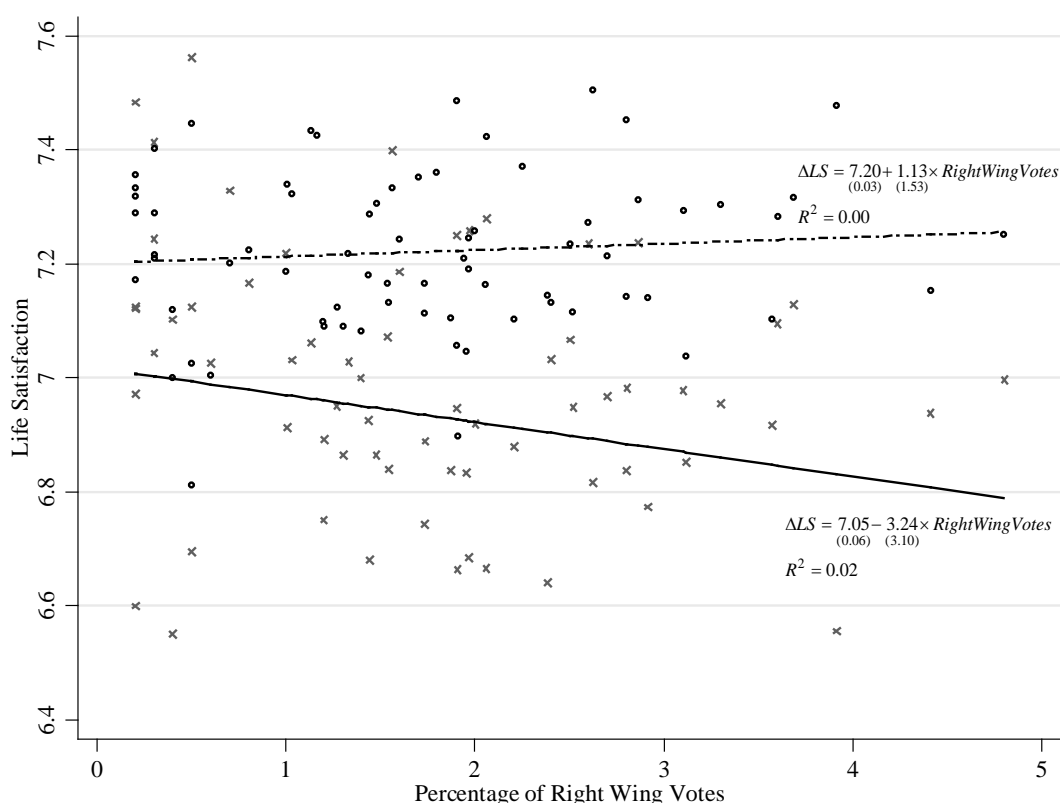
	Foreigners	German nationals
Low Education	6.96 (0.01)	7.06 (0.01)
High Education	7.17 (0.02)	7.30 (0.01)

Note: Standard errors in parentheses.

The aim of our study is to illuminate how the prevalence of right-wing extremism and xenophobia affects the well-being of immigrants. Figure 1 makes a first pass by showing the mean life satisfaction of foreigners and German nationals in each of the 10 West German states, averaged over four-year periods from 1984 to 2006. As the figure shows, there appears to be a negative relationship between the share of right-wing votes at the state level and the mean life satisfaction of foreigners in that state. Hence, the well-being of foreigners is

considerably lower in regions where right-wing parties perform successfully. An increase in the voting outcome of the far-right by 10 percentage points is associated with a reduction in life satisfaction by 0.3 points. In contrast, we do not find evidence for such an effect for the native population. German nationals' mean life satisfaction does not seem to be correlated with the share of votes given to right-wing parties in their region (if anything, the correlation appears to be positive).

Figure 1: Life satisfaction and right-wing extremism



Note: Dots (crosses) denote the mean life satisfaction of natives (foreigners), and the vote share of right-wing parties in a particular West German state, averaged over the following periods: 1984-1987, 1988-1991, 1992-1995, 1996-1999, 2000-2003, and 2004-2006.

5. Regression results

To separate the influence of the prevalence of right-wing extremism on well-being from that of other regional and individual factors, we conduct regression analyses. Table 4 contains the results from regressing individual life satisfaction on the share of right-wing votes, educational attainment, and a set of regional and individual characteristics (corresponding to equations (1) and (2)). We restrict our attention to federal elections, but discuss the effect of state elections later. We use an ordinary least squares regression with individual fixed effects because this allows us to interpret the results directly as marginal effects. The results shown in

Columns 1 and 2 refer to equation (1), i.e. they do not differentiate between different levels of educational attainment. Our results strongly support our hypotheses that a higher prevalence of right-wing extremism in a region, approximated by the share of votes given to right-wing parties, reduces the life satisfaction of foreigners living in that region. The coefficient is substantially negative and statistically significant at the 5%-level. Our results suggest that the life satisfaction of foreigners is reduced by 0.35 points if right-wing parties receive 10 percentage points more votes.

The results for German nationals, however, show a different picture. The coefficient on right-wing votes is negative, but its size is much smaller and not statistically significant. Hence, there does not seem to be a relation between sympathy for right-wing political ideas and average life satisfaction among the native population. The coefficients on our control variables have the expected signs. Being unemployed significantly reduces life satisfaction, while receiving more income raises it. Being married or living with a partner is associated with a significantly higher life satisfaction than being single. While the results in Table 2 suggest that education is associated with higher life satisfaction, Table 4 shows that this positive effect disappears when we control for income and employment status. This suggests that education serves as a means to obtain more income and better employment prospects rather than being an end in itself. The influence of the state-level variables (GDP and crime rates) is small and only significant for the unemployment rate with respect to natives (corresponding to increased job insecurity and sympathy with the unemployed among the employed, see Clark et al. 2009) and for GDP with respect to foreigners (for which status considerations might play a role, see Clark et al. 2008).

We now turn to specification (2), which includes the interaction effects between right-wing votes and educational attainment (see Table 4, columns (3) and (4)). The non-interacted effect of right-wing votes on the life satisfaction of foreigners is significantly negative (although smaller than in specification (1)). The interaction term between right-wing votes and the dummy indicating high educational attainment is also significantly negative. This suggests that, while the prevalence of right-wing extremism is negative for all foreigners, this effect is much more pronounced for immigrants with a higher level of education. The magnitude of the estimated coefficients implies that when the vote share of right-wing parties goes up by 10 percentage points, the life satisfaction of low-educated foreigners falls by almost 0.28 points, while high-educated foreigners experience a drop of almost 0.67 points. We do not find any comparable effect for German nationals. The less educated are not affected by the election

outcomes of right-wing parties, nor does there seem to be a differential effect between the educational groups.

Table 4: Estimation results

Dependent variable	Basic estimation		Estimation with education interaction	
	(1) Foreigners	(2) German nationals	(3) Foreigners	(4) German nationals
Method	Life Satisfaction FE OLS	Life Satisfaction FE OLS	Life Satisfaction FE OLS	Life Satisfaction FE OLS
Elections results				
Right-wing votes	-3.499** (1.410)	-0.578 (0.589)	-2.820* (1.451)	-0.557 (0.682)
High Education * Right-wing votes			-3.863** (1.942)	-0.044 (0.691)
Regional variables				
State-level GDP	-0.013* (0.008)	0.004 (0.003)	-0.013* (0.008)	0.004 (0.003)
State-level UE-rate	0.010 (0.010)	-0.008* (0.004)	0.009 (0.010)	-0.008* (0.004)
Other variables				
Unemployed	-0.789*** (0.034)	-0.723*** (0.020)	-0.790*** (0.034)	-0.723*** (0.020)
Net HH Income p.c. (in '000 Euros)	0.083*** (0.023)	0.090*** (0.007)	0.084*** (0.023)	0.090*** (0.007)
Cohabiting	0.114** (0.054)	0.201*** (0.018)	0.116** (0.054)	0.201*** (0.018)
Married	0.238*** (0.049)	0.289*** (0.023)	0.237*** (0.049)	0.289*** (0.023)
High education	-0.064 (0.054)	-0.058*** (0.022)	0.025 (0.070)	-0.057** (0.026)
Other personal controls	yes	yes	yes	yes
Individual fixed effects	yes	yes	yes	yes
Time fixed effects (annual)	yes	yes	yes	yes
R ²	0.050	0.040	0.051	0.040
Observations	38152	159816	38152	159816

Note: OLS regressions with individual and time fixed effects. Other personal controls include widowed, divorced, number of children, out of labor force, self-employed, part-time employment, public employment, 10-year age brackets, and having a household member in need of care. We abstain from presenting all coefficients of our control variables because the results are in line with previous studies (see Frey and Stutzer, 2002, Blanchflower and Oswald, 2004, or Frijters et al., 2004). Standard errors in parentheses. * denotes significance at the 10-percent-level, ** at the 5-percent-level, *** at the 1-percent-level.

6. Robustness checks

To check the robustness of these findings, Table 5 provides results obtained from alternative estimations. The results from the OLS regressions presented in Table 4 have the appeal that coefficients are directly interpretable as marginal effects. Despite the ease of interpretation, a dependent variable that is obtained on a scale with a fixed number of points, such as the measure of life satisfaction, would be better dealt with using ordered response models. Therefore, we also estimate specification (2) applying a probit-adjusted OLS (columns (1) and (2), see van Praag and Ferrer-i-Carbonell (2004)) and a conditional fixed effects logit regression (columns (3) and (4), see Ferrer-i-Carbonell and Frijters (2004)). These alternative estimation techniques support our findings obtained with the basic OLS. Right-wing extremism affects foreigners negatively, especially those with higher levels of education. No such effect is found for German nationals. In columns (5)-(8), we differentiate between men and women. Our findings show that the effect of right-wing extremism appears to be strongest for foreign men. For foreign women, both coefficients have the correct sign, but are statistically insignificant. In columns (9) and (10), we extend our sample and also include all persons who are older than 65, so that we cover ages 18 and above. This does not change our results compared to our findings in Table 4.

We also test whether our results could be driven by interstate migration of persons between states with different levels of right-wing votes as compared to intrastate variations of the prevalence of right-wing extremism. To this end, we keep only the observations of each person for the state in which this person resided longest. Hence, respondents in our sample did not change states. The results in columns (11) and (12) show that our results are also robust with respect to this restriction. In columns (13)-(16), we use the outcomes from state elections instead of federal elections. The effect of right-wing voting on foreigners' well-being is also significant when we look at elections to state legislatures. The effects appear to be smaller than for federal elections, though. This suggests that federal elections are a better indicator of right-wing extremism or receive more public attention than elections at the state level.

In general, the results show that an increase in the prevalence of right-wing attitudes and xenophobia reduces life satisfaction of foreigners noticeably. The results are robust to changes in the estimation method applied and to variations in the sample. The negative effects of right-wing extremism on the well-being of foreigners are even more pronounced for highly educated foreigners. We do not find evidence that the same relationship holds for German nationals.

Table 5: Robustness checks

Dependent variable	Probit-adjusted OLS			Conditional logit			Men only			Women only		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)				
	Life Satisfaction	Life Satisfaction	Life Satisfaction	Life Satisfaction	Life Satisfaction	Life Satisfaction	Life Satisfaction	Life Satisfaction				
Method	FE POLS	FE POLS	cond. FE logit	cond. FE logit	FE OLS	FE OLS	FE OLS	FE OLS				
Elections results												
Right-wing votes	-1.364*	-0.522	-3.009	-1.795	-2.838	-1.042	-3.226	-0.160				
	(0.784)	(0.368)	(2.146)	(1.125)	(1.995)	(0.960)	(2.113)	(0.967)				
High Education *	-1.955*	0.041	-5.615*	0.517	-7.235***	0.812	-0.483	-0.831				
	(1.050)	(0.373)	(2.881)	(1.141)	(2.656)	(0.971)	(2.850)	(0.984)				
Other controls	yes	yes	yes	yes	yes	yes	yes	yes				
Individual fixed effects	yes	yes	yes	yes	yes	yes	yes	yes				
Time fixed effects (annual)	yes	yes	yes	yes	yes	yes	yes	yes				
Log likelihood/R ²	0.052	0.039	-17494	-70844	0.066	0.048	0.040	0.035				
Observations	38152	159816	36148	149048	19862	78074	18290	81742				
everybody older than 18												
			without interstate movers			state elections						
Method	FE OLS	FE OLS	FE OLS	FE OLS	FE OLS	FE OLS	FE OLS	FE OLS				
Elections results												
Right-wing votes	-2.744*	-0.894	-2.138	-0.409	-1.201***	-0.030	-0.905*	-0.195				
	(1.413)	(0.615)	(1.474)	(0.696)	(0.457)	(0.219)	(0.472)	(0.289)				
High Education *	-3.298*	0.092	-4.017**	-0.248			-2.498**	0.313				
	(1.911)	(0.636)	(1.964)	(0.703)			(0.995)	(0.355)				
Other controls	yes	yes	yes	yes	yes	yes	yes	yes				
Individual fixed effects	yes	yes	yes	yes	yes	yes	yes	yes				
Time fixed effects (annual)	yes	yes	yes	yes	yes	yes	yes	yes				
Log likelihood/R ²	0.052	0.047	0.050	0.040	0.051	0.040	0.052	0.040				
Observations	39918	194772	37820	156323	37603	157670	37603	157670				

Note: All regressions contain the same control variables as in Table 4. Standard errors in parentheses. * denotes significance at the 10-percent-level, ** at the 5-percent-level, *** at the 1-percent-level.

7. Conclusion

To cope with demographic change and to fill urgent shortages on their labor markets, aging economies rely on the inflow of young, well-educated migrants. To be attractive for such workers, it is not enough for countries to offer high wages and fast immigration processes. At least as important is that migrants can expect to move to a safe and open-minded society in which they can feel welcome and are able to enjoy a higher quality of life than in their country of origin. Xenophobia and other hostile attitudes towards migrants and other ethnic minorities among the native population, however, could constitute a strong deterrent to economically desirable migration.

In this paper, we have provided evidence that the regional prevalence of anti-foreign sentiments reduces the quality of life of migrants in that region and thus lowers the attractiveness of regions for migration. Using individual panel data for Germany from 1984 to 2006, we were able to show that the life satisfaction of migrants depends negatively on the strength of right-wing extremism in their region of residence, as approximated by the vote share received by political parties of the extreme right in elections to federal and state parliaments. When distinguishing between different skill groups, we find that the better-educated migrants suffer more from regional xenophobia than those with lower levels of education. We suspect that better-educated immigrants have a stronger desire to identify with and integrate in their host country, resulting in stronger disappointment and frustration if they experience rejection or even discrimination by the native population. If life satisfaction is a decisive variable in the choice of regions people want to move to, work in, and spend their life in, an increased prevalence of right-wing behavior may frighten off foreigners, with potentially negative economic consequences for the region shunned by high-skilled migrants. These results suggest that recent attempts to make immigration more attractive to the high-skilled are ill-fated if they do not simultaneously address the question of how to reduce hostile attitudes among the native population.

To increase a region's attractiveness for high-skilled migrants and international business investment, it is not sufficient for governments to engage in publicly sponsored business development or regional marketing. This paper's findings suggest that it is also necessary to strengthen active crime prevention by supporting civil society's actions and initiatives against xenophobia and right-wing violence and by raising the population's consciousness of the benefits of immigration. Looked at it in this way, suitable social and crime policies are necessary complements to an efficient economic policy that makes regions and countries more attractive to high-skilled migrants and foreign business investment.

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