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## Abstract

This paper proposes a method to study the relationship between voters' attitudes towards immigration and the educational attainment of immigrants and their children, and applies it to Austrian data. We measure attitudes towards immigration using data on political parties' positions regarding immigration and the share of votes that each party received at the regional level. We then study the educational attainment and intergenerational educational mobility of immigrants who grew up in the regions whose political environment we observe. Preliminary results for Austria suggest that, surprisingly, better attitudes towards migration are associated with lower educational attainment for immigrants. However, immigrants are more likely than their native peers to obtain more education than their parents. Here, the returns to more positive attitudes towards immigration play a large role in explaining the mobility gap across migration background.

**JEL Classifications:** I24, J15, I21, D72

**Key Words:** educational attainment, immigration, voting behaviour, social attitudes

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# 1 Introduction

The choices and opportunities available to an individual in society are framed by their own characteristics as well as the social setting in which they live. In this paper, we propose a method to empirically assess the ways in which social attitudes towards a group may be related to the group’s educational outcomes and opportunities. In particular, we study how voting behavior may be related to the education of immigrants in Austria. The two main outcomes of interest are the overall educational attainment achieved and the probability of obtaining more education than the parents (intergenerational educational mobility). We study these outcomes for immigrants to Austria who immigrated before they were 10 years old (“first-generation immigrants”) and Austrian-born people whose parents were immigrants to Austria (“second-generation immigrants,” or individuals with a “migration background”).

The key conceptual starting point in the paper is the idea that individual outcomes, such as educational attainment, are influenced by the attitudes of other people in society. We study how the political climate in the region in which a person grew up (the region in which they lived when they were 14) might be related to their later educational outcomes. We proxy social attitudes towards immigrants and immigration (here, used interchangeably) via political parties’ stated positions on these issues in election years and corresponding election outcomes at the regional level.

We theorize that immigrants who grew up in a region in which relatively anti-immigrant political parties were successful may have faced greater challenges in achieving educational success. This may have been the case because of discrimination against immigrants, either explicit (via, for example, discrimination of teachers against students with a migration background) or implicit (as in political advertisement campaigns that present immigrants as dangerous or freeloaders, which may curb motivation and social engagement). If teachers discriminate against students with a migration background, those students will have worse chances of being supported in their studies or receiving a recommendation for the academic schooling track. Bullying from peers and general negative attitudes in society can harm the psychological well-being of the targeted group, making it more difficult to concentrate in school or to feel that academic efforts are “worth it.” This paper is a first attempt to find a way to assess the role of social attitudes in politics in determining educational opportunity and outcomes.

## 2 Background literature

Previous literature has found that first- and second-generation immigrants in Austria are less educated than people with native-born parents. At the same time, those with foreign-born parents have higher rates of upward mobility, meaning that they are more

likely to obtain more education than even their more highly-educated parent (Schnee-  
baum et al., 2016; Oberdabernig and Schneebaum, 2017). This study will address the  
relationship between social attitudes towards immigrants and immigrants' level of educa-  
tional attainment as well as the probability that they will complete more education than  
their parents had.

Across Europe, people with a migration background face barriers to achieving educa-  
tional attainment. Lüdemann and Schwerdt (2013), for example, show that in Germany,  
second-generation immigrants have lower test scores and worse recommendation letters  
for going onto the academic educational track.<sup>1</sup> Importantly, these differences are not ex-  
plained by lower test scores of lesser intelligence. However, once controlling for students'  
socioeconomic background (number of books at home, parental income, and parental  
education), the differences disappear, suggesting that teachers make recommendation  
decisions based on parental background, not always or necessarily based on student per-  
formance.

Schneeweis (2011) shows that in 40 countries, speaking the national language at home  
is one of the biggest predictors of success on the PISA and TIMSS achievement tests.  
This is important, because families with a migration background are, of course, less likely  
to speak the national language at home. Moreover, van Ours and Veenman (2003) show  
that in the Netherlands, second-generation immigrants are less educated than their peers  
with native-born parents. However, this gap disappears when comparing the children of  
immigrants and natives with the same level of education. In other words, the children of  
similarly educated immigrants and natives also have similar education. Thus, when con-  
sidering the educational attainment of immigrants, it is critical to consider the education  
level of their parents and their opportunities for intergenerational educational mobility.

Intergenerational mobility differs by gender (Fessler and Schneebaum, 2012; Schnee-  
baum et al., 2015), country (Hertz et al., 2007), as well as migration background (Bauer  
and Riphahn, 2006a; Lüdemann and Schwerdt, 2013; Oberdabernig and Schneebaum,  
2017). This paper focuses on the latter and aims to address the differences in inter-  
generational mobility of migrants as compared to natives. A growing part of the inter-  
generational mobility literature is focused on the differences in mobility by migration  
status.

Gang and Zimmermann (2000), along with Dustmann (2008) and Yaman (2014), show  
that the intergenerational persistence of education is much stronger for native-born Ger-

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<sup>1</sup>Austria and Germany have similar schooling systems, with early tracking into an academic versus  
a vocational path. The Austrian educational system works as follows: at age 10, after four years of  
primary schooling, children decide whether to continue to a lower secondary school or to a secondary  
academic school. At the end of secondary upper level at age 14, pupils choose between secondary  
academic versus technical and vocational schools. To attend a college or university, a pupil must pass  
the “Matura” examination. Several studies show that the socioeconomic status of the parents and their  
level of education have a greater influence on the educational outcomes of children in Austria than in  
other EU countries (European Commission, 2017).

mans than for second-generation immigrants. Bauer and Riphahn (2006a) investigate the rates of upward educational mobility for natives and second-generation migrants in Switzerland. The authors show that the level of intergenerational persistence in education depends strongly on the country of origin: overall, second-generation immigrants are more upwardly mobile than natives, but this does not hold true for migrants of Turkish, Portuguese, and former Yugoslavian origin. In a similar paper, Bauer and Riphahn (2007) analyze the extent to which observable characteristics can explain intergenerational persistence. The findings suggest that second-generation immigrants are more highly mobile than natives, but that even after controlling for a number of economic and household-level variables, the probability that second-generation migrants with low-educated parents attain high education is only one third of that for immigrants whose parents are well-educated. In their final conclusions, the authors interpret this to mean that “there are only limited opportunities for children disadvantaged by parental background to catch up educationally, which among other consequences implies permanent earning disadvantages” (Bauer and Riphahn, 2007, p. 146). In studying intergenerational educational mobility in 11 European countries, Oberdabernig and Schneebaum (2017) find that second-generation migrants are more upwardly mobile than natives in terms of education. The most important characteristic that helps explain the difference in the probability of upward mobility for natives versus second-generation migrants is the level of education of the parents - immigrant parents have lower education than native parents. Comparing the upward mobility rates of second-generation immigrants and natives for all 11 countries, the authors find mobility rates for both groups were the highest in the UK, France, and the Czech Republic. The three countries with the lowest rates were Austria (47% for second-generation migrants and 44% for natives children), Germany (54% for second-generation migrants and 40% for natives children), and Luxembourg (59% for second-generation migrants and 40% for natives children, respectively). Overall, second-generation migrants are found to be more upwardly mobile, but as Oberdabernig and Schneebaum (2017) and Bauer and Riphahn (2007) show, migrants often get stuck in a low education class and opportunities (for upward mobility) are limited to migrants whose parents are highly educated.

Turning now to Austria specifically, Oberdabernig and Schneebaum (2017) show that when looking at different educational categories 23% second-generation migrants get stuck in the lowest education class, whereas only 11% of natives do so. Further, Altzinger et al. (2013) compare the chances of upward mobility of native-born Austrians versus migrants conditional on their parents having completed only compulsory education. The probability of attaining a higher level of education than their parents is 77% for natives, while it is merely 51% for migrants. The authors conclude that in order to promote the integration of migrants in Austria, better access to apprenticeship training is needed. Schneebaum et al. (2016) show that the overall higher rates of upward mobility for second-

generation migrants, compared to natives in Austria apply only to boys. Contrary to migrants' sons, migrants' daughters are less likely to be upwardly mobile than natives' daughters. These findings suggest that migrants' higher chances of upward mobility are gender-specific.

Whether an individual is upwardly or downwardly mobile as compared to their parents' education, for example, does not only depend on social characteristics, but is also determined by social institutions. By altering institutional settings, the level of upward/downward mobility in a society can be changed. There exists a large strand of literature that shows that various social institutions, such as pre-school enrolment (early entry promotes mobility) (Schütz et al., 2008; Elder and Lubotsky, 2006), age of entry into school (the earlier, the better) (Bauer and Riphahn, 2009; Deming and Dynarski, 2008), and the age of first tracking (later is better) (Bauer and Riphahn, 2006b; Hanushek and Wößmann, 2006) all affect intergenerational mobility. Schütz et al. (2008), for example, find that later tracking and a higher share of pre-school enrolment are correlated with more mobility. For Switzerland, Bauer and Riphahn (2009) investigate how intergenerational persistence in education is related to the age of entry into school. The findings suggest that children who enter school at the age of seven show significantly more persistence of educational outcomes than their peers who enter school earlier, at the age of six.

In addition to the institutions mentioned above, there exist *unobservable* institutions which shape the degree of intergenerational mobility. Recall the discussion of Lüdemann and Schwerdt (2013), who look at schooling outcomes of migrants versus natives in Germany. Migrants receive worse recommendation by their teachers than natives. The differences are not explained by lower test results or lower intelligence, but instead the child's family background. The authors call attribute this to "general inequalities" (Lüdemann and Schwerdt, 2013, p. 470) faced by immigrant families.

Similar to the research of Lüdemann and Schwerdt (2013), we are interested in the unobservable mechanism of discrimination which works as a barrier to educational attainment and intergenerational mobility. We explicitly study the role of attitudes towards people with a migration background in determining their level of education and their chances of upward mobility. When migrants grow up in an environment with high anti-immigration sentiment, they likely face an anti-immigration atmosphere at school. Teachers may discriminate against migrants in terms of grades and recommendation for higher educational tracks. Children with a migration background are then faced with a "lack of agency." In other words, they might lose the belief that they can accomplish good grades based on their performance if they work hard enough. Overall, we try to show that migrants' educational outcome is not only determined by their parental background, but also by the environment they grow up in and the amount of negative sentiment they are faced with.

## 3 Data and Methods

### 3.1 Data on educational attainment

Our analysis of the educational attainment of people with and without a migration background is based on survey data from the fourth wave (2008) of the European Values Study (EVS) for Austria. A representative sample of individuals aged 18 or older living in private households is drawn based on a multi-stage, stratified, clustered, and random address procedure. Face-to-face interviews were conducted between July and October 2008. The language of interview was German.<sup>2</sup> Respondents were asked to provide information about their beliefs and attitudes regarding work, family, religion, politics, and society. In addition, the EVS dataset contains information on the demographic characteristics of individuals, as well as the region in which the individual lived when s/he was 14 years old at the NUTS 2 and NUTS 3 levels.

Along with this information, the individuals were asked to indicate whether they were living with their parents when they were 14 years old.<sup>3</sup> A range of characteristics indicating the socio-economic status of the household when the respondent was 14 are used in the analysis, including information about whether the parents were employed, if they liked to read books, if they had problems in making ends meet (which we call “financial problems I” below), and if they had problems replacing broken things (“financial problems II”).<sup>4</sup> Out of the total 1,510 valid observations, we keep only those individuals aged 25 or older (1,322 individuals), in order to focus on those who are most likely to be finished with their schooling. Because we want to focus on individuals attending school in Austria, we also exclude the 64 individuals from the sample who did not reside in Austria at the age of 14.<sup>5</sup> We further exclude the 103 individuals with missing information about their own educational attainment and/or the educational attainment of their parents. We are thus left with a sample of 1,155 individuals.

Our sample of (first- and second-generation) immigrants is based on information about the country of birth of the respondent and his/her parents. We define first-generation immigrants as those individuals who were not born in Austria but who came to Austria before the age of 10 in order to include those individuals who attended lower-secondary

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<sup>2</sup>From a total of 2262 sample units, 25 individuals declared that they had a language barrier and could not complete the survey, thus excluding them from the sample. This exclusion may have led to a sample selection problem, in that the better educated immigrants (who are more likely to have been able to complete the survey) are over-represented in our sample.

<sup>3</sup>Out of the 1507 individuals who answered this question, 1287 were living with both parents, 20 individuals were living only with the father, and 158 individuals were living only with the mother. 42 individuals did not live with either parent and these latter individuals are thus excluded from our analysis.

<sup>4</sup>By default in the data, this set of variables refers to the father if the individual was living with both parents, or to the parental unit with whom the individual was living if s/he grew up in a single-parent family.

<sup>5</sup>For the analysis of intergenerational mobility, we also exclude the 19 individuals with parents who have achieved the highest level of education, since by definition these people cannot be upwardly mobile.



school in Austria. Out of the 1,155 individuals in our sample, 28 individuals were not born in Austria and 22 of these came to Austria before the age of 10; we drop the six individuals who came to Austria when they were older than 10. We thus have a sample of 22 first-generation immigrants who were educated in Austria.

Those individuals who were born in Austria but whose parents (either mother or father, or both) were born abroad are considered second-generation immigrants. A total of 81 individuals belong to the category of second-generation immigrants. Therefore, our initial sample of immigrants comprises 103 individuals. Because we believe that hostile attitudes are not directed towards immigrants from Germany, we exclude from the analysis the 34 individuals whose country of birth is Germany or whose parents were born in Germany. Dropping these individuals from the total of 103 as well as the three second-generation immigrants whose parents' country of birth is unknown reduces the sample size to a total of 1,112 individuals, of which 66 individuals are immigrants or people with a "migration background" (i.e., first- or second-generation immigrants).

Our main outcome variables of interest are (1) the respondents' level of education and (2) whether or not the respondent achieved more education than his/her parents. The survey asks individuals to state the highest education level achieved as well as the highest education level of the parents (education level of the father if the individual was living with both parents at the age of 14 or education level of one of the parents if the individual was living in a single-parent household). The education level is reported in six categories, following the International Standard Classification of Education (ISCED). Based on these six categories, we also compute years of schooling using the OECD mapping.<sup>6</sup> The respondent is considered upwardly mobile if their ISCED classification is higher than that of the parents.

Descriptive statistics of the main variables included in the analysis are given in table 1; a detailed description of the variables is included in table A1 in the appendix. Just six percent of the sample have a migration background, which is consistent with national statistics for 2008.<sup>7</sup>

Table 1 reveals that in this sample, migrants are slightly more educated than natives, but their parents are less educated than the natives' parents. Tables 2 and 3 examine the distribution of educational attainment by migration background in more detail. In particular, we observe in table 2 that migrants are more likely to have either an upper

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<sup>6</sup>ISCED 1 = 4 years, ISCED 2 = 8 years, ISCED 3 = 12 years, ISCED 4 = 13 years, ISCED 5 = 15 years, ISCED 6 = 18 years.

<sup>7</sup>According to Statistik Austria, 17.4% of the population living in Austria in 2008 had a migration background ([http://www.statistik.at/web\\_de/statistiken/menschen\\_und\\_gesellschaft/bevoelkerung/bevoelkerungsstruktur/bevoelkerung\\_nach\\_migrationshintergrund/069443.html](http://www.statistik.at/web_de/statistiken/menschen_und_gesellschaft/bevoelkerung/bevoelkerungsstruktur/bevoelkerung_nach_migrationshintergrund/069443.html)). Recall that our sample included initially 103 individuals with migration background (8.9% of the sample) and 20 responses of individuals with migration background were considered invalid due to language difficulties in answering the questionnaire. We also remove from the sample individuals who migrated to Austria after age 10 or who are from Germany, which explains our lower rate of immigrants.

Table 1: Sample Descriptives

Variables	Whole Sample	Natives	Migrants
Migrant	0.06 (0.01)	0.00 (0.00)	1.00 (0.00)
Highest Level of Education of Respondent (ISCED)	3.11 (0.03)	3.11 (0.03)	3.17 (0.11)
Years of Schooling	11.63 (0.07)	11.62 (0.08)	11.86 (0.26)
Highest Level of Education of Parents	2.71 (0.03)	2.71 (0.03)	2.66 (0.12)
Year of Birth	1,956.95 (0.52)	1,956.87 (0.53)	1,958.17 (2.32)
Gender	0.52 (0.02)	0.51 (0.02)	0.53 (0.06)
Parents Employed at Respondents' age of 14	0.95 (0.01)	0.95 (0.01)	0.95 (0.03)
Preference of Mother for Books	0.74 (0.01)	0.75 (0.01)	0.69 (0.06)
Financial Problems I	0.85 (0.01)	0.85 (0.01)	0.75 (0.06)
Financial Problems II	0.90 (0.01)	0.91 (0.01)	0.85 (0.05)
Attitudes to Migrants I	-2.32 (0.07)	-2.31 (0.07)	-2.35 (0.30)
Attitudes to Migrants II	-0.35 (0.01)	-0.35 (0.01)	-0.34 (0.04)
Right-Left Scale (NUTS2-level at age of 14)	0.97 (0.43)	0.85 (0.45)	2.92 (1.78)
Urban Region	0.27 (0.01)	0.26 (0.01)	0.45 (0.06)
Migration Rate (NUTS2-level at age of 14)	0.06 (0.00)	0.06 (0.00)	0.11 (0.01)
<i>N</i>	1,112	1,046	66

Mean coefficients; linearized standard deviations in parentheses. Own calculations based on the EVS 2008 for Austria and CMP 2016. Estimates are computed using population weights. The variables preferences of parents for books and financial problems I and II are dummy variables described in the text. The variable attitudes to migrants II denotes the attitudes towards immigrants measure that is independent of the size of the manifesto. The right-left scale indicates the ideological political orientation of the voters in the region.

Table 2: Educational Attainment of Respondents by Migration Status

Education Level	Whole Sample %	Natives %	Migrants %
Primary Education	2.04	2.16	0.00
Lower Secondary Education	16.69	16.79	15.21
Upper Secondary Education	61.70	61.41	66.28
Post Secondary Non-Tertiary	9.26	9.42	6.74
First Stage of Tertiary Education	8.28	8.16	10.14
Second Stage of Tertiary Education	2.03	2.05	1.63
<i>N</i>	1,112	1,046	66

Own calculations based on the EVS 2008 for Austria. Estimates are computed using population weights.

secondary education or a first stage of tertiary education than natives. At the same time, no migrants have completed only primary education, while two percent of natives have only this level of education. On the other hand, immigrants are less likely to have completed a second stage of tertiary education. Thus, migrants are less likely to be in the tails of the educational distribution.

Table 3 shows that migrants' parents have fewer years of schooling, on average, than natives' parents (10.08 versus 10.48 years). Indeed, migrants' parents are more likely to have only a primary school education and none have completed the second stage of tertiary education, compared to the 2% of natives' parents who achieved this highest level of schooling. However, more of the migrants' parents completed either post-secondary schooling or first-stage tertiary schooling. Thus, in sum, we observe a rather small gap in the educational attainment of natives versus migrants in this sample. This almost non-existent gap is not consistent with other literature for Austria, which shows that migrants and their parents have lower levels of education than their native counterparts (Statistik Austria, 2017).

Table 3: Educational Attainment of Parents by Migration Status

Education Level	Whole Sample %	Natives %	Migrants %
Primary Education	5.13	4.93	8.30
Lower Secondary Education	34.36	34.13	38.08
Upper Secondary Education	51.73	52.53	39.03
Post Secondary Non-Tertiary	3.92	3.63	8.61
First Stage of Tertiary Education	3.08	2.89	5.98
Second Stage of Tertiary Education	1.79	1.90	0.00
Mean Years of Schooling	10.45	10.48	10.08
<i>N</i>	1,112	1,046	66

Own calculations based on the EVS 2008 for Austria. Estimates are computed using population weights.

Table 4: Upward Educational Mobility by Migration Status

Upward Mobility	Whole Sample %	Natives %	Migrants %
Not Mobile	62.28	62.94	52.00
Mobile	37.72	37.06	48.00
<i>N</i>	1,093	1,027	66

Own calculations based on the EVS 2008 for Austria. Estimates are computed using population weights.

Looking now at intergenerational mobility, table 4 shows that almost half of the immigrants are upwardly mobile, while only 37% of the natives have achieved a higher education level than their most educated parent, which is consistent with existing literature (Oberdabernig and Schneebaum, 2017).

The goal of this paper is to introduce a method to examine whether negative attitudes towards immigrants had an impact on migrants' educational attainment or the probability that they achieve more education than their parents. The next section describes our construction of a scale to measure attitudes towards immigrants, which is a key element of this method.

### 3.2 Measuring attitudes towards immigration

To begin, we must define what we mean when talking about "attitudes." According to Ajzen (1993, p. 41), attitudes are an individual's "dispositions to react with a certain degree of favourableness or unfavourableness to an object, behaviour, person, institution or event or to any other discriminable aspect of the individual's world." Throughout the paper we adapt this definition, concentrating on how individuals may perceive immigrants

and/or immigration, and what their resulting disposition toward immigration would be.

We proxy these dispositions to a certain degree of favorableness towards immigration by considering how people voted in national elections and how the parties for which they voted addressed the topic of immigration. In short, we do this in the following way. We use two types of data: first, regional results from national elections, and second, data from the Comparative Manifesto Project, which measures the degree to which certain issues are positively or negatively addressed in a political party’s manifesto.<sup>8</sup> We are particularly interested in the share of statements in a party’s manifesto dedicated to migration-related issues, and if these were given a positive or negative connotation. Using this information, each party in each year is assigned a certain raw “attitude” towards immigration. We then use historical election data for Austria’s parliamentary elections for the years 1949-1995<sup>9</sup> on a NUTS-2 level<sup>10</sup> to create a weighted measure of the raw attitudes in a certain region and year. In this way, we create a measure of attitudes towards immigration that we can study at the regional (NUTS-2) level, for each year in which there was a parliamentary election.<sup>11</sup>

We hypothesize that the mechanisms through which attitudes towards immigration would affect the educational success of immigrants occur when an immigrant is still in school. Therefore, we look at the sentiments towards migration at the time and place in which the individual was growing up and making major educational decisions. We thus test whether attitudes in the area in which one lived when s/he was 14 and in school affected their educational outcomes.

Are election results a good measure of a population’s attitudes towards immigration? In the political science literature, there are three main ways to identify party positions: the use of mass public opinion surveys, the use of expert surveys, and the analysis of party documents (Laver and Hunt, 1992). There are advantages and disadvantages to each of these three data sources. The advantage of opinion polls is that the data they generate directly capture the preferences of individuals towards immigrants, under the assumption that they reveal their true preferences on such surveys. However, such data are not available in Austria for the time period we want to observe attitudes towards immigrants. Expert surveys are also not available on this topic for the time span for which we would need them. We therefore turn to election data, which can be a good proxy of

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<sup>8</sup>For more detailed information see <https://manifestoproject.wzb.eu/>.

<sup>9</sup>We do not include the election years after 1995 because we only study the educational attainment of individuals aged 25 or older at the time of the European Value Survey in 2008.

<sup>10</sup>While an analysis on a NUTS-3 level would have allowed us to distinguish between regional effects in more detail, election results were only available from 1990 onwards at a NUTS-3 level. The election data were obtained from the Austrian Federal Ministry of the Interior ([http://www.bmi.gv.at/cms/BMI\\_wahlen/nationalrat/start.aspx](http://www.bmi.gv.at/cms/BMI_wahlen/nationalrat/start.aspx)) and Election Resources on the internet (<http://www.electionresources.org/at/>).

<sup>11</sup>Since we are interested in the attitudes towards immigrants when the individuals were 14 years old and not all sampled individuals were 14 years old exactly at an election year, we compute the attitudes measure for those individuals by assigning them to the nearest election year.

attitudes towards immigration because voters anonymously “state” their preferences for the country via their votes.

One characteristic of a democratic political system is that citizens are involved in electing parties or candidates that form the government. This process gives every citizen the opportunity to express his/her preference for a specific party, which represents different views than other parties. However, using only voting patterns to infer the scale of the anti-immigrant sentiments is problematic, because voting behaviour is influenced by many factors (Brunner and Kuhn, 2014) and it is difficult to disentangle the different motives of individuals for voting for a certain party. Consequently, the challenge we are faced with is to extract attitudes people have about immigration specifically.

To overcome this issue, we look at the CMP data and select the specific statements in a party’s manifesto related to immigration. Analyzing party documents (electoral manifestos) gives us information about party positions from the parties themselves. The most well-known and frequently employed manifesto data set in the comparative political science literature is the Comparative Manifesto Project (CMP). Using content analysis, the CMP provides information on party positions for over 1,000 parties in more than 50 countries from 1945 until today. Each quasi-sentence<sup>12</sup> of a party manifesto is assigned to one of 56 issue categories<sup>13</sup> and the total number of quasi-sentences for each category is put into relation to the total number of quasi-sentences (Volken, 2002; Volken et al., 2016). The CMP data are count data of sentences in categories.

We follow two steps to identify a party’s position on immigration in the CMP data. First, we select the categories in the CMP data that refer to this issue. We follow the approach by Alonso and Fonseca (2012), who investigate how the immigration issue is framed in the political discourse, in particular by the extreme right parties (ERPs). ERPs usually frame immigrants as a threat to ethno-national identity, as a threat to law and order (ethno-pluralist doctrine), as a cause of unemployment and as abusers of the welfare states (welfare chauvinist doctrine). This implies that ERPs refuse a multicultural society and are in favor of a politics of closed borders. Three issues in the manifesto data capture these negative attitudes towards immigration: (positive views of) a national way of life; (negative views of) multiculturalism; and (positive views on) law and order. Two of these issues are also included in the CMP data as a positive view of immigration: positive views of multiculturalism and favorable references to underprivileged minorities, such as the handicapped, homosexuals, immigrants, and indigenous people.

Second, after identifying the issues which refer specifically to attitudes towards immigration in the CMP data, we measure the *salience* of these issues in the party manifestos.

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<sup>12</sup>“Quasi-sentences are textual units that express a policy proposition and may be either a complete natural sentence or part of one.” (Lowe et al., 2011, p. 126). In other words, quasi-sentences are segments of sentences, extracted from the entire party manifesto document, which state positions on policy issues.

<sup>13</sup>For further information about the CMP and the coding instructions see <https://manifesto-project.wzb.eu/information/documents/handbooks>.

The salience captures the relevance that the immigration issue has for the parties, in that it measures the share of a party’s quasi-sentences that refer to a topic. Following the political science literature, we assume that the relative frequency of the sentences referring to immigration is a good proxy of the importance this issue has in the manifesto. Salience is calculated as the total sum of the percentages of those five issues related to immigration. Table 4 shows that Austrian Freedom Party (FPÖ) is the “issue owner” of the immigration issue, mentioning it on average in 7,5% of their sentences during the time period 1949-1995, more than the other three major parties in this time period.

Table 5: Mean Frequency of Immigration Issues and Rile Scale, 1949-1995

Party	Salience	Issues positive	Issues negative	Position I	Position II	Rile Scale
Greens	7.00 [3.4,11.6]	6.48	0.53	5.95	0.58	-0.34
Social Democrats	5.46 [0,12.8]	1.24	4.22	-2.98	-0.48	-14.07
Freedom Party	7.48 [1.2,17.59]	1.27	6.20	-4.94	-0.44	2.45
People’s Party	4.63 [0,21.5]	1.00	3.62	-2.62	-0.45	16.86
Total	5.81	1.63	4.17	-2.54	-0.33	3.45

Own Calculations based on the CMP for Austria. The Rile Scale indicates the right-left index.

Based on the approach recommended by Laver and Hunt (1992) and Alonso and Fonseca (2012), we measure a party’s position towards immigration by subtracting the percentage of negative quasi-sentences about it from the percentage of positive ones. This anti-immigration score has a value of -100 if a manifesto contains only negative mentioning of immigration and 100 if the manifesto contains only positive quasi-sentences regarding immigration.

An issue that has received much attention in the manifesto data literature is that the score based on this calculation approach is influenced by the total size of the manifesto (total number of quasi-sentences). Since the issues related to immigration are measured relative to the size of the manifesto, two political parties might have different position scores, even though they have the same number of issues related to migration. In order to get a measure that is independent of the size of the manifesto, we follow the recommendation of Laver and Garry (2000): we compute a “pure” position score by standardizing the percentages of positive and negative issues to the sum of the percentages of all issues related to immigration. We will refer to this measure in the text as “Position II” measure, while the raw position score that does not account for the number of quasi-sentences is called “Position I”.

In the last step, we weight each party’s raw attitude towards immigration by the share of votes that the party received in a particular year and region to calculate the “Attitudes to Migrants I” measure as follows:

$$AIM_{r,t} = \sum_p (position_p \times VoteShare_p). \quad (1)$$

We refer to the attitude measure that is weighted by the election results and is based on the pure position (Position II) measure as “Attitudes to Migrants II” measure. Table 5 depicts the mean position of the main political parties in Austria.<sup>14</sup> The estimates show that excluding the Green Party, for which on average positive mentioning of migration-related issues dominate, the other three parties show a negative attitude towards immigration.

To account for the fact that individuals vote for a certain party by taking a set of issues or policies that the party addresses into consideration instead of voting based only on the immigration issue, we also use the position of the political party in the right-left scale (“rile” scale), which is also available in the CMP dataset for each political party for each election year.<sup>15</sup> The rile scale of each party in each election year is weighted by the share of votes that the party received in a particular year and region to calculate a variable (RL) that gives the percentage of the population in each region with right or left political views:

$$RL_{r,t} = \sum_p (Rile_p \times VoteShare_p). \quad (2)$$

A negative value of RL variable indicates that the population of a region in a certain year held left political views. A positive value of the RL variable indicates that the population held right political views.

A summary of the percentage of votes won in parliamentary elections by the main political parties in each region of Austria in the time period 1949 - 1995 is given in the appendix in table A7. Figure 2 shows the weighted average attitude measure across the nine regions of Austria for all parliamentary election years from 1945-1997. The trends across regions are similar, because the CMP data come from national, not regional, manifestos. Thus the variation across regions is due only to differences in voting behavior of the citizens of these regions.

Two key trends can be identified: first, over almost all of the years, attitudes towards immigration were negative. Second, these negative attitudes were strongest earlier in the sample years (shortly after the second world war). After more positive attitudes in the

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<sup>14</sup>We include here only the four main political parties and abstract from other small parties mainly due to data availability. For instance, manifesto data are available for the Communist Party only for the election years of 2002 and 2008.

<sup>15</sup>The rile scale in the CMP dataset is computed according to the standard method by Laver and Garry (2000). For a detailed explanation of the calculation method see the paper by Benoit and Laver (2007). Note that the rile scale is based on a series of issues related to the views of the political parties regarding the economy, national safety, democracy, and welfare. As such, we find it a reasonable measure to control for different issues that influence voting behavior.



Figure 1: Right - Left Position of Regions, 1949-1995

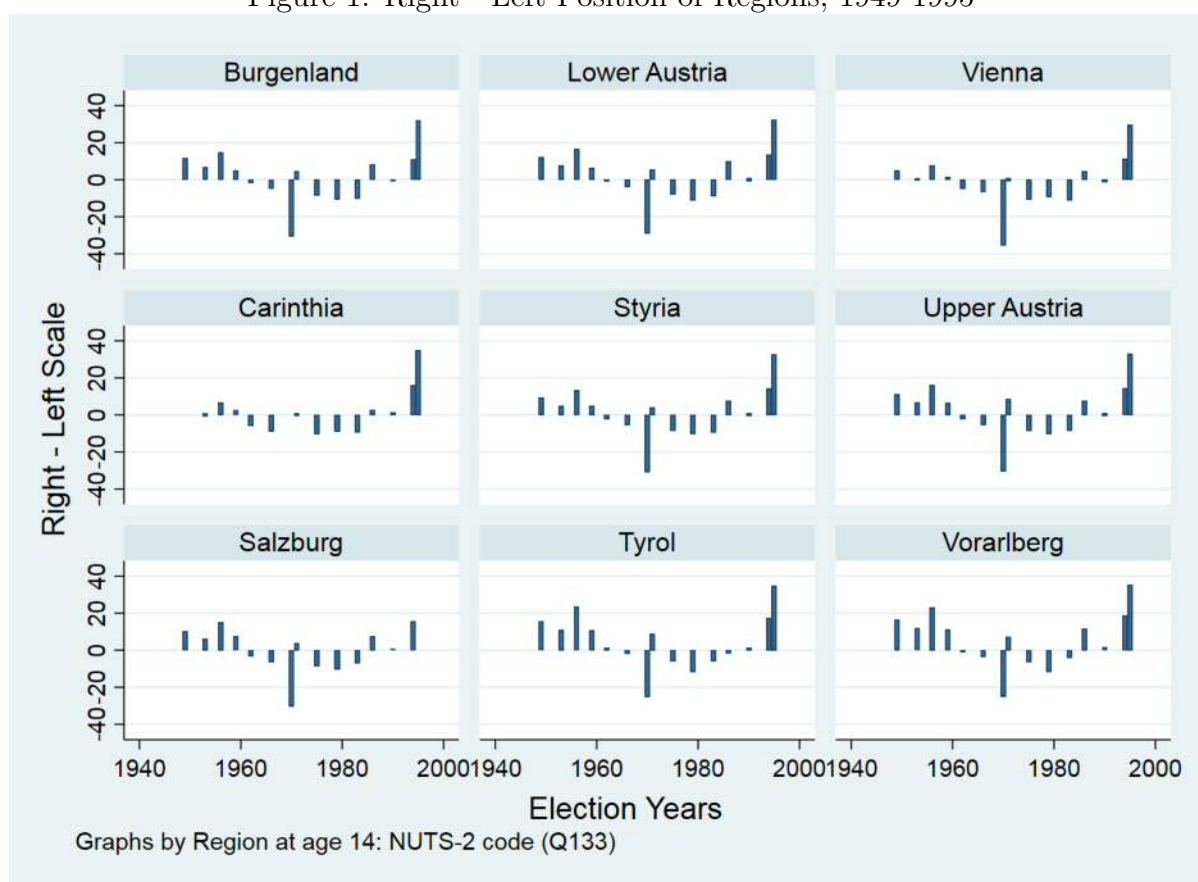


Figure 2: Regional measures of attitudes towards immigrants, 1949-1995

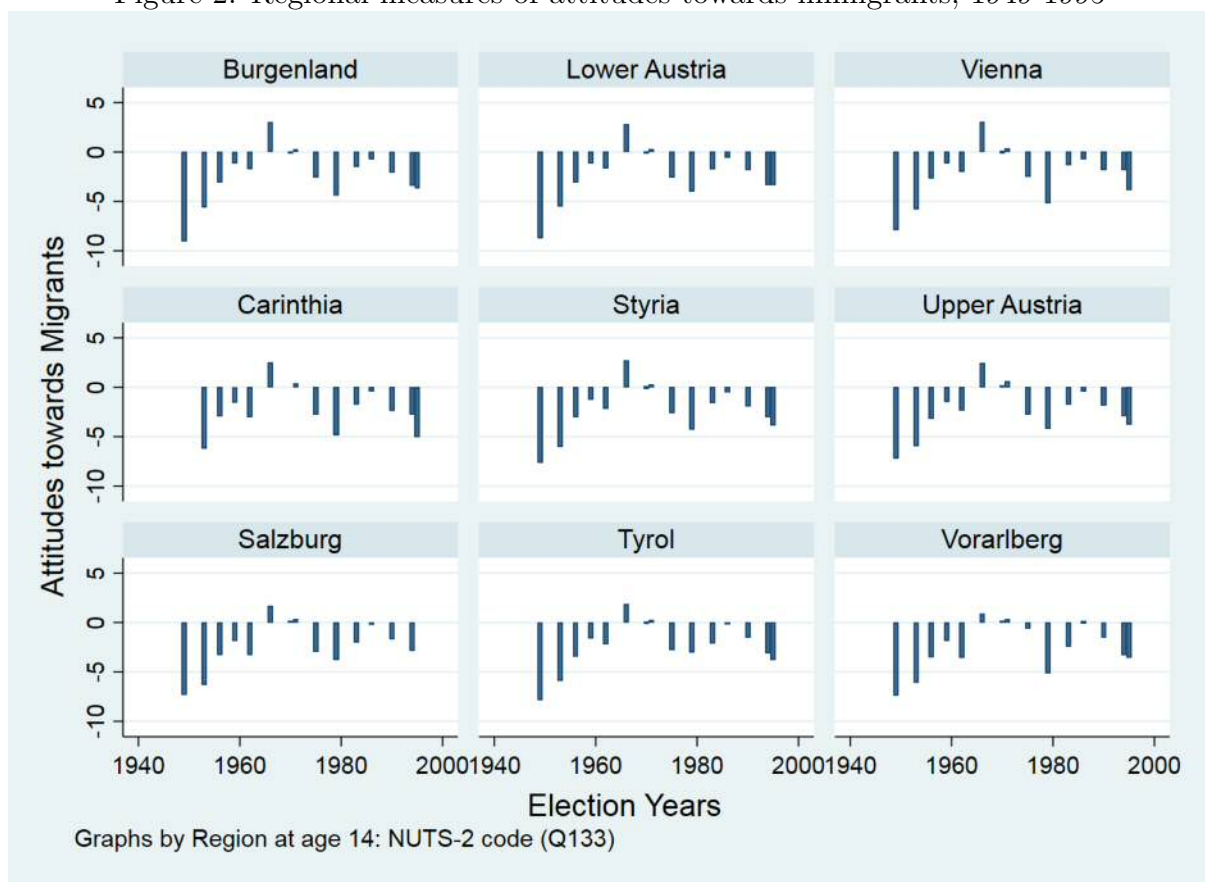
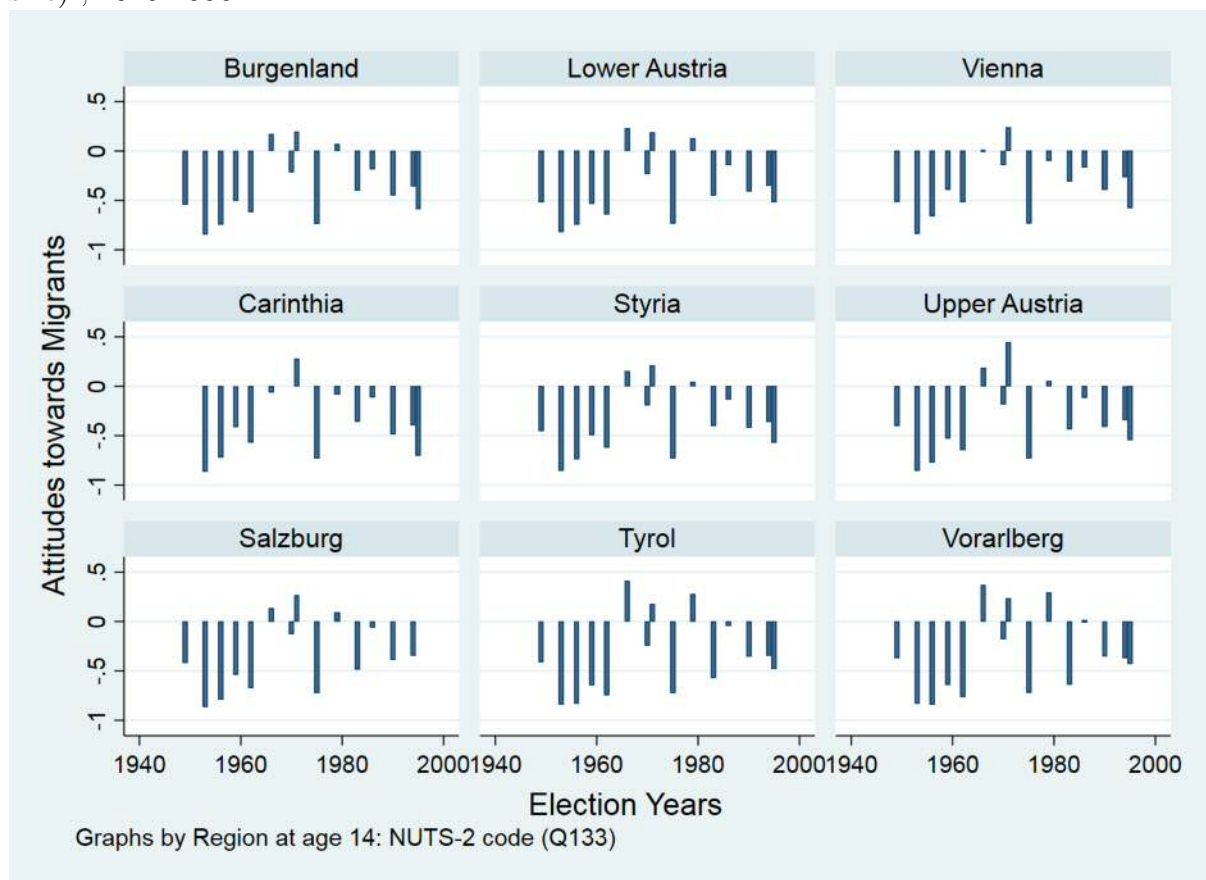


Figure 3: Regional measures of attitudes towards immigrants II (independent of manifesto size) , 1949-1995



decade of 1960-1970, attitudes again became negative in the 1980s and late 1990s and have become even more hostile in the latest sample years. A similar pattern is depicted in Figure 3, which shows the attitudes based on the position measure that is independent of the size of the manifesto (“Position II”).

To check for robustness of our measure of attitudes, we compare the position of the parties and the attitudes measure with another existing approach to measure attitudes towards immigrants. For two survey years (1990, 1999) we can compare our attitude measure with the attitudes in the EVS dataset, which are measured by asking individuals whether they would like immigrants as neighbours. Table A8 in the appendix shows that there is a positive correlation between the two measures: in regions with hostile attitudes towards immigrants there is a higher share of individuals who would not like to have an immigrant as a neighbor. This is especially the case when looking at the 1990 EVS data.

In the next section, we use these two measures of attitudes towards immigration as a predictor of the educational attainment and educational mobility of people with a migration background.

### 3.3 Econometric Methods to Measure Educational Outcomes

To analyse how attitudes towards migrants in a certain region affect differences in educational outcomes and mobility between natives and immigrants we employ the non-linear decomposition technique proposed by Fairlie (2005) and Bauer and Sinning (2008), who extend the standard Blinder-Oaxaca decomposition for models with binary dependent variables. The decomposition method is based on the estimates of a probit model for the two groups, which calculates the mean probability of having attained an upper secondary education and the probability of being upwardly mobile as a function of attitudes towards migrants in a certain region conditional on individual, family, and regional characteristics.

#### 3.3.1 Probit Estimates

In the first step we estimate two probit models separately for natives and immigrants:

$$Pr(Y_i = 1|X_i) = \Phi(X_i'\beta) \quad (3)$$

The left-hand side variable  $Y_i$  in equation 3 denotes the outcome variables respectively: a dummy variable equal to one if the individual has completed an upper secondary education and a dummy variable equal to one if the individual has attained a higher education level than their parents and zero otherwise. The vector  $X_i$  includes three sets of control variables: (1) characteristics of the individual such as gender and year of birth; (2) family background characteristics such as the education level of the parents, a dummy variable

equal to one if the family had financial problems when the individual was 14 years old, and a dummy variable indicating whether the mother liked to read books; and (3) regional characteristics controlling for other factors that may affect the chances that the individual gets a higher education, including attitudes towards immigrants in a region (Attitudes to Migrants I, Attitudes to Migrants II), migration rate at the region where the individual was living at the age of 14 (migration rate at NUTS2 level at the age of 14), and a dummy variable indicating whether the individual was living in an urban region. This is a way we control for the existence of school infrastructure that may affect educational decisions and opportunities. In addition, we also control for the political orientation of the individuals in the region by including the share of the population that voted a right party or a left party (Right – Left Scale at the NUTS2 level). The function  $\Phi$  denotes the cumulative distribution function from the standard normal distribution.<sup>16</sup>

### 3.3.2 Blinder-Oaxaca Decomposition for non-linear models

In the second step, we decompose the differences in upward mobility between natives and immigrants into the estimated effect that is due to differences in individual, family, and regional background characteristics and the estimated effect that is due to differences in the returns to these characteristics between the two groups:

$$\begin{aligned} Pr(u_i)^m - Pr(u_i)^n &= [\bar{\Phi}(X^m \widehat{\gamma}^n) - \bar{\Phi}(X^n \widehat{\gamma}^n)] + [\bar{\Phi}(X^m \widehat{\gamma}^m) - \bar{\Phi}(X^m \widehat{\gamma}^n)] P(u)^m - P(u)^n \\ &= [\bar{\Phi}(X^m \widehat{\gamma}^n) - \bar{\Phi}(X^n \widehat{\gamma}^n)] + [\bar{\Phi}(X^m \widehat{\gamma}^m) - \bar{\Phi}(X^m \widehat{\gamma}^n)]. \end{aligned} \quad (4)$$

The left-hand side denotes differences in upward educational mobility for person  $i$  ( $u_i$ ) between immigrants ( $m$ ) and natives ( $n$ ). The vector  $X_i$  includes the same set of explanatory variables as described above for equation 3. We employ transformed coefficients for the categorical variables, so that the results of the decomposition are invariant to the choice of the omitted base category. The function  $\Phi$  denotes the cumulative distribution function from the standard normal distribution. Of particular interest for us is whether differences in attitudes towards immigrants contribute to differences in mobility between the two groups.

## 4 Empirical Results on Educational Attainment

### 4.1 Educational Attainment

We begin the empirical analysis by studying the probability of natives and migrants having completed upper-secondary schooling. Table 6 and table 7 report the marginal

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<sup>16</sup>We also estimate the decompositions using coefficients from a logit regression. The decomposition estimates are not sensitive to whether the logit or probit model is used.

effects of the probit estimates for the probability of having completed an upper secondary education for natives and migrants, respectively. The key variable of interest is the “Attitudes to Migrants I”, which is calculated as described above. The other independent variables, in order of their listing in the tables, control for gender, respondent birth year, the highest level of education of the parents, interaction terms between the attitudes measure and the parental educational attainment measures, a dummy variable if the parents had trouble replacing broken appliances, the share of the population that has a migration background, the right-left scale measure, a dummy variable indicating whether the mother liked to read books, and a dummy variable indicating if the household lived in an urban region.

The estimates in table 6 show that better attitudes are associated with a higher probability of having completed upper secondary school for natives. However, table 7 shows that for immigrants, living in an environment where attitudes towards immigrants are relatively positive is *negatively* related to the chances of immigrants to get an upper secondary education. The results are similar if we use the years of schooling as the outcome variable (tables 8 and 9).

One explanation for these findings may be that immigrants respond to a hostile environment by putting more effort into their schooling. In other words, in this framework, immigrants who grew up in less friendly environments may be more motivated to overcome their hostile environments and put more effort into schooling. Related to this, an interesting result is that living in a region with positive attitudes towards immigrants is positively related to the educational chances of those individuals with better educated parents (see interaction effects of attitudes with the education level of the parents).

We also see that for both groups, the education level of the parents is highly important in determining the level of education of the respondents. The higher the education level of the parent (compared to individuals with parents having only elementary education), the higher the probability that the respondent gets an upper-secondary education or has more years of education. Following this line of thought, we now turn to an analysis of intergenerational mobility.

## 4.2 Upward Educational Mobility

We define an individual to have been upwardly mobile if s/he has achieved a higher education level than his or her parents. We exclude individuals whose parents have achieved the highest education level, because those individuals cannot achieve upward mobility, by definition.

Table 10 and 11 report the estimates of the probability of having been upwardly mobility for natives and migrants, respectively. Again, similar to the educational outcome estimates, we see that living in a region with positive attitudes towards immigrants

Table 6: Probability of Having Completed at least Upper Secondary Education for Natives (probit estimates)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Attitudes to Migrants I	0.006 (0.004)	0.008* (0.004)	0.071*** (0.019)	0.072*** (0.020)	0.071*** (0.019)	0.072*** (0.020)
Female	-0.097*** (0.021)	-0.087*** (0.021)	-0.093*** (0.021)	-0.099*** (0.022)	-0.092*** (0.021)	-0.098*** (0.022)
Year of Birth of Respondent	0.006*** (0.001)	0.004*** (0.001)	0.004*** (0.001)	0.004*** (0.001)	0.004*** (0.001)	0.004*** (0.001)
Lower Secondary Education		0.002 (0.063)	-0.193*** (0.034)	-0.184*** (0.033)	-0.189*** (0.033)	-0.182*** (0.032)
Upper Secondary Education		0.188*** (0.061)	-0.074*** (0.027)	-0.081*** (0.028)	-0.078*** (0.026)	-0.084*** (0.027)
Post-Secondary non-Tertiary Education		0.197** (0.080)	-0.038 (0.050)	0.000 (.)	-0.041 (0.051)	0.000 (.)
First Stage of Tertiary Education		0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Second Stage of Tertiary Education		0.196** (0.083)	-0.059 (0.063)	-0.075 (0.072)	-0.054 (0.060)	-0.069 (0.069)
Attitudes I × Lower Sec. Ed. of Parents			-0.065*** (0.019)	-0.066*** (0.021)	-0.064*** (0.019)	-0.066*** (0.020)
Attitudes I × Upper Sec. Ed. of Parents			-0.084*** (0.020)	-0.085*** (0.022)	-0.083*** (0.020)	-0.085*** (0.021)
Attitudes I × Post Sec. Non-Tert. Ed. of Parents			-0.064*** (0.021)	0.000 (.)	-0.064*** (0.021)	0.000 (.)
Attitudes I × 1.st Stage of Tert. Ed. of Parents			0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Attitudes I × 2.nd Stage of Tert. Ed. of Parents			-0.077*** (0.023)	-0.079*** (0.025)	-0.072*** (0.023)	-0.075*** (0.025)
Financial Problems II			0.014 (0.035)	0.025 (0.039)	0.017 (0.036)	0.027 (0.039)
Migration Rate (at NUTS2 level at age 14)			0.355 (0.248)	0.265 (0.242)	0.285 (0.254)	0.209 (0.250)
Right-Left Scale (NUT2 - level at age of 14)			-0.002** (0.001)	-0.002** (0.001)	-0.002** (0.001)	-0.002** (0.001)
Preference of Mother for Books				-0.048 (0.031)		-0.045 (0.031)
Urban Region				0.041 (0.025)		0.036 (0.027)
N_sub	957	929	865	809	865	809

Own Calculations based on the EVS 2008 for Austria. All specifications are computed using population weights. Marginal effects and their standard errors (in parenthesis) are reported.

Table 7: Probability of Having Completed at least Upper Secondary Education for Migrants (probit estimates)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Attitudes to Migrants I	-0.021 (0.015)	-0.023 (0.016)	-0.362*** (0.125)	-0.446*** (0.165)	-0.347** (0.147)	-0.454** (0.216)
Female	0.010 (0.080)	0.020 (0.099)	0.059 (0.135)	0.058 (0.124)	0.063 (0.128)	0.057 (0.120)
Year of Birth of Respondent	0.006* (0.003)	0.007 (0.004)	0.005* (0.003)	0.005* (0.003)	0.005 (0.003)	0.005 (0.003)
Lower Secondary Education		0.066 (0.177)	0.784*** (0.111)	0.826*** (0.069)	0.761*** (0.140)	0.829*** (0.063)
Upper Secondary Education		0.017 (0.175)	0.661*** (0.123)	0.684*** (0.104)	0.648*** (0.150)	0.681*** (0.106)
Post-Secondary non-Tertiary Education		0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
First Stage of Tertiary Education		0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Attitudes I × Lower Sec. Ed. of Parents			0.307*** (0.105)	0.375*** (0.135)	0.290** (0.129)	0.384** (0.187)
Attitudes I × Upper Sec. Ed. of Parents			0.347*** (0.131)	0.427*** (0.164)	0.335** (0.146)	0.434** (0.206)
Attitudes I × Post Sec. Non-Tert. Ed. of Parents			0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Attitudes I × 1.st Stage of Tert. Ed. of Parents			0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Attitudes I × 2.nd Stage of Tert. Ed. of Parents			0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Financial Problems II			0.723*** (0.100)	0.743*** (0.085)	0.719*** (0.100)	0.745*** (0.083)
Migration Rate (at NUTS2 level at age 14)			2.193*** (0.769)	2.221*** (0.797)	2.179*** (0.759)	2.233*** (0.854)
Right-Left Scale (NUT2 - level at age of 14)			-0.007** (0.003)	-0.008** (0.003)	-0.007** (0.003)	-0.008** (0.004)
Preference of Mother for Books				-0.117 (0.113)		-0.119 (0.122)
Urban Region					-0.022 (0.083)	0.010 (0.094)
N_sub	60	50	46	45	46	45

Own Calculations based on the EVS 2008 for Austria. All specifications are computed using population weights. Marginal effects and their standard errors (in paranthesis) are reported.



Table 8: OLS Regression Results: Years of Schooling for Natives

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Attitudes to Migrants I	0.075** (0.030)	0.087*** (0.027)	0.578*** (0.106)	0.544*** (0.108)	0.580*** (0.106)	0.546*** (0.108)
Female	-0.519*** (0.128)	-0.398*** (0.121)	-0.447*** (0.125)	-0.462*** (0.126)	-0.446*** (0.125)	-0.461*** (0.126)
Year of Birth of Respondent	0.031*** (0.005)	0.016*** (0.005)	0.016*** (0.005)	0.016*** (0.005)	0.016*** (0.005)	0.017*** (0.005)
Lower Secondary Education		0.476 (0.463)	-1.025*** (0.384)	-1.034*** (0.398)	-1.027*** (0.384)	-1.041*** (0.397)
Upper Secondary Education		1.401*** (0.453)	-0.507 (0.368)	-0.612 (0.385)	-0.531 (0.368)	-0.631 (0.385)
Post-Secondary non-Tertiary Education		2.001*** (0.558)	0.600 (0.626)	0.587 (0.594)	0.577 (0.618)	0.571 (0.589)
First Stage of Tertiary Education		3.070*** (0.545)	1.568** (0.613)	1.329** (0.625)	1.560** (0.615)	1.323** (0.627)
Second Stage of Tertiary Education		3.637*** (0.800)	1.692** (0.815)	1.479* (0.835)	1.674** (0.823)	1.467* (0.840)
Attitudes I × Lower Sec. Ed. of Parents			-0.477*** (0.114)	-0.444*** (0.116)	-0.477*** (0.114)	-0.444*** (0.116)
Attitudes I × Upper Sec. Ed. of Parents			-0.637*** (0.112)	-0.606*** (0.114)	-0.638*** (0.112)	-0.608*** (0.114)
Attitudes I × Post Sec. Non-Tert. Ed. of Parents			-0.395** (0.189)	-0.358** (0.181)	-0.399** (0.186)	-0.362** (0.179)
Attitudes I × 1.st Stage of Tert. Ed. of Parents			-0.516*** (0.167)	-0.475*** (0.174)	-0.511*** (0.168)	-0.475*** (0.175)
Attitudes I × 2.nd Stage of Tert. Ed. of Parents			-0.606*** (0.196)	-0.563*** (0.199)	-0.599*** (0.197)	-0.559*** (0.200)
Financial Problems II			0.291 (0.246)	0.311 (0.256)	0.299 (0.247)	0.316 (0.257)
Migration Rate (at NUTS2 level at age 14)			0.634 (1.201)	0.496 (1.193)	0.238 (1.297)	0.234 (1.303)
Right-Left Scale (NUT2 - level at age of 14)			-0.012** (0.005)	-0.013*** (0.005)	-0.012** (0.005)	-0.013*** (0.005)
Preference of Mother for Books				-0.388*** (0.147)		-0.376** (0.149)
Urban Region					0.141 (0.143)	0.096 (0.147)
Constant	-48.433*** (9.747)	-20.338** (9.434)	-19.225* (10.462)	-19.358* (10.505)	-19.557* (10.444)	-19.613* (10.500)
N_sub	957	957	892	870	892	870

Own Calculations based on the EVS 2008 for Austria. All specifications are computed using population weights.

Table 9: OLS Regression Results: Years of Schooling for Migrants

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Attitudes to Migrants I	-0.157 (0.098)	-0.141 (0.098)	-1.011* (0.581)	-1.925*** (0.459)	-0.828 (0.636)	-2.014*** (0.666)
Female	-0.108 (0.484)	-0.192 (0.526)	-0.493 (0.629)	-0.584 (0.637)	-0.428 (0.616)	-0.605 (0.624)
Year of Birth of Respondent	0.024 (0.018)	0.016 (0.023)	0.018 (0.029)	0.008 (0.031)	0.020 (0.029)	0.007 (0.031)
Lower Secondary Education		0.711 (0.891)	2.592* (1.535)	4.319*** (1.100)	1.926 (1.686)	4.602*** (1.645)
Upper Secondary Education		0.949 (0.851)	1.668 (1.516)	3.269** (1.322)	1.202 (1.596)	3.476** (1.746)
Post-Secondary non-Tertiary Education		2.056 (1.322)	4.567 (2.982)	6.919* (3.682)	4.200 (2.998)	7.103* (3.635)
First Stage of Tertiary Education		1.561* (0.875)	1.219 (1.836)	3.560** (1.749)	0.771 (1.773)	3.777* (1.968)
Attitudes I × Lower Sec. Ed. of Parents			0.929 (0.567)	1.719*** (0.428)	0.728 (0.616)	1.814*** (0.624)
Attitudes I × Upper Sec. Ed. of Parents			0.667 (0.623)	1.548*** (0.543)	0.534 (0.639)	1.619** (0.688)
Attitudes I × Post Sec. Non-Tert. Ed. of Parents			1.400 (1.179)	2.493* (1.446)	1.332 (1.204)	2.543* (1.424)
Attitudes I × 1.st Stage of Tert. Ed. of Parents			0.435 (0.688)	1.682** (0.677)	0.265 (0.692)	1.775** (0.788)
Attitudes I × 2.nd Stage of Tert. Ed. of Parents			0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Financial Problems II			2.290*** (0.869)	3.165*** (0.653)	2.309*** (0.859)	3.172*** (0.642)
Migration Rate (at NUTS2 level at age 14)			3.735 (4.550)	9.265*** (2.487)	4.087 (4.269)	9.298*** (2.522)
Right-Left Scale (NUT2 - level at age of 14)			0.003 (0.021)	-0.004 (0.020)	0.005 (0.021)	-0.005 (0.023)
Preference of Mother for Books				-0.906 (0.562)		-0.937 (0.605)
Urban Region					-0.368 (0.453)	0.126 (0.474)
Constant	-36.327 (35.355)	-21.079 (45.418)	-27.682 (58.014)	-11.017 (60.373)	-30.593 (57.795)	-10.043 (59.887)
N-sub	60	60	54	52	54	52

Own Calculations based on the EVS 2008 for Austria. All specifications are computed using population weights.

increases the probability of being upward mobile for natives but, surprisingly, has a negative significant effect on the probability of upward mobility for migrants. Nevertheless, as discussed above in table 4, the overall rate of upward mobility is much higher for immigrants than for natives (48% versus 37%). The question is now whether the attitudes towards immigrants in the time and place that they grew up affects the large gap in the probability of upward mobility.

Table 12 gives the results of the decomposition of the gap in upward mobility for natives versus migrants. Across model specifications, the “explained” portion of the gap - that is, the portion of the gap due to differences in characteristics - shows that the attitudes towards immigrants do not directly impact the gap. However, it is perhaps the returns to these attitudes – the “unexplained” portion of the gap – that is most interesting to us. In three of the five model specifications, the coefficient on the returns to the attitudes to immigrants is statistically significant and positive. This means that the returns to more positive attitudes are associated with a greater gap in upward mobility for immigrants. This finding is very important. Given that immigrants start from a disadvantaged point, in that their parents are less educated than natives’ parents, there *must* be a positive gap in the probability of upward mobility in order for immigrants to catch up in their educational attainment over generations. The positive association between the returns to more accepting attitudes towards immigrants and the immigrants’ opportunity to close the educational achievement gap across generations suggests that attitudes have important consequences for socioeconomic outcomes.

## 5 Discussion and Conclusions

This paper suggested a new method for measuring attitudes towards immigrants, and used Austrian data to test whether this measure of attitudes is related to the educational outcomes of immigrants. The most important empirical finding of the applied analysis is that there is a positive relationship between the returns more accepting attitudes towards immigrants and the immigrants’ opportunity to close the educational gap with natives. There is thus evidence that this measure of attitudes towards immigrants captures an important aspect of social and economic relations.

Further research can use our measure of attitudes towards immigrants for other countries and for other outcome variables of interest, such as income, wealth, occupational status, health, and well-being. One drawback of the empirical application in this paper is the small sample size of immigrants in the EVS data; there are no datasets in Austria with all educational and regional variables we need with a larger sample of immigrants. Other analyses of the role of attitudes can overcome this problem by studying other outcome measures.

Table 10: Probit Model Estimates of the Probability of Upward Educational Mobility for Natives

	Model 1	Model 2	Model 3	Model 4	Model 5
Attitudes to Migrants I	0.021*** (0.007)	0.015*** (0.006)	0.009 (0.006)	0.014** (0.006)	0.009 (0.006)
Female	-0.001 (0.032)	-0.037 (0.026)	-0.036 (0.027)	-0.039 (0.027)	-0.041 (0.027)
Year of Birth of Respondent	-0.004*** (0.001)	0.003*** (0.001)	0.004*** (0.001)	0.003*** (0.001)	0.004*** (0.001)
Lower Secondary Education		-0.202*** (0.043)	-0.193*** (0.043)	-0.196*** (0.043)	-0.196*** (0.040)
Upper Secondary Education		-0.755*** (0.039)	-0.749*** (0.040)	-0.748*** (0.040)	-0.770*** (0.037)
Post-Secondary non-Tertiary Education		-0.723*** (0.075)	-0.724*** (0.074)	-0.723*** (0.075)	-0.753*** (0.070)
First Stage of Tertiary Education		-0.891*** (0.051)	-0.890*** (0.051)	-0.890*** (0.051)	-0.915*** (0.044)
Financial Problems I			0.075** (0.037)	0.082** (0.036)	0.066* (0.038)
Right-Left Scale (NUT2 - level at age of 14)			-0.003** (0.001)		-0.003*** (0.001)
Migration Rate (at NUTS2 level at age 14)				0.035 (0.286)	-0.045 (0.294)
Urban Region					0.040 (0.033)
Preference of Mother for Books					-0.069** (0.033)
N_sub	939	939	895	895	868

Own Calculations based on the EVS 2008 for Austria. All specifications are computed using population weights. Marginal effects and their standard errors (in parenthesis) are reported.

Table 11: Probit Model Estimates of the Probability of Upward Educational Mobility for Migrants

	Model 1	Model 2	Model 3	Model 4	Model 5
Attitudes to Migrants I	-0.028 (0.029)	-0.057** (0.024)	-0.064** (0.026)	-0.065** (0.026)	-0.058** (0.023)
Female	-0.004 (0.135)	0.083 (0.119)	0.051 (0.119)	0.049 (0.121)	0.128 (0.093)
Year of Birth of Respondent	-0.012** (0.005)	-0.003 (0.005)	-0.003 (0.006)	-0.002 (0.005)	-0.001 (0.005)
Lower Secondary Education		0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Upper Secondary Education		0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Post-Secondary non-Tertiary Education		0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
First Stage of Tertiary Education		0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Financial Problems I		(.)	0.247** (0.112)	0.236* (0.123)	0.299*** (0.093)
Right-Left Scale (NUT2 - level at age of 14)			0.002 (0.004)		-0.000 (0.004)
Migration Rate (at NUTS2 level at age 14)				-0.063 (0.641)	0.636 (0.590)
Urban Region					-0.086 (0.112)
Preference of Mother for Books					-0.382** (0.153)
N_sub	60	51	48	48	46

Own Calculations based on the EVS 2008 for Austria. All specifications are computed using population weights. Marginal effects and their standard errors (in paranthesis) are reported.

Table 12: Oaxaca Decompositions: Probability of Upward Mobility (detailed specification, twofold decomposition based on natives' coefficients)

	Model 1	Model 2	Model 3	Model 4	Model 5
Migrants	0.527*** (0.065)	0.564*** (0.085)	0.556*** (0.085)	0.555*** (0.084)	0.554*** (0.082)
Natives	0.375*** (0.016)	0.377*** (0.015)	0.386*** (0.016)	0.386*** (0.016)	0.388*** (0.016)
Difference	0.152** (0.067)	0.187** (0.086)	0.170** (0.086)	0.169** (0.085)	0.165** (0.083)
Explained	-0.010 (0.010)	0.094*** (0.036)	0.066* (0.037)	0.071* (0.040)	0.077* (0.042)
Unexplained	0.161** (0.067)	0.093 (0.068)	0.104 (0.067)	0.098 (0.068)	0.088 (0.063)
Explained					
Attitudes to Migrants I	-0.001 (0.006)	0.001 (0.005)	0.000 (0.003)	0.000 (0.003)	0.001 (0.003)
Year of Birth of Respondent	-0.009 (0.008)	0.005 (0.007)	0.009 (0.008)	0.009 (0.008)	0.012 (0.008)
Female	0.000 (0.000)	0.000 (0.003)	0.000 (0.003)	0.000 (0.003)	-0.000 (0.003)
Primary Ed. of Parents		0.029 (0.019)	0.025 (0.019)	0.025 (0.020)	0.027 (0.021)
Lower Sec. Ed. of Parents		0.012 (0.013)	0.008 (0.014)	0.008 (0.014)	0.007 (0.013)
Upper Sec. Ed. of Parents		0.048** (0.020)	0.040** (0.020)	0.040* (0.020)	0.034 (0.021)
Post Sec. Non-Tert. Ed. of Parents		-0.017 (0.012)	-0.018 (0.013)	-0.018 (0.013)	-0.014 (0.011)
1.st Stage of Tert. Ed. of Parents		0.017*** (0.004)	0.017*** (0.004)	0.017*** (0.004)	0.017*** (0.004)
2.nd Stage of Tert. Ed. of Parents		0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Financial Problems I			-0.011 (0.008)	-0.011 (0.008)	-0.010 (0.008)
Right-Left Scale (NUT2 - level at age of 14)			-0.004 (0.006)	-0.004 (0.006)	-0.003 (0.006)
Migration Rate (at NUTS2 level at age 14)				0.005 (0.016)	-0.002 (0.014)
Urban Region					0.007 (0.006)
Preference of Mother for Books					0.002 (0.005)
Unexplained					
Attitudes to Migrants I	0.116* (0.069)	0.070 (0.353)	0.084* (0.047)	0.081* (0.047)	0.068 (0.384)
Year of Birth of Respondent	-15.276 (10.478)	-5.517 (31.271)	-6.248 (6.404)	-6.082 (6.442)	-3.890 (26.655)
Female	-0.001 (0.070)	0.027 (0.139)	0.021 (0.032)	0.020 (0.032)	0.043 (0.239)
Primary Ed. of Parents		0.021 (0.124)	0.023 (0.016)	0.022 (0.016)	0.027 (0.097)
Lower Sec. Ed. of Parents		-0.116 (0.298)	-0.118** (0.047)	-0.114** (0.048)	-0.085 (0.485)
Upper Sec. Ed. of Parents		-0.134 (0.245)	-0.171*** (0.056)	-0.165*** (0.058)	-0.187* (0.100)
Post Sec. Non-Tert. Ed. of Parents		-0.039 (0.052)	-0.051** (0.024)	-0.049** (0.024)	-0.050 (0.041)
1.st Stage of Tert. Ed. of Parents		0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
2.nd Stage of Tert. Ed. of Parents		0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Financial Problems I			0.081 (0.058)	0.078 (0.059)	0.116 (0.640)
Right-Left Scale (NUT2 - level at age of 14)			0.004 (0.006)	0.004 (0.006)	0.002 (0.012)
Migration Rate (at NUTS2 level at age 14)				-0.010 (0.036)	0.034 (0.181)
Urban Region					-0.024 (0.126)
Preference of Mother for Books					-0.117 (0.641)
Constant	15.322 (10.444)	5.779 (30.343)	6.479 (6.405)	6.313 (6.464)	4.152 (25.560)
N	1093	1093	1093	1093	1093

Own Calculations based on the EVS 2008 for Austria. Estimates are computed using population weights.

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## 6 Appendix

Table A1: Description of Variables

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<p><i>Variables</i></p> <p><i>Year of Birth</i>: indicates the year in which the respondent was born.</p> <p><i>Gender</i>: indicates sex of the respondent: 1 = female 0 = male.</p> <p><i>Education Level of Respondent</i> indicates the highest education level of respondent measured in six ISCED Categories: Primary Education, Lower Secondary Education, Upper Secondary Education, Post-secondary non-tertiary Education, First Stage of Tertiary Education, Second Stage of Tertiary Education.</p> <p><i>Years of Schooling</i> : indicates the total number of years the respondent has attended school calculated based on the ISCED categories according to the following assignment: ISCED 1 = 4 years, ISCED 2 = 8 years, ISCED 3 = 12 years, ISCED 4 = 13 years, ISCED 5 = 15 years, ISCED 6 = 18 years.</p> <p><i>Migrant</i> : a dummy variable indicating if the individual is a first generation or second generation migrant.</p> <p><i>Highest Level of Education of Parents</i>: indicates the highest level of education of the father if the individuals was living with both parents or the highest education level of mother (father) if the individual was living only with the mother (father) in a single parent household at the age of 14.</p> <p><i>Father/Mother Employed at Respondents age of 14</i> : a dummy variable indicating whether the mother/father was employed at respondents' age of 14.</p> <p><i>Preference of Mother for Books</i>: indicates whether the mother liked to read books: 1 = Yes 0 = No.</p> <p><i>Financial Problems I</i> : indicates whether the parents had problems in making ends meet in a month at respondents' age of 14: 1 = Yes 0 = No.</p> <p><i>Financial Problems II</i>: indicates whether the parents had problems in repairing broken things. 1 = Yes 0 = No.</p> <p><i>Attitudes to Immigrants I</i> : a continuous variable measuring the attitudes that were prevalent towards immigrants in the region where she/he was living at the age of 14. Negative values indicate hostile attitudes towards immigrants.</p> <p><i>Attitudes to Immigrants II</i> : a continuous variable measuring the attitudes that were prevalent towards immigrants in the region where she/he was living at the age of 14. Negative values indicate hostile attitudes towards immigrants. This measure is independent of manifesto size.</p> <p><i>Urban Region</i> : a dummy variable indicating whether the individual was living in an urban region at the age of 14. Classification is done based on the OECD classification of NUTS3 regions.<sup>a</sup></p> <p><i>Right-Left Scale</i> : a variable indicating the ideological political orientation of the voters in the region where she/he was living at the age of 14. Negative values indicate left political views. Positive values indicate right political views.</p> <p><i>Migration Rate (NUT2 level at age of 14)</i> indicates the proportion of migrants living in a region. Own Estimates using EVS data based on the migrants living in a region at the decades where the individual was 14.</p>
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<sup>a</sup>OECD classifies NUTS-3 regions in three groups: predominately urban, intermediate and predominately rural. A region is classified as rural if the share of the population living in a rural local administrative unit of level 2 is higher than 50%. In a second step the size of the urban centers is used to classify the regions as urban, intermediate or rural. For more information see the following links:  
[http://stats.oecd.org/Index.aspx?DataSetCode=REGION\\_DEMOGR](http://stats.oecd.org/Index.aspx?DataSetCode=REGION_DEMOGR)  
[http://ec.europa.eu/eurostat/statistics-explained/index.php/Urban-rural\\_typology](http://ec.europa.eu/eurostat/statistics-explained/index.php/Urban-rural_typology)

Table A2: Country of Origin of Respondents with Migration Background

<b>First Generation Immigrants</b>		
Country of Birth		Percent
Croatia		11.11
Serbia		22.22
Hungary		11.11
Poland		22.22
Turkey		22.22
Iran		11,11
<b>N</b>		<b>9</b>
<b>Second Generation Immigrants</b>		
Country of Birth of Father	Country of Birth of Mother	Percent
Austria	Bosnia-Herzegovina	1.75
Austria	Serbia	1.75
Austria	Czech Republic	3.51
Austria	Hungary	1.75
Austria	Poland	1.75
Austria	Italy	3.51
Austria	Spain	1.75
Austria	Sweden	1.75
Austria	France	1.75
Bosnia - Herzegovina	Austria	1.75
Serbia	Austria	3.51
Croatia	Austria	1.75
Hungary	Austria	8.77
Czech - Republic	Austria	3.51
Slovakia	Austria	1.75
Slovenia	Austria	3.51
Poland	Austria	1.75
Romania	Austria	1.75
Turkey	Austria	3.51
Italy	Austria	7.02
Saint Martin	Austria	1.75
Australia	Austria	1.75
U.S.	Austria	1.75
Bosnia - Herzegovina	Bosnia - Herzegovina	1.75
Croatia	Serbia	1.75
Croatia	Croatia	3.51
Serbia	Serbia	1.75
Croatia	Cuba	1.75
Czech - Republic	Czech - Republic	5.26
Slovakia	Slovakia	1.75
Slovenia	Slovenia	1.75
Hungary	Hungary	1.75
Indonesia	Indonesia	1.75
Poland	Poland	1.75
Poland	Romania	1.75
Turkey	Turkey	8.77
Pakistan	Sweden	1.75
<b>N</b>		<b>57</b>

Own Calculations based on the EVS 2008 for Austria.

Table A3: Educational Attainment of Respondents by Migration Status. Austrian Education System

Education Level	Whole Sample %	Natives %	Migrants %
Left School without degree (ISCED 1)	2.04	2.16	0.00
Primary School (ISCED 1)	16.69	16.79	15.21
School for Interm. Vocat. Educ. (ISCED 2/3)	14.18	13.76	20.79
Part Time Vocat. School and Apprent. (ISCED 3)	8.06	8.30	4.25
College for Higher Vocat. Educ.(ISCED 4/5)	39.47	39.35	41.23
Higher Educ. Entrance Exam.(ISCED 4)	7.28	7.40	5.53
School of Nursing (ISCED 4)	1.97	2.02	1.20
Post-Sec. Vocat. Educ. Course (ISCED 5)	1.24	1.22	1.55
Bachelor Studies (ISCED 6)	5.10	4.97	7.29
Master Studies(ISCED 7)	1.94	1.98	1.30
Doctoral Studies/PhD (ISCED 8)	2.03	2.05	1.63
<i>N</i>	1,112	1,046	66

Own Calculations based on the EVS 2008 for Austria. Estimates are computed using population weights.

Table A4: Distribution of Respondents over Regions at the age of 14

Region at age 14: NUTS2-level	Whole Sample %	Natives %	Migrants %
Burgenland	5.19	5.18	5.36
Lower Austria	19.27	19.21	20.30
Vienna	14.13	13.39	25.77
Carinthia	9.65	10.18	1.20
Styria	15.83	16.15	10.76
Upper Austria	17.94	17.92	18.21
Salzburg	6.03	6.08	5.32
Tyrol	6.96	6.77	9.95
Voralberg	5.01	5.13	3.13
<i>N</i>	1,112	1,046	66

Own calculations based on the EVS 2008 for Austria. Estimates are computed using population weights.

Table A5: Correlations of Parents and Child Years of Schooling

	Correlation Coefficient	<i>N</i>
Whole Sample	0.35	1,112
Natives	0.36	1,046
Migrants	0.21	66

Own calculations based on the EVS 2008 for Austria. Estimates are computed using population weights.

Table A6: Attitudes Towards Immigrants in Urban and Rural Areas

	Rural	Urban
Attitudes to Migrants I	-2.35	-2.30
Attitudes to Migrants II	-0.35	-0.35
<i>N</i>	283	734

Own calculations based on the EVS 2008 for Austria. Estimates are computed using population weights.

Table A7: Mean Percentage of votes of main political parties in the parliamentary elections in the time frame 1949 - 1995

Region at age 14: NUTS-2	Social Democrats %	Greens %	Freedom Party %	People's Party %
Burgenland	47.56	2.83	5.69	44.51
Lower Austria	42.38	4.08	6.12	47.16
Vienna	52.28	7.38	8.47	31.28
Carinthia	48.82	4.03	17.16	29.91
Styria	44.43	4.56	9.97	41.28
Upper Austria	45.11	5.41	11.60	45.70
Salzburg	38.32	6.73	15.67	41.39
Tyrol	31.14	7.00	10.63	53.71
Vorarlberg	27.39	7.58	14.91	52.46

The Green Party participated only in these elections: 1986, 1990, 1994, 1995.

Table A8: Comparison of Attitudes to Migrants Measure with Attitudes in EVS

Region NUTS2-level	1990		1999	
	% EVS	Attitudes I	% EVS	Attitudes I
Burgenland	36.1	-2.1	7.7	-7.2
Lower Austria	26	-1.9	14.3	-7.2
Vienna	14.7	-1.8	8.4	-5.9
Carinthia	17.2	-2.4	17.2	-6.5
Styria	20.6	-1.9	20.6	-6.9
Upper Austria	23.5	-1.9	23.5	-7
Salzburg	20.5		10.2	-6.9
Tyrol	12.9	-1.5	6.3	-7
Voralberg	8.1		14.5	1.5

Own Calculations based on the CMP and EVS for Austria. The column % EVS shows the percentage of individuals who said they would not like to have an immigrant as a neighbor. The column "Attitudes I" gives our weighted measure of attitudes based on party CMP data and voting results.