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### **Natives' attitudes and immigrants' unemployment durations**

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## **Abstract**

Which factors determine the performance of immigrants in the destination country labor market? Evidence in the literature suggests that discrimination may be a barrier to the economic assimilation of immigrants. However, depending on their country of origin, immigrants are heterogeneous with respect to the discrimination they face. This paper investigates how the attitude of natives affects immigrants' unemployment duration in Germany. Using individual level panel data from the German Socio Economic Panel from 1984 to 2012, we employ survival analysis methods to model immigrants' unemployment duration. We find that lower trust levels of natives towards the citizens of a given country, measured using Eurobarometer surveys, positively influence the unemployment duration of immigrants originating from this country. We show that this result is not driven by origin-specific unobserved heterogeneity, and that it is robust to different definitions of unemployment and different specifications. The results of our paper highlight the fact that immigrants face different obstacles depending on their origin when it comes to integrating destination country labor markets.

## **Keywords**

Immigrant workers, Unemployment duration, Discrimination.

## **JEL Codes**

J61, J64, J71

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# 1 Introduction

Germany is currently confronted with the challenge of integrating sizable inflows of foreign-born populations which include both economic migrants and refugees.<sup>1</sup> The public debate on the reception of immigrants and asylum seekers sparked very divergent reactions within the German population, ranging from warm welcome demonstrations to violent protestations against this historical surge in foreign born population. Such mixed feelings about immigration are not new and the integration of the foreign-born population in the local labor market has been at the heart of concerns for decades. In this context, a question that is often overlooked is how the attitude of natives affects the integration of immigrants.

The fact that immigrants underperform natives in the labor market has been often observed in the literature (Borjas, 2014). Many potential explanations have been proposed, including immigrants' lower ability, firms' difficulties in properly assessing qualifications obtained in a foreign country, lack of language skills, or discrimination. Empirical evidence suggests that immigrants are indeed discriminated in the labor market (Kaas and Manger, 2012). However, immigrants from different countries of origin do not necessarily face the same obstacles in the destination country labor market. There is a gap in the literature when it comes to exploring the heterogeneity in terms of labor market discrimination against immigrants. In particular, a plausible but unexplored hypothesis is that different levels of trust that natives associate with immigrants depending on their country of origin might capture origin-specific discrimination. Indeed, trust can condition the willingness to engage in economic transactions with immigrants since trust is a prerequisite for contracts in the absence of complete information (Göran and Hägg, 1994).

While trust levels can affect different labor market outcomes such as wages and job quality, the focus of the present analysis is on unemployment spells for several reasons. First, we observe an over-representation of immigrants in the unemployed population. Indeed, while the unemployment rate stood at 4.5% for the German native population, it reached 9.2% among immigrants in 2014.<sup>2</sup> We also observe a large heterogeneity by origin country. Second, prolonged unemployment spells bear high costs on society because of poorer health of the unemployed, skill depreciation, forgone tax incomes, slower assimilation, etc.

In this paper we investigate empirically whether trust levels that Germans associate with

<sup>1</sup>According to the *Statistisches Bundesamt* (German federal statistical office), 1,226,000 people immigrated to Germany in 2013, an increase of 146,000, or 13%, with respect to 2012. Source: <https://www.destatis.de/EN/FactsFigures/SocietyState/Population/Migration/Current.html> accessed on July 16, 2016.

<sup>2</sup>Source: Eurostat: [http://ec.europa.eu/eurostat/statistics-explained/index.php/Migrant\\_integration\\_statistics\\_-\\_employment](http://ec.europa.eu/eurostat/statistics-explained/index.php/Migrant_integration_statistics_-_employment) accessed on July 16, 2016.

the citizens of an immigrants' country of origin influence his or her unemployment duration. The rationale can be conveyed by a standard job search model in which discriminated groups of immigrants, captured by lower levels of trust, receive fewer job offers. As a consequence, immigrants who originate from countries which Germans perceive as less trustworthy end up with lower exit rates out of unemployment.<sup>3</sup>

We carry out the empirical analysis building on an individual-level panel dataset, the German Socio-Economic Panel (GSOEP). Specifically, we use monthly calendar information to construct labor market activity spells over the period 1984-2012. We then model immigrant's unemployment duration using Cox and Weibull proportional hazard models. We test whether the level of trust that Germans associate with an immigrants' country of origin is a significant determinant of unemployment duration. Our measure for the level of trust is the share of Germans declaring in Eurobarometer surveys that citizens of the country in question are trustworthy. We exploit variation in levels of trust towards different origin countries both at the national and the regional level. Working at the regional level allows us to control for origin-specific factors which account for the adverse consequences of selection into migration. Indeed, a major drawback of analyzing a self-selected stock-sample is that it excludes potential migrants for whom discrimination is most costly. This in turn can confound the identification of the effect of discrimination on immigrant's labor market outcome. In line with this concern, our analysis highlights the importance to overcome the identification challenge posed by varying self-selection patterns across origin countries.

The results of our analysis suggest that natives' attitudes strongly influence the labor market outcomes of immigrants. In particular, our findings indicate that if Germans had the same positive attitudes towards Turkish citizens that they have towards Austrian citizens, Turkish migrants would see their average unemployment duration reduced by three months on average. Our results are robust to alternative specifications and to several definitions of unemployment and levels of aggregation of the variable capturing levels of trust. Furthermore, the results are at odds with a number of alternative explanations.

This paper is related to several strands of the literature. First, it contributes to the literature investigating the determinants of immigrants' performance on the destination country labor market. The seminal work by Chiswick (1978), dealing with the effects of Americanization on the earnings of immigrants, has given rise to a vast literature trying to understand

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<sup>3</sup>Reducing the arrival rate of jobs offer has two opposed effects. On the one hand, the unemployment duration of discriminated workers decreases because they become less choosy and reduce their reservation wage. On the other hand, the lower expected number of occasions of leaving unemployment increases immigrant's unemployment duration. van den Berg (1994) shows that under relatively weak conditions the latter effect dominates.

the labor market performance of immigrants in the destination country. Empirical results generally suggest that the ability to engage in social interactions with natives increases the labor market performance of immigrants. For instance, Aldashev *et al.* (2009) find that language proficiency significantly affects labor market participation, employment probability, and occupational choice of foreigners in Germany. The literature review by Constant and Zimmermann (2009) also suggests that ethnic identities and attitudes seem to have implications for the economic performance of immigrants in the host country. With respect to immigrants' ties to host and origin country, Constant and Zimmermann (2009) find that, conditional upon entering unemployment, those not attached to the host country but rather strongly attached to their country of origin reintegrate more slowly into the German labor market. The authors argue that this group of migrants exerts a relatively low search effort and that it has reservation wages above the level that would imply employment probabilities observed for other groups of migrants. Using the European Social Survey, Bisin *et al.* (2011) also find that non-EU immigrants in Europe with a strong ethnic identity experience a penalty with respect to labor market outcomes. However, Casey and Dustmann (2010) argue that home country identity and host country identity *per se* are not strong determinants of immigrants' labor market outcomes in Germany. This suggests that the attitude of natives might also play an important role in the economic assimilation of immigrants.

A second strand of the literature related to this paper investigates how negative attitudes and discrimination affect individuals in their job search process. The economic literature on discrimination distinguishes two forms of discrimination. The first type of discrimination, well-known as taste discrimination, was first described in the seminal paper of Becker (1957). Taste discrimination occurs when members of a minority group are unequally treated regarding members of a majority group despite identical characteristics. The second form of discrimination, namely statistical discrimination, tries to rationalize this unequal treatment. Phelps (1972), Arrow (1973) or Akerlof (1976) analyze discrimination across the informational spectrum and signal theory. They argue that discrimination arises from the fact that employers lack information about the productivity of job applicants. It becomes therefore rational for them to use observable characteristics like gender or race to infer their productivity, by using the average productivity of the group they belong to. Concerning immigrants, Baker and Benjamin (1994) document the existence of persistent differences in labor market outcomes and small rates of assimilation for different cohorts of immigrants in Canada. The authors argue that the role of discrimination cannot be ruled out. Evidence on important wage differences between natives and immigrants is also found in Germany (Gundel

and Peters, 2007; Zibrowius, 2012). The literature suggests that observed wage gaps are not exclusively due to differences in productivity. Indeed, field experiments provide causal evidence that subjective perceptions of recruiters based on race or origin also play an important role (Bertrand and Mullainathan, 2004; Kaas and Manger, 2012; Biavaschi *et al.*, 2013). Focusing more specifically on natives' self-reported sentiments towards immigrants, Larsen and Waisman (2007) find that in Swedish municipalities with strong negative attitudes, well educated immigrants from developing countries suffer from a sizable income penalty. Furthermore, quasi-experimental evidence indicates that changes in natives attitudes reduce the attractiveness of the host country for immigrants. Based on a household survey, Friebel *et al.* (2013) find that xenophobic attacks in South Africa against immigrants from neighboring countries decreased the migration intention of household heads in Mozambique. In a similar vein, following a widely documented crime, De Coulon *et al.* (2016) also identify a significant effect of anti-immigrant attitudes on the intended duration of stay of Romanian migrants in Italy. Gould and Klor (2015) show that the 9/11 terrorist attacks induced a backlash against the Muslim community in the US, slowing their assimilation rate. However, Åslund and Rooth (2005) and Braakmann (2007) find that the variation in attitudes following the attacks of 9/11 did not cause a severe decline in job prospects of Muslims in the Swedish and German labor markets, respectively. In a more general review of the literature on the labor market outcomes of minority groups, Lang and Lehmann (2012) underline that assessing differences in terms of unemployment duration due to discrimination is rather puzzling from a theoretical perspective. Indeed, since standard job search models ignore the reaction of firms, one might expect that the labor market adjusts through wages and that differences in the exit rate out of unemployment between groups of workers cancel at equilibrium. However, more sophisticated equilibrium search-matching models show that longer unemployment duration for discriminated minority groups can exist at equilibrium. For instance, Rosén (1997) shows that groups of workers with a lower probability of being hired for a job for which they apply end up with lower wages and higher unemployment rate and that this equilibrium is stable. Furthermore, Lang and Lehmann (2012) show that a simple extension of the model by Rosén (1997) can also explain longer unemployment duration and higher turnover for discriminated groups.

A third strand of the literature related to this paper suggests that perceptions such as trust, rooted in group-specific cultural norms, beliefs, and values, strongly influence economic outcomes. For instance Nunn and Wantchekon (2011) demonstrate that the consequences of the slave trade in terms of mistrust between groups of population in Africa are still observable



nowadays. By conditioning the level of social capital and cooperation among agents, inherited trust facilitates economic transactions which is mirrored in macroeconomic outcomes such as economic development (Knack and Keefer, 1997; Fafchamps, 2006) and economic growth (Algan and Cahuc, 2010). Finally Guiso *et al.* (2009) show that bilateral trust between European countries influences bilateral trade flows, portfolio investments, and direct investments.

The remainder of the paper is organized as follows. Section 2 introduces the data used in the analysis and Section 3 presents the descriptive statistics. Section 4 presents the empirical strategy and Sections 5 and 6 the main results and some robustness analysis, respectively. Finally, Section 7 draws the main conclusions.

## 2 Data

We use the German Socio-Economic Panel (GSOEP hereafter), the most extensive (still ongoing) tracking survey of private households and persons in Germany. Started in 1984 in the Federal Republic of Germany and extended to the German Democratic Republic in 1990,<sup>4</sup> the GSOEP consists of several samples introduced in different years and targeting specific subgroups of the German population (see appendix Table A1). Samples B and D are the most relevant in the context of our analysis since they oversample households with immigration background.<sup>5</sup>

We combine annual longitudinal biographical information on immigrants with monthly calendar data in order to precisely reconstruct individual labor market activity over time. This information is then matched with German's levels of trust towards the different countries of origin of immigrants in the sample. Information on natives' attitudes is taken from two particular surveys i.e. the Eurobarometer (for the years 1976-1997) and the European Election surveys (for the year 2004).

### 2.1 Labor market activity: The German Socio-Economic Panel

In each wave of the GSOEP, respondents are asked to provide information on their monthly activities of the previous year. Specifically, respondents are asked to choose among 11 different categories the ones corresponding to their main activities in each month. Figure A1 in

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<sup>4</sup>With the exception of Berlin, our sample contains only regions from western Germany. This is due to the fact that these regions concentrate the bulk of surveyed immigrants.

<sup>5</sup>Notice that households with immigration background are also present in other samples.

the appendix provides an example taken from the questionnaire.

We build on this information to generate spells of activity for the year preceding the survey. In particular, we obtain individual-specific monthly activity spells by recoding the 11 activity categories into three labor market statuses: employed, unemployed, and out of labor force. Individuals are classified as employed in months in which they declared being either full-time employed or part-time employed. The definition of unemployment is less straightforward because of the difficulty to identify discouraged workers i.e. workers who are not officially registered as unemployed but who are still available for work.<sup>6</sup> It is important to take this particular group into account in our analysis since those individuals could have left the active population precisely because of discrimination. Our sample of analysis consists of individuals officially registered as unemployed as well as individuals who are not officially registered as unemployed but who declare that they are actively looking for work and/or are available for work in the two weeks following the interview. Both pieces of information are taken from the annual biographical questionnaires. We allocate these annual answers to all months of the survey year. Hence, individuals who do not correspond to either activity status are considered out of the labor force and are not included in the analysis. In order to assess the sensitivity of our results to the definition of unemployment, we construct alternative samples with different definitions of unemployment (see Section 6.2).

## 2.2 Trust data: Eurobarometer and European Election surveys

The trust data are taken from different surveys sponsored by the European Commission and designed to measure public opinions on various topics. They were conducted on a representative sample of the total population of age sixteen and older (about 1,000 individuals per country and per year). Specifically, we use waves of Eurobarometer surveys between 1976 and 1997 that collected self-reported trust information of Germans with respect to citizens from 33 countries; we complement this information with the European Election Survey which collected similar information in 2004.<sup>7</sup> In the Eurobarometer surveys, respondents are asked

<sup>6</sup>The International Labour Organization (ILO) resolutions concerning economically active population, employment, unemployment and underemployment adopted by the 13th International Conference of Labour Statisticians, October 1982, paragraph 10, state the following definition: *The unemployed comprise all persons above a specified age who during the reference period were: (i) without work, that is, were not in paid employment or self-employment during the reference period; (ii) currently available for work, that is, were available for paid employment or self-employment during the reference period; and (iii) seeking work, that is, had taken specific steps in a specified recent period to seek paid employment or self-employment.*

<sup>7</sup>Unfortunately, Eurobarometer surveys and the European Election Survey do not provide information on the nativity status of respondents. The surveys are designed to capture the opinion of the resident population. Hence it is possible that the opinion of some immigrants were taken into account. According to the 2011

the following question: “*I would like to ask you a question about how much trust you have in people from various countries. For each, please tell me whether you have a lot of trust, some trust, not very much trust, or no trust at all*”. To construct a measure of bilateral trust from Germans towards other nations, we use the share of positive answers among the total answers i.e. the share of Germans who answered “*very trustworthy*” or “*fairly trustworthy*”. In the waves 1995 and 1997 of the Eurobarometer surveys and in the European Election Survey in 2004, the question is slightly different. The wording of the question is “*do you trust citizens from country X?*”. Only two answers were possible: “*I trust them*” or “*I do not trust them*”. For these years, the share of those who answered “*I trust them*” is used as an indicator of positive opinions.

We are interested in the general level of trust that Germans have towards individuals from different countries of origin. There may be some ambiguity in the interpretation of this measure of trust. Guiso *et al.* (2009) argue that the correlation with other questions in separate surveys suggests that the level of trust captured in Eurobarometer surveys reflects the subjective probability that a random person from a given country is trustworthy rather than the respondent’s ability to identify trustworthy people in a different country.<sup>8</sup>

The factors that shape the perception of the trustworthiness towards citizens from a given country have in common that they are rather stable over time. This is illustrated in Figure A2 in appendix. The upper figure shows that the evolution of levels of trust over time is driven by common shocks that do not affect the ranking between countries very much. This appears even more clearly in the lower figure where we partial out year fixed effects that capture shocks such as economic or political conditions in Germany affecting general levels of trust Germans have towards others. This is in line with the literature review on public attitudes towards immigration by Hainmueller and Hopkins (2014) who find that there is little accumulated evidence that immigration-related attitudes are based on personal economic situations and that attitudes seem to be rather driven by symbolic and cultural concerns. Differences in

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Census, foreigners represented around 10 percent of the German population and diasporas for single origin countries (including German citizens with foreign background i.e. not only migrants strictly speaking) do not reach 4 percent of the total population. Therefore the share of positive opinions we use should not be influenced in a major way by the opinions of migrants.

<sup>8</sup>Specifically, Guiso *et al.* (2009) mention a sample of 1,990 individuals who were asked the two following questions: (i) “Suppose that a random person you do not know personally receives by mistake a sum of 1,000 euros that belong to you. He or she is aware that the money belongs to you and knows your name and address. He or she can keep the money without incurring in any punishment. According to you what is the probability (a number between zero and 100) that he or she returns the money?” and (ii) “How good are you (very good, good, not very good, not good at all) in detecting people who are trustworthy?” They find that the first question is highly statistically correlated with the measure of trust used in this paper, but the second one is not.

levels of trust are indeed determined by many factors including historical events such as wars, cultural differences, differences in political systems, and the quality of law and its enforcement (Guiso *et al.*, 2009).<sup>9</sup> Hence we obtain our variable of interest by calculating time-invariant origin-specific mean values of the share of Germans who declare that they trust citizens of the origin country in question. We calculate this variable both at the national and regional level. One could be concerned that the variable *Trust* computed at the regional level reflects statistical noise due to the small number of annual respondents when the Eurobarometer surveys are split between 11 German regions. This concern is mitigated by the fact that the mean value is computed over several waves of Eurobarometer surveys. On average, the mean value of the *Trust* variable for each region is computed over a sample of 422 individuals.

### 3 Descriptive statistics

Our main sample of analysis is restricted to unemployment spells that do not exceed 48 months.<sup>10</sup> This leaves us with a sample of 108,991 individual-month observations between January 1984 and December 2012. The sample contains 1,580 individuals originating from 15 countries and located in 11 regions (Länder) in Germany. On average, 40.6 percent of Germans declare that they trust citizens that originate from the countries included in our sample of analysis (see Table 2). This mean value hides a lot of variability between countries of origin: Table 1 shows that only 24.4 percent of Germans perceive Romanians as trustworthy while as much as 80 percent perceive Austrians as trustworthy.

Figure A3 in the appendix reveals that trust towards citizens of a given country also varies greatly between regions. It is interesting to note that the variability across regions is in line with the average at the country level: the minimum value and maximum of average levels of trust at the regional level are generally within a 20 percentage points range of the country level mean. Hence, the relative level of trust towards citizens of a given country is reflected at the regional level with varying intensity.

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<sup>9</sup>Table A7 in Appendix shows the Pearson correlations between our variable *Trust* and some measures of distances computed by Spolaore and Wacziarg (2009). We clearly see that *Trust* is highly correlated with indexes of cultural, genetic and religious distance.

<sup>10</sup>We suspect unemployment spells above this threshold to be unusual or potentially artificial (due to early retirement for example). Nonetheless, such observations correspond to less than one percent of the total observations and all results are robust with estimates including unemployment spells above this threshold.

Table 1: Origin countries of immigrants

Country of origin	Indiv.	Obs.	Perc.	Cum.	Survival time			Trust
					25%	50%	75%	
Turkey	586	44456	40.79	40.79	7	9	12	0.320
Italy	229	17101	15.69	56.48	8	12	14	0.558
Poland	203	13320	12.22	68.64	5	8	10	0.268
Russia	174	10208	9.37	78.07	7	10	13	0.347
Greece	149	9421	8.64	86.71	9	13	15	0.596
Spain	79	3890	3.57	90.28	6	8	12	0.662
Romania	61	3882	3.56	93.74	6	8	12	0.244
Austria	17	1033	0.95	94.79	4	7	9	0.800
United States	14	1280	1.17	95.96	3	4	6	0.685
Czech Republic	14	822	0.79	96.75	13	13	14	0.392
France	12	1174	1.08	97.83	2	2	3	0.689
Hungary	12	796	0.73	98.56	22	22	24	0.517
Netherlands	12	744	0.68	99.24	13	14	16	0.711
Portugal	11	324	0.30	99.54	13	15	17	0.597
United Kingdom	7	497	0.46	100.00	9	10	12	0.565
Total	1580	108991	100.00	Mean	6	9	12	0.406

Source: Author's elaboration on GSOEP panel data, Eurobarometer and European Election Survey data. Survival time is the time elapsed before failure i.e. exit out of unemployment. It is interpreted as the number of months necessary for  $x\%$  of the unemployed population to find a job. Trust is the mean of the share of Germans who expressed that they trust citizens from a given country, calculated by country of origin.

This can be explained by the heterogeneity within German regions with respect to openness, inherited cultural values and beliefs, which in turn translates into heterogeneity in terms of norms such as family values and attitudes more in general (Bertram and Nauck, 1995; Silbereisen and von Eye, 1999; Bertram, 2013; Bertram *et al.*, 2013, for references).

The question at the heart of this paper is whether varying levels of trust that Germans associate with different countries of origin influence the unemployment duration of immigrants. On average, unemployment spells last for 25.76 months in our main sample of analysis.<sup>11</sup> However, immigrants from different countries of origin experience very different average lengths of unemployment spells. For instance, individuals who originate from Turkey have unemployment spells of 26.53 months on average while the corresponding figure stands

<sup>11</sup>This figure is reduced to an average of 21.73 months if we consider only unemployment spells that end with a return to employment during the period of analysis.

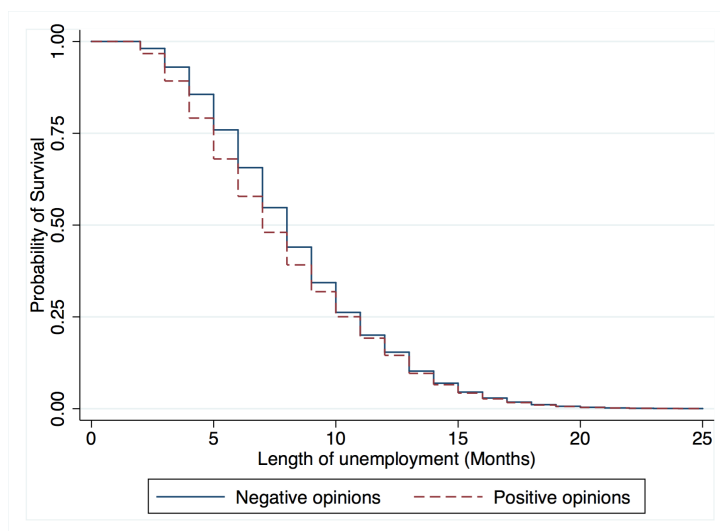
at 15.49 months for individuals originating from the US. As can be observed in Table 1, longer average spells of unemployment tend to coincide with lower perceived trustworthiness by Germans. Indeed, this table shows that it takes on average 13 months for 75 percent of unemployed immigrants from Russia (low level of trust) to escape unemployment while the corresponding figure for Austrian immigrants (high level of trust) is only nine months.

Table 2: Descriptives statistics

Variable	Mean	Std.D.	Min	Max	Log-rank Test
Trust	0.406	0.141	0.244	0.800	
Trust(region)	0.396	0.148	0.020	0.813	
Age	1.850	1.005	0	3	5394.600***
Female	0.464	0.499	0	1	924.770***
Nb. Children	1.158	0.165	0	4	954.130***
Education	0.787	0.690	0	2	1784.220***
Married	0.775	0.417	0	1	160.890***
Years since migration	3.292	1.763	0	6	1944.420***
Assistance	0.130	0.336	0	1	18497.350***

Source: Author's elaboration on GSOEP panel data, Eurobarometer and European Election Survey data. Trust is the mean of the share of Germans who expressed that they trust citizens from a given country, calculated by country of origin. Age is a categorical variable with four groups: younger than 25 (0), between 25 and 34 (1), between 35 and 44 (2) and above 44 years old (3). Female is a dummy variable equal to one if the respondent is a woman and zero otherwise. Nb. children is a categorical variables with five groups: no child (0), One child (1), two children (2), three children (3) and four children (4) present in the household. Education is a categorical variable with three groups: low ISCED (0), middle ISCED (1) and high ISCED (2). Married is a dummy variable equal to one if the respondent is married and zero otherwise. Years since migration to Germany is a categorical variable with seven groups: less than 5 years (0), between 5 and 9 years (1), between 10 and 14 years (2), between 15 and 19 years (3), between 20 and 24 years (4), between 25 and 29 years (5) and 30 years or more (6). Assistance is a dummy variable equal to one if the respondent received social assistance and zero otherwise. The log-rank test compares estimates of the hazard functions of the several groups at each time for categorical variables. The null hypothesis assumes no difference between the survival curves of the different groups.

Figure 1: Kaplan-Meier estimates of immigrant's unemployment duration by natives' attitudes levels



Source: Author's elaboration on GSOEP panel data, Eurobarometers and European Election Survey data. The Kaplan-Meier estimator is a non parametric estimate of the survivor function, which is the probability of failing after the month  $m$  (Cleves *et al.*, 2010). The survival function (defined as in Eq. 2) reports the probability of remaining unemployed beyond the month  $m$  (There was no failure before  $m$ ). At any month  $m$ , it gives the percentage of the population remaining unemployed. Positive and negative opinions refer respectively to the mean of the share of Germans who expressed that they trust or distrust citizens from a given country.

A similar picture is conveyed by Figure 1 which presents survival functions associated with different levels of the variable *Trust*. Indeed, when the share of Germans who perceive the country of origin as trustworthy exceeds 50 percent, the probability of exiting unemployment is higher than when this figure is below 50 percent. However, Table 1 also shows that the relationship between the survival time and the level of trust is not systematic. This is not surprising since individuals from different countries of origin are very different in terms of observable characteristics, such as age and years of education, that may influence the duration of unemployment spells (see Table A3 in the appendix). This calls for a more sophisticated analysis that can account for such confounding factors.

## 4 Empirical Analysis

This section introduces our empirical analysis. After presenting the duration model, we discuss the implications of self-selection of migrants for our analysis, which is due to the stock-sample nature of our dataset. We also discuss how we address this issue by looking at

the effect of natives' attitudes at the regional level.

## 4.1 Duration model

We model immigrants' unemployment duration in Germany using survival analysis methods where unemployment duration is reported in months. We define a failure as the transition from unemployment to part-time or full-time employment. Unemployment spells that are not stopped by hiring are treated as right-censored. Let  $M$  be a non-negative random variable, called the survival time, denoting the time spent unemployed expressed in number of months. The cumulative distribution of  $M$ ,  $F(m)$  is such as:

$$\begin{aligned} F(m) &= Pr[M \leq m] \\ &= \int_0^m f(s)ds \end{aligned} \tag{1}$$

with  $f(m)$  its density function. We define  $S(m)$ , the survival function, as the probability for an individual surviving (remaining unemployed) beyond month  $m$ . It is therefore the probability that the individual does not find a job prior to  $m$ . The survival function can be written as follows:

$$\begin{aligned} S(m) &= Pr[M \geq m] \\ &= 1 - F(m) \end{aligned} \tag{2}$$

This function shows therefore which proportion of unemployed immigrants remains unemployed (i.e. experiences no failure) prior to a given month  $m$ . At the heart of duration models, hazard functions focus on the instantaneous probability that an individual finds a job in a given month  $m$ , conditional on the fact that he had remained unemployed until this month.<sup>12</sup> Our hazard function is therefore defined such as:

$$h(m) = \lim_{\Delta m \rightarrow 0} \frac{Pr(m + \Delta m > M > m | M > m)}{\Delta m} = \frac{f(m)}{S(m)} \tag{3}$$

Proportional hazard models (PH) assume that the hazard faced by an individual  $i$ , which varies in response to individual's characteristics, is multiplicatively proportional to a baseline hazard  $h_0(m)$ , faced by all individuals. If we define  $\mathbf{x}_{im}$  as a vector of covariates with the

<sup>12</sup>Months vary from 1 (January 1984) to 348 (December 2012). Individuals enter the analysis in the first month of unemployment.



subscripts  $i$  for individual and  $m$  for month, our main specification can be written such as:

$$h_i(m|Trust_o, \mathbf{x}_{im}) = h_0(m) \exp\{\beta_0 + \beta_1 Trust_o + \boldsymbol{\beta}'_x \mathbf{x}_{im}\} \quad (4)$$

where  $Trust_o$  represents, for an individual  $i$ , Germans' trust level towards his or her origin country  $o$ . The coefficient of interest  $\beta_1$  captures the effect of native's attitudes on immigrants' unemployment duration. A positive  $\beta_1$  means that a higher level of Germans' trust towards the origin country of a given individual increases his instantaneous probability to leave unemployment i.e reduces his expected length of unemployment.<sup>13</sup> Note that our baseline specification takes into account year, seasonal and regional fixed-effects and that  $\mathbf{x}_{im}$ , the full vector of individual characteristics includes age, sex, education, marital status, number of years since migration and whether the unemployed received social assistance.<sup>14</sup> Our empirical analysis uses two different specifications in order to estimate these hazards.<sup>15</sup> These two specifications differ in the assumptions made about the hazard shape over time. First, the semi-parametric Cox-proportional hazard model makes no assumption on time dependency.<sup>16</sup> Thus, hazards can be either an increasing, a decreasing, or a constant function of time. Second, we use the parametric Weibull model which allows us to rewrite the hazard function such as:<sup>17</sup>

$$\begin{aligned} h_i(m|Trust_o, \mathbf{x}_{im}) &= h_0(m) \exp\{\beta_0 + \beta_1 Trust_o + \boldsymbol{\beta}'_x \mathbf{x}_{im}\} \\ &= pm^{p-1} \exp\{\beta_0 + \beta_1 Trust_o + \boldsymbol{\beta}'_x \mathbf{x}_{im}\} \end{aligned} \quad (5)$$

with  $p$  a parameter, estimated from the data and which models the time dependency of the hazard. If  $p > 1$  ( $p < 1$ ) then the hazard is an increasing (decreasing) function of time. Also, our model allows for multiple unemployment spells. In order to avoid time-dependency for the unemployment spells of the same individual over time, we correct the covariance matrix of the estimators by clustering the errors at the individual level (Lin and Wei, 1989).<sup>18</sup>

<sup>13</sup>Our tables report hazard ratios exponentiated coefficients. Different from traditional hazard ratios, exponentiated coefficients have not to be compared with one but with zero.

<sup>14</sup>All these categorical variables have a p-value below 0.01 for the log-rank test of equality. The null hypothesis of the log-rank test assumes equality of survival distributions for each level of a categorical variable. Non parametric estimates of covariates with the Kaplan-Meier estimator are available in appendix Figure A4. All results remain unchanged when the variable assistance is removed from the regression.

<sup>15</sup>Irrespective of the model we use, hazard functions are estimated using a maximum likelihood approach.

<sup>16</sup>Semi-parametric models imply however that the effect of covariates is assumed to take a certain form, by opposition to non parametric models, as the Kaplan-Meier estimator.

<sup>17</sup>The Weibull model is retained against the gamma, log-logistic, log-normal and exponential models, regarding its lower AIC and BIC criteria.

<sup>18</sup>Successive failures are assumed to be unordered and of the same type. 40% of the individuals in the baseline sample experienced only one unemployment spell.

## 4.2 Empirical strategy

Equation 5 is useful for looking at cross-country differences. However, it does not account for origin-specific factors that might influence the exit rate of immigrants out of unemployment. Indeed, an important concern arises from the fact that our analysis builds on a stock-sample of migrants who have chosen to migrate to Germany despite the potential discrimination they would face. Specifically, discrimination might influence the composition of the self-selected group of observed immigrants because different labor market opportunities may lead immigrants from highly discriminated origin countries to be drawn from a different part of the population than their counterparts from less discriminated origin countries.

To the extent that discrimination influences the distribution of wage offers faced by potential migrants, the standard Roy model (Roy, 1951), applied to the analysis of the migration decision by Borjas (1991), predicts that, holding other determinants of individual earnings constant, immigrants originating from a highly discriminated origin country will have on average lower reservation wages compared to immigrants originating from less-discriminated origin countries. This in turn leads to higher acceptance rates of job offers and lower unemployment durations.<sup>19</sup> The self-selection of migrants regarding discrimination levels at destination implies that it is crucial to control for origin-specific effects.<sup>20</sup>

In order to overcome the adverse consequences of selection at the national level, we estimate a second equation which considers natives' attitudes at the regional level. In particular, we compute the variable  $Trust_{or}$  for 15 origin countries  $o$  in each German region  $r$ . Our estimated equation becomes:

$$h_i(m|Trust_{or}, \mathbf{x}_{im}) = pm^{p-1} \exp\{\beta_0 + \beta_1 Trust_{or} + \beta'_x \mathbf{x}_{im}\} \quad (6)$$

This specification exploits the variation between origin-region pairs. It allows us to control

<sup>19</sup>Notice that a different argument could lead to the same prediction. For instance, if migrants originating from countries which Germans associate with lower levels of trust also have higher monetary migration costs, the migration in itself would deplete their savings available for the job search period, thus reducing their optimal reservation wage. As a result such migrants would have lower reservation wages as well as shorter unemployment durations.

<sup>20</sup>Lower levels of trust can also influence the selection patterns of immigrants who decide to leave Germany. Individuals suffering the most from discrimination may have greater incentives to leave Germany for another destination or returning back to their origin country. This would imply that the remaining pool of immigrants in Germany is composed of those who are able to mitigate the effects of discrimination due to lower origin-specific trust. Our data reveal that around 10 percent of our sample corresponds to migrants who left Germany between 1984 and 2012. Surprisingly, we found that the mean of the variable  $Trust$  is higher for this group (around 50 percent of positive opinions) compared to the mean value for stayers (around 40 percent of positive opinions). This suggests that return migrants are possibly drawn disproportionately more from origin countries towards which Germans express higher trust levels.

for unobserved origin-specific factors such as quality of education and self-selection patterns by including origin fixed-effects interacted with year fixed-effects. We expect therefore an increase in our coefficient of interest  $\beta_1$ . It is worth noting that institutions such as collective bargaining and unions can mitigate the downward bias induced by the selection at the national level since they result in a compression of the wage distribution, lower reservation wages in groups of highly discriminated immigrants are not sufficient to fully offset the unemployment effect of lower job offer rates.<sup>21</sup> Indeed, immigrants whose reservation wage is lower than the minimum wage offered by firms cannot increase their exit probability out of unemployment by taking advantage of job offers between their reservation wage and the minimum wage.

Finally, a legitimate concern would be that a similar self-selection effect might occur at the regional level. Indeed, as long as we cannot fully correct for self-selection into German regions, our empirical analysis can only determine a conservative estimate of the effect of discrimination on unemployment spells if the migrants in low-trust regions reduce their reservation wage. Figure A5 in the appendix shows that observable characteristics are not systematically different for migrants from a given origin country when we compare regions that express relatively higher levels of trust compared to regions that express relatively low levels of trust towards citizens of this origin country. Hence this Figure suggests that migrants in our sample do not systematically self-select into regions that express higher levels of trust towards citizens of their origin country. Although it is not necessarily informative about self-selection on unobserved characteristics, the Figure reduces the concerns regarding self-selection at the regional level.

## 5 Results

This section presents the results of our empirical analysis starting first with the results obtained with the variable *Trust* at the national level and second with the variable *Trust(region)* at the regional level. This allows us to discuss the role played by origin-specific unobserved heterogeneity such as self-selection of migrants along the lines discussed in the previous section. Finally, we discuss some threats to identification that could confound our interpretation of the observed correlation between natives' attitudes and immigrant's unemployment

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<sup>21</sup>Collective bargaining is very common in Germany and labour unions play an important role in the determination of the wages (Franz and Pfeiffer, 2006). This may lead to a compression of wages at the lower end of the distribution even in non-union firms (Blau and Kahn, 1999). Kahn (2000) documents a positive relationship between collective bargaining coverage or union density and low relative employment for less-skilled workers.

duration.

## 5.1 Trust at the national level

Columns (1) and (2) in Table 3 report the effect of Germans' trust levels towards the different countries of origin of migrants at the national level. It is worth noticing that these estimates include a full set of individual controls and several sets of fixed-effects. Focusing on our variable of interest, the first two columns also show that regardless of the estimator we employ, a higher level in natives' trust towards a given origin country is associated with a higher instantaneous exit probability out of unemployment for immigrants originating from this country.<sup>22</sup> This effect is significant at the 5% level in both the Cox and Weibull models. The evidence that lower levels of origin-specific trust are associated with longer unemployment spell for immigrants suggests that immigrants originating from different countries experience diverse barriers to entry when it comes to integrating into the German labor market. Nevertheless, it is important to bear in mind that the coefficients of interest in columns (1) and (2) do not account for the origin-specific self-selection process which, according to a standard Roy model, leads the most discriminated immigrants to be drawn from the lower part of the reservation wage distribution in their home country. Hence these coefficients are potentially downward biased. Regarding individual level variables, it clearly appears that, being aged, being female, having many children, or being married comparatively to single persons, increases immigrants' unemployment duration.<sup>23</sup> Conversely, we observe that conditional upon being unemployed, highly educated immigrants have a higher instantaneous probability of finding a job comparatively to less educated immigrants. The hazard of exiting unemployment also increases with years since immigration, a standard result in the assimilation literature. This is not the case for immigrants receiving financial assistance from the government who experience longer length of unemployment. This result is standard in the literature since benefits may reduce the income gain associated with a transition from unemployment to employment (Bover *et al.*, 2002; Røed and Zhang, 2003).

<sup>22</sup>The estimated shape parameter  $\ln(\rho)$ , in Weibull regressions is significantly positive which means that the probability for immigrants to find a job increases with time in unemployment.

<sup>23</sup>All the results in this paper are robust to stratification by gender and available upon request.

Table 3: Natives' attitudes and immigrant's unemployment duration.  
Semi-parametric and parametric estimates.

	(1)		(2)		(3)		(4)		(5)		(6)	
	Cox Hazard	Std.D.	Weibull Hazard	Std.D.	Cox Hazard	Std.D.	Weibull Hazard	Std.D.	Weibull Hazard	Std.D.	Weibull Hazard	Std.D.
	$\beta$		$\beta$		$\beta$		$\beta$		$\beta$		$\beta$	
Trust	0.193**	(0.087)	0.180**	(0.088)								
Trust(region)					0.231***	(0.085)	0.220**	(0.086)	1.056**	(0.452)	0.400**	(0.163)
Age ( <i>ref&lt;25</i> ):												
25-34 years old	-0.032	(0.034)	-0.026	(0.034)	-0.033	(0.034)	-0.027	(0.035)	-0.030	(0.035)	-0.028	(0.035)
35-44 years old	-0.120***	(0.040)	-0.124***	(0.041)	-0.121***	(0.040)	-0.125***	(0.041)	-0.127***	(0.041)	-0.129***	(0.041)
45 and + years old	-0.280***	(0.045)	-0.287***	(0.047)	-0.282***	(0.045)	-0.289***	(0.047)	-0.291***	(0.047)	-0.294***	(0.047)
Female (ref is male)	-0.051	(0.036)	-0.055	(0.036)	-0.050	(0.036)	-0.054	(0.036)	-0.056	(0.036)	-0.059	(0.037)
Nb. Children ( <i>ref is no child</i> ):												
One child	0.055*	(0.030)	0.055*	(0.030)	0.056*	(0.030)	0.056*	(0.030)	0.055*	(0.030)	0.055*	(0.030)
Two children	0.083***	(0.032)	0.063*	(0.034)	0.086***	(0.032)	0.066*	(0.034)	0.066*	(0.034)	0.067**	(0.034)
Three children	0.095**	(0.039)	0.063	(0.041)	0.096**	(0.039)	0.065	(0.040)	0.064	(0.040)	0.066	(0.041)
Four children and +	0.049	(0.054)	0.022	(0.057)	0.051	(0.054)	0.025	(0.057)	0.024	(0.057)	0.027	(0.057)
Female * One child	-0.142***	(0.047)	-0.147***	(0.048)	-0.144***	(0.047)	-0.149***	(0.048)	-0.147***	(0.048)	-0.145***	(0.048)
Female * Two children	-0.106**	(0.048)	-0.093*	(0.049)	-0.109**	(0.048)	-0.096*	(0.050)	-0.096*	(0.050)	-0.091*	(0.050)
Female * Three children	-0.293***	(0.084)	-0.286***	(0.086)	-0.294***	(0.084)	-0.287***	(0.086)	-0.285***	(0.086)	-0.284***	(0.086)
Female * Four children and +	-0.414***	(0.138)	-0.413***	(0.144)	-0.417***	(0.138)	-0.415***	(0.143)	-0.416***	(0.143)	-0.410***	(0.144)
Education ( <i>ref is low ISCED</i> ):												
Middle ISCED	0.094***	(0.027)	0.099***	(0.027)	0.096***	(0.027)	0.101***	(0.027)	0.101***	(0.027)	0.192**	(0.085)
High ISCED	0.157***	(0.032)	0.172***	(0.032)	0.158***	(0.032)	0.174***	(0.032)	0.174***	(0.032)	0.325***	(0.097)
Married (ref is single)	-0.052**	(0.025)	-0.061**	(0.026)	-0.052**	(0.025)	-0.061**	(0.026)	-0.061**	(0.026)	-0.064**	(0.026)
Years since migration ( <i>ref&lt;5</i> ):												
5-9 years	0.199***	(0.066)	0.227***	(0.066)	0.200***	(0.066)	0.228***	(0.066)	0.581***	(0.191)	0.227***	(0.066)
10-24 years	0.200***	(0.070)	0.176**	(0.072)	0.202***	(0.070)	0.177**	(0.072)	0.487**	(0.202)	0.177**	(0.072)
15-19 years	0.144**	(0.072)	0.091	(0.073)	0.146**	(0.072)	0.092	(0.073)	0.436**	(0.204)	0.092	(0.073)
20-24 years	0.096	(0.074)	0.026	(0.077)	0.097	(0.074)	0.026	(0.077)	0.285	(0.208)	0.025	(0.076)
25-29 years	0.059	(0.077)	-0.031	(0.079)	0.059	(0.077)	-0.032	(0.079)	0.241	(0.213)	-0.031	(0.079)
30 and +	0.045	(0.080)	-0.073	(0.082)	0.043	(0.080)	-0.075	(0.082)	0.262	(0.217)	-0.071	(0.082)
Assistance	-1.343***	(0.063)	-1.320***	(0.063)	-1.343***	(0.063)	-1.320***	(0.063)	-1.319***	(0.063)	-1.320***	(0.063)
Interactions:												
5-9 years * Trust(region)									-0.970**	(0.440)		
10-14 years * Trust(region)									-0.847*	(0.467)		
15-19 years * Trust(region)									-0.939**	(0.471)		
20-24 years * Trust(region)									-0.720	(0.476)		
25-29 years * Trust(region)									-0.762	(0.484)		
30 and + * Trust(region)									-0.904*	(0.481)		
Middle ISCED * Trust(region)											-0.222	(0.192)
High ISCED* Trust(region)											-0.367*	(0.209)
Constant			-2.513***	(0.131)			-2.534***	(0.131)	-2.835***	(0.220)	-2.608***	(0.141)
Observations	108991		108991		108991		108991		108991		108991	
Individuals	1580		1580		1580		1580		1580		1580	
Failures	71309		71309		71309		71309		71309		71309	
Seasonal fixed-effects	Yes		Yes		Yes		Yes		Yes		Yes	
Year fixed-effects	Yes		Yes		Yes		Yes		Yes		Yes	
Regional fixed-effects	Yes		Yes		Yes		Yes		Yes		Yes	
$\ln(\rho)$			0.305***				0.305***		0.306***		0.306***	

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Standard errors in parentheses adjusted for clustering at the individual level. Source: Author's elaboration on SOEP panel data over 1984-2012, Eurobarometer and European Election Survey data.  $\ln(\rho)$  is the estimated shape parameter. Trust is the mean of the share of Germans who expressed that they trust citizens from a given country, calculated by country of origin. Age is a categorical variable with four groups: younger than 25 (0), between 25 and 34 (1), between 35 and 44 (2) and above 44 years old (3). Female is a dummy variable equal to one if the respondent is a woman and zero otherwise. Nb. children is a categorical variables with five groups: no child (0), One child (1), two children (2), three children (3) and four children (4) present in the household. Education is a categorical variable with three groups: low ISCED (0), middle ISCED (1) and high ISCED (2). Married is a dummy variable equal to one if the respondent is married and zero otherwise. Years since migration to Germany is a categorical variable with seven groups: less than 5 years (0), between 5 and 9 years (1), between 10 and 14 years (2), between 15 and 19 years (3), between 20 and 24 years (4), between 25 and 29 years (5) and 30 years or more (6). Assistance is a dummy variable equal to one if the respondent received social assistance and zero otherwise.

## 5.2 Trust at the regional level

From columns (3) to (5) in Table 3, we estimate the effect of Trust at the regional level. This has the advantage of increasing the variability and then to improve the precision of the estimated parameters. Indeed, additional variability is obtained from the differences observed between the 15 origin countries across 11 regions.<sup>24</sup> Columns (3) and (4) of Table 3 show a positive and significant effect of  $Trust(region)$  on the probability to leave unemployment. The effect is statistically significant at the 1 and 5% level respectively.<sup>25</sup> It is also worth noticing that in column (5), years since migration reduce the effect of natives' attitudes on immigrants' hazard ratios since the interaction term between the two variables is statistically significant. In the same way, column (6) suggests that the marginal effect of Germans' attitudes is not conditional on the different levels of education at the five percent level of significance.

As discussed in Section 4.2, we are concerned that the estimated coefficient of our variable  $Trust(region)$  may reflect country-specific factors such as different incentives to migrate that determine the selection of migrants in the population of the country of origin or the fact that different immigrants have faced different quality levels of education in their origin countries. Table 4, column (1), includes therefore origin fixed-effects interacted with year fixed-effects which absorb the effect of all the time-varying origin-specific characteristics which affect immigrant's unemployment duration, and which do not change between German regions. We observe that, while the coefficient remains significant at the one percent level, its magnitude dramatically increases. This is in line with the theoretical intuition that because discrimination reduces the expected gains from migration, migrants from more discriminated origins self-select into the lower parts of the origin country reservation wage distribution. Not accounting for the origin-specific factors reduces therefore significantly the estimated impact of native's attitudes on immigrant's unemployment duration. In terms of magnitude, if Germans had the same positive attitudes towards Turkish citizens as they have towards Austrian citizens, Turkish migrants would see their average unemployment duration reduced by three months on average.<sup>26</sup> Thus, the effect of natives' attitudes is not just statistical but also an

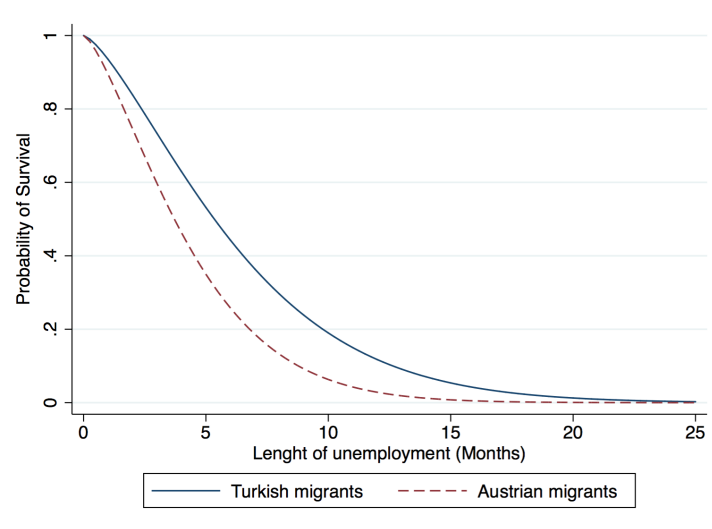
<sup>24</sup>We actually use 112 out of 165 possible origin-region pairs because migrants from some origins are not observed in all regions.

<sup>25</sup>Results with  $Trust$  and  $Trust(region)$  are robust to estimates excluding Turkish immigrants, the largest group of immigrants in Germany. Results are available upon request.

<sup>26</sup>Interpretations in terms of duration are obtained using Weibull estimates in the accelerated failure-time (AFT) metric. AFT model no longer models hazards (as parametric proportional hazards Weibull models) but the logarithm of the duration. Still, the results are perfectly equivalent in the two metrics since  $\beta_{AFT} = \frac{-\beta_{PH}}{\rho}$ . Results with the AFT metric are not reported here but available upon request.

economically significant effect.

Figure 2: Predicted survival functions of unemployment



Source: Author's elaboration on SOEP panel data over 1984-2012, Eurobarometer and European Election Survey data. The survival function (defined as in Eq. 2) reports the probability of remaining unemployed beyond the month  $m$ . At any month, the survival function gives the percent of the population remaining unemployed. These predictions are obtained using the estimated coefficients reported in the column (2) of the Table 4 with the Weibull parametric estimator and using the average value of the control variables.

In order to control for labor market conditions at destination, we introduce in column (2) regional fixed-effects interacted with year fixed-effects which account for all the time-varying region unobserved characteristics that affect immigrant's unemployment duration and which do not vary between origin countries. We prevent therefore our estimations to be biased by yearly heterogeneous dynamics in regional labor markets. Indeed, regions with more favorable labor markets can attract particular groups of immigrants. Still, the coefficient of  $Trust(region)$  is highly positive and significant suggesting that negative natives' attitudes towards immigrants hinder their chances of finding a job more quickly. Figure 2 depicts the predicted survival functions of the immigrant groups with one of the highest and lowest levels of trust namely, Turkish and Austrian immigrants for this last estimate. As expected, the survival function of Austrian immigrants dominates the survival function of Turkish immigrants regardless of the unemployment duration. After seven months of unemployment duration, our model predicts that more than 80 percent of Austrian unemployed would have found a job against less than 65 percent for Turkish immigrants.

Table 4: Natives' attitudes and immigrant's unemployment duration.  
Additional fixed-effects and control variables

	(1)		(2)		(3)		(4)		(5)		(6)	
	Weibull Hazard 1984-2012		Weibull Hazard 1984-2012		Weibull Hazard 1991-2012		Weibull Hazard 1984-2012		Weibull Hazard 1991-2012		Weibull Hazard 1991-2012	
	$\beta$	Std.D.	$\beta$	Std.D.	$\beta$	Std.D.	$\beta$	Std.D.	$\beta$	Std.D.	$\beta$	Std.D.
Trust(region)	1.022***	(0.395)	1.142***	(0.413)	1.029***	(0.398)	1.143***	(0.411)	1.004**	(0.397)	1.163***	(0.400)
Immigration rate					1.780	(2.919)						
Stock immigrants (log)							0.019	(0.034)				
Unemployment Rate (monthly)									-0.023**	(0.011)	-0.028***	(0.005)
<i>Age (ref&lt;25):</i>												
25-34 years old	-0.052	(0.036)	-0.042	(0.035)	0.020	(0.049)	-0.042	(0.035)	0.020	(0.049)	0.027	(0.049)
35-44 years old	-0.182***	(0.042)	-0.172***	(0.041)	-0.094*	(0.054)	-0.171***	(0.042)	-0.093*	(0.055)	-0.086	(0.054)
45 and + years old	-0.369***	(0.049)	-0.357***	(0.048)	-0.263***	(0.060)	-0.356***	(0.048)	-0.262***	(0.061)	-0.254***	(0.060)
Female (ref is male)	-0.055	(0.038)	-0.055	(0.037)	-0.034	(0.038)	-0.055	(0.037)	-0.034	(0.038)	-0.035	(0.037)
<i>Nb. Children (ref is no child):</i>												
One child	0.082***	(0.032)	0.088***	(0.031)	0.091***	(0.034)	0.088***	(0.031)	0.090***	(0.034)	0.094***	(0.033)
Two children	0.108***	(0.035)	0.106***	(0.035)	0.118***	(0.036)	0.106***	(0.035)	0.118***	(0.036)	0.116***	(0.037)
Three children	0.127***	(0.042)	0.124***	(0.042)	0.108**	(0.043)	0.125***	(0.042)	0.107**	(0.043)	0.105**	(0.042)
Four children and +	0.072	(0.057)	0.067	(0.054)	0.114**	(0.050)	0.067	(0.054)	0.115**	(0.050)	0.118**	(0.049)
Female * One child	-0.172***	(0.048)	-0.174***	(0.048)	-0.161***	(0.049)	-0.174***	(0.048)	-0.162***	(0.050)	-0.163***	(0.049)
Female * Two children	-0.121**	(0.050)	-0.120**	(0.050)	-0.121**	(0.051)	-0.121**	(0.050)	-0.122**	(0.051)	-0.121**	(0.051)
Female * Three children	-0.313***	(0.086)	-0.317***	(0.086)	-0.307***	(0.096)	-0.318***	(0.086)	-0.306***	(0.096)	-0.300***	(0.096)
Female * Four children and +	-0.428***	(0.141)	-0.410***	(0.138)	-0.485***	(0.147)	-0.409***	(0.138)	-0.481***	(0.146)	-0.454***	(0.143)
<i>Education (ref is low ISCED):</i>												
Middle ISCED	0.073***	(0.027)	0.069**	(0.027)	0.063**	(0.029)	0.069**	(0.027)	0.064**	(0.029)	0.057**	(0.028)
High ISCED	0.122***	(0.034)	0.115***	(0.034)	0.125***	(0.034)	0.115***	(0.034)	0.126***	(0.034)	0.117***	(0.034)
Married (ref is single)	-0.062**	(0.027)	-0.062**	(0.027)	-0.050*	(0.028)	-0.063**	(0.027)	-0.051*	(0.028)	-0.054*	(0.028)
<i>Years since migration (ref&lt;5):</i>												
5-9 years	0.232***	(0.068)	0.189***	(0.065)	0.184**	(0.075)	0.189***	(0.065)	0.182**	(0.075)	0.139*	(0.072)
10-24 years	0.184**	(0.074)	0.142**	(0.071)	0.144*	(0.085)	0.140**	(0.071)	0.143*	(0.084)	0.098	(0.080)
15-19 years	0.099	(0.077)	0.061	(0.073)	0.102	(0.087)	0.057	(0.073)	0.101	(0.087)	0.056	(0.082)
20-24 years	0.049	(0.080)	0.015	(0.077)	0.025	(0.089)	0.011	(0.077)	0.024	(0.089)	-0.016	(0.085)
25-29 years	0.029	(0.082)	-0.013	(0.080)	0.002	(0.090)	-0.016	(0.080)	0.001	(0.090)	-0.044	(0.087)
30 and +	-0.002	(0.084)	-0.033	(0.082)	-0.018	(0.093)	-0.035	(0.082)	-0.019	(0.093)	-0.048	(0.090)
Assistance	-1.298***	(0.062)	-1.310***	(0.062)	-1.304***	(0.062)	-1.310***	(0.062)	-1.301***	(0.062)	-1.317***	(0.062)
Constant	-3.058***	(0.208)	-2.845***	(0.745)	-2.587***	(0.207)	-3.032***	(0.823)	-2.365***	(0.218)	-2.178***	(0.216)
Observations	108991		108991		86596		108991		86596		86596	
Individuals	1580		1580		1301		1580		1301		1301	
Failures	71309		71309		58579		71309		58579		58579	
Seasonal fixed-effects	Yes		Yes		Yes		Yes		Yes		Yes	
Regional fixed-effects	Yes		No		Yes		No		Yes		No	
Origin fixed-effects	No		Yes		No		Yes		No		Yes	
Origin×Year fixed-effects	Yes		No		Yes		No		Yes		No	
Regional×Year fixed-effects	No		Yes		No		Yes		No		Yes	
$\ln(\rho)$	0.337***		0.333***		0.302***		0.333***		0.302***		0.302***	

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Standard errors in parentheses adjusted for clustering at the individual level. Source: Author's elaboration on SOEP panel data over 1984-2012, Eurobarometer, European Election Survey data, The German Federal Statistical Office and The German Federal Employment Agency.  $\ln(\rho)$  is the estimated shape parameter. Trust is the mean of the share of Germans who expressed that they trust citizens from a given country, calculated by country of origin. Age is a categorical variable with four groups: younger than 25 (0), between 25 and 34 (1), between 35 and 44 (2) and above 44 years old (3). Female is a dummy variable equal to one if the respondent is a woman and zero otherwise. Nb. children is a categorical variables with five groups: no child (0), One child (1), two children (2), three children (3) and four children (4) present in the household. Education is a categorical variable with three groups: low ISCED (0), middle ISCED (1) and high ISCED (2). Married is a dummy variable equal to one if the respondent is married and zero otherwise. Years since migration to Germany is a categorical variable with seven groups: less than 5 years (0), between 5 and 9 years (1), between 10 and 14 years (2), between 15 and 19 years (3), between 20 and 24 years (4), between 25 and 29 years (5) and 30 years or more (6). Assistance is a dummy variable equal to one if the respondent received social assistance and zero otherwise.



### 5.3 Threats to identification

We are concerned that omitted variables could influence simultaneously natives' attitudes towards immigrants and the opportunities for the foreign-born to find a job. First, columns (3) and (4) in Table 4 include therefore annual immigration rates for each migrants' origin countries at the regional level.<sup>27</sup> Indeed, immigration rates can be correlated with natives' attitudes towards a particular origin and also promote (through networks) or deter (through competition) the access to employment for immigrants originating this country. Our analysis is constrained by the availability of German native population data only after 1991 used to compute immigration rates by origin and region. Thus, we first introduce immigration rates in column (3) with origin fixed-effects interacted with year fixed-effects and restrict our analysis to the 1991-2012 period. The coefficient of *Trust(region)* remains positive and highly significant. In a second step, in column (4), we introduce the logarithm of the annual stock of immigrants of each origin in each region. This last estimate covers our entire period of analysis. Indeed, regional fixed-effect interacted with time fixed-effects absorb the variation in the size of the natives population over time at the regional level. Still, the effect of natives' attitudes on immigrant's unemployment duration is robust to the introduction of this control variable. Second, from columns (5) to (6), we include monthly unemployment rates at the regional level in order to have a better control of regional market dynamics that can affect both the access of immigrants to local labor market and the native's attitudes. Here again we restrict our analysis to the period 1991-2012. Accounting either for origin fixed-effects interacted with year fixed-effects or for regional fixed-effect interacted with time fixed-effect, the effect of *Trust(region)* on the hazard ratio remains positive and significant at the one percent level. As expected, the coefficient in front of the unemployment rate is negative and significant. It confirms that lower hiring opportunities decrease the likelihood for all individuals to exit unemployment.

Another important source of concern is the fact that variables capturing natives' attitudes might also capture linguistic distance. This entails that our results could reflect the fact that migrants for whom it is more costly to learn German also struggle more to find a job. To tackle this potential issue, we introduce categorical variables capturing self-reported fluency in speaking and writing German language. The results, reported in columns (1) and (2) of appendix Table A8, show that controlling for command of German at the individual level

<sup>27</sup>It is important to note that the definition of immigration rates differs here from what has been used in our analysis so far. Indeed, immigration rates are computed using information on the nationality and not with the origin country of foreign-born. Still, we assume that trends in immigration rates based on nationality reflect the arrival rates of immigrants of different origin country in each region.

does not modify our main results. One could also be concerned that our results are driven by the fact that migrants from different origins specialize in specific sectors and occupations with varying labor market dynamics. We investigate this possibility by controlling for sector and occupation fixed effects. Results are reported in the appendix Table A8 and suggest that our main results are not due to immigrants clustering in specific occupations and sectors.<sup>28</sup>

Measuring natives' attitudes at the regional level may exacerbate the concern that the ability of a given diaspora to perform in local labor markets could shape native's attitudes at the regional level.<sup>29</sup> This concern is greatly mitigated by the fact that the questions in Eurobarometer surveys ask about trust towards citizen of a given country, not towards migrants in Germany. Nonetheless, it is important to tackle this threat to identification more formally. In order to address the possibility of reverse causality, we rely on an instrumental variable approach, namely the two-stage residual inclusion method (2SRI hereafter), which is widely used to address endogeneity issues in non linear models.<sup>30</sup> Following Terza *et al.* (2008), our first-stage equation regresses  $Trust(region)$  on its instruments and the control variables at the origin-region level. In a second-stage we include the first-stage residual as an explanatory variable in our equation of interest. We use a proxy for the cultural distance between each German region  $r$  and each origin country  $o$  as an instrument for  $Trust(region)$ . As a matter of fact, Guiso *et al.* (2009) underline that cultural distance is a strong determinant of  $Trust$  since individuals tend to have more confidence in people that share their beliefs and values. The exclusion restriction of our IV strategy implies therefore that, conditional on the other covariates included in the regression, cultural distance has no impact on individual's probability to exit unemployment other than through the discrimination channel.

In order to obtain bilateral cultural distances we rely on the World Value Surveys (WVS) which explore values and human beliefs through individual questionnaires conducted in almost 100 countries over the world. Individuals are asked to express their views on several practices. It is crucial to select practices in the questionnaire which do not violate the exclusion restriction of our identification strategy. Therefore we select individual views on homosexuality, abortion, divorce or suicide as instruments. Here, our identification strategy

<sup>28</sup>The changes in coefficient are only due to the fact that the sample size is reduced because of missing values in the additional regressors.

<sup>29</sup>Notice that cross-country estimates are less affected by this issue since it is very unlikely that individual's abilities to perform in local labor markets influence attitudes towards citizen of a particular country at the national level.

<sup>30</sup>The 2SRI estimator corrects for the inconsistency of the estimated parameters obtained with the two-stage least square method (2SLS) applied to non-linear models. While the 2SLS and the 2SRI share the same first stage equation, the latter does not replace the endogenous variable by its predicted value but instead, includes the first-stage residuals as additional regressors (Terza *et al.*, 2008).

relies on the assumption that tolerance towards homosexuality, abortion, divorce or suicide are very unlikely to influence the individual hazard rate of finding a job other than through cultural distance with natives. For each of these four dimensions we define  $S_{ir}$  and  $S_{io}$  as the share of individuals either living in the German region  $r$  or in the origin country  $o$  declaring that the  $i^{th}$  dimension is justifiable.<sup>31</sup> The variability of our instrument comes from the fact that, not only different origin countries have different beliefs and values, but also individuals living in different German regions exhibit differences in terms of attitudes towards homosexuality, divorce, suicide or abortion for instance. Indeed, German regions are very heterogeneous with respect to cultural values which translates into heterogeneity in terms of norms such as family values (Bertram and Nauck, 1995; Silbereisen and von Eye, 1999; Bertram, 2013; Bertram *et al.*, 2013, for references). We exploit these intra-regions discrepancies within Germany in order to obtain a bilateral measure of cultural distance between German regions and immigrants' origin countries. Our first measure of cultural distance is such as:

$$DisA_{ro} = \sqrt{\sum_i (S_{ir} - S_{io})^2} \quad (7)$$

where  $i \in \{Homosexuality; Abortion; Divorce; Suicide\}$  is the vector of views on practices. Our second measure of cultural distance is based on four different indicators which measure the probability that two randomly-drawn individuals, one in a given origin country and one in a given region in Germany, have a different opinion on the  $i^{th}$  practices:

$$DisB_{iro} = 1 - \left( [S_{ir} * S_{io}] + [1 - S_{ir}] * [1 - S_{io}] \right) \quad (8)$$

Using a principal component analysis, we extract the component  $DisPCA_{or}$  that explains most of the variance of the data (56%) and use it as an instrument for  $Trust(region)$ . We report the results of these estimates in the Table 5. We replicate our main result in column (1) excluding Austrian, Greek and Portuguese immigrants from the analysis. It allows us to compare our estimated coefficients across a similar sample, since cultural distance data are not available for these three countries. The coefficient of  $Trust(region)$  is still significant and not statistically different from the one reported in Table 4, column(3). In columns (2) we introduce the residuals of the first-stage estimates regressing  $Trust(region)$  on  $DisA_{r,o}$ .

We see at the bottom of Table 5 that the instrument is significant with the expected sign. An increase in the cultural distance between a given German region and a given origin country decreases the share of German that express positive views toward immigrants originating from

<sup>31</sup>Data for Austria, Greece and Portugal are not available in the WVS for this particular question.

Table 5: Two-stage residuals inclusion method (2SRI)

	(1)		(2)		(3)	
	Weibull Hazard		Weibull (2SRI) Hazard		Weibull (2SRI) Hazard	
	$\beta$	Std.D.	$\beta$	Std.D.	$\beta$	Std.D.
Trust(region)	0.995**	(0.403)	1.447***	(0.541)	2.269**	(1.033)
<i>Age (ref&lt;25):</i>						
25-34 years old	-0.048	(0.037)	-0.049	(0.037)	-0.049	(0.037)
35-44 years old	-0.181***	(0.044)	-0.180***	(0.044)	-0.181***	(0.044)
45 and + years old	-0.353***	(0.050)	-0.352***	(0.050)	-0.351***	(0.050)
Female (ref is male)	-0.072*	(0.039)	-0.073*	(0.039)	-0.078**	(0.040)
<i>Nb. Children (ref is no child):</i>						
One child	0.059*	(0.033)	0.058*	(0.033)	0.055*	(0.033)
Two children	0.089**	(0.037)	0.088**	(0.037)	0.086**	(0.037)
Three children	0.117***	(0.044)	0.116***	(0.044)	0.115***	(0.043)
Four children and +	0.073	(0.056)	0.073	(0.056)	0.072	(0.056)
Female * One child	-0.161***	(0.051)	-0.159***	(0.050)	-0.156***	(0.051)
Female * Two children	-0.094*	(0.053)	-0.094*	(0.052)	-0.089*	(0.053)
Female * Three children	-0.331***	(0.093)	-0.329***	(0.093)	-0.322***	(0.093)
Female * Four children and +	-0.445***	(0.143)	-0.445***	(0.143)	-0.436***	(0.144)
<i>Education (ref is low ISCED):</i>						
Middle ISCED	0.084***	(0.029)	0.081***	(0.029)	0.084***	(0.029)
High ISCED	0.138***	(0.038)	0.134***	(0.038)	0.137***	(0.038)
Married (ref is single)	-0.066**	(0.028)	-0.066**	(0.027)	-0.063**	(0.028)
<i>Years since migration (ref&lt;5):</i>						
5-9 years	0.242***	(0.069)	0.240***	(0.069)	0.241***	(0.069)
10-24 years	0.204***	(0.076)	0.201***	(0.076)	0.202***	(0.076)
15-19 years	0.115	(0.078)	0.111	(0.078)	0.110	(0.078)
20-24 years	0.062	(0.082)	0.056	(0.082)	0.055	(0.081)
25-29 years	0.040	(0.084)	0.033	(0.084)	0.030	(0.084)
30 and +	0.019	(0.087)	0.012	(0.087)	0.004	(0.088)
Assistance	-1.247***	(0.063)	-1.247***	(0.063)	-1.243***	(0.063)
First-stage residuals			-0.474	(0.349)	-1.152	(0.838)
Constant	-3.034***	(0.212)	-3.280***	(0.285)	-3.727***	(0.563)
Observations	98213		98213		98213	
Individuals	1403		1403		1403	
Failures	64297		64297		64297	
Seasonal fixed-effects	Yes		Yes		Yes	
Regional fixed-effects	Yes		Yes		Yes	
Origin×Year fixed-effects	Yes		Yes		Yes	
$\ln(\rho)$	0.333***	(0.017)	0.333***	(0.016)	0.332***	(0.017)
<i>First-stage:</i>						
$DisInglehart_{o,r}$		-0.768***	(0.090)			
$DisPCA_{o,r}$					-0.037***	(0.014)

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Standard errors in parentheses adjusted for clustering at the individual level. Source: Author's elaboration on SOEP panel data over 1984-2012, Eurobarometer, European Election Survey data, The German Federal Statistical Office and The German Federal Employment Agency.  $\ln(\rho)$  is the estimated shape parameter. Trust is the mean of the share of Germans who expressed that they trust citizens from a given country, calculated by country of origin. Age is a categorical variable with four groups: younger than 25 (0), between 25 and 34 (1), between 35 and 44 (2) and above 44 years old (3). Female is a dummy variable equal to one if the respondent is a woman and zero otherwise. Nb. children is a categorical variables with five groups: no child (0), One child (1), two children (2), three children (3) and four children (4) present in the household. Education is a categorical variable with three groups: low ISCED (0), middle ISCED (1) and high ISCED (2). Married is a dummy variable equal to one if the respondent is married and zero otherwise. Years since migration to Germany is a categorical variable with seven groups: less than 5 years (0), between 5 and 9 years (1), between 10 and 14 years (2), between 15 and 19 years (3), between 20 and 24 years (4), between 25 and 29 years (5) and 30 years or more (6). Assistance is a dummy variable equal to one if the respondent received social assistance and zero otherwise. Columns (2) and (3) include residuals from the first-stage equations that regress Trust(region) on the control variables and their own instrument  $DisInglehart_{r,o}$  and  $DisPCA_{o,r}$  respectively.

this country. Moreover the coefficient of  $Trust(region)$  remains positive and significant. We find similar results in column (3) using  $DisPCA_{o,r}$  as an instrument for  $Trust(region)$ . However, it is worth noticing that the first-stage residuals in the two last columns, which capture determinants of  $Trust(region)$  not captured by our instruments are not significant. This strengthens the case for the argument that the variability in German attitudes captured in our regressions are not shaped by the local labor market performance of immigrants. In other words, unobserved origin-region characteristics correlated with  $Trust(region)$ , such as the average labor market performance of migrants from a given origin country, are not driving individuals' hazard rates of exiting unemployment.<sup>32</sup> This is in line with our observation that  $Trust$  is stable over time because it is determined by historical legacy and deeply rooted cultural differences as discussed in Section 2.

## 6 Robustness

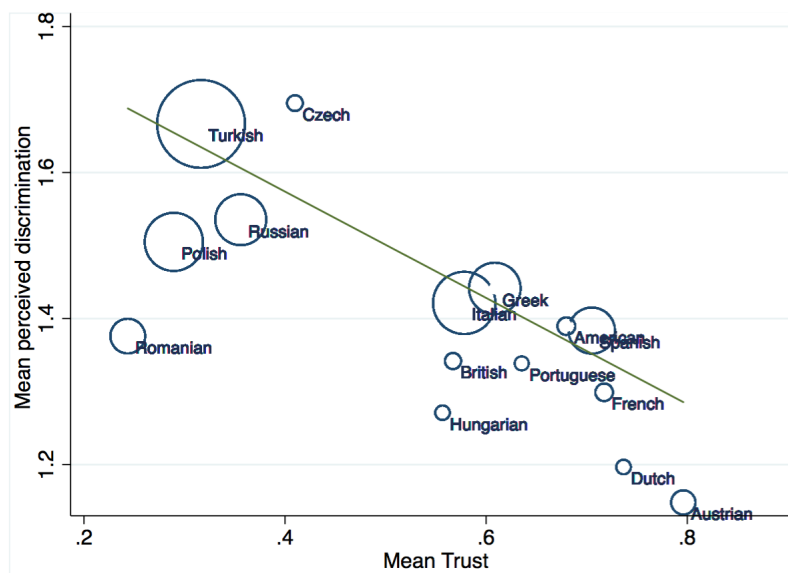
### 6.1 Perceived discrimination

A legitimate question is whether different levels of trust towards citizens of a given country translate to immigrants that originate from this country. Indeed, it could be possible that well integrated immigrants are perceived differently than their fellow countrymen who live in their country of origin. We explore this point by observing the correlation between the level of trust Germans have towards citizens of a given country of origin and the perception of these immigrants with respect to discrimination due to their origin. This analysis at the individual level has also the advantage of exploiting a different source of variability that complements our previous group-level analysis. Specifically, we use a variable that captures the answer to the following question: “*how often have you experienced disadvantages in the last two years because of your origins?*”. The corresponding variable takes the value of 0 if the response is *never*, 1 if the response is *seldom*, and 2 if the response is *often*. Figure 3 shows a strong and negative correlation between the variable  $Trust$  and the perceived discrimination variable: immigrants who originate from countries that Germans associate with lower levels of trust declare that they are more often discriminated due to their origin.<sup>33</sup> Lower levels of trust of Germans towards a particular group of immigrants seem therefore to be strongly correlated with immigrants' perceived discrimination.

<sup>32</sup>It is important to note that, included one by one in our main specification as explanatory variables, our two instruments are not significant which supports the validity of the exclusion restriction.

<sup>33</sup>The correlation coefficient between the two variables stands at -0.17 and is statistically significant at the one percent level.

Figure 3: Natives' attitudes and immigrants' perceived discrimination



Source: Author's elaboration on SOEP panel data over 1984-2012, Eurobarometer and European Election Survey data. The size of the markers is scaled according to the size of each diaspora in the sample. Mean Trust is the mean of the share of Germans who expressed that they trust citizens from a given country, calculated by country of origin. Mean perceived discrimination by origin country refers to the average responses to the question "how often have you experienced disadvantages in the last two years because of your origins?". The variable takes the value of 0 if the response is *never*, 1 if the response is *seldom*, and 2 if the response is *often*. The line plots the linear predictions of the regression of Mean perceived discrimination on Mean Trust.

In this Section we investigate empirically whether higher levels of perceived discrimination are associated with longer unemployment durations among immigrants. We use the information on 1376 immigrants originating from 24 different countries.<sup>34</sup> We also look at how the feeling of belonging to the German nationality influences integration into the local labor market. Indeed, respondents in the GSOEP are asked to reply to the following question: "How much do you feel like a German?". Our German identity variable takes therefore the value of 0 if the response is *completely*, 1 if the response is *mostly*, 2 if the response is *in some respects*, 3 if the response is *barely* and 4 if the response is *not at all*. The idea behind this second set of estimations is to say that if the effect of the variable *Trust* really captures a discrimination process, then we should find a negative effect of feeling discriminated but no strong effect of feeling German. In other words, the negative impact observed on immigrant's unemployment durations has to come from natives' attitudes and not from the attitude of immigrants. It is worth noting that (time-varying) perceived discrimination and unemploy-

<sup>34</sup>Descriptive statistics by origin countries and at the global level are available in appendix Tables A4 and A5.

ment duration certainly strongly affect each other and that these results should be considered with great caution. However the correlations that we present below are interesting in the sense that they allow to complement the main results and explore alternative explanations.

Table 6 presents the effect of perceived discrimination on immigrant's unemployment duration from columns (1) to (3). After controlling for potentially confounding factors through the inclusion of origin fixed effects we see that higher levels of perceived discrimination are negatively associated with the hazard rate i.e the expected length of unemployment for immigrants is higher for migrants who declare having been discriminated due to their origin. Coefficients are fairly stable regardless of the different specifications. Taking into account either time-varying origin-specific characteristics in column (2) or time-varying region-specific characteristics in column (3), we observe that immigrants who often feel discriminated also experience longer unemployment durations comparatively to immigrants who never feel discriminated. These patterns are less straightforward when it comes to German identity in columns (4), (5) and (6). Despite the fact that in the first specification, higher levels of German identity seem to be associated with lower length of unemployment among immigrants in columns (4). This effect is no longer significant in more sophisticated specifications. After controlling for different forms of unobserved heterogeneity, feeling more or less German is not strongly associated with immigrant's unemployment durations. This result is in line with the intuition that, while immigrants can have a strong feeling of belonging to Germany, negative attitudes from natives can still deteriorate their entrance in the local labor-market. Longer unemployment durations for some particular group of immigrants seem therefore to come from native's attitudes more than immigrant's behaviours or feelings. This is in line with the evidence given by (Casey and Dustmann, 2010) that host country identity is not a strong determinant of immigrants' success in the labor market.

Table 6: Perceived discrimination, German identity and immigrants' unemployment duration.

	(1)		(2)		(3)		(4)		(5)		(6)	
	Weibull Hazard $\beta$	Std.D.	Weibull Hazard $\beta$	Std.D.	Weibull Hazard $\beta$	Std.D.	Weibull Hazard $\beta$	Std.D.	Weibull Hazard $\beta$	Std.D.	Weibull Hazard $\beta$	Std.D.
<i>Discrimination (ref is never):</i>												
Seldom	-0.051***	(0.017)	-0.045***	(0.017)	-0.044**	(0.017)						
Often	-0.078**	(0.039)	-0.061	(0.039)	-0.062	(0.038)						
<i>German identity (ref is completely):</i>												
Mostly							-0.071	(0.054)	-0.040	(0.053)	-0.048	(0.055)
In some respects							-0.102**	(0.052)	-0.029	(0.053)	-0.031	(0.053)
Barely							-0.121**	(0.056)	-0.019	(0.058)	-0.023	(0.058)
Not at all							-0.145***	(0.055)	-0.042	(0.059)	-0.036	(0.058)
<i>Age (ref &lt; 25):</i>												
25-34 years old	0.135**	(0.056)	0.134**	(0.056)	0.135**	(0.056)	-0.089**	(0.042)	-0.117***	(0.045)	-0.135***	(0.044)
35-44 years old	0.054	(0.061)	0.012	(0.061)	0.026	(0.061)	-0.119**	(0.051)	-0.204***	(0.054)	-0.221***	(0.054)
45 and + years	-0.039	(0.065)	-0.093	(0.066)	-0.078	(0.065)	-0.383***	(0.062)	-0.478***	(0.066)	-0.476***	(0.066)
Female (ref is male)	-0.021	(0.033)	-0.018	(0.034)	-0.018	(0.034)	-0.086	(0.053)	-0.112**	(0.055)	-0.105*	(0.055)
<i>Nb. Children (ref is no child):</i>												
One child	0.061**	(0.030)	0.064**	(0.031)	0.069**	(0.031)	0.045	(0.046)	0.057	(0.046)	0.067	(0.046)
Two children	0.074**	(0.033)	0.096***	(0.034)	0.102***	(0.034)	0.013	(0.050)	0.043	(0.050)	0.056	(0.052)
Three children	0.030	(0.037)	0.086**	(0.039)	0.087**	(0.040)	0.000	(0.066)	0.037	(0.066)	0.046	(0.066)
Four children	0.010	(0.048)	0.044	(0.048)	0.055	(0.048)	-0.129	(0.092)	-0.071	(0.096)	-0.071	(0.091)
Female * One child	-0.152***	(0.047)	-0.148***	(0.047)	-0.154***	(0.047)	-0.158**	(0.072)	-0.148**	(0.071)	-0.153**	(0.072)
Female * Two children	-0.169***	(0.052)	-0.196***	(0.053)	-0.196***	(0.053)	-0.139*	(0.078)	-0.141*	(0.079)	-0.145*	(0.080)
Female * Three children	-0.324***	(0.100)	-0.381***	(0.098)	-0.368***	(0.098)	-0.180*	(0.109)	-0.157	(0.109)	-0.172	(0.107)
Female * Four children and +	-0.370**	(0.165)	-0.417***	(0.158)	-0.423***	(0.162)	-0.208	(0.221)	-0.180	(0.221)	-0.200	(0.218)
<i>Education (ref is low ISCED):</i>												
Middle ISCED	0.094***	(0.028)	0.074***	(0.028)	0.068**	(0.028)	0.069*	(0.036)	0.062*	(0.035)	0.053	(0.035)
High ISCED	0.141***	(0.034)	0.115***	(0.034)	0.106***	(0.035)	0.154***	(0.055)	0.124**	(0.057)	0.120**	(0.056)
Married (ref is single)	-0.017	(0.027)	-0.003	(0.027)	-0.003	(0.027)	-0.029	(0.039)	-0.019	(0.040)	-0.020	(0.040)
<i>Years since migration (ref &lt; 5):</i>												
5-9 years	0.125*	(0.067)	0.130*	(0.067)	0.079	(0.063)	0.088	(0.081)	0.109	(0.081)	0.101	(0.080)
10-14 years	0.087	(0.073)	0.125	(0.076)	0.055	(0.070)	0.032	(0.084)	0.076	(0.087)	0.054	(0.084)
15-19 years	0.076	(0.076)	0.139*	(0.080)	0.055	(0.073)	-0.098	(0.088)	-0.047	(0.091)	-0.079	(0.088)
20-24 years	0.020	(0.080)	0.093	(0.082)	0.015	(0.077)	-0.103	(0.091)	-0.069	(0.095)	-0.081	(0.092)
25-29 years	-0.054	(0.081)	0.014	(0.084)	-0.049	(0.079)	-0.175*	(0.097)	-0.136	(0.103)	-0.158	(0.101)
30 and +	-0.096	(0.083)	-0.026	(0.086)	-0.089	(0.082)	-0.297***	(0.114)	-0.217**	(0.125)	-0.267**	(0.121)
Assistance	-1.357***	(0.062)	-1.348***	(0.061)	-1.353***	(0.061)	-1.387***	(0.121)	-1.412***	(0.120)	-1.405***	(0.120)
Constant	-2.138***	(0.130)	-2.389***	(0.146)	-2.254***	(0.225)	-2.638***	(0.237)	-3.016***	(0.285)	-2.676***	(0.755)
Observations	75733		75733		75733		41977		41977		41977	
Individuals	1376		1376		1376		1236		1236		1236	
Failures	51053		51053		51053		25421		25421		25421	
Year fixed-effects	Yes		No		No		Yes		No		No	
Regional fixed-effects	Yes		Yes		No		Yes		Yes		No	
Seasonal fixed-effects	Yes		Yes		Yes		Yes		Yes		Yes	
Origin fixed-effects	No		No		Yes		No		No		Yes	
Year×Origin fixed-effects	No		Yes		No		No		Yes		No	
Year×Regional fixed-effects	No		No		Yes		No		No		Yes	
$\ln(\rho)$	0.267***	(0.018)	0.281***	(0.019)	0.282***	(0.019)	0.389***	(0.024)	0.418***	(0.025)	0.417***	(0.025)

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Standard errors adjusted for clustering at the individual level. Source: Author's elaborations on SOEP panel data over 1984-2012.

$\ln(\rho)$  is the estimated shape parameter. Discrimination refers to the question "how often have you experienced disadvantages in the last two years because of your origins?". The variable takes the value of 0 if the response is *never*, 1 if the response is *seldom*, and 2 if the response is *often*. German identity refers to the question "How much do you feel like a German?". German identity takes the value of 0 if the response is *completely*, 1 if the response is *mostly*, 2 if the response is *in some respects*, 3 if the response is *barely* and 4 if the response is *not at all*. Age is a categorical variable with four groups: younger than 25 (0), between 25 and 34 (1), between 35 and 44 (2) and above 44 years old (3). Female is a dummy variable equal to one if the respondent is a woman and zero otherwise. Nb. children is a categorical variable with five groups: no child (0), One child (1), two children (2), three children (3) and four children (4) present in the household. Education is a categorical variable with three groups: low ISCED (0), middle ISCED (1) and high ISCED (2). Married is a dummy variable equal to one if the respondent is married and zero otherwise. Years since migration to Germany is a categorical variable with seven groups: less than 5 years (0), between 5 and 9 years (1), between 10 and 14 years (2), between 15 and 19 years (3), between 20 and 24 years (4), between 25 and 29 years (5) and 30 years or more (6). Assistance is a dummy variable equal to one if the respondent received social assistance and zero otherwise.



## 6.2 Alternative definitions of unemployment

In this section we look at the sensitivity of our results when we change the definition of unemployment. Recall that the baseline sample which has been used so far is the **Sample 3**. Column (3) in Table 7 reports therefore the previous findings of the paper for easier comparison.

First, we restrict our analysis to **Sample 1** which only includes immigrants officially registered as unemployed. We find that higher values of  $Trust(region)$  are associated with higher exit rates out of unemployment. In addition, with the **Sample 2**, our main results do not change. Adding individuals looking for work raises the size of the sample but does not modify the size of the coefficient of interest. When we add to **Sample 2** immigrants not actively looking for a job but declaring to be available for work in the two weeks following the interview, the coefficient of interest increases dramatically in **Sample 3**. The intuition is that excluding these individuals from the analysis leads to a downward bias of the estimates since discouraged immigrants workers could have left the labor market due to discrimination in the hiring process. As a matter of fact, these individuals that we identify as discouraged workers are more likely to be subject to discrimination and may have left the labor market for this particular reason. Recoding short periods out of the labor force in the last column, our results stay stable.<sup>35</sup> Indeed, in **Sample 4**, we recode inactivity spells of less than one year between two employment spells as employment. In most occurrences this corresponds to holidays or maternity leaves.<sup>36</sup> We also recode short inactivity spells between two spells of unemployment as unemployment and extend unemployment spell duration when the short period of inactivity is framed between an unemployment spell and an employment spell. The rationale is that these individuals may also be discouraged unemployed workers since they took a job as soon as they were offered an opportunity. Finally, we extend unemployment spell duration when the short inactivity spell is preceded by an employment spell and followed by an unemployment spell. We assume that during this short time out of the labor force the individual was looking for a job or at least was available for work. The coefficient is robust and keeps both its magnitude and its statistical significance with this last sample.

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<sup>35</sup>A short exit of the active population corresponds to spells of inactivity shorter than one year.

<sup>36</sup>We noticed that most of the short spells of inactivity correspond to months that are typically used for vacation in Germany such as July and August.

Table 7: Robustness to alternative definitions of unemployment

	(1)		(2)		(3)		(4)	
	Sample 1		Sample 2		Sample 3		Sample 4	
	Weibull Hazard		Weibull Hazard		Weibull Hazard		Weibull Hazard	
	$\beta$	Std.D.	$\beta$	Std.D.	$\beta$	Std.D.	$\beta$	Std.D.
Trust(region)	0.665**	(0.317)	0.659**	(0.332)	1.022***	(0.395)	1.022***	(0.392)
<i>Age (ref&lt;25):</i>								
25-34 years old	-0.079**	(0.036)	-0.050	(0.036)	-0.052	(0.036)	-0.054	(0.036)
35-44 years old	-0.219***	(0.044)	-0.194***	(0.044)	-0.182***	(0.042)	-0.184***	(0.042)
45 and + years old	-0.400***	(0.050)	-0.374***	(0.050)	-0.369***	(0.049)	-0.369***	(0.049)
Female (ref is male)	-0.029	(0.036)	-0.044	(0.037)	-0.055	(0.038)	-0.054	(0.037)
<i>Nb. Children (ref is no child):</i>								
One child	0.037	(0.031)	0.053*	(0.031)	0.082***	(0.032)	0.081**	(0.032)
Two children	0.095***	(0.033)	0.103***	(0.034)	0.108***	(0.035)	0.106***	(0.035)
Three children	0.114***	(0.042)	0.116***	(0.042)	0.127***	(0.042)	0.125***	(0.042)
Four children and +	0.082	(0.057)	0.079	(0.059)	0.072	(0.057)	0.071	(0.056)
Female * One child	-0.081*	(0.048)	-0.097**	(0.049)	-0.172***	(0.048)	-0.169***	(0.048)
Female * Two children	-0.060	(0.051)	-0.089*	(0.051)	-0.121**	(0.050)	-0.119**	(0.049)
Female * Three children	-0.275***	(0.103)	-0.363***	(0.111)	-0.313***	(0.086)	-0.299***	(0.086)
Female * Four children and +	-0.229	(0.165)	-0.292*	(0.162)	-0.428***	(0.141)	-0.429***	(0.140)
<i>Education (ref is low ISCED):</i>								
Middle ISCED	0.096***	(0.028)	0.083***	(0.028)	0.073***	(0.027)	0.073***	(0.027)
High ISCED	0.153***	(0.035)	0.141***	(0.035)	0.122***	(0.034)	0.121***	(0.034)
Married (ref is single)	-0.002	(0.028)	-0.015	(0.028)	-0.062**	(0.027)	-0.059**	(0.027)
<i>Years since migration (ref&lt;5):</i>								
5-9 years	0.166**	(0.067)	0.156**	(0.068)	0.232***	(0.068)	0.224***	(0.068)
10-140 years	0.111	(0.072)	0.107	(0.073)	0.184**	(0.074)	0.176**	(0.074)
15-19 years	0.054	(0.075)	0.043	(0.076)	0.099	(0.077)	0.093	(0.077)
20-24 years	0.028	(0.078)	0.023	(0.078)	0.049	(0.080)	0.040	(0.080)
25-29 years	0.001	(0.080)	-0.011	(0.081)	0.029	(0.082)	0.022	(0.082)
30 and +	-0.003	(0.083)	-0.021	(0.083)	-0.002	(0.084)	-0.010	(0.084)
Assistance	-1.341***	(0.062)	-1.332***	(0.063)	-1.298***	(0.062)	-1.298***	(0.062)
Constant	-2.171***	(0.196)	-2.316***	(0.203)	-3.058***	(0.208)	-3.051***	(0.207)
Observations	82774		88840		108991		109765	
Individuals	1243		1333		1580		1580	
Failures	56988		60031		72083		72083	
Seasonal fixed-effects	Yes		Yes		Yes		Yes	
Regional fixed-effects	Yes		Yes		Yes		Yes	
Origin $\times$ Year fixed-effects	Yes		Yes		Yes		Yes	
$ln(\rho)$	0.241***	(0.017)	0.277***	(0.017)	0.337***	(0.016)	0.337***	(0.016)

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Standard errors in parentheses adjusted for clustering at the individual level. Source: Author's elaboration on SOEP panel data over 1984-2012, Eurobarometer and European Election Survey data.  $ln(\rho)$  is the estimated shape parameter. Each sample corresponds to a different definition of unemployment. Trust(region) is the mean of the share of Germans who expressed that they trust citizens from a given country, calculated by country of origin and by German regions. Age is a categorical variable with four groups: younger than 25 (0), between 25 and 34 (1), between 35 and 44 (2) and above 44 years old (3). Female is a dummy variable equal to one if the respondent is a woman and zero otherwise. Nb. children is a categorical variables with five groups: no child (0), One child (1), two children (2), three children (3) and four children (4) present in the household. Education is a categorical variable with three groups: low ISCED (0), middle ISCED (1) and high ISCED (2). Married is a dummy variable equal to one if the respondent is married and zero otherwise. Years since migration to Germany is a categorical variable with seven groups: less than 5 years (0), between 5 and 9 years (1), between 10 and 14 years (2), between 15 and 19 years (3), between 20 and 24 years (4), between 25 and 29 years (5) and 30 years or more (6). Assistance is a dummy variable equal to one if the respondent received social assistance and zero otherwise.

## 7 Conclusions

In the debate on the integration of immigrants in the labor market of the destination country, the role of the attitudes of natives has often been overlooked. In particular, varying attitudes across German regions towards immigrants from different countries of origins might contribute to explain observed heterogeneity in terms of immigrants' labor market performance.

In this paper we investigate how natives' attitudes relate to the unemployment duration of immigrants. Our empirical analysis finds that positive German attitudes are associated with shorter unemployment duration for migrants. By combining data from the GSOEP and Eurobarometer surveys, our estimates indicate that if Germans had the same positive attitudes towards Turkish citizens that they have towards Austrian citizens, the Turkish migrants would see their average unemployment duration reduced by three months. This result is particularly important given the large number of migrants originating from developing countries who are expected to come to Germany and other high-income countries in upcoming years. It underlines that the assimilation of foreigners at destination is not only the responsibility of newcomers but also of the native population. We find that this effect is robust to different specifications and alternative definition of unemployment.

Reducing negative attitudes in migrants' host countries towards foreign-born should be at the heart of integration policies since it affects returns to education and the incentives for immigrants to invest in human capital at destination. This aspect has been stressed as crucial in the assimilation process (Borjas, 2014). Integrating foreign-born is particularly important given the direct costs of unemployment for host societies and the opportunity cost of an untapped workforce which could better contribute to the economic growth if it was employed at its full potential. Raising awareness on these issues has lead policy makers to introduce anti-discrimination policies with the major goal to overcome the negative effects of discrimination on immigrants' labor market outcomes. As a matter of fact, Germany ranked 22nd out of 38 in the Migration Integration Policy index which measures the effort of the integration of immigrants made by OECD countries.<sup>37</sup> Also, if natives' attitudes reflect cultural, historical and political differences, then the main focus should be on public beliefs and resentment about immigrants from different origins.

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<sup>37</sup><http://www.mipex.eu/anti-discrimination>.

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## Appendix

Figure A1: Calendar data from the SOEP

74.	And now please think about the entire previous year, in other words about 1993: We have made a sort of calendar. On the left, we have written things that could have happened last year. Please go through the entire list and check each month, in which, for example, you were employed or unemployed, etc. Please make sure you answer for each month.
1993	J F M A M J J A S O N D
full-time employment, job creation measure	- - - - -
Short-time work	- - - - -
part-time or occasionally employed	- - - - -
vocational training, education, retraining	- - - - -
registered unemployed	- - - - -
retired, early retirement	- - - - -
maternity leave	- - - - -
in school/college	- - - - -
military/civilian service	- - - - -
housewife/househusband	- - - - -
other, namely -----	- - - - -

Source: Desktop Companion to the German Socio-Economic Panel (GSOEP).

Table A1: GGSOEP samples

<b>Sample A</b>	German residents of West Germany, started in 1984.
<b>Sample B</b>	Foreigners in West Germany with Turkish, Greek, Yugoslavian, Spanish or Italian household head. Sample B is oversampled and started with in 1984.
<b>Sample C</b>	Est German households, started in June 1990.
<b>Sample D</b>	Immigrants sample, started in 1995.
<b>Sample E</b>	Refreshment sample, started in 1998. A new sample was selected from the population of private households in Germany.
<b>Sample F</b>	Innovation sample, new households added in 2000.
<b>Sample G</b>	High Income Sub-sample, households with a monthly income of at least DM 7,500 (EURO 3,835). Started in 2002.

Source: Desktop Companion to the German Socio-Economic Panel (GSOEP).

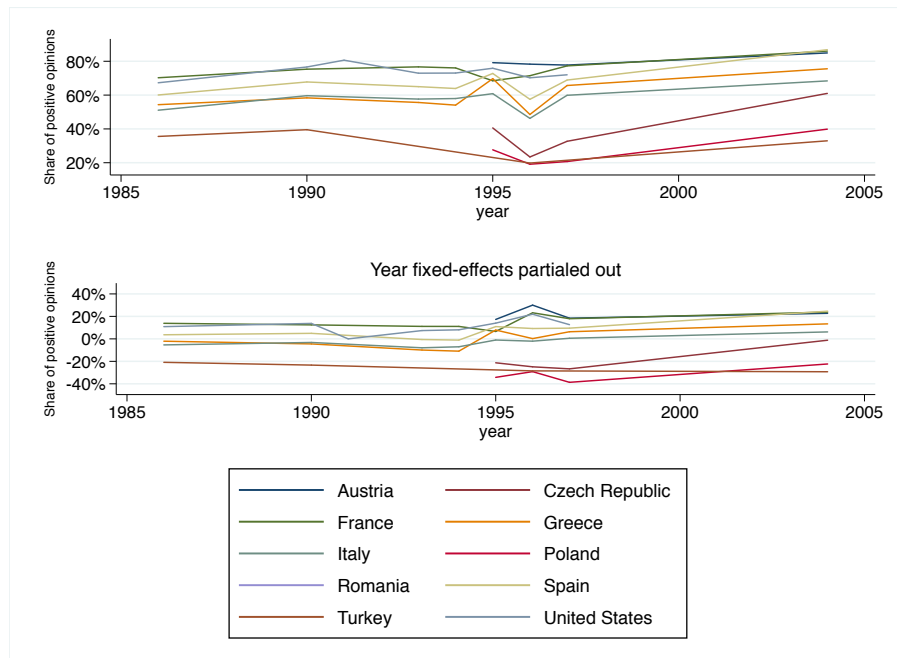


Table A2: Definition and source of main variables

Variable	Definition	Source
Trust	Mean of the share of Germans who expressed that they trust citizens from a given country, calculated by country of origin.	Eurobarometer and EES
Trust(region)	Mean of the share of Germans who expressed that they trust citizens from a given country, calculated by country of origin and by German region.	Eurobarometer and EES
Discrimination	Categorical variable with three groups: it is equal to zero if the respondent never felt disadvantaged due to his origin in the year of the survey, equal to one if the respondent rarely felt disadvantaged due to his origin, and equal to two if the respondent often felt disadvantaged due to his origin.	German Socio Economic Panel
German identity	Categorical variable with five groups: feel completely German, mostly German, in some respects, barely, not at all.	German Socio Economic Panel
Age	Categorical variable with four groups: younger than 25, between 25 and 34, between 35 and 44 and above 44 years old	German Socio Economic Panel
Female	Binary variable equal to one if respondents is a woman and 0 otherwise.	German Socio Economic Panel
Married	Binary variable equal to zero if respondents is single (this category includes divorced or widowed individuals) and one if the respondent is married.	German Socio Economic Panel
Number of children	Categorical variable with five groups: no child present in the household, One child present, two children present, three children present, four children or more present in the household.	German Socio Economic Panel
Education	Categorical variable with three groups: low ISCED, middle ISCED, and high ISCED.	German Socio Economic Panel
Years since immigration	Categorical variable with seven groups: less than 5 years, between 5 and 9 years, between 10 and 14 years, between 15 and 19 years, between 20 and 24 years, between 25 and 29 years, and 30 years and more.	German Socio Economic Panel
Assistance	Binary variable equal to one if respondents received (public) social assistance in the survey year and zero otherwise.	German Socio Economic Panel
Immigration Rate	Annual stock of regional population by nationality over all the residents of the region in the year. Available for all the Lander from 1991 to 2012.	German Federal Statistical Office (2016)
Stock immigrants	Annual stock of regional population by nationality. Available for all the Lander from 1984 to 2012.	German Federal Statistical Office (2016)
Unemployment rates	Monthly stock of regional unemployed population over all the active population of the region in the year.	German Federal Employment Agency (2016)

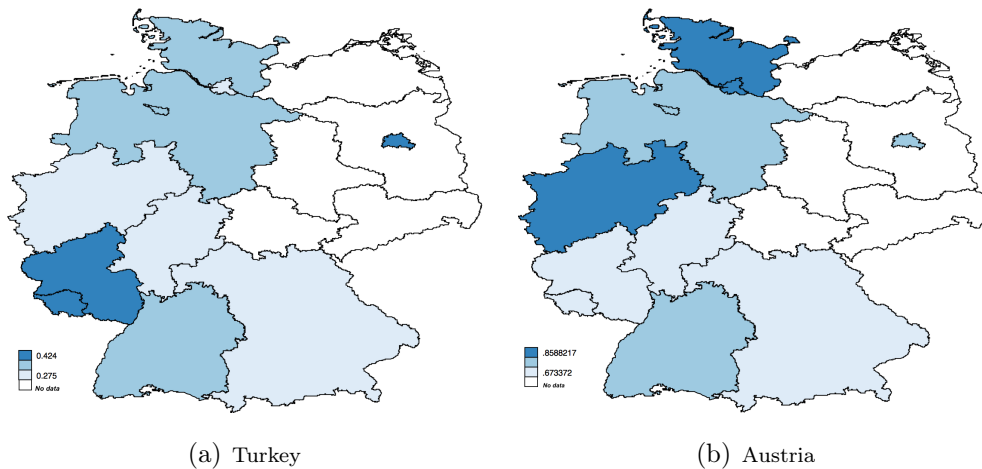
Source: Author's elaboration.

Figure A2: Share of Germans trusting citizens from other countries



Source: Author’s elaboration on Eurobarometer and European Election Survey data. The sample includes the top ten countries of origin over the period of analysis. Share of Germans trusting citizens from other countries is the mean of the share of Germans who expressed that they trust citizens from a given country, calculated by country of origin.

Figure A3: Natives’ attitudes towards immigrants’ origin countries at the regional level.



Source: Author’s elaboration on Eurobarometer and European Election Survey data. Trust(region) is the mean of the share of Germans who expressed that they trust citizens from a given country, calculated by country of origin and by German regions.

Table A3: Descriptives statistics by origin country.

Variable	Turkey		Greece		Italy		Spain		Austria	
	Mean	Std.D.	Mean	Std.D.	Mean	Std.D.	Mean	Std.D.	Mean	Std.D.
Trust	0.320	0.000	0.596	0.000	0.558	0.000	0.662	0.000	0.800	0.000
Trust(region)	0.311	0.039	0.569	0.023	0.556	0.034	0.651	0.035	0.758	0.019
Age	1.541	0.999	2.183	0.889	1.925	1.016	2.081	1.013	2.426	0.870
Female	0.381	0.486	0.451	0.498	0.401	0.490	0.484	0.500	0.859	0.349
Nb. child	1.582	1.218	0.990	1.077	0.906	0.979	0.656	0.967	0.351	0.705
Education	0.597	0.604	0.624	0.747	0.580	0.606	0.544	0.705	0.777	0.416
Married	0.827	0.379	0.854	0.353	0.748	0.434	0.692	0.462	0.742	0.437
Years since migration	3.172	1.692	4.420	1.497	3.983	1.711	4.230	1.413	4.836	1.363
Assistance	0.120	0.325	0.103	0.304	0.098	0.297	0.073	0.261	0.098	0.297

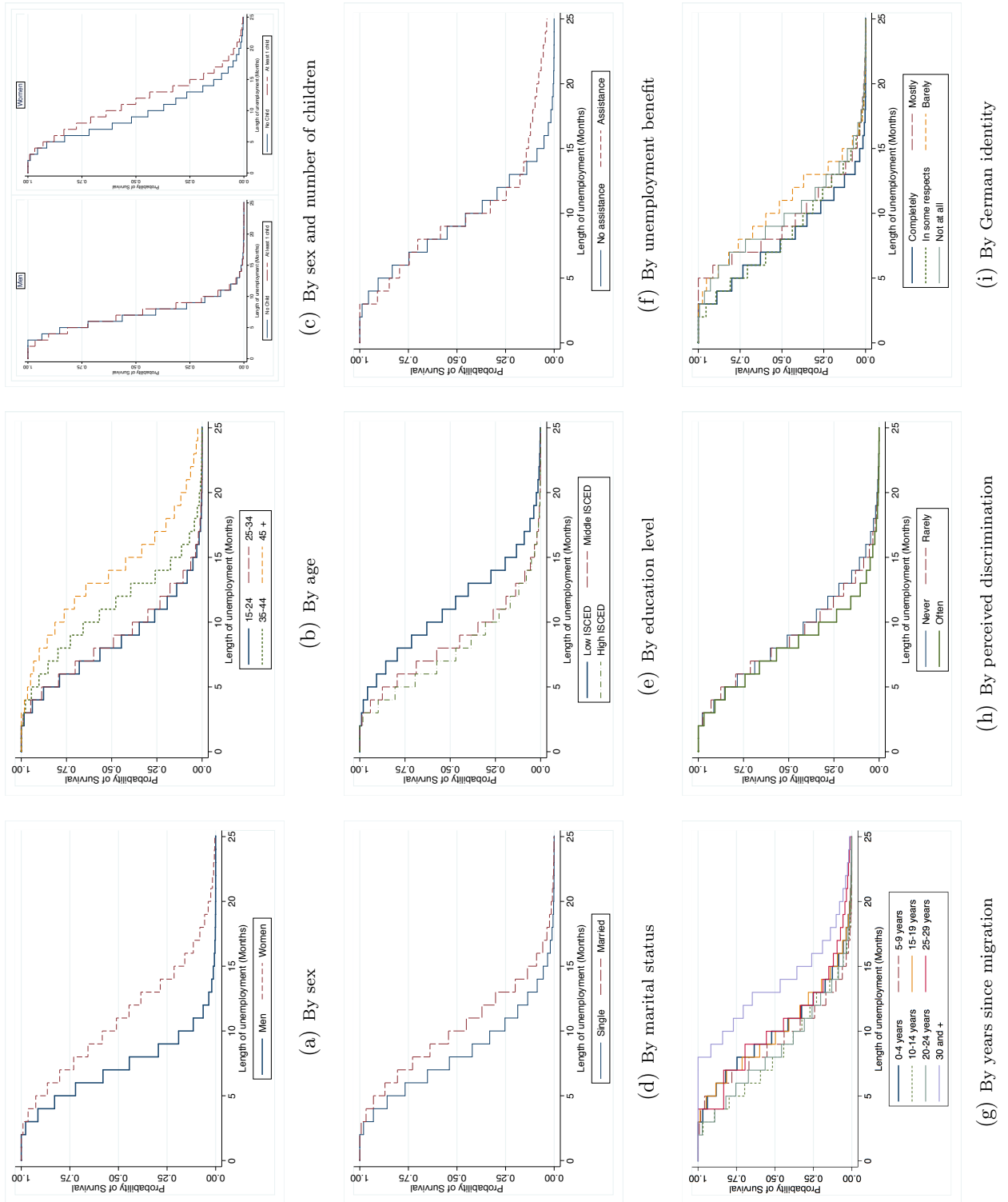
Variable	France		United Kingdom		United States		Romania		Polish	
	Mean	Std.D.	Mean	Std.D.	Mean	Std.D.	Mean	Std.D.	Mean	Std.D.
Trust	0.689	0.000	0.565	0.000	0.685	0.000	0.244	0.000	0.268	0.000
Trust(region)	0.688	0.067	0.571	0.019	0.684	0.027	0.291	0.089	0.225	0.074
Age	1.709	0.869	2.636	0.482	1.948	0.902	2.121	0.943	2.015	0.916
Female	0.841	0.366	0.565	0.496	0.664	0.473	0.645	0.479	0.595	0.491
Nb. child	0.517	0.751	1.054	0.734	1.097	1.210	0.544	0.819	0.946	1.008
Education	1.237	0.656	1.123	0.822	1.379	0.503	1.014	0.539	1.228	0.593
Married	0.660	0.474	0.755	0.431	0.652	0.477	0.645	0.479	0.747	0.435
Years since migration	3.207	1.982	4.412	1.254	3.900	1.831	2.571	1.449	2.743	1.513
Assistance	0.121	0.326	0.082	0.275	0.099	0.299	0.157	0.363	0.150	0.357

Variable	Hungary		Portugal		Czech Republic		Russia		Netherlands	
	Mean	Std.D.	Mean	Std.D.	Mean	Std.D.	Mean	Std.D.	Mean	Std.D.
Trust	0.517	0.000	0.597	0.000	0.394	0.000	0.347	0.000	0.711	0.000
Trust(region)	0.481	0.051	0.592	0.017	0.316	0.046	0.358	0.026	0.696	0.034
Age	2.284	0.734	2.466	0.905	2.273	0.894	2.157	0.939	2.140	0.866
Female	0.798	0.402	0.478	0.500	0.945	0.228	0.489	0.500	0.800	0.400
Nb. child	0.753	0.832	0.849	1.132	0.223	0.481	0.902	1.194	0.906	1.014
Education	1.541	0.612	0.231	0.422	0.945	0.375	1.301	0.651	1.492	0.640
Married	0.367	0.482	0.781	0.414	0.453	0.498	0.756	0.430	0.468	0.499
Years since migration	3.271	1.793	4.228	2.021	4.403	1.903	1.859	1.287	3.173	1.737
Assistance	0.137	0.344	0.389	0.488	0.235	0.425	0.230	0.421	0.167	0.373

Source: Author's elaboration on GSOEP panel data. Trust is the mean of the share of Germans who expressed that they trust citizens from a given country, calculated by country of origin. Trust(region) is the mean of the share of Germans who expressed that they trust citizens from a given country, calculated by country of origin and by German regions. Age is a categorical variable with four groups: younger than 25 (0), between 25 and 34 (1), between 35 and 44 (2) and above 44 years old (3). Female is a dummy variable equal to one if the respondent is a woman and zero otherwise. Nb. children is a categorical variables with five groups: no child (0), One child (1), two children (2), three children (3) and four children (4) present in the household. Education is a categorical variable with three groups: low ISCED (0), middle ISCED (1) and high ISCED (2). Married is a dummy variable equal to one if the respondent is married and zero otherwise. Years since migration to Germany is a categorical variable with seven groups: less than 5 years (0), between 5 and 9 years (1), between 10 and 14 years (2), between 15 and 19 years (3), between 20 and 24 years (4), between 25 and 29 years (5) and 30 years or more (6). Assistance is a dummy variable equal to one if the respondent received social assistance and zero otherwise.

Figure A4: Kaplan-Meier survival estimates for covariates



Source: Author's elaboration on GSOEP panel data.

Table A4: Descriptives statistics (Perceived discrimination)

Variable	Mean	Std.D.	Min	Max	Log-rank Test
Discrimination	0.553	0.632	0	2	241.450***
German identity	2.096	1.300	0	4	119.990***
Age	2.016	0.923	0	3	2105.230***
Female	0.472	0.499	0	1	216.340***
Nb. Children	1.095	1.162	0	4	693.350***
Education	0.891	0.682	0	2	1145.860***
Married	0.781	0.414	0	1	62.030***
Years since migration	3.411	1.891	0	6	636.350***
Assistance	0.196	0.397	0	1	20729.750***

Source: Author's elaboration on GSOEP panel data. Discrimination refers to the question "*how often have you experienced disadvantages in the last two years because of your origins?*". The variable takes the value of 0 if the response is *never*, 1 if the response is *seldom*, and 2 if the response is *often*. German identity refers to the question "*How much do you feel like a German?*". German identity takes the value of 0 if the response is *completely*, 1 if the response is *mostly*, 2 if the response is *in some respects*, 3 if the response is *barely* and 4 if the response is *not at all*. Age is a categorical variable with four groups: younger than 25 (0), between 25 and 34 (1), between 35 and 44 (2) and above 44 years old (3). Female is a dummy variable equal to one if the respondent is a woman and zero otherwise. Nb. children is a categorical variables with five groups: no child (0), One child (1), two children (2), three children (3) and four children (4) present in the household. Education is a categorical variable with three groups: low ISCED (0), middle ISCED (1) and high ISCED (2). Married is a dummy variable equal to one if the respondent is married and zero otherwise. Years since migration to Germany is a categorical variable with seven groups: less than 5 years (0), between 5 and 9 years (1), between 10 and 14 years (2), between 15 and 19 years (3), between 20 and 24 years (4), between 25 and 29 years (5) and 30 years or more (6). Assistance is a dummy variable equal to one if the respondent received social assistance and zero otherwise.

Table A5: Origin countries of immigrants (Perceived discrimination).

Country of origin	Indiv.	Obs.	Perc.	Survival time		
				25%	50%	75%
Turkey	341	22179	29.29	8	10	13
Ex-Yugoslavia	187	8952	11.82	4	7	10
Poland	162	8538	11.26	5	8	10
Kazakhstan	139	6110	8.07	6	9	13
Russia	137	7099	9.38	9	11	14
Italy	118	7561	9.99	12	15	20
Greece	74	4514	5.96	15	15	16
Romania	45	2699	3.56	12	14	16
Ukraine	26	687	0.91	7	11	14
Spain	22	1079	1.42	13	13	14
Bosnia	13	602	0.80	4	5	7
Austria	12	588	0.78	8	8	9
Hungary	12	516	0.68	22	23	25
France	10	794	1.05	2	2	3
United States	10	731	0.97	3	3	3
Croatia	10	454	0.60	2	3	5
Kyrgyzstan	10	414	0.55	3	3	3
Netherlands	9	549	0.73	25	25	26
Portugal	9	266	0.35	13	14	16
Albania	8	418	0.55	32	33	35
Czech Republic	8	365	0.48	37	38	41
United Kingdom	7	426	0.56	13	13	14
Iran	7	192	0.25	16	17	19
Total	1376	75733	100.000	6	8	12

Source: Author's elaboration on GSOEP panel data, Eurobarometer and European Election Survey data. Survival time is the survival time to the first failure. It has to be interpreted as the number of months which have been necessary to reach that  $x\%$  of the unemployed population has found a job.

Table A6: Correlation between *Trust* and individual labor earnings

	(1)	(2)	(3)	(4)
	Pearson correlation Earnings (log)	Pearson correlation Earnings (log)	Pooled-OLS Earnings (log)	Pooled OLS Earnings (log)
Trust	0.074*** (0.000)		0.309*** (0.001)	
Trust(region)		0.067*** (0.000)		0.267*** (0.002)
Individuals			3188	3188
Observations			23250	23250
R-squared			0.300	0.300

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . Source: Author's elaboration on SOEP panel data over 1984-2012, Eurobarometer and European Election Survey data. Earnings represents the annual labor earnings of individuals 16 years of age and older. Labor earnings include wages and salary from all employment including training, primary and secondary jobs, and self-employment, plus income from bonuses, over-time, and profit-sharing. Trust is the mean of the share of Germans who expressed that they trust citizens from a given country, calculated by country of origin. Columns (3) and (4) include a full vector of controls with age, sex, number of children, an interaction between the number of children and sex, education, Married, years since migration, a dummy for whether the individuals receive any assistance and year and regional fixed-effects.

Table A7: Cross-correlations between *Trust*, genetic and cultural distances

	Trust	Genetic Distance	Religious Distance	Cultural distance
Trust	1.000			
Genetic Distance	-0.468*** (0.000)	1.000		
Religious Distance	-0.466*** (0.000)	0.888*** (0.000)	1.000	
Cultural distance	-0.773*** (0.000)	0.880*** (0.000)	0.866*** (0.000)	1.000

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . Source: Author's elaboration on Eurobarometer data, European Election Survey, and data from Spolaore and Wacziarg (2009). Trust is the mean of the share of Germans who expressed that they trust citizens from a given country, calculated by country of origin. Genetic distance accounts for the differences in the genetic composition between populations of two countries. Religious distance is the weighted religious similarity, corresponding to the religious proximity between two randomly chosen individuals between two countries. Cultural distance accounts for the differences, across pairs of countries, in average responses to 98 questions asked in the World Values Survey (WVS).

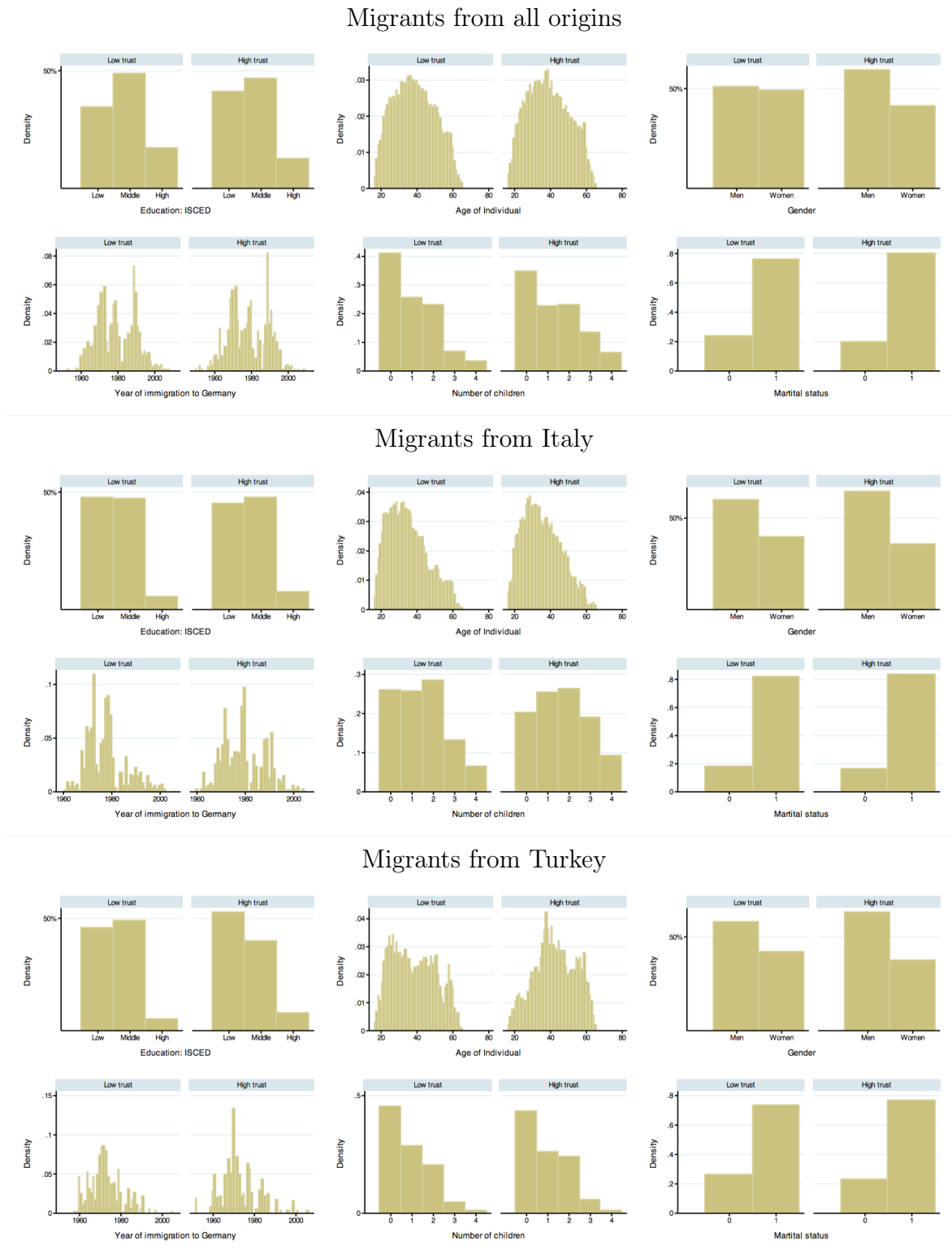
Table A8: Natives' attitudes and immigrant's unemployment duration.  
Additional controls variables

	(1)		(2)		(3)		(4)		(5)		(6)	
	Weibull Hazard		Weibull Hazard		Weibull Hazard		Weibull Hazard		Weibull Hazard		Weibull Hazard	
	$\beta$	Std.D.	$\beta$	Std.D.	$\beta$	Std.D.	$\beta$	Std.D.	$\beta$	Std.D.	$\beta$	Std.D.
Trust(region)	1.194***	(0.456)	1.214***	(0.462)	1.172**	(0.458)	0.552*	(0.292)	0.570*	(0.292)	0.619**	(0.298)
<i>Speak German (ref is very good):</i>												
Good			-0.019	(0.021)								
Fairly			-0.099***	(0.029)								
Poorly			-0.129***	(0.041)								
Not at all			-0.336**	(0.152)								
<i>Write German (ref is very good):</i>												
Good					-0.015	(0.023)						
Fairly					-0.054**	(0.028)						
Poorly					-0.116***	(0.034)						
Not at all					-0.213***	(0.049)						
<i>Sectors (ref is Agriculture):</i>									0.000		0.000	
Manufacturing									-0.172**	(0.082)	-0.130	(0.249)
Construction									-0.151*	(0.085)	-0.136	(0.220)
Services									-0.127	(0.082)	-0.207	(0.180)
<i>Occupations (ref is Managers):</i>												
Professionals									-0.043	(0.062)	0.094	(0.233)
Technicians									0.003	(0.054)	0.097	(0.126)
Clerical support workers									-0.021	(0.059)	0.025	(0.131)
Services and Sales workers									-0.021	(0.056)	0.077	(0.130)
Skilled Agricultural workers									0.265*	(0.152)	0.424**	(0.187)
Trade workers									-0.007	(0.056)	-0.149	(0.223)
Plant operators/Assemblers									-0.019	(0.054)	0.063	(0.129)
Elementary Occupations									-0.034	(0.055)	0.074	(0.130)
<i>Interactions:</i>												
Manufacturing * Professionals											-0.157	(0.278)
Manufacturing * Technicians											-0.112	(0.180)
Manufacturing * Clerical support workers											-0.116	(0.196)
Manufacturing * Services and Sales workers											-0.241	(0.238)
Manufacturing * Trade workers											0.114	(0.254)
Manufacturing * Plant operators/Assemblers											-0.123	(0.180)
Manufacturing * Elementary Occupations											-0.145	(0.182)
Construction * Professionals											-0.539	(0.458)
Construction * Technicians											-0.180	(0.152)
Construction * Clerical support workers											0.031	(0.143)
Construction * Services and Sales workers											-0.106	(0.140)
Construction * Skilled Agricultural workers											-14.743***	(1.024)
Construction * Trade workers											0.103	(0.246)
Construction * Plant operators/Assemblers											-0.012	(0.141)
Construction * Elementary Occupations											-0.171	(0.150)
Services * Professionals											-0.049	(0.200)
Services * Trade workers											0.167	(0.201)
Observations	96143		96143		96065		87585		87585		87585	
Individuals	1370		1370		1370		1154		1154		1154	
Failures	64492		64492		64492		65720		65720		65720	
Individual controls	Yes		Yes		Yes		Yes		Yes		Yes	
Seasonal fixed-effects	Yes		Yes		Yes		Yes		Yes		Yes	
Origin fixed-effects	Yes		Yes		Yes		Yes		Yes		Yes	
Regional $\times$ year fixed-effects												
$\ln(\rho)$	0.312***		0.306***		0.308***	(0.019)	0.161***		0.162***		0.161***	

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Standard errors in parentheses adjusted for clustering at the individual level. Source: Author's elaboration on SOEP panel data over 1984-2012, Eurobarometer, European Election Survey data, The German Federal Statistical Office and The German Federal Employment Agency.  $\ln(\rho)$  is the estimated shape parameter. Trust is the mean of the share of Germans who expressed that they trust citizens from a given country, calculated by country of origin. Control variables includes age category, gender, number of children, education level, marital status, years since migration, and a dummy variable equal to one if the respondent received social assistance and zero otherwise.



Figure A5: Observable characteristics, by region and origin-specific level of trust



Source: Author's elaboration on GSOEP panel data. For each origin country, regions are classified into *High trust* and *low trust* if they are respectively above or below the origin-specific mean level of trust.