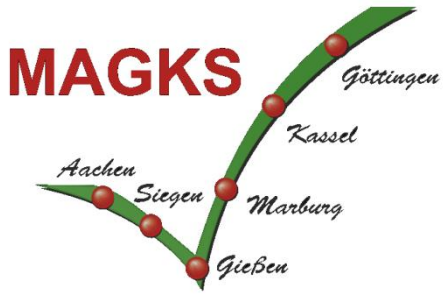

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The perceived impact of immigration on native workers' labour market outcomes

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Abstract

A sizeable literature analyses how immigration affects attitudes towards migrants and discusses differences between socio-economic groups and their potential correlation with perceived concerns about labour market competition. Against the background of the large-scale influx of refugees into Germany between 2015 and 2016, this paper uses data from a unique and representative survey of the German population to assess whether respondents express fears of job loss due to immigration. We focus on the importance of perceptions of migrants' ability to do one's job in relation to these fears. Moreover, we compare concerns about refugees with those about EU migrants. We propose several hypotheses regarding egotropic and sociotropic motives. Our findings indicate that: (i) Respondents are more likely to view EU migrants as potential competitors in the labour market. (ii) Workers in blue-collar occupations and without tertiary education are more likely to view migrants as potential competitors on the labour market. (iii) The perception of potential competition from migrants strongly predicts fear of job loss. Once we control for this perception, occupation and skill levels are no longer significantly related to the probability of reporting fear of job loss. Moreover, there are no longer significant differences between the two migrant groups. (iv) Anti-migrant sentiments are also associated with concerns about job loss.

Keywords: refugees, EU migration, immigration, labour market, perceptions, competition, job loss, Germany

JEL: F22, J61, D84

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1 Introduction

The refugee wave in 2015-16 has put deep strains on the fabric of many European societies. Germany received the largest number of refugees, roughly 1.2 million. This led to substantial tensions in German society, with anti-immigrant movements gaining unprecedented support. At the same time, and much less noticed, the number of foreign workers in Germany, especially from other EU countries, also rose sharply.

In this study, we investigate labour market participants' attitudes towards both types of immigration, from the EU and through the right of asylum. Using a representative sample of the German population collected in 2018, we first analyse the extent to which labour market participants believe that these foreigners can do their jobs. Second, we assess the extent to which fears of job loss can be related to concerns about effective labour market competition from migrants.

Our analysis can be linked to several strands of literature. The first strand refers to the sizeable literature on the effects of immigrants on natives' labour market outcomes, such as wage levels or employment shares. Following Card's (1990) seminal paper on the effects of the Mariel boatlift, subsequent studies have sought to identify the effects of other large-scale and unexpected inflows of migrants (see, for example, Friedberg (2001) and Glitz (2012) for migration from the former Soviet Union to Israel and Germany, respectively). This literature has produced conflicting evidence on the impact of natives' labour market outcomes. While Friedberg's (2001) instrumental variable estimates provide no evidence for adverse effects on natives, Glitz (2012) finds evidence for displacement among natives, but no effect on wages. By contrast, Dustmann et al. (2017) find that a sudden increase in cross-border commuting from the Czech Republic to Germany led to lower wages among younger workers and a decline in employment for older workers.

Proxying for the skill level of worker by their occupation, Orrenius and Zavodny (2007) study US survey data and report that an increase in the share of foreign-born workers has a significantly negative influence on the wages of natives in blue-collar occupations, but not on the wages of white-collar workers in skilled occupations. Further evidence of heterogeneous effects of immigration is provided by Dustmann et al. (2013), who show that negative wage effects are restricted to natives up to the 20th percentile of the wage distribution. This coincides with the position that immigrants tend to occupy in the wage distribution, suggesting that labour market competition due to immigration predominantly affects workers at the lower end of the wage distribution. Borjas and Monras (2016) analyse four different waves of refugee migration and find that, in general, immigration has an adverse impact on those natives who compete with immigrants for similar jobs. Our paper contributes to this literature by examining whether individuals with different characteristics differ in the extent to which they view immigration as a potential threat to their labour market prospects and relates this to the extent to which these individuals regard migrants as potential labour market competitors.

Within this strand of literature, our paper is also related to an emerging literature that analyses the effects of the 2015-16 refugee migration wave. For Germany, Berbée et al. (2022) show that exposure to refugee migration at the local level raised employment in non-tradable sectors in the short-run due to an expansion in local demand caused by the arrival of refugees. Tumen (2016) provides evidence for the effects of Syrian refugee migration on the labour, goods and housing market in Turkey. Recent evidence for the German housing market by Unal et al. (2024) suggests that immigration flows increase price inflation for flats and rents, especially at the lower end of the market, whereas refugee flows have no significant impact.

A second strand of literature is mainly concerned with the analysis of individual perceptions or subjective economic indicators. It examines the role of perceived labour market competition for

attitudes towards immigration. Scheve and Slaughter (2001) analyse three years of individual-level data for the US. They conclude that low-skilled workers are relatively more anti-immigration than high-skilled workers. This finding is consistent with the view that concerns about labour market competition affect attitudes towards immigration if migrants are more likely to seek jobs occupied by low-skilled workers.

Ortega and Polavieja (2012) employ the European Social Survey to estimate instrumental variable models that allow for heterogeneity at the individual, regional, and country levels. They find that natives who are hostile to immigration tend to work in low-immigration occupations. In contrast, high-skilled workers with more than 12 years of schooling have more pro-immigration attitudes. Workers in jobs with a high proportion of manual labour (communication-oriented work) tend to be relatively more (less) anti-immigration. They conclude that attitudes towards immigration are strongly affected by the specific type of qualification of workers. Using data from Austria, Halla et al (2017) find that concerns about adverse labour market outcomes can also lead to increased vote shares for far-right parties.

In contrast, Hainmueller and Hiscox (2007) analyse data from the 2003 European Social Survey and conclude that the relationship between a person's skill level and her attitude towards migration is not driven by fears of labour market competition. Similarly, Hainmueller et al. (2015) study a survey of US employees. They conclude that fear of labour market competition has no noteworthy effects on attitudes towards immigration. Haaland and Roth (2020) use a survey-based information experiment in a representative sample of the US population to investigate the causal impact of providing evidence showing that immigration does not have a negative impact on the labour market. Respondents who receive this information are significantly more supportive of immigration than those who do not. Likewise, Dylong and Uebelmesser (2024) find that the provision of information can counter concerns about labour market competition from migration.

We contribute to this strand of the literature by evaluating the extent to which the native population in Germany is concerned about job loss due to immigration, and how this concern varies with observable worker characteristics, such as skill or occupational group. In contrast to the extant literature, however, we relate these concerns not only to differences in observable characteristics, but also explicitly ask survey participants about whether they believe natives can do their job. Perceived substitutability arguably provides a more direct way of eliciting the relevance of perceived labour market competition for concerns about the adverse impact of immigration on one's own labour market prospects than observable characteristics that provide broad measures of jobs for which migrants may be more likely to compete, such as a person's skill level or occupation.

The third strand concerns the labour market integration of different types of refugees in Germany and in other countries. Using household panel data, the Institute for Employment Research (IAB) estimates that around ten years after their arrival, 70% of the migrants are employed and after 10 years in employment, their median income reaches about 90% of the median earnings of the German population (Brücker 2018). There is also evidence that refugees arriving in Germany enter the labour market later than other migrants (Salikutluk et al. 2016). Possible reasons include legal restrictions on access to the labour market after arrival, refugees' lower qualification levels, and their tendency to use informal job search methods. Regarding the match between educational level and job qualification, it is found that about a quarter to a third of migrants and refugees work below their formal educational level, compared to about 20% of native German workers. Finally, refugees earn less than other migrants. Likewise, Brell et al. (2020) report that refugees tend to have less favourable employment trajectories than other migrant groups, especially in terms of employment rates. Results by Fasani et al. (2022) indicate that refugees take longer to find a job than comparable migrants and, when

employed, tend to work in lower-quality occupations. We relate to this literature by comparing natives' perceptions of two different groups of immigrants: EU migrants and refugees.

The fourth strand of literature studies natives' perceptions of the impact of migrants on the labour market in general. Dempster and Hargrave (2017) provide a summary of many perspectives on public attitudes towards refugees and migrants. Foroutan (2013) and Gerhsitz et al. (2017) discuss the situation in Germany, with the former focusing on Muslim integration and the latter on the hike in refugee inflows in 2015 and 2016. However, the specific views of workers have not yet received sufficient attention. Of particular interest in this context is the question of whether anti-immigration attitudes are driven by egotropic or sociotropic considerations. The egotropic view, which is widely adopted in economic analysis in the form of a 'pocket-book' perspective, is based on the idea that economic strain, and in particular unemployment, causes anti-migration attitudes. For Germany, Betz (1990) and Scheepers et al. (1990) provide some evidence in support of this view. The opposite is argued by proponents of the sociotropic view. Here, ideological political views are responsible for anti-migration attitudes. For example, Hainmueller and Hiscox (2010) claim that labour market aspects do not have a strong influence on attitudes towards migration.

In contrast to most of the existing literature our investigation of the specific perspective of German labour market participants on the impact of migrants and refugees on their jobs takes a different approach: We focus on how immigration is perceived by the labour market participants themselves. In other words, rather than taking the objective perspective of an external observer, we investigate the degree to which the persons concerned feel threatened by EU and refugee migration. Specifically, we ask to what extent labour market participants in Germany believe that these foreigners will be able to perform their jobs and to what extent they fear losing their jobs or expect greater difficulties in finding new ones. Our empirical analysis of the answers to these questions is guided by a number of hypotheses reflecting both egotropic and sociotropic aspects.

The remainder of the paper is structured as follows. The next section develops our hypotheses, Section 3 discusses our data and empirical methodology and Section 4 presents the results. Section 5 concludes.

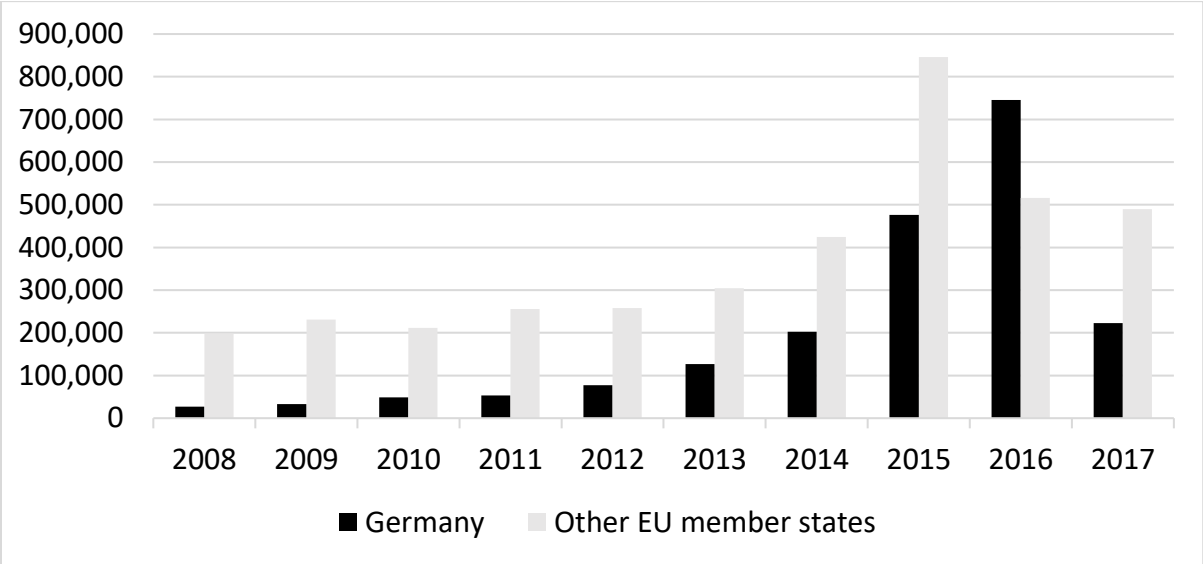
2 Context and developing hypotheses

2.1 The immigration situation in Germany

We examine the case of Germany, where the issue of immigration became particularly salient in the years preceding our survey. The two most important types of immigration flows are due to refugees and EU workers, the latter being able to move easily to Germany within the Common Market. With regard to the first group the number of asylum applications in EU countries jumped to 2.5 million in 2015 and 2016 (see Figure 1). Almost half of these applications, that is, 1.2 million, were filed in Germany. In fact, Germany received more asylum-seekers in 2016 than all other EU Member States combined. The IAB-BAMF-SOEP survey (Brücker et al., 2022), which contains information on refugees who have arrived in Germany since January 2013, was used to analyse the labour market integration of refugees. Based on this survey, Brücker et al. (2020) estimate that the share of refugees who are working increases steadily with the time elapsed since arrival: two years after arrival, about 17% of refugees are estimated to be working, a figure that rises to 35% after three years. Compared to the German population, refugees are more frequently employed in unskilled jobs (by 2018, comprising 44% compared to 13% for Germans). However, the employment of refugees is not limited to unskilled jobs, as about 52% are employed in skilled jobs (compared to 60% for Germans). By contrast, the share of refugees working in jobs consisting of specialist and highly complex tasks is relatively modest (2%

and 3%, respectively, compared to 14% for both categories amongst Germans). Refugees are frequently employed in production and manufacturing-related occupations (32%), transport, logistics, safety and security occupations (26%), and commercial services (17%).

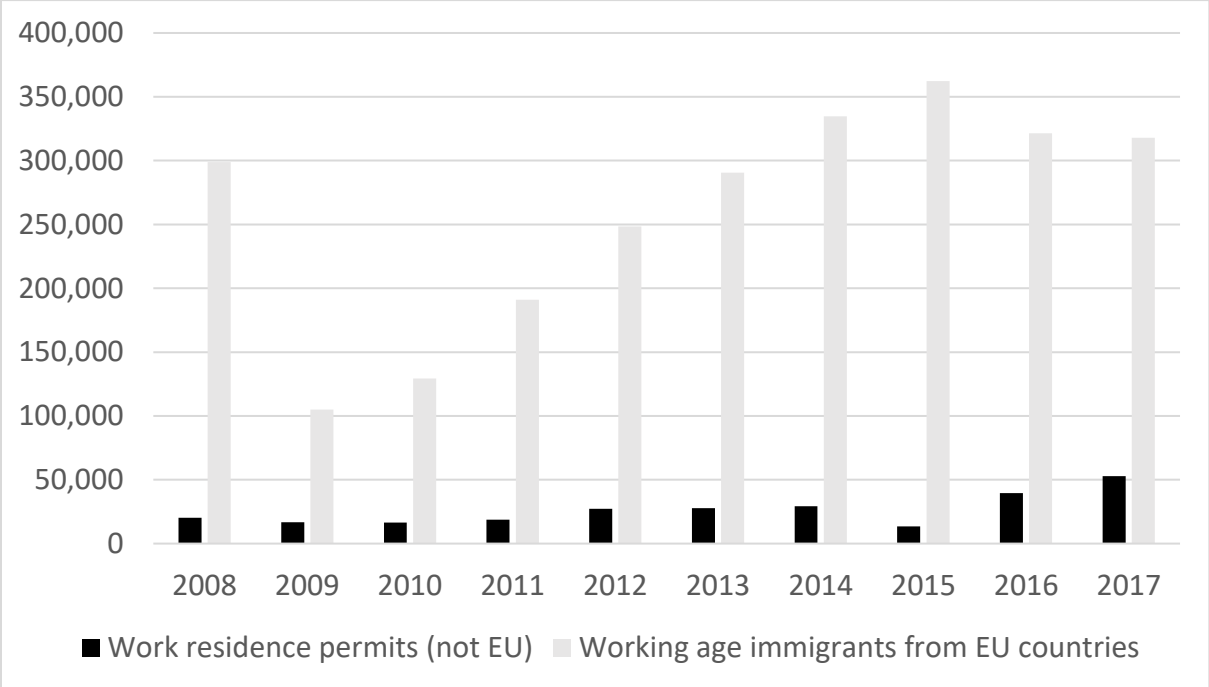
Figure 1: Number of asylum applications per year in Germany and the EU



Notes: The figure shows the annual number of asylum applications in Germany (black columns) and other EU member states (grey columns) from 2008 to 2017. Source: Federal Office for Migration and Refugees (*Bundesamt für Migration und Flüchtlinge*) and Eurostat.

At the same time, there has been a steady inflow of EU workers (see Figure 2). Since 2014, the number of migrant workers from the EU has exceeded 300,000 per year, many of them from Eastern Europe, while those from outside the EU have generally remained below 50,000.

Figure 2: Number of workers entering Germany from inside and outside the EU per year



Notes: The figure shows the annual number of work residence permits granted to non-EU national in Germany (black column), as well as the annual number of working age (20-64) immigrants from EU to countries to Germany (grey column) from 2008 to 2017. Source: Eurostat.

In 2018, the number of registered foreign workers of EU origin in Germany was around 1.5 million. Most EU workers come from a relatively small number of countries: there are 400,000 Poles and 350,000 Romanians and more than 600,000 workers from Greece, Italy, Portugal, and Spain (https://www.dw.com/en/eastern-europeans-filling-hundreds-of-thousands-of-new-german-jobs/a-45790776).

Considering these two types of immigration flows, we examine German labour market participants' beliefs about whether immigrants would be able to do their jobs. We then turn to an evaluation of the extent to which they express concerns about job loss as a result of immigration. Our main objective is to assess whether perceived labour market substitutability is related to concerns about job loss. To test this and other relationships, we formulate several empirical hypotheses. Our survey design implies that the results of those hypotheses that pertain to the difference in labour market participants' perceptions between EU migrants and asylum-related immigration can be interpreted as causal. This is because our survey design randomly assigns respondents to two groups, one of which is asked about EU migrants and the other one about asylum-related immigration. The socio-demographic structure of these two groups is nearly identical (see Hayo et al. 2018). The other hypotheses we consider are tested in the form of multivariate correlations linking socio-demographic, economic, and attitudinal variables to our questions of interest.

2.2 Hypotheses for 'Can migrants do your job?'

First, given the different structure of the migrant groups, we expect German labour market participants to be more likely to say that EU migrants can do their jobs more easily than refugees can. Second, respondents who have had positive experiences of working with migrant workers should see them as more capable and therefore be more likely to think that they are able to do their job. Third, blue-collar workers are more likely to face competition from immigrants than white-collar workers. Fourth, well-educated employees are more difficult to replace by immigrants than those with lower levels of education, for example because the former may lack relevant skills or face difficulties in having their qualifications recognised. Fifth, respondents who are more satisfied with their economic situation tend to have more demanding and higher-paying jobs (e.g., Clark, 2005; Layard and De Neve, 2023), which immigrants, and especially asylum seekers, might find difficult to fill. Sixth, if respondents have an anti-migration position based on a notion of racial or national superiority of the native workforce, they should be less likely to expect that they could be replaced by immigrants. For a more in-depth analysis of attitudes towards asylum seekers in Germany based on our survey, see Hayo and Neumeier (2023). Table 1 summarises these hypotheses.

Table 1: List of hypotheses for 'Can migrants do your job?'

Hypothesis		**Expected answer**
H1	Relatively higher agreement that EU migrants can do their job compared to refugees	EU effect > refugee effect
H2	Labour market participants with positive migrant-related work experiences	Yes
H3	Blue-collar worker	Yes
H4	High formal education	No
H5	High satisfaction with their economic situation	No
H6	Anti-migration position due to believed superiority	No

2.3 Hypotheses for 'Afraid of job loss because of migration?'

First, we expect that workers are likely to be more concerned about job loss due to migration if they believe that migrants can do their job (egotropic). Second, given the different skill structure of the two migrant groups, German labour market participants should be more fearful of EU migration (egotropic). Third, respondents who have had positive experiences of working with migrant workers are more likely to perceive migrants as serious competitors (egotropic) or as beneficial to the economy as a whole (sociotropic). Fourth, it is difficult to replace older workers in Germany due to the experience they have acquired, so they have less to fear from immigration (egotropic). However, the consequences of job loss tend to be harsher for older people, so they may fear it more (egotropic).

Fifth, reflecting the labour market patterns discussed above, blue-collar workers are more likely to face competition from migrants than white-collar workers. Sixth, well-educated employees are less easily replaced than those with lower levels of education and are therefore less fearful of losing their jobs (egotropic). Seventh, full-time workers tend to have more stable jobs, i.e. less turnover due to permanent contracts and high levels of unionisation. Thus, they are less concerned about losing their jobs to migrants (egotropic). Eighth, labour market participants who are more satisfied with their economic position tend to have more demanding jobs and are therefore more difficult to replace (egotropic).

Ninth, respondents' anti-migration political stance should exacerbate labour market participants' fears if it is driven by personal labour market considerations (egotropic). The kind of fear we have in mind here is not related to objective labour market structures, such as low-skilled jobs, but can be seen as a diffuse sense of threat associated with immigrant workers. In contrast, if the anti-migration stance is based on a notion of racial/national superiority of the domestic workforce, workers should be less likely to expect to be replaced by immigrants (sociotropic). These hypotheses are summarised in Table 2.

Table 2: List of hypotheses for 'Afraid of job loss because of migration?'

Hypothesis		**Expected answer**
H1	Migrants believed to be able to do perform one's job	Yes
H2	Relatively higher fear of EU migrants compared to refugees	EU effect > refugee effect
H3	Labour market participants with positive migrant-related work experiences	Yes
H4	Older labour market participants: more job security vs difficult to find a job	No/Yes
H5	Blue-collar workers	Yes
H6	High formal education	No
H7	Full-time workers	No
H8	Higher satisfaction with their economic situation	No
H9	Anti-migration position	Yes (egotropic); No (sociotropic

3 Data and empirical strategy

3.1 The survey

The paper uses data from an omnibus survey, which was designed by the authors and conducted in the first quarter of 2018 by the *Gesellschaft für Konsumforschung (GfK)*, which is the largest private company in Germany specialising in public opinion surveys. The survey contains information on 2,015 individuals and is representative of the German population aged 14 and over. More information on the structure and content of the survey can be found in the corresponding documentation paper (Hayo et al., 2018).

The survey covers a wide range of socio-demographic and labour market characteristics as well as political preferences and personal attitudes. More importantly for this analysis, it provides information on how survey respondents view a range of migration-related issues, in particular, (A) whether they believe that migrants can do their job and (B) whether they are concerned about potential job losses as a result of immigration:

A) Can migrants perform your job

*(1) Group 1: Imagine that more people start looking for work in your home region. Assume that these are immigrants from the **European Union**. When you think about your own job, do you believe that it could be done by these immigrants?*

*(2) Group 2: Imagine that due to the influx of **refugees**, more people start looking for work in your home region. When you think about your own job, do you believe that it could be done by refugees?*

B) Afraid of job loss because of migration

*(1) Group 1: Imagine that more people start looking for work in your home region. Assume that these are immigrants from the **European Union**. Under these circumstances, would you be afraid that you might lose your job or that it might become more difficult for you to find a new job?*

*(2) Group 2: Imagine that due to the influx of **refugees**, more people start looking for work in your home region. Under these circumstances, would you be afraid that you might lose your job or that it might become more difficult for you to find a new job?*

A special feature of these two questions is that respondents are randomly assigned to one of two groups. The first group is asked about migrants from other European countries, while the second group is asked about refugee migrants. This distinction allows us to assess whether perceptions differ systematically between these two groups of migrants. In particular, the answers to the questions about European migrants serve as an interesting benchmark against which to compare the responses to the questions about refugees. Table A1 in the Appendix shows that both groups are very similar in terms of most of the characteristics included in the survey.

3.2 Sample and variables

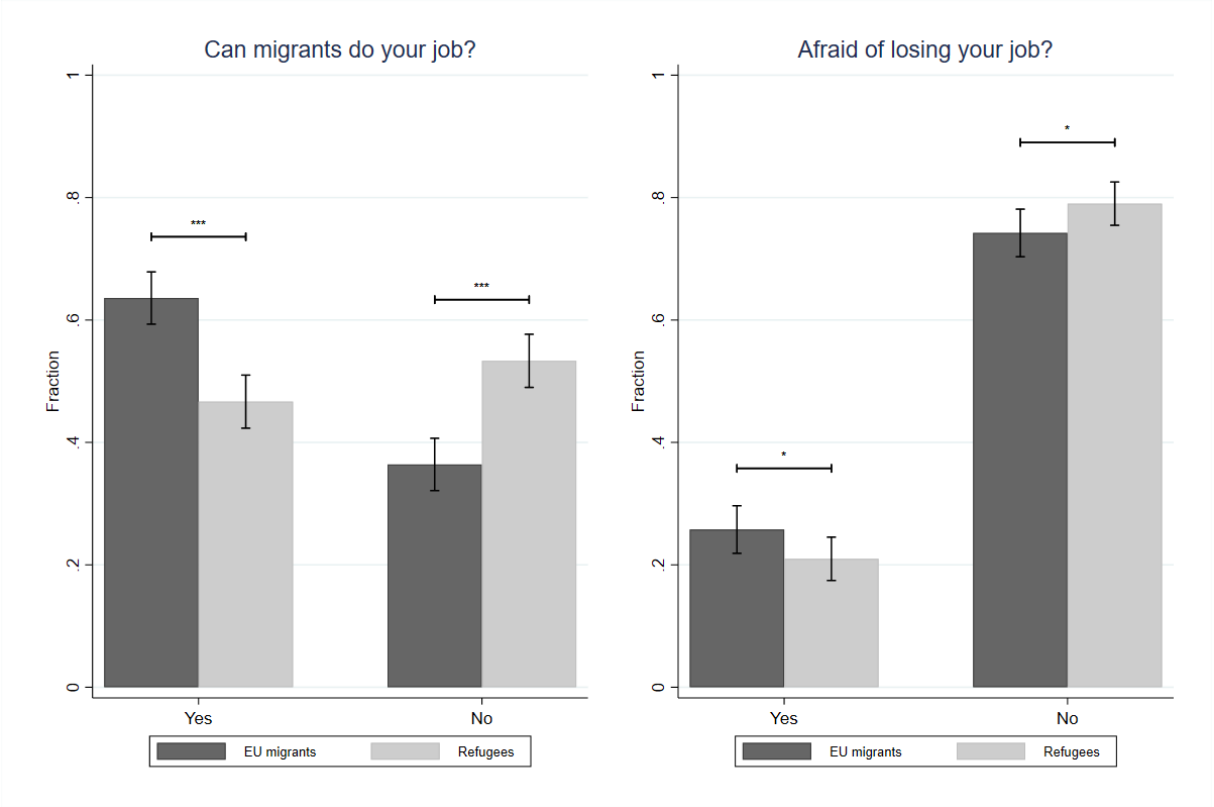
For the empirical analysis, we restrict the sample to labour market participants. This means that we retain only individuals aged between 16 and 65 years who report being either employed, unemployed or engaged in an apprenticeship at the time of the interview. Moreover, we drop all respondents who answer 'don't know' to either of the two main questions – perceived ability of migrants to do one's job and fear of losing one's job. After taking into account missing values, the sample consists of 999 observations.[1] In line with standard practice, we indicate statistical significance in graphs and tables at

[1] The reduction in sample size results mainly from two factors: the imposition of an age restriction (-485 observations) and the focus on labour market participants (-313). Additionally, 137 observations are lost due to

the 10%, 5%, and 1% levels. However, to ensure the statistical robustness of our findings, we focus in the final analysis on results that are significant at the 5% level or lower.

The left panel of Figure 3 shows that the respondents' perceptions of migrants' ability to perform their job are not the same for EU migrants and refugees. While a majority of 60% of respondents consider EU migrants to be potential substitutes in the labour market, only 40% of respondents consider refugees to be potential substitutes.[2] This difference is economically large and statistically significant. One possible explanation for this difference is that people perceive refugees to be less skilled than EU migrants (possibly, because their main reason for migrating is not economic and they come from poorer countries) and are therefore less likely to see them as potential labour substitutes.

Figure 3: Responses to 'Can migrants do your job?' and `Afraid of job loss because of migration?'



Notes: Vertical lines represent the 95% confidence interval of the estimated shares. Horizontal lines show whether there is a statistically significant difference between the estimated shares of the two immigrant groups. */**/*** indicate statistical significance at the 10%/5%/1% level.

missing values (or 'don't know') in the two main variables of interest, while 81 observations are lost because of missing values in the control variables. Additional analysis reveals that 11% of the survey participants in the relevant sample either fail to answer or respond with 'don't know' to the survey's two main items ('Can migrants do your job?' and 'Afraid of losing your job because of migrants?'). These respondents differ from those who provide answers to these questions. First, they more often report having had experiences with migrant co-workers that are worse than those with native co-workers. They are also less likely to expect that the integration of migrants will work out and more likely to answer 'don't know'. Second, these respondents are less likely to report being white-collar workers and working full-time. Conversely, they more frequently state being unemployed or without occupation and working part-time. They also report being dissatisfied with their economic situation more frequently and have a higher value of the anti-asylum variable. By contrast, we find no differences in terms of gender composition or residence with respect to East/West Germany or within/outside cities. Results from a detailed comparison of this group with our analysis group are available on request.

[2] The survey allows respondents to choose from a more nuanced set of response categories, which we group together into two categories. The full distribution is shown in Figures A1 and A2 in the Appendix.

While a considerable share of respondents believe that migrants could potentially replace them in the labour market, they are much less likely to report being worried about a negative impact on their own employment prospects (as shown in the right-hand panel of Figure 3). Just over 20% of respondents say they are worried about losing their job, with the share slightly higher for EU migrants than for refugees. In contrast to their assessment of migrants' ability to do their job, there does not seem to be much difference between the two groups of migrants when it comes to believing that migrants could have a negative impact on their job situation. One reason for this finding may be that people with concerns about job loss due to immigration work in jobs with low barriers to entry, which could be done equally well by members of both immigrant groups. In the following, we examine in more detail which factors influence the likelihood of viewing migrants as substitutes and worrying about job loss.

Table A1 sets out the means and standard deviations of the variables used in the empirical analysis. The values are shown for the full sample and separately for the two sub-groups, which were asked about EU migrants and refugees, respectively. The last column contains the difference in means between the two groups and its standard error. The first rows refer to the results for the questions on potential substitutability and fear of job loss, which are shown graphically in Figure 3; the rest of the table refers to various control variables.

How people assess the ability of migrants to do their jobs may depend on whether they have had previous experience with migrant colleagues. We enquired about whether they had such experience and, if so, what it was like (see Hayo et al. 2018).[3] About half of the respondents said they had no such experience. Among the other half, 19% of respondents rated working with migrants as at least as good as working with natives, whereas 28% reported that their experience was worse. To separate specific assessments about migrants from a more general view of the impact of the large-scale migration of refugees that took place in 2015 and 2016, we asked respondents about their expectations regarding the widespread integration of refugees into the German labour market (see Hayo et al. 2018).[4] We find that around 60% of respondents do not expect integration to go well, and only approximately a third believe that it will.

To assess whether people who are employed in jobs that are more easily accessible to migrants are more likely to perceive them as potential substitutes and whether this perception is associated with a higher likelihood of worrying about job loss, we utilise the various labour market-related variables in the survey. First, we include information on a person's occupation. Almost two-thirds of respondents are white-collar workers or civil servants, whereas 19% are blue-collar workers, 11% are self-employed, and 7% have no occupation (mainly because they do housework or are in education) or are unemployed. We also control for whether a person has completed tertiary education, which is the case for approximately 11% of respondents. As the occupational and sectoral structure varies across regions, we also take into account whether a person lives in East or West Germany and whether he or she lives in a city (population size > 100,000).

Beliefs about migrants may also vary systematically with a person's economic background. Specifically, concerns about the impact of migrants on one's own labour market prospects may be influenced by one's own economic situation. To control for this, we include a measure of how satisfied a person is with her or his economic situation as well as whether she or he owns property. Furthermore, we use

[3] The original question is: 'Tell us about your work experience with immigrated workers. Comparing these with German workers, would you say that teamwork is a) Much better, b) Slightly better, c) Equally good, d) Slightly worse, e) Much worse, f) So far, I have had no work experience with migrated workers, g) Don't know'.

[4] The original question is: 'What are your expectations regarding a widespread integration of refugees into the German labour market? This integration will a) Work out well, b) Roughly work out, c) Not really work out, d) Not work at all, e) Don't know'.

information on spending patterns to distinguish between people who finance their spending mainly from their own resources or by borrowing. Finally, attitudes towards migrants may also be influenced by various personal characteristics. Most importantly, we want to account for the possibility that people with anti-immigrant attitudes may have different perceptions of the ability of migrants to succeed in the German labour market. Employing factor analysis, we construct a measure of the extent to which a person holds anti-asylum attitudes. We call this factor 'Against asylum' and it is based on five items reflecting respondents' attitudes towards the right to asylum in Germany, their feelings about the number of immigrants, and their political orientation (see Table A2 in the Appendix). We can clearly identify a factor with absolute loadings on the individual items of 0.4 or more. Thus, 'Against asylum' is based on people who reject the right to asylum, are concerned about the influx of refugees, and vote for the anti-immigration party *Alternative für Deutschland* (AfD). We standardise this variable so that it has a mean of zero and a standard deviation of one. Details on all these variables can be found in Hayo et al. (2018).

In our analysis, we also control for the influence of time preferences and impatience. Dohm et al. (2016) report a robust positive relationship between patience and human capital across individuals. Moreover, Falk et al. (2018) show that impatience is correlated with important economic and labour market characteristics, particularly with regard to accumulating financial and human capital, running one's own business, and planning to start one. In the survey, we conduct two 'experiments' to elicit the respondents' time preferences. First, they are asked to choose between a safe payoff of €1,000 paid immediately and a higher payoff of €X paid in six months. Second, they are asked to choose between a safe payoff of €1,000 paid in six months and a higher payoff of €Y paid in 12 months. Respondents' choices of X and Y can then be used to calculate indicators of time preference and hyperbolic discounting (see Angeletos et al., 2001).

Table A1 shows that the two sub-groups – respondents asked about EU migrants and respondents asked about refugees – are balanced overall in terms of the control variables. In most cases, the differences in the means between the two groups are small and statistically insignificant. The different assessments of potential substitutability by EU migrants and refugees, as shown in the left panel of Figure 3, are therefore unlikely to reflect differences in observable characteristics. As the assignment to the two groups was random it should, in principle, be orthogonal to the characteristics of the respondents. However, this condition can be violated in finite samples and, indeed, in some cases we find significant differences between the groups. Survey participants who are asked about refugees are more likely to report having had worse experiences with migrant workers than with native workers, are less likely to have tertiary education and report to be dissatisfied with their economic situation. In order to be able to compare responses on attitudes towards migrants between the two groups, it is therefore advisable to control for these characteristics in the empirical analysis. In addition, inclusion of control variables reduces the idiosyncratic error in our regressions, which improves estimation efficiency.

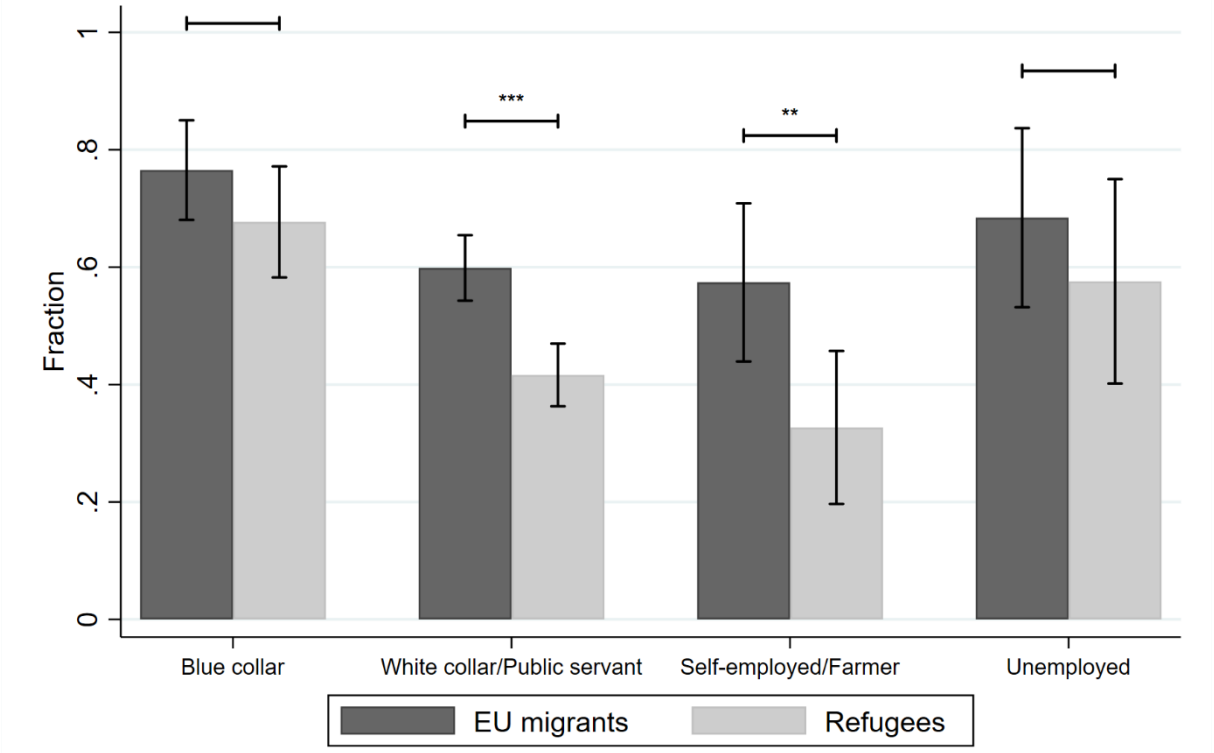
3.3 Conditional distributions

We continue our analysis by assessing whether attitudes towards migrants depend on various observable worker characteristics. Based on the corresponding fraction of respondents for each group, Figure 4 provides a first assessment of whether the belief that migrants are potential substitutes in one's job differs between occupational groups. First, we find differences between the different occupations in the extent to which migrants are seen as potential substitutes. Regardless of the type of migrant, blue-collar workers and the unemployed are on average more likely to believe that migrants could do their job than white-collar workers or the self-employed. Second, the differential assessment of the extent to which EU migrants and refugees are seen as potential labour substitutes varies by occupation. The share of white-collar workers and the self-employed who think that EU

migrants could do their job is about 20 percentage points (pp) higher than for refugees. The difference is less pronounced and statistically insignificant amongst manual workers and the unemployed. One possible explanation for why members of different occupational groups differ in their assessment of their potential substitutability is that some occupations are generally more accessible to migrants than others, for example because of lower educational or skill requirements.

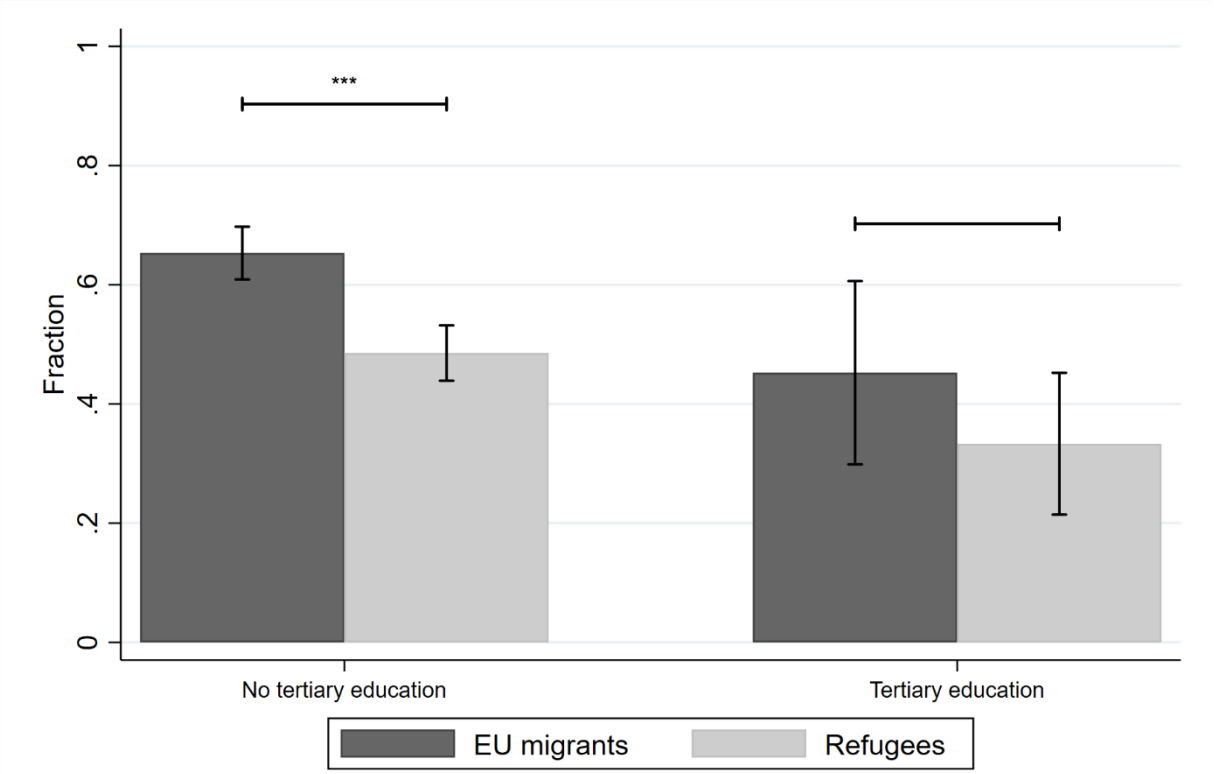
Similarly, Figure 5 shows the proportion of respondents who believe that migrants would be capable of doing their job, categorised by level of education. As expected, respondents with tertiary education are less likely to respond that they expect migrants – both EU nationals and refugees – to be able to do their job. Moreover, we discover that respondents without tertiary education are significantly more likely to perceive EU migrants as potential competitors in the labour market compared to refugees. We find a similar result in the case of tertiary educated respondents, but the difference is not statistically significant.

Figure 4: Responses of survey participants to 'Can migrants do your job?' – by occupational groups



Notes: Vertical lines represent the 95% confidence interval of the estimated shares. Horizontal lines show whether there is a statistically significant difference between the estimated shares of the two immigrant groups. */**/*** indicate statistical significance at the 10%/5%/1% level.

Figure 5: Responses of survey participants to 'Can migrants do your job?' – by level of education



Notes: Vertical lines represent the 95% confidence interval of the estimated shares. Horizontal lines show whether there is a statistically significant difference between the estimated shares of the two immigrant groups. */**/*** indicate statistical significance at the 10%/5%/1% level.

We then examine whether the belief that migrants are potential labour market substitutes is associated with a higher likelihood of worrying about job loss. Figure 6 shows the corresponding fractions for the two groups of respondents who believe that migrants could do their job and those who do not. Respondents who regard migrants as substitutes are approximately 15 and 20 pp more likely to worry about job loss in the case of EU migrants and refugees, respectively. These results suggest that concerns about immigration leading to job loss are, at least partly, channelled through the belief that migration leads to increased competition in the labour market.

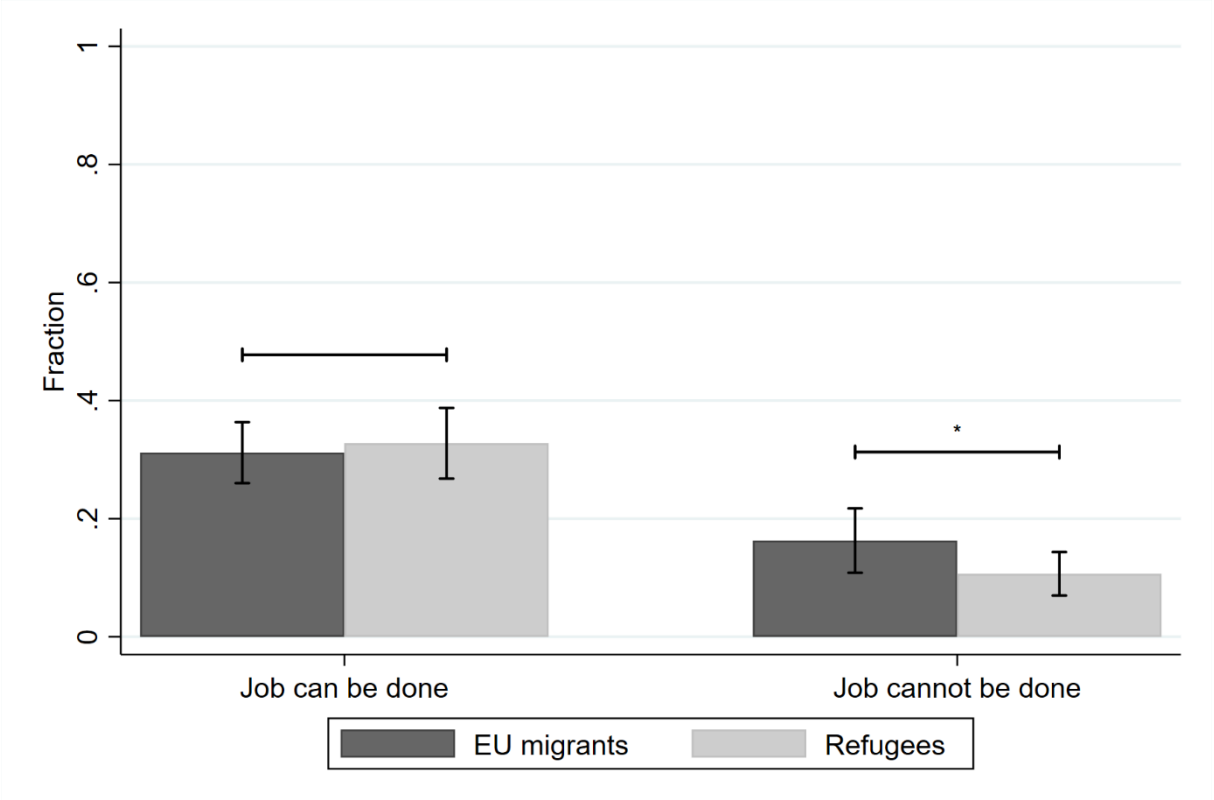
3.4 Empirical model

While Figures 4, 5, and 6 provide evidence based on bivariate relationships, we want to assess whether the association between various personal and job-related characteristics and the belief that immigrants are potential substitutes as well as between this belief and concerns about job loss also holds in a multivariate setting. For this purpose, we estimate the following logit model:

$$Pr(y_i^m|\boldsymbol{x_i^m}) = e^{x_i^{m\prime}\boldsymbol{\beta^m}} \Big/ \left(1 + e^{x_i^{m\prime}\boldsymbol{\beta^m}}\right) \quad (1)$$

The left-hand side of Equation 1 refers to the conditional probability that individual *i,* when asked about migration group *m* (EU migrants or refugees), believes that migrants could do her or his job or is concerned about losing her or his job. The vector of control variables $\boldsymbol{x_i^m}$ includes the broad range of additional variables listed in Table A1. To compare the size of the coefficients of the two groups, we also estimate a fully interacted model in which we also include an indicator variable for the migration group about which a person is asked and further interact all control variables with this indicator.

Figure 6: Responses to `Afraid of job loss because of migration?' – by response to 'Can migrants do your job?'



Notes: Vertical lines represent the 95% confidence interval of the estimated shares. Horizontal lines show whether there is a statistically significant difference between the estimated shares of the two immigrant groups. */**/*** indicate statistical significance at the 10%/5%/1% level.

4 Results

Table 3 provides the average marginal effects from estimating Equation 1 for the question of whether respondents think that migrants would, in principle, be able to do their job. The results for EU migrants are presented in the first column, those for refugees in the second column.[5] The marginal effects show that controlling for covariates does not substantially alter the finding in Section 2.3 that beliefs about potential substitutability differ between occupational groups. Compared to white-collar workers, blue-collar workers are much more likely to believe that immigrants can do their job. The corresponding difference is 15 pp in the case of EU migrants and 23 pp in the case of refugees. This finding supports the argument that (i) blue-collar jobs have lower entry barriers for migrants and (ii) it is relatively more difficult for refugees to enter white-collar jobs than for EU migrants. The results for a person's level of qualification provide further evidence that people are more likely to expect migrants to work in jobs requiring lower levels of qualification. Compared to all other qualification groups, respondents with a tertiary education are 18 (11) pp more likely to say that EU migrants (refugees) could in principle do their job.

Having worked together with foreigners also influences the probability of perceiving migrants as potential substitutes in the labour market. Ceteris paribus, respondents who rate their cooperation

[5] Not all the covariates that have been introduced in Section 2.2 are included in Table 3. Variables that are individually and jointly insignificant in the models for both groups of migrants are excluded. The results of a model including all covariates are presented in Table A2 of the Appendix. The F-statistic for the excluded variables (female, union membership, property ownership, financing of expenditures, East Germany, and time preference) is 8.8 (p-value = 0.26) and 5.0 (p-value = 0.67) for EU migrants and refugees, respectively.

with foreign co-workers as at least as good as with natives are more likely than other respondents to say that migrants can do their job. Compared to interviewees with no experience of working with foreign colleagues, the probability is 10 pp higher for EU migrants and 14 pp higher for refugees. In contrast, the difference is smaller for respondents who report that their experience with foreign colleagues is worse than with natives. Moreover, people who expect the labour market integration of the refugees who arrived in Germany in the years 2015 and 2016 to be successful are also more likely to perceive migrants as potential substitutes than respondents who do not expect integration to be successful.

Similarly, full-time workers are less likely than part-time workers to see migrants as potential substitutes, although the difference is statistically significant only for EU migrants. Finally, people living in cities are more likely to state that migrants could do their job. In urban areas, the labour-market presence of foreigners is clearly more prevalent than in rural areas.[6] Exposure to such a social environment may make respondents more inclined to believe that foreigners are capable of doing their jobs.

Turning to personal characteristics and preferences, we find that xenophobic tendencies also affect people's assessment of possible substitutability. A one standard deviation increase in our anti-asylum indicator is associated with a 6 pp reduction in the probability of considering EU migrants as potential substitutes. For refugees, however, the corresponding effect is not statistically significant. The results also show that respondents who are characterised by short-term impatience (hyperbolic discounting) are significantly more likely to answer that EU migrants can do their job, whereas we observe no such relationship in the case of refugees. Following the arguments of Dohm et al. (2016) and Falk et al. (2018), and considering that the education level is a noisy indicator of human capital stock, our results could be interpreted as suggesting that respondents with lower human capital and less entrepreneurial spirit do more readily agree that EU migrants can replace them in the labour market. However, due to the larger skills gap of refugees, they may not think that they can be replaced as easily.

Table 3: Dependent variable: Can migrants in principle do your job? (average marginal effects)

VARIABLES	EU MIGRANTS	REFUGEES
ATTITUDES TOWARDS MIGRANTS AND MIGRATION		
Experience with immigrant workers (base category: No experience)		
Better or equally good	0.10*	0.14**
	(0.06)	(0.06)
Worse	0.01	-0.03
	(0.05)	(0.05)
Don't know	-0.08	-0.02
	(0.11)	(0.11)
Will the labour market integration of refugees be successful? (base category: Will not work out)		
Will work out	0.22***	0.27***
	(0.05)	(0.05)
Don't know	0.26***	0.24***
	(0.08)	(0.09)

[6] See https://service.destatis.de/DE/karten/migration_integration_regionen.html#ANT_AI15BU65.

SOCIO-DEMOGRAPHIC		
Age	-0.00*	-0.00**
	(0.00)	(0.00)
LABOUR MARKET		
Occupation (base category: white-collar / public servant)		
Blue-collar	0.15***	0.23***
	(0.05)	(0.05)
Self-employed (including farmers)	0.04	-0.09
	(0.07)	(0.07)
No occupation / unemployed	-0.08	0.02
	(0.09)	(0.10)
Education (base category: less than tertiary education)		
Tertiary education	-0.18**	-0.11*
	(0.07)	(0.06)
Full-time-status (base category: part-time)		
Full-time	-0.10**	-0.04
	(0.05)	(0.05)
ECONOMIC CONDITIONS		
Satisfaction with own economic situation (base category: neutral)		
Satisfied	-0.08*	-0.08*
	(0.04)	(0.05)
Not satisfied	0.00	-0.03
	(0.06)	(0.06)
PERSONAL TRAITS (standardised)		
Against asylum	-0.06**	-0.01
	(0.02)	(0.02)
Hyperbolic discounting	0.07***	0.03
	(0.02)	(0.02)
Degree of risk aversion	0.05*	0.05
	(0.03)	(0.03)
RESIDENCE		
City (base category: does not live in city)		
Lives in city	0.04	0.13**
	(0.04)	(0.05)
OBSERVATIONS	489	510

Notes: The table shows average marginal effects. Robust standard errors are used. */**/*** indicate statistical significance at the 0.1/0.05/0.01 level.

To assess whether and to what extent beliefs about potential substitutability are also reflected in concerns about job loss, we estimate Equation 1 for the question of whether people fear losing their job. Information on beliefs about potential substitutability is included as an additional control variable. The results are presented in Table 4.[7]

As hypothesised, the fear of losing one's job due to migration is partly channelled through the belief that migrants are potential substitutes in the labour market. This is supported by the finding that, ceteris paribus, respondents who report that EU migrants (refugees) could potentially perform their

[7] The results from a model including all covariates are shown in Table A3. The F-statistic for the excluded variables (female, tertiary education, full-time employment, union membership, East Germany, time preference, hyperbolic discounting, and the degree of risk aversion) is 3.7 (p-value = 0.88) and 4.8 (p-value = 0.78) for EU migrants and refugees, respectively.

job are 15 (20) pp more likely to be concerned about losing their job as a result of migration. Other labour market-related variables, such as the level of qualification or occupation, that influence the belief in the ability of migrants to perform one's job do not have a direct impact on the probability of worrying about job loss (see Table A2). This suggests that concerns about job loss are only indirectly affected by observable characteristics, such as skills or occupation, to the extent that the former influence perceptions of migrants' ability to perform one's job.[8]

Conversely, experience with foreign workers also directly influences concerns about job loss, even after accounting for a person's belief in migrants' job capabilities. Respondents who rate their experiences with foreign colleagues as at least as good as those with natives are more likely to be concerned about job loss. A possible explanation for this finding is that these people base their expectations about migrants' ability to compete for jobs on their personal experiences with foreign colleagues. Those anticipating successful labour market integration of refugees are less concerned about job loss due to migration from other EU countries (with a small and statistically insignificant effect observed for refugees). People who expect successful labour market integration of refugees also appear to believe that it will not lead to increased competition for jobs, and amongst EU migrants we even observe a decrease in fear of job loss. This can be interpreted in three different ways: First, they expect labour market complementarity rather than substitutability. Second, the successful integration of migrants into the labour market may indicate that they are taking up vacancies that could not be filled by native workers. This increase in the total number of jobs in the economy is seen as beneficial for all workers. Third, it may simply reflect a kind of general optimism about the labour market.

The results also indicate that people in better economic circumstances are less likely to be concerned about migration-induced job loss. Satisfaction with one's economic situation is associated with a lower probability of reporting fears of job displacement due to migration of EU citizens. This relationship may reflect the fact that, on average, these people are employed in relatively complex jobs that are more difficult for migrants to access, possibly due to a lack of relevant qualifications. For EU migrants, we find no statistically significant relationship between financing consumption through borrowing and concerns about job loss. For refugees, we observe a positive and statistically significant effect at the 10% level.

Finally, our results show that anti-immigration attitudes are associated with a higher likelihood of worrying about job loss. Interestingly, the effect is statistically indistinguishable between EU migrants and refugees. A one standard deviation rise in the 'Against asylum' indicator increases the probability of reporting concerns about job loss by 7 pp and 8 pp for EU migrants and refugees, respectively. A possible explanation for this relationship is that people with anti-immigrant views believe that immigration has a negative impact on society, which in turn also leads to unfavourable labour market outcomes.

Table 4: Dependent variable: Afraid of job loss because of migration (average marginal effects)

VARIABLES	EU MIGRANTS	REFUGEES
ATTITUDES TOWARDS MIGRANTS AND MIGRATION		
Can migrants do your job? (base category: no)		
Yes	0.15***	0.20***
	(0.04)	(0.04)

[8] When estimating a model without controlling for whether a person believes that migrants could do her or his job, we find that working in a blue-collar job is associated with a statistically significant increase in the probability of being concerned about job loss for both groups of migrants. Detailed results are available on request.

Experience with immigrant workers (base category: No experience)		
Better or equally good	0.15***	0.09*
	(0.06)	(0.05)
Worse	0.07	0.07*
	(0.04)	(0.04)
Don't know	0.01	0.10
	(0.08)	(0.10)
Will the labour market integration of refugees be successful? (base category: Will not work out)		
Will work out	-0.09**	0.01
	(0.04)	(0.04)
Don't know	0.07	0.06
	(0.09)	(0.08)
SOCIO-DEMOGRAPHIC		
Age	0.003*	0.002*
	(0.002)	(0.001)
LABOUR MARKET		
Occupation (base category: white-collar / public servant)		
Blue-collar	0.04	0.08*
	(0.05)	(0.05)
Self-employed (including farmers)	-0.05	-0.04
	(0.06)	(0.05)
No occupation / unemployed	0.10	0.09
	(0.07)	(0.07)
ECONOMIC CONDITIONS		
Satisfaction with own economic situation (base category: neutral)		
Satisfied	-0.17***	-0.06*
	(0.04)	(0.04)
Not satisfied	0.10*	0.04
	(0.06)	(0.06)
Housing property (base category: does not own property)		
Owns property	-0.09**	0.001
	(0.04)	(0.04)
How are expenses financed? (base category: through own funds)		
Through borrowing	-0.01	0.08*
	(0.04)	(0.04)
Don't know	-0.02	0.04
	(0.07)	(0.05)
PERSONAL TRAITS (standardised)		
Against asylum	0.07***	0.08***
	(0.02)	(0.02)
RESIDENCE		
City (base category: does not live in city)		
Lives in city	-0.11***	0.05
	(0.04)	(0.04)
OBSERVATIONS	489	510

Notes: The table shows average marginal effects. Robust standard errors are used. */**/*** indicate statistical significance at the 0.1/0.05/0.01 level.

5 Conclusion

Given the economic and political importance of immigration for Germany, we examine labour market participants' attitudes towards immigration from the EU and through the right of asylum. We employ two questions from a representative population survey for Germany conducted in 2018. Labour market participants are defined as individuals aged between 16 and 65 years who report being either employed, unemployed or engaged in an apprenticeship at the time of the interview. First, we analyse German labour market participants' beliefs about the ability of these foreigners to do their jobs. Second, we analyse the extent to which German workers fear losing their jobs due to immigration or whether they worry about difficulties in finding a new one.

In contrast to most of the existing literature, which emphasises observable characteristics, we focus on how immigration is perceived by the labour market participants themselves. Our empirical analysis of the answers to these questions is guided by a set of hypotheses reflecting both egotropic and sociotropic aspects. The hypotheses relate to how the labour market participants' perspective may be associated with socio-demographic, economic, and attitudinal variables as well as hypotheses focusing on the difference between how labour market participants view immigration from the EU and immigration based on the right of asylum. In our empirical analysis, we derive multivariate correlations in the case of the former and causal inferences in the case of the latter. The possibility of drawing causal conclusions arises from the survey design, which randomly assigns respondents to two groups, one of which is asked about EU migrants and the other one about asylum-related immigration.

Table 5 lists the hypotheses pertaining to 'Can migrants do your job?' and shows whether our empirical analysis provides any support at least at the 5% level of significance. We find that most of the hypotheses are supported by our analysis. Note that we tested H1 based on a random design, whereas the other hypotheses are based on the outcome of a multivariate regression. Our results suggest that German labour market participants believe that EU migrants are more likely to do their job than asylum seekers. Those who have had positive job-related experiences with migrants are more likely to think that migrants can do their job (H2). The same conclusion applies to blue-collar workers (H3). Those with a high level of formal education think it is less likely that they could be replaced (H4). Finally, anti-asylum attitudes are associated with a lower probability of regarding EU migrants as potential substitutes in the labour market. This finding is consistent with the hypothesis of a notion of racial or national superiority of the domestic labour force among individuals with anti-asylum attitudes (H6).

Table 5: Evaluation of hypotheses for 'Can migrants do your job?'

Hypothesis		**Supported?**
H1	Relatively higher agreement that EU migrants can do their job compared to refugees	Yes
H2	labour market participants with positive migrant-related work experiences	Yes
H3	Blue-collar worker	Yes
H4	High formal education	Yes
H5	High satisfaction with their economic situation	No[9]
H6	Anti-migration position due to believed superiority	Yes (egotropic) No (sociotropic)[10]

[9] Supporting statistical evidence can be found at a 10% level of significance.

[10] The supporting evidence is only significant in the case of EU migrants.

In Table 6, we set out the outcome of our hypothesis tests regarding the fear of losing one's job. Here, the results are not quite as straightforward, as some of the hypotheses only apply to one group of immigrants. Regarding hypothesis H1, we discover a consistent perspective: those labour market participants who think that migrants can do their job are more likely to be afraid of job loss. However, once we control for perceptions about potential substitutability, we do not find that workers are more afraid of losing their jobs in the face of EU immigration than in the face of asylum-related immigration (H2). Hence, once perceptions about migrants' ability to do one's job are accounted for, labour market participants no longer differentiate between refugees and EU migrants with respect to fear of job loss.

Table 6: Evaluation of hypotheses for 'Afraid of job loss because of migration?'

Hypothesis		**Supported?**
H1	Migrants believed to be able to do perform one's job	Yes
H2	Relatively higher fear of EU migrants compared to refugees	No[11]
H3	labour market participants with positive migrant-related work experiences	Yes
H4	Older labour market participants: more job security vs difficult to find a job	No[12]
H5	Blue-collar workers	Weak yes[13]
H6	High formal education	No
H7	Full-time workers	No
H8	Higher satisfaction with their economic situation	No[14]
H9	Anti-migration position	No (egotropic) Yes (sociotropic)

This fear is exacerbated when native workers have had positive experiences with migrants in the workplace (H3). After controlling for perceptions about potential substitutability, the difference in the probability of being concerned about job loss due to EU migration between blue and white-collar workers is only marginally significant (H5). There is some ambiguity when it comes to labour market participants' attitudes towards migration. We find evidence supporting the hypothesis that the anti-migration stance amongst labour market participants arises from a notion of racial or national superiority of the native workforce, as they anticipate being less likely to be replaced by immigrants (H9).

Finally, regarding the magnitudes of the estimated average marginal effects, we find that they range from 5 pp to 25 pp, which we would interpret as small to medium effects. For example, blue-collar workers are, on average, 23 pp more likely than white-collar workers to think that refugees can do their job, or respondents who report that refugees could potentially do their job are 20 pp more likely to be concerned about losing their job as a result of migration. In the case of negative attitudes towards asylum seekers, a one standard deviation increases in our indicator raises the probability of reporting concerns about job loss by 8 pp for refugees. Note that the relative economic importance of these estimates cannot always be derived by comparing the size of the marginal effects, as it is difficult to

[11] The coefficient estimates indicate support, but the difference is not statistically significant.
[12] Supporting statistical evidence can be found at a 10% level of significance.
[13] For asylum-related migration, supporting statistical evidence can only be found at a 10% level of significance.
[14] Supporting statistical evidence can be found at a 10% level of significance.

compare the change in a dummy variable, e.g. white-collar worker vs blue-collar worker, with a standard error change of a roughly continuous variable, such as attitude towards refugees.

In summary, labour market participants' subjective views on how they are affected by immigration from EU countries and on the basis of the right of asylum are rather complex. We find evidence to support one set of hypotheses, but at the same time we are unable to support another set. Moreover, some hypotheses that find empirical support in our analysis are of an egotropic nature, whereas others are of a sociotropic nature. This suggests that both of these dimensions play a role in how workers perceive the impact of migration on their labour market situation.

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Appendix

Table A1: Descriptive statistics

VARIABLES	TOTAL	EU MIGRANTS	REFUGEES	DIFFERENCE
ATTITUDES TOWARDS MIGRANTS AND MIGRATION				
Can migrants do your job?				
Yes	0.55	0.64	0.47	-0.17***
	(0.50)	(0.48)	(0.50)	(0.03)
No	0.45	0.36	0.53	0.17***
	(0.450)	(0.48)	(0.50)	(0.03)
Afraid of losing job?				
Yes	0.23	0.26	0.21	-0.05*
	(0.42)	(0.44)	(0.41)	(0.03)
No	0.77	0.74	0.79	0.05*
	(0.42)	(0.44)	(0.41)	(0.03)
Experience with immigrant workers				
Better or equally good	0.19	0.22	0.16	-0.06**
	(0.39)	(0.41)	(0.37)	(0.03)
Worse	0.28	0.24	0.31	0.07**
	(0.45)	(0.43)	(0.46)	(0.03)
No experience	0.50	0.50	0.50	-0.0
	(0.50)	(0.50)	(0.50)	(0.03)
Don’t know	0.04	0.05	0.03	-0.01
	(0.19)	(0.21)	(0.17)	(0.01)
Will the labour market integration of refugees be successful?				
Will work out	0.35	0.37	0.33	-0.04
	(0.48)	(0.48)	(0.47)	(0.03)
Will not work out	0.60	0.58	0.61	0.03
	(0.49)	(0.49)	(0.49)	(0.03)
Don’t know	0.05	0.05	0.06	0.01
	(0.23)	(0.22)	(0.23)	(0.01)
SOCIO-DEMOGRAPHIC				
Sex				
Male	0.50	0.50	0.49	-0.01
	(0.50)	(0.50)	(0.50)	(0.03)
Female	0.51	0.50	0.51	0.01
	(0.50)	(0.50)	(0.50)	(0.03)
Age	44.35	43.75	44.93	1.19
	(12.50)	(13.00)	(11.98)	(0.79)
LABOUR MARKET				

Occupation				
Blue-collar	0.19	0.20	0.19	-0.01
	(0.40)	(0.40)	(0.39)	(0.03)
White-collar / public servant	0.63	0.61	0.65	0.03
	(0.48)	(0.49)	(0.48)	(0.03)
Self-employed (including farmers)	0.11	0.11	0.10	-0.01
	(0.31)	(0.31)	(0.30)	(0.02)
No occupation / unemployed	0.07	0.08	0.07	-0.01
	(0.26)	(0.27)	(0.25)	(0.02)
Education				
Less than tertiary education	0.90	0.91	0.88	-0.04*
	(0.31)	(0.28)	(0.33)	(0.02)
Tertiary education	0.11	0.09	0.12	0.04*
	(0.31)	(0.28)	(0.33)	(0.02)
Full-time-status				
Part-time	0.27	0.28	0.26	-0.02
	(0.44)	(0.45)	(0.44)	(0.03)
Full-time	0.73	0.72	0.75	0.02
	(0.44)	(0.45)	(0.44)	(0.03)
Union membership				
Not a union member	0.90	0.89	0.91	0.02
	(0.30)	(0.32)	(0.29)	(0.02)
Union member	0.10	0.11	0.09	-0.02
	(0.30)	(0.32)	(0.29)	(0.02)
ECONOMIC CONDITIONS				
Satisfaction with own economic situation				
Satisfied	0.47	0.44	0.50	0.05*
	(0.50)	(0.50)	(0.50)	(0.03)
Neutral	0.36	0.36	0.37	0.00
	(0.48)	(0.48)	(0.48)	(0.03)
Not satisfied	0.17	0.19	0.14	-0.06**
	(0.37)	(0.40)	(0.35)	(0.02)
Housing property				
Does not own property	0.54	0.56	0.51	-0.05*
	(0.50)	(0.50)	(0.50)	(0.03)
Owns property	0.46	0.44	0.49	0.05*
	(0.50)	(0.50)	(0.50)	(0.03)
How are expenses financed?				
Through own funds	0.61	0.64	0.58	-0.05*
	(0.49)	(0.48)	(0.49)	(0.03)
Through borrowing	0.27	0.27	0.26	-0.01
	(0.44)	(0.44)	(0.44)	(0.03)
Don’t know	0.12	0.09	0.15	0.06***
	(0.33)	(0.29)	(0.36)	(0.02)
PERSONAL TRAITS (standardised)				
Against asylum	0.00	-0.04	0.04	0.08
	(1.00)	(1.02)	(0.98)	(0.06)
Time preference	0.00	0.00	-0.00	-0.01
	(1.00)	(1.00)	(1.00)	(0.06)

Hyperbolic discounting	0.00	0.01	-0.01	-0.03
	(1.00)	(1.02)	(0.98)	(0.06)
Degree of risk aversion	0.13	0.13	0.14	0.01
	(0.68)	(0.69)	(0.67)	(0.04)
RESIDENCE				
Residence				
Lives in West Germany	0.61	0.60	0.62	0.03
	(0.49)	(0.49)	(0.49)	(0.03)
Lives in East Germany	0.39	0.41	0.38	-0.03
	(0.49)	(0.49)	(0.49)	(0.03)
City				
Lives in city	0.27	0.28	0.26	-0.03
	(0.44)	(0.45)	(0.44)	(0.03)
Does not live in city	0.73	0.72	0.75	0.03
	(0.44)	(0.45)	(0.44)	(0.03)
OBSERVATIONS	999	489	510	

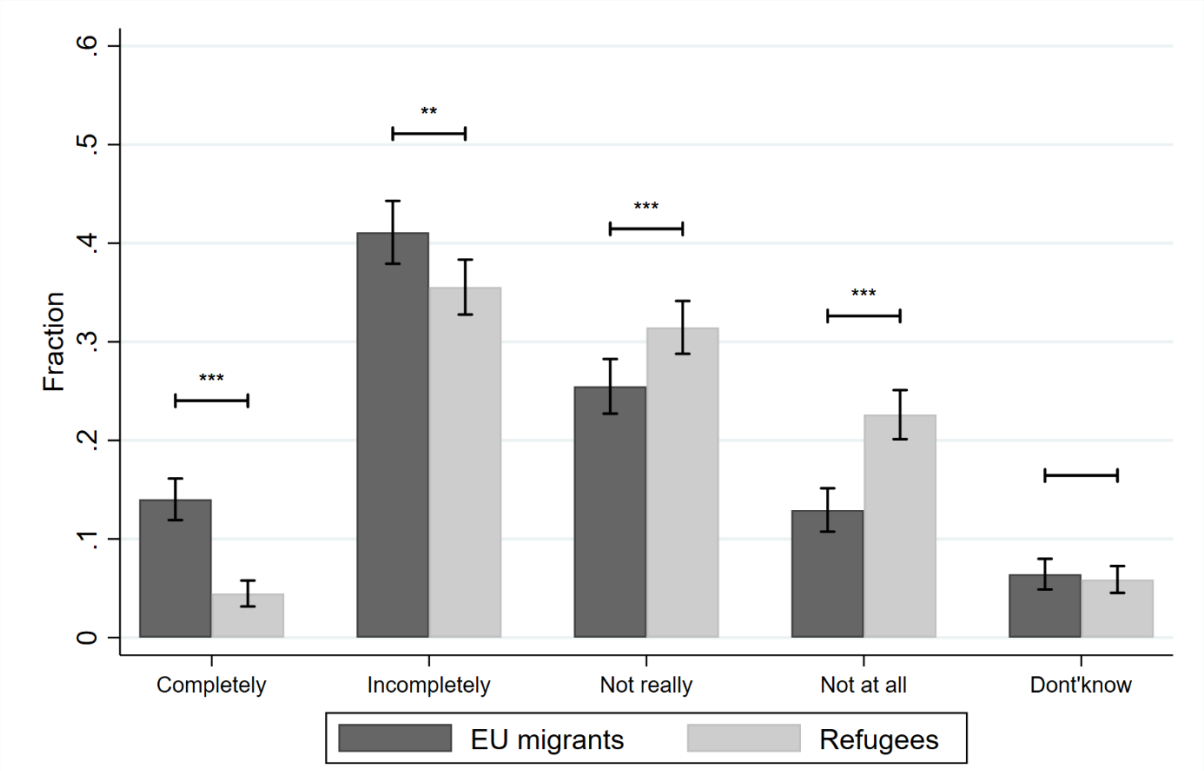
Notes: The first three columns contain means and standard deviations (in parentheses). The last column shows the difference between the group-specific mean values and the corresponding standard error. */**/*** indicate statistical significance at the 10%/5%/1% level.

Table A2: Constructing an indicator for 'Against asylum' using factor analysis

	Factor loading	Communality
The right of asylum ought to be maintained as a basic right (yes: 1, no: 0)	-0.43	0.18
The right of asylum should no longer be maintained as a basic right (yes: 1, no: 0)	0.45	0.20
From which number of approved asylum applications per year onwards would you feel notably uncomfortable living in Germany?		
< 50,000 (yes: 1, no: 0)	0.53	0.28
> 500,000 (yes: 1, no: 0)	-0.45	0.20
Which party would you vote for if federal elections were held this Sunday? (AfD: 1, otherwise: 0)	0.40	0.16

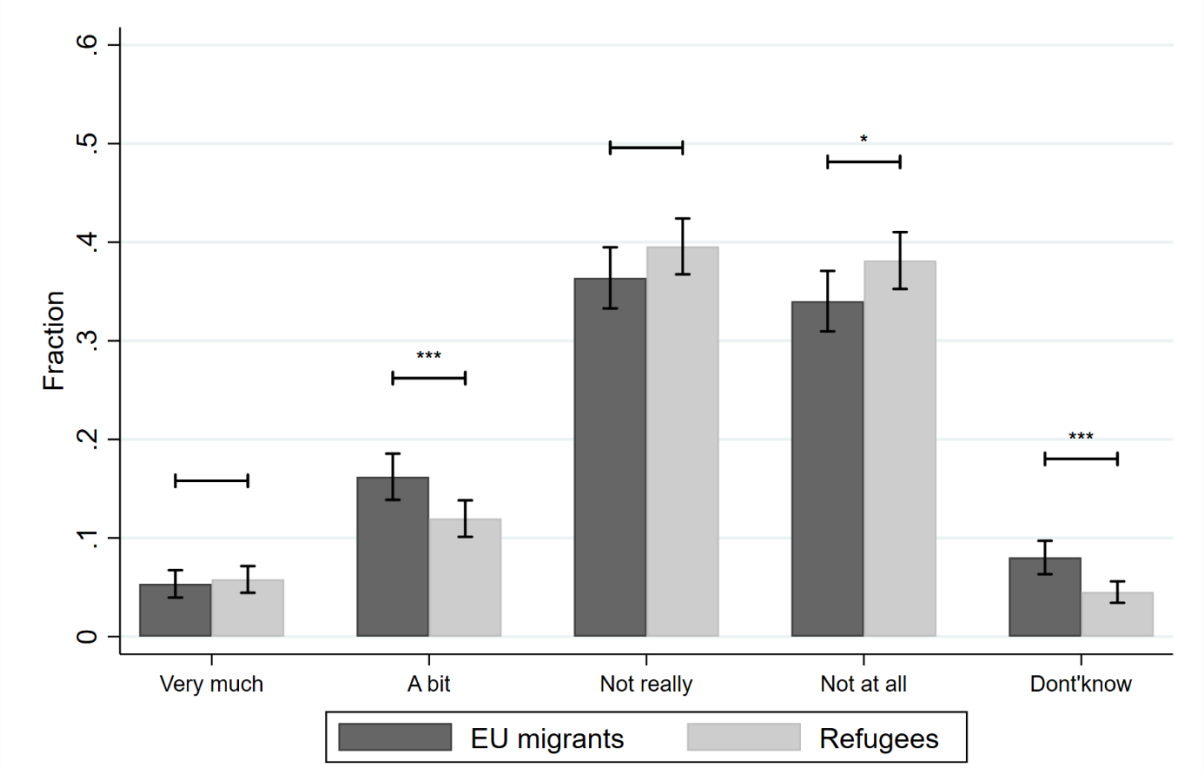
Notes: Number of observations: 2,015. The Kaiser-Meyer-Olkin measure of sampling adequacy is 0.6, indicating that the condition for conducting a factor analysis is met and we can reject the LR test of independence against the saturated model at all reasonable levels of significance (Chi2(10) = 957). The first two eigenvalues are 1.0 and 0.2, respectively. Our choice of one factor is based on the eigenvalue criterion and a large difference from the next factor, which is consistent with the Scree plot criterion. The factor explains 21% of the variation in the five items, reflecting the relatively low communalities. The factor 'Against asylum' is computed using regression scoring.

Figure A1: Responses to 'Can migrants do your job?' (all categories)



Notes: Vertical lines represent 95% confidence interval of the estimated shares. Horizontal lines show whether there is a statistically significant difference between the estimated shares of the two groups. */**/*** indicate statistical significance at the 10%/5%/1% level.

Figure A2: Responses to `Afraid of job loss because of migration?' (all categories)



Notes: Vertical lines represent 95% confidence interval of the estimated shares. Horizontal lines show whether there is a statistically significant difference between the estimated shares of the two groups. */**/*** indicate statistical significance at the 10%/5%/1% level.

Table A3: Average marginal effects (full model)

DEPENDENT VARIABLE	CAN MIGRANTS PERFORM ONE'S JOB		AFRAID OF JOB LOSS BECAUSE OF MIGRATION	
VARIABLES	**EU MIGRANTS**	**REFUGEES**	**EU MIGRANTS**	**REFUGEES**
ATTITUDES TOWARDS MIGRANTS AND MIGRATION				
Can migrants do your job? (base category: no)				
Yes	-	-	0.15***	0.20***
			(0.04)	(0.04)
Experience with immigrant workers (base category: No experience)				
Better or equally good	0.09	0.14**	0.15***	0.09*
	(0.06)	(0.06)	(0.06)	(0.05)
Worse	-0.01	-0.02	0.07	0.07
	(0.05)	(0.05)	(0.04)	(0.04)
Don't know	-0.08	-0.01	0.01	0.08
	(0.11)	(0.11)	(0.08)	(0.10)
Will the labour market integration of refugees be successful? (base category: Will not work out)				
Will work out	0.22***	0.27***	-0.09*	0.00
	(0.05)	(0.05)	(0.04)	(0.04)
Don't know	0.26***	0.25***	0.06	0.05
	(0.08)	(0.09)	(0.09)	(0.08)
SOCIO-DEMOGRAPHIC				
Sex (base category: male)				
Female	-0.06	0.01	-0.03	0.05
	(0.04)	(0.05)	(0.04)	(0.04)
Age	-0.00*	-0.00**	0.00*	0.00*
	(0.00)	(0.00)	(0.00)	(0.00)
LABOUR MARKET				
Occupation (base category: white-collar / public servant)				
Blue-collar	0.13**	0.23***	0.03	0.09*
	(0.05)	(0.06)	(0.05)	(0.05)
Self-employed (including farmers)	0.04	-0.07	-0.05	-0.03
	(0.07)	(0.07)	(0.06)	(0.05)
No occupation / unemployed	-0.12	0.01	0.05	0.10
	(0.09)	(0.10)	(0.09)	(0.09)
Education (base category: less than tertiary education)				
Tertiary education	-0.19**	-0.12*	-0.00	-0.03
	(0.08)	(0.06)	(0.08)	(0.06)
Full-time-status (base category: part-time)				
Full-time	-0.15***	-0.04	-0.05	0.00
	(0.05)	(0.06)	(0.05)	(0.05)
Union membership (base category: no member)				
Member	0.04	-0.00	-0.02	0.02
	(0.06)	(0.07)	(0.05)	(0.05)
ECONOMIC CONDITIONS				
Satisfaction with own economic situation (base category: neutral)				
Satisfied	-0.08*	-0.09*	-0.17***	-0.05
	(0.05)	(0.05)	(0.04)	(0.04)
Not satisfied	-0.02	-0.02	0.10*	0.05
	(0.06)	(0.07)	(0.06)	(0.06)
Housing property (base category: does not own property)				
Owns property	-0.06	-0.03	-0.08**	-0.00
	(0.05)	(0.05)	(0.04)	(0.04)
How are expenses financed? (base category: through own funds)				
Through borrowing	0.03	-0.04	-0.01	0.08*
	(0.05)	(0.05)	(0.04)	(0.04)
Don't know	-0.09	-0.06	-0.03	0.04
	(0.07)	(0.06)	(0.07)	(0.05)
PERSONAL TRAITS (standardised)				
Against asylum	-0.05**	-0.01	0.07***	0.08***
	(0.02)	(0.02)	(0.02)	(0.02)
Time preference	0.02	-0.02	-0.01	-0.00
	(0.02)	(0.02)	(0.02)	(0.02)

Hyperbolic discounting	0.08***	0.02	0.00	0.00
	(0.03)	(0.02)	(0.02)	(0.02)
Degree of risk aversion	0.05	0.07**	-0.03	0.01
	(0.03)	(0.03)	(0.03)	(0.03)
RESIDENCE				
Residence (base category: lives in West Germany)				
East Germany	-0.04	0.05	-0.01	-0.04
	(0.04)	(0.04)	(0.04)	(0.03)
City (base category: does not live in city)				
Lives in city	0.02	0.12**	-0.11***	0.05
	(0.05)	(0.05)	(0.04)	(0.04)
OBSERVATIONS	489	510	489	510

Notes: The table shows average marginal effects. Robust standard errors are used. */**/*** indicate statistical significance at the 10%/5%/1% level.