

Hayo, Bernd; Neumeier, Florian

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Between Fear Mongers and Samaritans: Does Information Provision Affect Attitudes towards the Right of Asylum in Germany?

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Coordination: Bernd Hayo • Philipps-University Marburg
School of Business and Economics • Universitätsstraße 24, D-35032 Marburg
Tel: +49-6421-2823091, Fax: +49-6421-2823088, e-mail: hayo@wiwi.uni-marburg.de

**Between Fear Mongers and Samaritans:
Does Information Provision Affect Attitudes towards the
Right of Asylum in Germany?**

Bernd Hayo* and Florian Neumeier‡

* University of Marburg and MACIE

‡ ifo Institute Munich, University of Munich, CESifo, and MACIE

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Corresponding author:

Florian Neumeier

ifo Institute Munich

D-81679 Munich

Germany

Phone: +49-89-92241425

Email: neumeier@ifo.de

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Between Fear Mongers and Samaritans: Does Information Provision Affect Attitudes towards the Right of Asylum in Germany?

Abstract

We utilise information experiments embedded in a representative population survey to elicit the German public's attitude towards the right of asylum. We randomly assign the interviewees to different groups and 'treat' each group with different information about the asylum-seekers that came to Germany in 2015 and 2016. The treatments involve information about (i) the total number of asylum-seekers, (ii) the fiscal costs as well as (iii) the potential long-term economic benefits associated with accepting refugees, (iv) the share of Muslim asylum-seekers, and (v) the share of war refugees. We find that providing information about the fiscal costs associated with accepting refugees, and about the share of Muslim refugees, significantly increases the likelihood of opposing the right of asylum by roughly 5 and 7 percentage points, respectively. These effects are more pronounced for middle-income earners and respondents with a low level of education. Deviations of people's beliefs from the actual numbers provided by the treatments can affect their attitudes: respondents who underestimated the share of Muslim refugees are 18 percentage points more likely to call for abolishing the right of asylum when informed about the actual share.

Keywords: Refugee crisis; right of asylum; immigration; perception bias; survey experiment; Germany.

JEL: C9; J15; K37; Z13

1. Introduction

The last few years have seen an unprecedented influx of people seeking refuge. In 2015 and 2016, more than 1.2 million refugees were taken in by Germany. Both the large influx of refugees as well as the unequal distribution of asylum-seekers across EU Member States, have led to great tensions within German society. On the one hand, Germany has been internationally recognised for its *Willkommenskultur* (welcome culture) after opening its borders to Syrian war refugees in August 2015, when no other Central European country was willing to do so. On the other hand, xenophobic and anti-immigrant movements gained in popularity as the number of asylum-seekers grew. They have been stoking fears that Germany might be overrun by foreigners and emphasise the harmful influence of foreign cultures. Typically, those fears are projected onto Muslims. Since the outset of the refugee crisis, the popularity of the German nationalist party *Alternative für Deutschland* (Alternative for Germany; AfD) has increased notably, not least because the party runs on an anti-immigration and Islamophobic platform. Another issue subject to heated debate has been the fiscal costs associated with accepting refugees. Since the start of the refugee crisis, different political camps have reported varying estimates of the associated costs, as independent and reliable cost figures were not immediately available.

In light of the recent inflow of refugees, how does the German public as well as different population subgroups think about accepting refugees? Do people's attitudes depend on the costs and benefits of taking in refugees? Are people more inclined towards welcoming asylum-seekers that flee for a specific reason, particularly from war and terror? Are people more reluctant to accept Muslim refugees? To answer these questions, we designed a survey eliciting respondents' attitudes towards the inflow of refugees that includes an information experiment. The survey was conducted on our behalf by *Gesellschaft für Konsumforschung* (GfK) at the start of 2018 in the form of face-to-face interviews. Our sample comprises the individual answers of 2,015 representatively selected German citizens.

We assess individual attitudes towards the inflow of refugees by asking the respondents about their opinion on the legal right of asylum. Germany is one of the few countries in the world where the right of asylum is embedded in the constitution. Whether the right of asylum should remain a constitutional right has been the subject of heated political debates. Those supporting the notion that the right of asylum should be restricted or even removed from the constitution are not only members of the nationalist parties, but also of moderate parties, too. Hence, we

believe it is more politically and socially acceptable to speak out against the impersonal right of asylum than against specific persons in the form of refugees.

In our survey, respondents could indicate whether they (i) support the constitutional right of asylum in its current form, (ii) think the right of asylum should be restricted, or (iii) opt for a removal of the constitutional right of asylum. Prior to the survey, respondents were randomly assigned to six different groups and each group was given different background information on the incoming refugees. The information we provided concerns the total number of refugees that came to Germany in 2015 and 2016, the average amount of money the government spends per refugee each month, the share of refugees from Muslim-majority countries, the share of refugees fleeing from war, as well as the potential economic gains if refugees can be successfully integrated into the labour market. Randomly assigning respondents into different treatment groups allows us to identify the causal effect of information provision on individual attitudes towards the right of asylum. To assess the importance of biased perceptions, we also test whether inaccurate *ex-ante* beliefs about the realisations of those variables affects individual support for the right of asylum.

Our main findings are as follows: we discover that only a minority, e.g., 14% of our respondents, opts for preserving the right of asylum as a constitutional right. Roughly 60% of the interviewees call for restrictions on the right of asylum and almost 30% even indicate that the right of asylum should be abolished. The results from the information experiments suggest that providing background information about the incoming refugees changes individual attitudes towards the right of asylum in a statistically significant way. The estimated magnitudes are relevant: respondents who are informed about the average monthly government expenditure per refugee are roughly 5 percentage points (pp) less likely to opt for preserving the right of asylum as a constitutional right. Respondents who are told the share of Muslim refugees are 7 pp more likely to call for removing the right of asylum from the constitution. These treatment effects are notably larger for middle-income earners as well as persons with a low level of education. Moreover, we find that deviations of people's beliefs from the actual numbers provided by the treatments can notably affect their attitudes. For instance, respondents who underestimated the share of Muslim refugees are 18 pp more likely to call for abolishing the right of asylum when being informed about the actual share.

Information experiments embedded in face-to-face or online surveys are becoming increasingly popular in economics and political science. They are used to study the information-sensitivity of individual attitudes towards redistribution

(Alesina et al., 2018; Kuziemko et al., 2015; Cruces et al., 2013), policy reforms (Dolls and Wehrhöfer, 2018; Lergetporer et al., 2018), as well as immigration (Hopkins et al., 2019; Getmansky et al., 2018; Lergetporer et al., 2017; Bansak et al., 2016; Grigorieff et al., 2016).¹

Immigration literature has mainly focused on the importance of the number of immigrants and high-skilled versus low-skilled immigration. Employing data from survey-based information experiments conducted in the US, Hopkins et al. (2019) investigate whether providing respondents with accurate information about the share of foreign-born citizens affects their attitudes towards immigration. The authors do not find any significant information treatment effects. Also for the US, Grigorieff et al. (2016) test whether the provision of information about (i) the share of immigrants, (ii) the share of illegal immigrants, (iii) the unemployment rate among immigrants, (iv) the incarceration rate of immigrants, and (v) the share of immigrants who cannot speak English, affects respondents' opinions about immigrants. The authors find that respondents who received information tend to adopt a more positive view about immigrants.

In an online survey on German university students, Lergetporer et al. (2017) randomly provided participants with information about the education level of refugees and then asked whether (i) Germany should accept more or fewer refugees in the future, (ii) the number of refugees that came to Germany in the past is considered too high or too low, and whether (iii) refugees should be allowed to permanently remain in Germany. Providing information about refugees' educational backgrounds does not influence students' attitudes. Finally, Bansak et al. (2016) conducted a survey with a conjoint experiment in 15 European countries. For the experiment, the authors confronted survey participants with hypothetical profiles of refugees that varied on nine different attributes. Bansak et al. (2016) find that European citizens are, *inter alia*, more tolerant towards refugees fleeing from persecution and of the Christian as opposed to the Muslim faith. However, their data stems from an online survey, raising concerns about the representativeness of their sample, since taking part in an online survey requires both internet access as well as the ability and willingness to use a web-enabled device. Moreover, data was collected in February and March 2016, that is, before the inflow of refugees had

¹ Other studies also utilise various forms of survey data and identification strategies to investigate the determinants of individual attitudes towards immigration, e.g., Facchini and Mayda (2012; 2009), Hainmueller and Hiscox (2007), Hanson et al. (2007), Mayda (2006), and O'Rourke and Sinnott (2004).

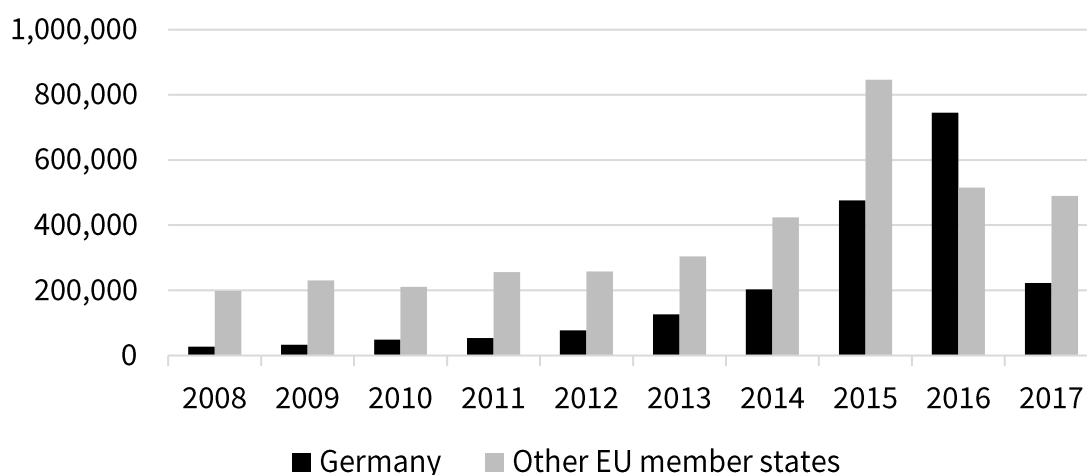
reached its peak. In Germany, more than 40% of all asylum applications filed in 2015 and 2016 were initiated between April and December 2016.

The remainder of the paper is structured as follows. The next section provides details on the political background in Germany during the time of the refugee crisis. Section 3 introduces the survey and Section 4 shows some descriptive statistics. Section 5 explains our empirical approach and reports the results of our empirical analysis. Section 6 concludes.

2. Political background

Due to civil wars, persecution, and forced displacements, the number of refugees coming to the EU has steadily increased over the past decade. However, as Figure 1 shows, the number of asylum applications experienced a sudden jump to 2.5 million in 2015 and 2016. Almost half of these applications, that is, 1.2 million, were filed in Germany. In fact, in 2016, Germany has accepted more asylum-seekers than all other EU Member States combined.

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



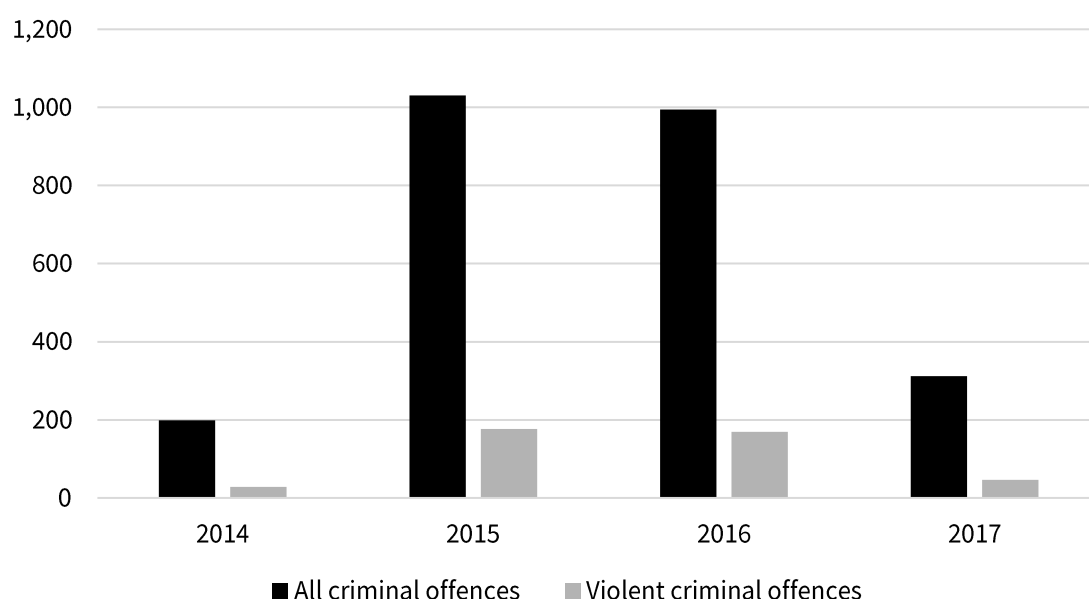
Notes: The figure shows the annual number of asylum applications in Germany (black columns) and other EU member states (grey columns) from 2008 to 2017. Source: Federal Office for Migration and Refugees (*Bundesamt für Migration und Flüchtlinge*) and Eurostat.

The sharp increase in the number of incoming asylum-seekers as well as the unequal distribution of asylum-seekers across the EU, has fuelled anti-immigrant and xenophobic sentiments in Germany. Refugees from Muslim countries in particular have become a target of these resentments. Emblematic for this is the rise of the Islamophobic movement *Patriotische Europäer gegen die Islamisierung des*

Abendlandes (Patriotic Europeans Against the Islamisation of the Occident; PEGIDA). PEGIDA has organised dozens of protests with tens of thousands of participants against the German government's refugee policy.

Figure 2 sets out the increasing number of violent and non-violent criminal crimes against refugee centres. From 2014 to 2015, the number of non-violent crimes increased by more than 400% and the number of violent crimes by even more than 500%.

Figure 2: (Violent) Criminal offences against refugee centres in Germany



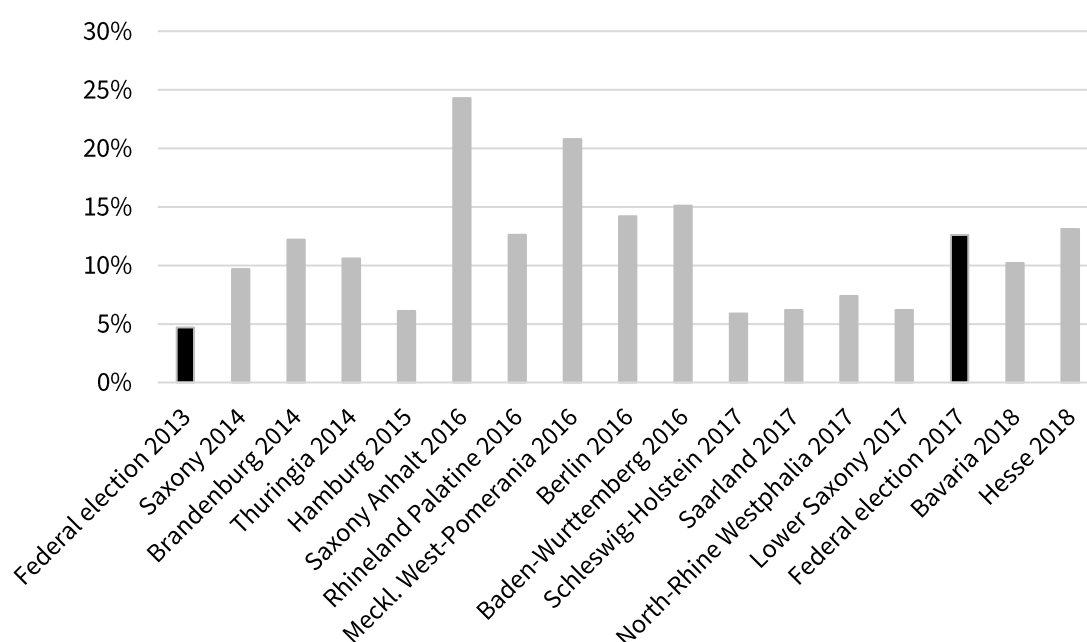
Notes: The figure shows the number of all (violent and non-violent; black columns) and violent (grey columns) criminal offences against refugee centres from 2014 to 2017. Source: Federal Criminal Police Office (*Bundeskriminalamt*).

At the same time, the German public has shown widespread support for asylum seekers. According to a representative population survey conducted on behalf of the *Bundesministerium für Familie, Senioren, Frauen und Jugend* (Federal Ministry for Family Affairs, Senior Citizens, Women and Youth; BMFSFJ), 55% of German citizens supported refugees that came to Germany between 2015 and 2017. 49% of respondents indicated that they donated money or in kind to refugees or organisations assisting refugees, while 23% stated that they actively supported refugees, for example by volunteering in refugee centres, providing language courses, or accompanying refugees to the doctor or authorities (BMFSFJ, 2017).

On the political stage, it is the nationalist party AfD that evokes and successfully capitalises on resentments against asylum-seekers in general and Muslim refugees

in particular. Since February 2020, the *Bundesamt für Verfassungsschutz* (Federal Office for the Protection of the Constitution) has been monitoring the AfD due to the openly Islamophobic sentiments of some party officials. Since the beginning of the refugee crisis, the AfD's popularity has notably increased. Figure 3 shows its vote shares in state and federal elections from 2014 onwards. The AfD's success was mainly at the expense of the governing parties at federal level: Chancellor Angela Merkel's Christian Democratic Party/Christian Socialist Party (CDU/CSU) and the Social Democratic Party (SPD).

Figure 3: Vote share of AfD in federal and state elections



Notes: The figure shows the AfD's vote share in federal (black columns) and state elections (grey columns) from 2013 to 2018. Source: Federal and State Returning Officers (*Bundes- und Landeswahlleiter*).

3. The survey

To elicit individual attitudes towards the recent inflow of refugees and to study the influence of people's information about the incoming refugees on these attitudes, we designed a survey that included an information experiment.

The survey was part of an omnibus survey and conducted on our behalf by *Gesellschaft für Konsumforschung* (GfK), one of the largest private survey companies in Germany. The fieldwork took place between 6 February and 2 March 2018. The sample consists of 2,015 representatively selected persons from the German population aged 14 or above. Methodologically, the survey is based on quota

sampling. Survey questions were asked in face-to-face interviews by professional interviewers using pen-pads. Pen-pads help to avoid interviewer biases when trying to elicit sensitive information from respondents. Hayo et al. (2018) contains survey details, the questionnaire in German and English, as well as descriptive statistics.

3.1. The information experiment

For the information experiment, the interviewees were randomly assigned to six different groups, each of which was provided with a different introductory text. Only the first two sentences of the introductory text were the same for all respondents:

‘The *Grundgesetz* (German constitutional law) states in Article 16(2, sentence 2): “Political refugees have a right of asylum”. This implies that the right of asylum is seen as one of the basic rights.’

We decided to refer to Article 16 of the German constitutional law in the introductory text for two reasons. First, its constitutional status indicates how highly this right is regarded in Germany. When the Federal Republic of Germany was founded in 1949, the Constitutional Assembly decided to include the right of asylum in the constitution because of the political persecution and the terrors of war that many people in Germany experienced during the Nazi regime. Second, at the peak of the refugee crisis, the political discussion about whether and how to limit the number of asylum seekers has, to a large extent, focused on the legal implications of the constitutional right of asylum. Some politicians, such as Friedrich Merz, one of the competitors for the party leadership of the CDU, even claimed that Germany could not refuse to accept refugees coming to the European Union because Article 16 grants every refugee an individual right of asylum.²

After this general remark on the right of asylum, each of the six groups of interviewees was provided with different background information about the refugees that came to Germany in 2015 and 2016. The first group (benchmark scenario) was only told the total number of asylum applications that were filed in 2015 and 2016. Groups two to five were provided with additional information on top of the total number of refugees. The second group (scenario ‘share Muslims’) was additionally told the share of refugees that came from countries with a Muslim

² Note that most refugees coming to Germany apply for asylum based on EU directives as well as international law. However, the political and public debate in Germany has, to a large extent, ignored this fact.

majority.³ The third group was informed about the share of refugees originating from countries suffering from (civil) war and terror (scenario ‘war and terror’). Both the share of refugees from Muslim countries and from countries experiencing war and terror are taken from the *Bundesamt für Migration und Flüchtlinge* (Federal Office for Migration and Refugees). The fourth group was provided with information about approximate monthly government expenditure per refugee (scenario ‘economic costs’). The figure is based on a report by the Federal Ministry of Finance and includes spending on accommodation, food, as well as language and integration courses. The fifth group of interviewees was confronted with an estimate of the refugees’ positive long-term impact on the German economy in case they can be successfully integrated into the labour market (scenario ‘cost/benefit’). The estimate is taken from a report published by the *Deutsches Institut für Wirtschaftsforschung* (German Institute for Economic Research; DIW (2015)). Finally, the sixth group was not provided with any background information on the recent refugee influx, that is, not even the number of refugees. Thus, the six scenarios are:

Scenario 1 (benchmark information):

‘During the last years, the number of asylum seekers has noticeably increased, which led to criticism of the right of asylum. In 2015 and 2016, approximately 1.2 million asylum applications were filed.’

Scenario 2 (share Muslims):

Benchmark information plus ‘Some citizens fear that this migration wave, originating from societies with different cultural and religious roots, could lead to an inundation of the German society by foreigners. Two-thirds of asylum seekers come from Islamic-dominated countries.’

Scenario 3 (war and terror):

Benchmark information plus ‘Many asylum seekers flee from war, terror, and political persecution. More than half of asylum seekers from the last two years come from countries where several hundred thousand people were killed by war and terror.’

³ Note that the *Bundesamt für Migration und Flüchtlinge* (Federal Office for Migration and Refugees) does not collect information about the religious beliefs of refugees, which is why the actual share of Muslim refugees is unknown. It does document the nationality of asylum applicants, though, allowing us to compute the share of refugees coming from countries with a Muslim majority.

Scenario 4 (economic costs):

Benchmark information plus 'In this context, the large costs of hosting the refugees are often mentioned. Summing up the costs for federal, state, and local levels amounts to roughly 20 billion euros per year. The costs per refugee are roughly 1000 euros per month or 12000 euros per year. These figures include the costs of providing accommodation and provisions as well as language and integration courses.'

Scenario 5 (cost/benefit):

Benchmark information plus 'In this context, the large costs of hosting the refugees are often mentioned. Summing up the costs for the federal, state, and local levels amounts to roughly 20 billion euros per year. The costs per refugee are roughly 1000 euros per month or 12000 euros per year. Assuming that refugees are successfully integrated, some experts think that the resulting increase in labour supply for the German economy will lead to high economic growth rates over the next 15 to 20 years. This, in turn, would result in a marked increase in income for most Germans.'

Scenario 6 (no information):

No additional information was provided.

3.2. Questions relating to the inflow of refugees

After the information treatment, respondents were asked about their attitudes towards the right of asylum.

'In light of this situation, we would like to know how you evaluate the right of asylum. With which of the following opinions can you identify most?

- a) The right of asylum ought to be preserved as a basic right, independent of its consequences, like a large migration wave.
- b) In general, the right of asylum ought to be preserved as a basic right, but it should be restricted, for instance, when immigration increases excessively.

- c) The right of asylum should no longer be preserved as a basic right, as it could be that too much immigration undermines the structure of our society.'

Arguably, the importance of information provided to the respondents depends on their prior beliefs or subjective knowledge. On the one hand, if the information we provide is not news to a respondent, the information treatment might be ineffective. On the other hand, if a respondent's prior belief does not match the factual information we provide, then the effect of the information treatment could differ between respondents who have, for instance, overestimated the costs of the refugee crisis, or the share of Muslim refugees, and respondents who have underestimated the respective values.

The most common way to assess the importance of prior beliefs for the effect of an information treatment in the context of a survey experiment is to ask respondents at the beginning of the survey what they believe the realisation of a variable is. Only then are interviewees confronted with the true realisation of that variable. For instance, Cruces et al. (2013) study the influence of biased perceptions with regard to an individual's position in the income distribution on attitudes towards redistribution. To this end, the authors first ask the interviewees how many households they believe have a lower income level than themselves. Subsequently, half of the interviewees are informed about the actual number of households with a lower level of income, while the other half remains uninformed. Next, both groups of interviewees are asked about their preferences for redistribution. By comparing the answers of individuals who received the information treatment to those who did not, Cruces et al. (2013) are able to infer the importance of biased perceptions for individual attitudes towards redistribution.

In this paper, we adopt multiple imputation to infer the importance of (biased) prior beliefs for respondents' attitudes towards the right of asylum. We chose not to adopt Cruces et al.'s (2013) design for two reasons. First, the refugee crisis and its economic and political consequences are highly controversial and emotionally loaded topics. We were concerned that highlighting respondents' false beliefs about, for instance, the costs of the refugee crisis, would affect the answers they give in the remainder of the survey. Social desirability biases could have emerged if we told them that they were overestimating or underestimating the costs. The second reason for not adopting Cruces et al.'s (2013) design is of a more practical nature. While they apply only one information treatment, our survey includes five different pieces of information, which would have resulted in ten treatment groups. This

would not only have made interpreting the results across different groups more complicated, but also led to imprecise estimates of the treatment effects due to small samples.

Our survey incorporates questions measuring respondents' subjective assessments, as we ask the interviewees about their beliefs regarding the share of Muslim refugees, war refugees, as well as the average amount of money the government spends per refugee each month. However, unlike Cruces et al. (2013) and others, we pose these questions only to those respondents who were not given the respective information in the introductory text. That means, we only ask those respondents who were not informed about the share of refugees from Muslim-majority countries (the costs of the refugee crisis/the share of refugees fleeing from war and terror) about their belief regarding the share of Muslim refugees (the costs of the refugee crisis /the share of war refugees). Therefore, for each of the three questions capturing the interviewees' subjective assessment, one-sixth of the answers is missing. These answers are relevant when testing for the importance of biased perceptions. However, because of the random assignment of respondents to the six different treatment groups, these answers are missing at random, too. Thus, we can obtain consistent estimates for the missing prior beliefs by using a multiple imputation technique. Details of the imputation approach are provided in Appendix A.

3.3. Other survey items

Our survey incorporates a number of additional questions, which allows us to test whether individual attitudes towards the right of asylum are related to respondents' characteristics.⁴ In our empirical specification, we control for respondents' age and squared age, sex (dummy variable), children (dummy variable), education (dummies for *Hauptschulabschluss* (lower secondary school degree) and no degree (reference)⁵, *Realschulabschluss* (middle secondary school degree), *Abitur* (upper secondary school degree)), employment status (employed/self-employed (reference), unemployed, househusband/housewife, retiree, apprentice, student), marital status (single (reference), in partnership, married, widowed), internet use

⁴ A description of all variables included in our analysis as well as descriptive statistics are provided in Appendix B.

⁵ We combined respondents without a school degree and those with a lower secondary school degree – the lowest educational achievement in Germany – in one group, because there are only few respondents in our sample without a school degree.

(never (reference), up to three times a month, weekly, daily), and the *Bundesland* (state) of residence.

We also control for the respondents' subjective and objective economic situation. To assess subjective economic well-being, we asked respondents to indicate how satisfied they are with their current economic situation using a scale from one (very satisfied) to five (very dissatisfied). We construct two dummy variables: the first dummy takes on the value one in case the respondent indicated that she is very or rather satisfied with her current economic situation (categories 1 and 2), the second dummy takes the value one in case the respondent indicated being rather or very dissatisfied with her current economic situation (categories 4 and 5).⁶ The middle category (neither/nor) serves as reference. We proxy the respondents' objective economic situation using household income and wealth. Wealth is measured by dummy variables indicating whether the respondent is a saver, a borrower, or neither/nor (reference). Information about household income is self-reported. Note that for roughly 25% of our sample, income is imputed as the respondents either refused to answer or indicated that they do not know the level of their households' income. We control for households' relative position in the sample income distribution using income tertiles based on a grouped income variable, with the lowest tertile of the income distribution as reference. As part of our robustness tests, we replace relative income by absolute income.

Our data set also includes an ordinal variable indicating whether the level of net household income is below 1500 euros, between 1500 euros and 3000 euros, or above 3000 euros. In general, this variable is also based on a respondent's self-reported household income level. However, in the case that respondents refused (or were not able) to state their household income, the interviewers assigned them to one of the three income groups based on their assessment of the respondents' living situation. In another robustness test, we use this variable instead of the dummies for the income tertiles.

Finally, we asked respondents what party they would vote for if federal elections were held next Sunday. Respondents were able to choose between CDU/CSU (reference), SPD, *Die Grünen* (Green Party), *Die Linke* (the Leftist Party), AfD, and the Liberal Party (FDP). Alternatively, they could indicate that they would vote for a different party or not vote at all.

⁶ We combined these categories because relatively few respondents chose the options 'very satisfied' (8%) and 'very dissatisfied' (4%).

4. Descriptive statistics

Figure 5 shows the distribution of answers to the question about people's attitudes towards the right of asylum. Only a minority of respondents, that is, 14%, opts for preserving the right of asylum in its current form. About one-fourth of the respondents would go as far as removing the right of asylum from the constitution. A majority of respondents, almost 60%, prefers to keep the constitutional right in a restricted form.

Figure 5: Attitudes toward the right of asylum – distribution of answers

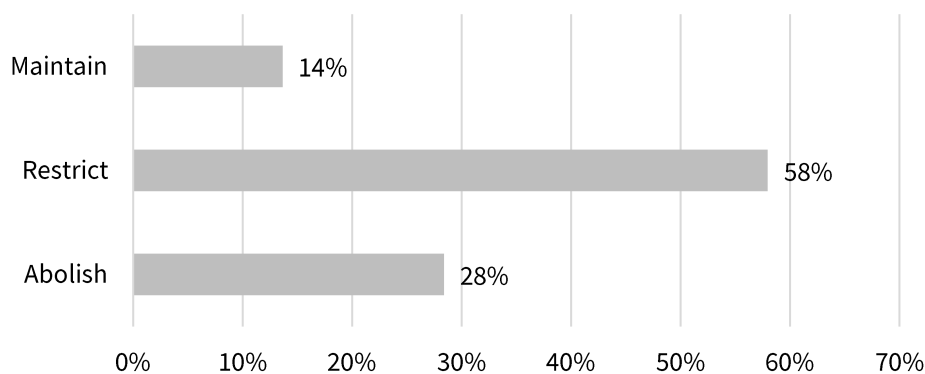


Table 4 shows the distribution of answers to the questions about (i) the believed share of refugees from Muslim-majority countries, (ii) the share of refugees coming from countries experiencing war and terror, and (iii) the average amount of money spent by the government per refugee each month. With respect to all three questions, about one-third of the respondents state that they do not know the correct answer. Regarding the share of refugees from Muslim-majority countries, only 18% are in a close range (e.g., between 60% and 80%) of the actual share of almost 70%. One-quarter overestimates the share of Muslim refugees and more than 20% underestimate it. The actual share of refugees coming from countries experiencing war and terror is slightly below 60%. Almost 20% of the answers are in a close range when counting all those who estimated the share to be between 50% and 70%. Only 10% overestimate this share, while more than 40% underestimate it.

Table 4: Believed share of Muslim refugees, war refugees, and fiscal costs

What is the share of refugees from Muslim-majority countries?										
Don't know	<10%	<20%	<30%	<40%	<50%	<60%	<70%	<80%	<90%	≤100%
36%	6%	1%	1%	1%	4%	8%	10%	8%	19%	6%
What is the share of refugees fleeing from war?										
Don't know	<10%	<20%	<30%	<40%	<50%	<60%	<70%	<80%	<90%	≤100%
31%	15%	6%	6%	5%	9%	11%	8%	5%	4%	1%
How much money per refugee is spent by the government each month?										
Don't know	<500	<1000	<1500	<2000	<2500	<3000	<3500	<4000	<4500	≥4500
34%	3%	8%	20%	11%	8%	4%	4%	1%	2%	7%

Notes: The actual shares of Muslim refugees and war refugees are 67% and 58%, respectively, and the amount of money spent by the government is roughly €1000.

With respect to the fiscal costs, individual knowledge appears to be more accurate. Almost one-third of the respondents believe that the government spends, on average, between 500 euros and 1500 euros per refugee each month, which is relatively close to the actual figure of 1000 euros. Only 3% assume that the costs are lower, whereas close to 40% of the interviewees overestimates the fiscal costs.

5. Information provision and attitudes towards the right of asylum

5.1. Empirical approach

To study whether the provision of specific background information exerts a significant influence on individual attitudes towards the right of asylum, we estimate the following empirical model using multinomial logit estimation:

$$(1) \Pr(y_i = k) = \frac{\exp\{x_i' \beta_k\}}{\exp\{x_i' \beta_1\} + \dots + \exp\{x_i' \beta_K\}}, k = 1, \dots, K.$$

The dependent variable is based on the individual answers to the question of how respondents think about the right of asylum. The three potential realisations of the discrete variable y_i are denoted by k : k is equal to 1 if the respondent opts for preserving the right of asylum as a basic right, 2 if she opts for restricting the right of asylum, and 3 if she thinks that the right of asylum should be abolished. Subscript i refers to the respective interviewee. Vector x includes a set of five treatment

dummies, indicating which information the interviewee has received. The benchmark scenario in which the interviewees were only told the number of refugees that came to Germany in 2015 and 2016 is the reference category. In addition, we add to the vector x the full set of variables described in Section 3.4. These variables should be orthogonal to the treatment dummies, as the treatment was randomly assigned. However, we include these variables for two reasons. First, if the inclusion of control variables sufficiently reduces the idiosyncratic error of our estimation, we can estimate the treatment effects more precisely. Second, we investigate whether treatment effects vary across different population subgroups by interacting the treatment dummies with some of the variables included in vector x . We estimate the coefficients β_k using maximum likelihood and compute heteroscedasticity-robust standard errors (White, 1980). Population weights ensure that our sample, as well as the treatment groups, are representative of the German population.

5.2. Results from the baseline specification

Table 5 shows estimation results. The table displays the average marginal effects of the explanatory variables on the realisations of the dependent variable. To economise on space, the standard error estimates are omitted from the table.⁷

Two of the information treatments exert a statistically significant influence on individual attitudes towards the right of asylum. (i) Respondents informed about the amount of money spent per refugee each month are less likely to opt for preserving the right of asylum as a basic right. Note that this effect is only significant at a 10% level. (ii) Respondents presented with the share of refugees from Muslim-majority countries are significantly less likely to indicate that the right of asylum should be restricted and significantly more likely to call for removing the right of asylum from the constitution.

The estimated average marginal effects are of a relevant magnitude but not large. If a respondent is informed about the fiscal costs, then the likelihood that she opts for preserving the right of asylum decreases by 5 percentage points (pp). Respondents who are made aware of the share of Muslim refugees have an 8 pp lower likelihood of preferring a restriction of the right of asylum and a more than 7 pp higher probability of advocating the abolition of the constitutional right of asylum.

⁷ All omitted information is available on request.

Table 5: Average marginal effects of the explanatory variables on individual attitudes toward the right of asylum

Right of asylum should be...	...maintained	...restricted	...abolished
Info: number of refugees		Reference	
Info: economic costs + benefits	-0.005	-0.018	0.022
Info: economic costs	-0.053*	0.010	0.043
Info: share war refugees	-0.015	-0.019	0.034
Info: share Muslim refugees	0.008	-0.075**	0.067**
Info: no info	-0.001	-0.020	0.021
Income: lower tertile		Reference	
Income: middle tertile	-0.012	-0.031	0.043*
Income: upper tertile	-0.035	-0.016	0.051*
Econ. satisfaction: dissatisfied	0.005	-0.023	0.018
Econ. satisfaction: neither/nor		Reference	
Econ. satisfaction: satisfied	0.039**	0.022	-0.061***
Wealth: neither saver nor borrow.		Reference	
Wealth: saver	0.023	-0.006	-0.017
Wealth: borrower	0.062**	-0.060	-0.002
Education: lower secondary		Reference	
Education: middle secondary	0.039*	-0.032	-0.007
Education: higher second./tertiary	0.093***	-0.048	-0.045
Children: no		Reference	
Children: yes	-0.053***	0.103***	-0.050**
Internet use: never		Reference	
Internet use: monthly	-0.084	0.062	0.022
Internet use: weekly	0.001	0.054	-0.055
Internet use: daily	0.023	0.068	-0.091***
Age	0.005	-0.004	-0.001
Age squared	-0.00006	0.00003	0.00003
Sex: male		Reference	
Sex: female	0.003	0.046*	-0.049**
Empl.: employed		Reference	
Empl.: unemployed	0.112**	-0.114	0.002
Empl.: retiree	0.063**	0.014	-0.077**
Empl.: housewife/househusband	-0.011	-0.019	0.030
Empl.: apprenticesh./milit. service	-0.010	0.071	-0.061
Empl.: attending school/university	0.044	-0.028	-0.016

Table 5 (continued)

Right of asylum should be...	...maintained	...restricted	...abolished
Family status: single		Reference	
Family status: living with partner	0.025	-0.057	0.033
Family status: married	0.020	-0.035	0.015
Fam. status: widowed/div./sep.	0.052	-0.031	-0.020
Voting intention: CDU		Reference	
Voting intention: SPD	-0.007	0.041	-0.033
Voting intention: AfD	-0.206***	-0.129**	0.335***
Voting intention: FDP	-0.009	-0.041	0.050
Voting intention: Leftist Party	0.053*	-0.034	-0.019
Voting intention: Green Party	0.063**	-0.001	-0.062
Voting intention: other party	-0.043	-0.013	0.056
Voting intention: would not vote	-0.042	-0.028	0.070**
Share Muslim refugees: don't know		Reference	
Share Muslim refugees: < 50%	0.035	0.002	-0.037
Share Muslim refugees: 50% - 75%	0.004	0.037	-0.041
Share Muslim refugees: > 75%	-0.065***	0.008	0.057**
Share war refugees: don't know		Reference	
Share war refugees: < 40%	0.002	0.002	-0.004
Share war refugees: 40% - 60%	0.032	0.005	-0.037
Share war refugees: > 60%	0.065*	0.037	-0.102**
Costs: don't know		Reference	
Costs: < €1000	0.064	-0.058	-0.005
Costs: €1000 - €2000	0.016	-0.002	-0.014
Costs: > €2000	-0.009	0.011	-0.002
Observations		1981	
Pseudo-R ²		0.161	

Notes: White (1980) robust standard errors are computed. */**/** indicate significance at the 10%/5%/1% level.

The introduction emphasised that fiscal costs and the inflow of Muslim refugees dominated the public debate during the refugee crisis. Interestingly, our results suggest that people's attitudes towards the right of asylum are particularly sensitive to the information we provide about these two topics. There are at least two possible explanations for this finding. First, contents of the public debate may have left a mark on individual respondents. Second, public debate actually reflected the topics individual respondents were particularly concerned about. The respondents'

reaction to these treatments indicates that they perceive the share of Muslim refugees, and to a lesser extent, the amount of money spent per refugee to be large.

Although they do not necessarily have a causal interpretation, it is interesting to look at the coefficient estimates of the control variables. The average marginal effects of the indicators for individual beliefs about the share of Muslim refugees and the share of war refugees reveal some intuitive findings. Compared to respondents who did not form beliefs, those overestimating the share of Muslim refugees are 6 pp more likely to prefer removing the right of asylum from the constitution and 7 pp less likely to preserve the right of asylum. In contrast, respondents who overestimate the share of war refugees are significantly more likely to support the right of asylum and significantly less likely to opt for its removal. Overestimating the share of war refugees is associated with a 10 pp lower probability of expressing that the constitutional right of asylum should be abolished and a 7 pp higher likelihood that the right of asylum should remain unchanged. The coefficient estimates of the indicators for the believed fiscal costs are not significant at reasonable levels of significance. All of these estimates are of a notable magnitude.

Several socio-demographic indicators are individually significantly related to individual attitudes towards the right of asylum.⁸ Our results suggest that *subjective* economic well-being is positively associated with individual support for the right of asylum. Respondents who express that they are (very) satisfied with their economic situation are 8 pp less likely to call for abolishing the right of asylum and 5 pp more likely to voice that the right of asylum should be preserved.

In contrast, our indicators of *objective* economic well-being are inversely related to individual support towards the right of asylum. Respondents with a medium (high) level of income have a 4 pp (5 pp) higher likelihood to opt for removing the right of asylum from the constitution than respondents with a low level of income. However, these effects are only significant at the 10% level. Moreover, the association between income and individual support towards the right of asylum becomes insignificant when replacing income tertiles by dummies that are partially based on interviewers' assessments of the respondents' living conditions or by a continuous measure of income.

Borrowers are more than 6 pp more likely to indicate that the right of asylum should remain unchanged than those who are neither savers nor borrowers. To the extent that being a borrower indicates a lower economic status, this finding can be

⁸ Note that an exclusion F-test indicates that the individually insignificant coefficient estimates are jointly significant at the 5% level and, hence, they are not statistically irrelevant.

interpreted in at least two ways: first, less well-off respondents are less concerned about potential adverse consequences of immigration, such as rising crime rates. Second, the less well-off have less fear about having to bear the fiscal costs. These interpretations are in line with findings from a laboratory experiment reported by Böhm et al. (2018): ‘helping refugees becomes less likely when it is individually costly to the citizens’ (p. 1).

The higher the level of education, the higher the likelihood that a person prefers to preserve the right of asylum. Respondents with a middle secondary school degree (higher secondary school degree/tertiary education) have a more than 4 pp (9 pp) higher likelihood of indicating that the right of asylum should not be changed.

Respondents with children are far more likely to prefer restricting of the right of asylum than respondents without children. The average marginal effect is +10 pp and, thus, of notable size. At the same time, they are less likely to express that the right of asylum should remain a constitutional right, or to opt for its removal from the constitution. Frequent internet users as well as female respondents are less inclined to call for removing the right of asylum from the constitution. Unemployed persons are more likely to support the right of asylum than employed persons. With an estimated average marginal effect of +11 pp, this difference is sizeable. Similar to the result on borrower, this finding contradicts the common notion that economic strain and especially unemployment foster xenophobic tendencies (see, e.g., Betz (1990) and Scheepers et al. (1990) on Germany) and supports Hainmueller and Hiscox’s (2010) claim that egotropic labour market considerations only play a minor role in determining attitudes towards migration.

The coefficient estimates of the party preference indicators are in line with our expectations. AfD supporters are about 21 pp less likely to indicate that the right of asylum should remain unchanged and almost 34 pp more likely to call for an abolition of the constitutional right of asylum than CDU/CSU supporters. In contrast, supporters of the Green Party and the Leftist Party (only at the 10% level of significance) have a higher probability of opting for preserving the right of asylum. These effects are consistent with opinions voiced by party officials.

5.3. The role of biased perceptions

As explained in Section 3.1., the effects of information treatments could depend on respondents’ prior beliefs. Specifically, respondents whose beliefs about the fiscal costs of the refugee crisis, the share of Muslim refugees, and the share of war refugees coincide with our information, may not react to the information we provide. In contrast, respondents who overestimate (underestimate) these numbers

may be less (more) inclined to favour an abolishment or a restriction of the right of asylum when informed about their misconception. In order to test for the importance of biases in respondents' beliefs, we consecutively interact the dummy variables indicating respondents' beliefs about (i) the fiscal costs of the refugee crisis, (ii) the share of Muslim refugees, and (iii) the share of war refugees with the full set of information treatment indicators. The results are presented in Tables 6, 7, and 8, respectively.

The estimates set out in Table 6 suggest that respondents' prior beliefs about the fiscal costs associated with the refugee crisis hardly affect the size of the information treatment effects. Thus, irrespective of whether respondents underestimate (panel A of Table 6), correctly assess (panel B), overestimate (panel C), or are not able to assess (panel D) the true expenses per refugee each month, the coefficient estimates of almost all information treatment indicators remain roughly constant.⁹ The only exception is the treatment involving information about the share of Muslim refugees. The likelihood of supporting a removal of the right of asylum when being informed about the share of Muslim refugees depends positively on the perception about the expenses per refugee. This suggests that the interviewees tend to be less generous when their taxes are spent on refugees from Muslim countries.

The results shown in Table 7 indicate that the estimates of the information treatment effects are sensitive to the believed share of Muslim refugees, which is consistent with the public debate noted above. Respondents who underestimate the share of Muslim refugees prior to the information treatment (panel A of Table 7) react strongly to the disclosure of the actual share. That is, revealing the true share of Muslim refugees leads to an almost 18 pp increase in the likelihood of opting for a removal of the right of asylum from the constitution when the believed share of Muslim refugees was too low, while the probability of supporting a restriction decreases by 16 pp. Furthermore, respondents who underestimate the share of Muslim refugees do react significantly to information about the amount of money spent per refugee. Specifically, respondents informed about the costs of the refugee crisis are about 16 pp less likely to opt for preserving the right of asylum when they underestimate the share of Muslim refugees (panel A of Table 7). This finding again highlights that the Germans tend to be suspicious of Muslim refugees.

⁹ Differences with respect to the significance of the treatment effect estimates are due to the varying number of observations.

Table 6: Average marginal effects for the interaction between respondents' prior beliefs about the amount of government spending and the information treatment indicators

A) Costs: less than €1000(underestimate)			
Right of asylum should be...	...maintained	...restricted	...abolished
Info: number of refugees		Reference	
Info: econ. costs + benefits	-0.006	-0.014	0.020
Info: economic costs	-0.053	0.014	0.040
Info: share war refugees	-0.022	-0.020	0.042
Info: share Islam	0.009	-0.073*	0.065**
Info: no info	0.008	-0.031	0.023
B) Costs: €1000 – €2000			
Right of asylum should be...	...maintained	...restricted	...abolished
Info: number of refugees		Reference	
Info: econ. costs + benefits	-0.005	-0.015	0.020
Info: economic costs	-0.046	0.008	0.038
Info: share war refugees	-0.018	-0.023	0.041
Info: share Islam	0.009	-0.074*	0.065**
Info: no info	0.009	-0.031	0.022
C) Costs: more than €2000 (overestimate)			
Right of asylum should be...	...maintained	...restricted	...abolished
Info: number of refugees		Reference	
Info: econ. costs + benefits	-0.007	-0.024	0.031
Info: economic costs	-0.032*	-0.017	0.049
Info: share war refugees	-0.013	-0.042	0.055
Info: share Islam	0.003	-0.090**	0.088**
Info: no info	0.008	-0.038	0.031
D) Costs: don't know			
Right of asylum should be...	...maintained	...restricted	...abolished
Info: number of refugees		Reference	
Info: econ. costs + benefits	-0.007	-0.017	0.024
Info: economic costs	-0.047	0.004	0.043
Info: share war refugees	-0.019	-0.027	0.047
Info: share Islam	0.007	-0.079**	0.072**
Info: no info	0.008	-0.034	0.025

Notes: Coefficients of control variables are omitted to conserve space. White (1980) robust standard errors are computed. */**/** indicate significance at the 10%/5%/1% level.

Table 7: Average marginal effects for the interaction between respondents' prior beliefs about the share of Muslim refugees and the information treatment indicators

A) Share Muslim refugees: less than 50% (underestimate)			
Right of asylum should be...	...maintained	...restricted	...abolished
Info: number of refugees		Reference	
Info: econ. costs + benefits	0.052	-0.063	0.011
Info: economic costs	-0.162**	0.115	0.047
Info: share war refugees	-0.019	-0.009	0.027
Info: share Islam	-0.018	-0.156*	0.175**
Info: no info	0.010	-0.108	0.098
B) Share Muslim refugees: 50% - 75%			
Right of asylum should be...	...maintained	...restricted	...abolished
Info: number of refugees		Reference	
Info: econ. costs + benefits	-0.014	-0.062	0.076
Info: economic costs	-0.073	-0.059	0.131**
Info: share war refugees	-0.015	-0.058	0.073
Info: share Islam	0.005	-0.086	0.081
Info: no info	0.043	-0.114	0.070
C) Share Muslim refugees: more than 75% (overestimate)			
Right of asylum should be...	...maintained	...restricted	...abolished
Info: number of refugees		Reference	
Info: econ. costs + benefits	0.034	-0.052	0.018
Info: economic costs	0.001	-0.029	0.028
Info: share war refugees	0.043	-0.047	0.004
Info: share Islam	0.048	-0.065	0.017
Info: no info	0.048	-0.02	-0.027
D) Share Muslim refugees: don't know			
Right of asylum should be...	...maintained	...restricted	...abolished
Info: number of refugees		Reference	
Info: econ. costs + benefits	-0.062	0.066	-0.004
Info: economic costs	-0.029	0.049	-0.020
Info: share war refugees	-0.081	0.048	0.033
Info: share Islam	-0.025	-0.002	0.027
Info: no info	-0.089*	0.083	0.006

Notes: Coefficients of control variables are omitted to conserve space. White (1980) robust standard errors are computed. */**/** indicate significance at the 10%/5%/1% level.

Table 8: Average marginal effects for the interaction between respondents' prior beliefs about the share of war refugees and the information treatment indicators

A) Share war refugees: less than 40% (underestimate)			
Right of asylum should be...	...maintained	...restricted	...abolished
Info: number of refugees		Reference	
Info: econ. costs + benefits	-0.004	-0.02	0.023
Info: economic costs	-0.061*	0.017	0.043
Info: share war refugees	-0.024	-0.013	0.037
Info: share Islam	0.007	-0.064	0.058*
Info: no info	0.008	-0.025	0.018
B) Share war refugees: 40% - 60%			
Right of asylum should be...	...maintained	...restricted	...abolished
Info: number of refugees		Reference	
Info: econ. costs + benefits	-0.003	-0.021	0.023
Info: economic costs	-0.051*	0.010	0.041
Info: share war refugees	-0.021	-0.016	0.037
Info: share Islam	0.008	-0.066*	0.058**
Info: no info	0.009	-0.026	0.018
C) Share war refugees: more than 60% (overestimate)			
Right of asylum should be...	...maintained	...restricted	...abolished
Info: number of refugees		Reference	
Info: econ. costs + benefits	-0.003	-0.027	0.030
Info: economic costs	-0.032*	-0.013	0.045
Info: share war refugees	-0.017	-0.034	0.051
Info: share Islam	0.005	-0.081**	0.076**
Info: no info	0.008	-0.027	0.019
D) Share war refugees: don't know			
Right of asylum should be...	...maintained	...restricted	...abolished
Info: number of refugees		Reference	
Info: econ. costs + benefits	-0.003	-0.022	0.025
Info: economic costs	-0.052*	0.008	0.044
Info: share war refugees	-0.022	-0.018	0.041
Info: share Islam	0.006	-0.069*	0.063**
Info: no info	0.008	-0.027	0.018

Notes: Coefficients of control variables are omitted to conserve space. White (1980) robust standard errors are computed. */**/** indicate significance at the 10%/5%/1% level.

Respondents who correctly assessed the share of Muslim refugees (panel B) also react to the disclosure of the actual share in a statistically significant way and with a relevant magnitude. That is, respondents who assumed the share of Muslim refugees to be somewhere in the range of 50% to 75% are roughly 13 pp more likely to call for its abolishment. In contrast, respondents who overestimate, or were not aware of the share of Muslim refugees, do not react significantly when the actual share is revealed.

Finally, the estimates of all information treatments are relatively stable across panels A to D of Table 8. Hence, respondents' prior beliefs about the share of war refugees do not appear to notably influence the magnitudes of the information treatment effects. This conclusion also applies to the effect of disclosing information about the share of war refugees on individual attitudes towards the right of asylum. Respondents who underestimate (overestimate) the share of war refugees do not become more (less) supportive of the right of asylum when being made aware of their misconception. The population does not appear to be more empathetic towards asylum-seekers fleeing from war and terror than to asylum-seekers fleeing to Germany for other reasons. Thus, Balzan et al.'s (2016) conclusion about the refugees' deservedness as an important determinant of people's attitudes towards refugees may not be universally valid or at least dimension-specific.

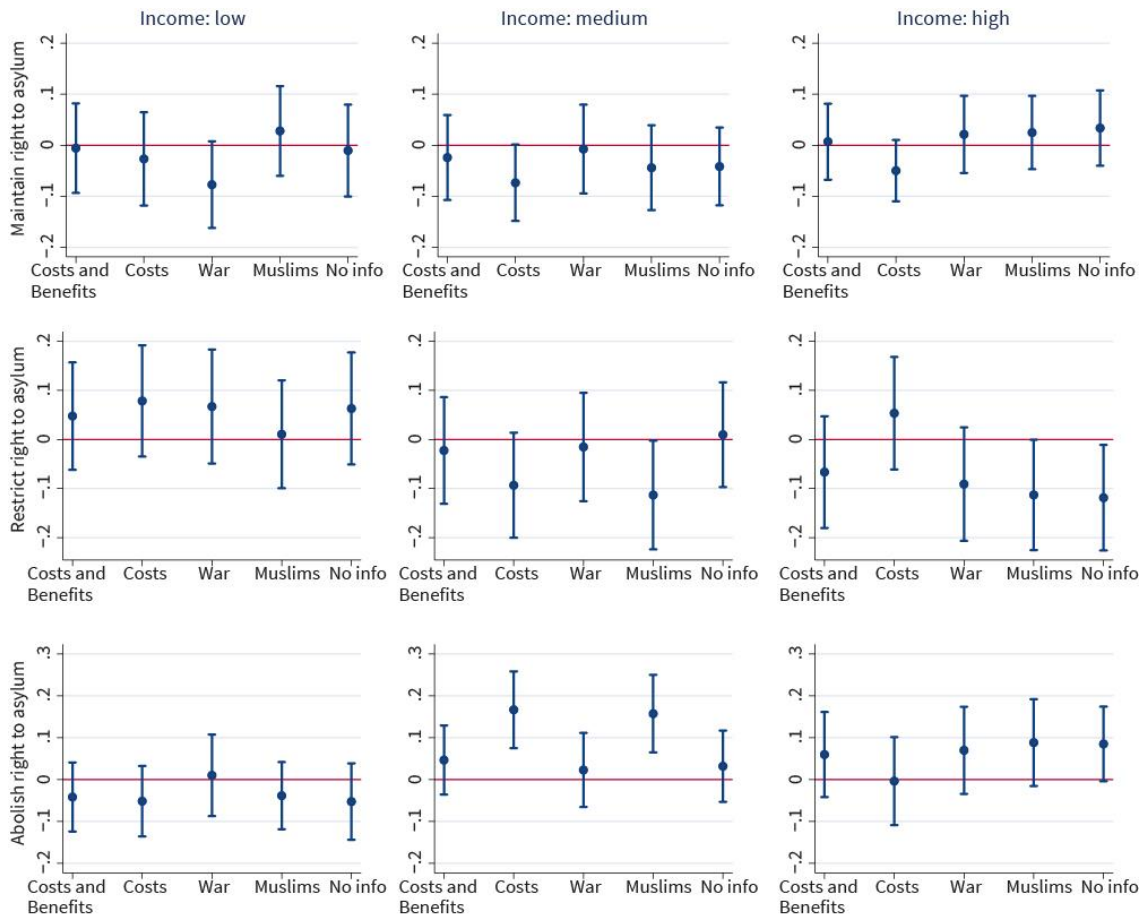
5.4. The role of income and education

It is often argued that persons with low income and low levels of education are more prone to support the narratives of populist parties and movements (see, e.g., Betz (1990) or Scheepers (1990)). But does this mean that people with low income and a low level of education also react more sensitively to information about incoming refugees? To test this hypothesis, we interact the five treatment dummies with the income group and education dummies. Figure 6 shows the average marginal effects (along with their 90% confidence intervals) for income, Figure 7 for education.

The only income group that significantly reacts to the information treatments are middle-income earners. The likelihood that they prefer an abolition of the right of asylum increases by about 17 pp when informed about the costs associated with accepting refugees, and by about 16 pp when informed about the share of Muslim refugees. In contrast, low and high-income earners appear to be insensitive to the provision of background information about refugees coming to Germany. Note that these effects remain virtually unchanged when replacing dummy variables for different income levels that are partially based on imputed incomes with income

level dummies partially based on interviewer assessments of respondents' living conditions.

Figure 6: Average marginal effects of information treatments for different income levels

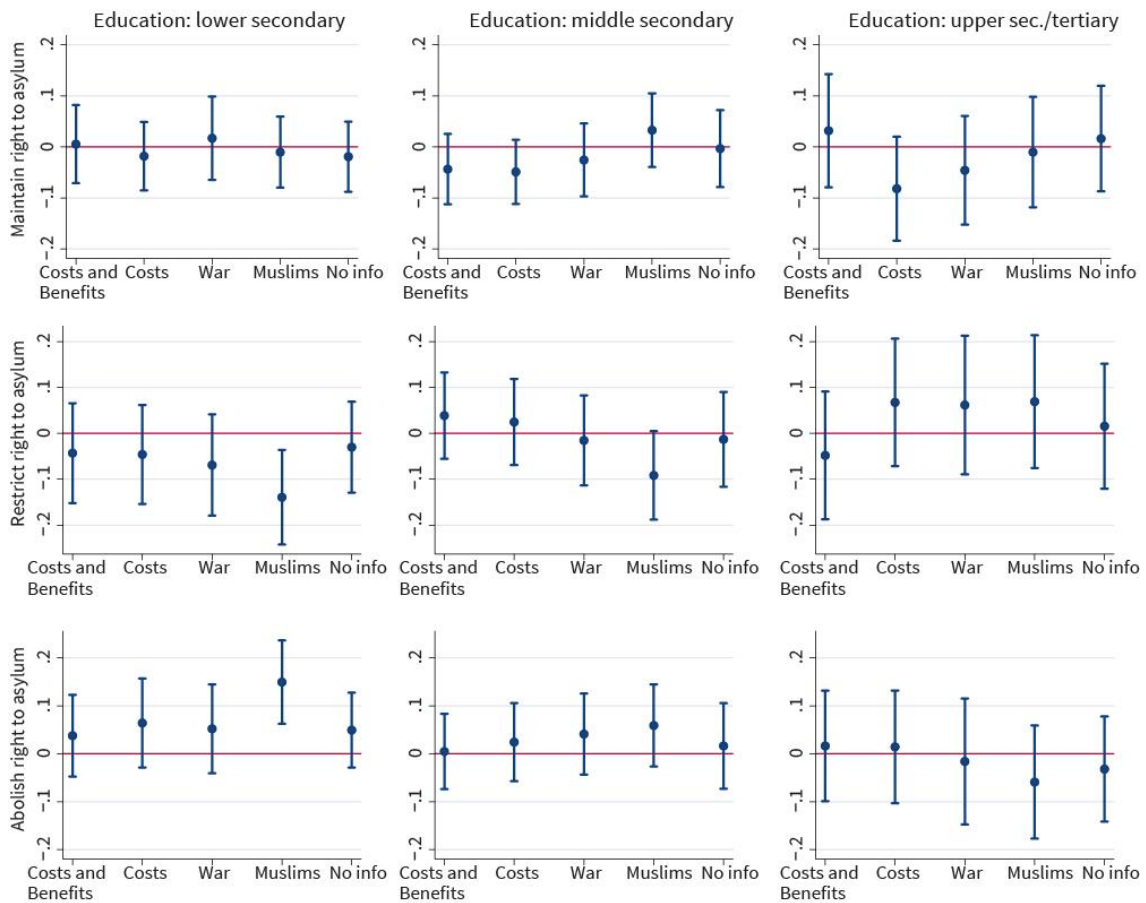


With regard to education, the only group that reacts to the provision of information are respondents without a school degree or a lower secondary school degree. The treatment effects for this group are sizeable: Informing these respondents about the share of Muslim refugees reduces the probability of supporting an abolition of the right of asylum by 15 pp and the probability of restricting the right of asylum by 14 pp.

Arguably, the importance of education for the information treatment effect is in line with intuition. In contrast, the discovery that only respondents with a medium level of income react to the provision of information may appear surprising. One possible explanation for the mediating influence a medium level of income has on the 'fiscal cost' treatment effect could be that middle-income earners are afraid of

having to bear a particularly large share of the fiscal burden associated with accepting refugees. In fact, the German income tax system is often criticised as being unfair to middle-income earners (e.g., Dorn et al., 2017).¹⁰ Another possible explanation for the mediating influence of a medium level of income could be a variant of Rugg’s (1941) seminal discovery that middle-class survey respondents react relatively strongly to variations in the specific language used for formulating questions.

Figure 7: Average marginal effects of information treatments for different education levels



¹⁰ For instance, on average, middle-income earners face a marginal tax rate that is close to the top income tax rate of 42%. Moreover, the tax rate for capital income in Germany is notably lower than the top tax rate for labour income (25% vs. 42%). Since the share of income derived from capital vis-à-vis labour is typically higher for top-income earners than for middle-income earners, top-income earners often face a lower average tax rate.

6. Conclusion

In this paper, we utilise an information experiment embedded in a representative population survey conducted in 2018 to elicit the German population's attitude towards refugees and the right of asylum. For the information experiment, we randomly assigned the interviewees to six different groups and 'treated' each group with different background information about the refugees that came to Germany in 2015 and 2016. The treatments involved information about (i) the total number of refugees that came to Germany in 2015 and 2016, (ii) the average amount of money the government spends per refugee each month, (iii) the potential economic benefits that arise in case refugees are successfully integrated into the labour market, (iv) the share of Muslim refugees, and (v) the share of refugees who were exposed to war and terror in their home countries. The sixth group was not provided with any information. After receiving the information treatment, the interviewees were asked about their opinion on the constitutional right of asylum.

Our findings suggest that a majority of the German population opposes the right of asylum in its current form. Only 14% of our respondents indicate that the right of asylum should not be changed. Restricting the right of asylum is favoured by 58% and 28% even call for removing the right of asylum from the constitution. It is therefore evident that most German citizens are alarmed about the large inflow of refugees.

The results of our information treatments suggest that the Germans are particularly concerned about Muslim refugees and, to a lesser extent, the fiscal costs associated with the influx of refugees. Respondents who are made aware of the share of Muslim refugees are roughly 7 pp more likely to support an abolition of the right of asylum. Respondents who are informed about the average amount of money spent by the government per refugee each month are about 5 pp less likely to indicate that the right of asylum should be preserved. These average treatment effects are not large but neither negligible.

Moreover, they are even more pronounced for specific groups, especially middle-income earners and respondents with a low level of education. In addition, we find that deviations of people's beliefs from the actual numbers provided by the treatments can affect their attitudes. For instance, the likelihood of supporting a removal of the right of asylum when informed about the share of Muslim refugees strongly depends on respondents' prior beliefs about this share. For those who underestimated the share of Muslim refugees, the probability of opting for an abolition the right of asylum increases by almost 18 pp when informed about the actual share. Moreover, for respondents who are informed about the actual share of

Muslim refugees, the probability of opposing the right of asylum depends positively on the perception about the expenses per refugee.

Interestingly, the number of Muslim refugees as well as the fiscal costs of the refugee crisis were the two key topics in the political debate. Anti-immigration movements like PEGIDA and the nationalist political party AfD fuelled resentments against asylum-seekers from Muslim countries and emphasised the fiscal burden of accepting refugees. Our results suggest that exactly these two topics have an impact on the public's attitude towards the right of asylum. The mere disclosure of the fiscal costs and the share of Muslim refugees significantly increase opposition against the right of asylum.

Finally, following Abadie (2020), it is also important to discuss the insignificant treatments. First, we find no evidence that information about people fleeing from war, terror, and political persecution mattered for people's attitudes towards the right of asylum. This suggests that the conclusion by Balzan et al. (2016) about the refugee's deservedness as an important factor for people's attitudes towards refugees may have been premature or loses its relevance after a major immigration wave occurred. Second, pointing out potential long-term benefits deriving from refugees' contribution to the German economy do not have a significant impact on attitudes either. Arguably, this result raises questions about Hainmueller and Hiscox's (2010) claim that sociotropic economic perspectives are influential with regard to attitudes towards refugees. Third, providing information about the number of asylum seekers in 2015 and 2016 did not affect attitudes, too, which suggests that these numbers were more or less common knowledge.

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Appendix

Appendix A: Imputation of respondents' subjective assessments

Since we only asked those respondents about their beliefs regarding the share of Muslim refugees, war refugees, and the amount of government spending per refugee who were not already provided with the respective information in the introductory text, one-sixth of the answers is missing. However, since those answers are randomly missing, we can obtain consistent estimates of the respondents' subjective assessments using multiple imputation techniques. When imputing the missing answers, we have to take into account that a fraction of respondents who were asked to provide an assessment were not able to do so (these are the 'don't know'-answers in Table 4). As a result, we impute missing values using a two-step procedure. In the first step, we create a dummy variable that is equal to one in case a respondent who was asked to provide an assessment did so and zero in case she answered 'don't know'. Then we apply a binary response logit model to impute the missing realisations of that dummy variable for those respondents not asked to provide an assessment. Put differently, for those respondents not asked to assess the share of Muslim refugees, the share of war refugees, or the fiscal costs associated with accepting refugees, we predict the likelihood that they would have provided an assessment if we had asked them to. In the second step, we focus on those respondents who were either asked to provide an assessment and did so, or who were not asked but are predicted to have provided an answer in step one. For this group, we impute the missing values for those who were not asked to provide an assessment based on truncated regressions. In both step one and step two, we use five rounds of imputation and include all variables described in Section 3.4 of the main text as regressors.

Appendix B: Variable description and descriptive statistics

Variable	Description	Mean	Std. dev.	Min.	Max
Info: number of refugees	Dummy	0.179	0.383	0	1
Info: economic costs + benefits	Dummy	0.169	0.375	0	1
Info: economic costs	Dummy	0.165	0.372	0	1
Info: share war refugees	Dummy	0.164	0.371	0	1
Info: share Muslim refugees	Dummy	0.164	0.371	0	1
Info: no info	Dummy	0.158	0.365	0	1
Net monthly household income	Realisations correspond to the mid-points of a grouped income variable (11 groups)	2571.53	1098.08	249.5	4500.0
Income tertiles	Based on net monthly household income	1.969	0.813	1	3
Income group	Three realisations: <1500 euros, 1500-3000 euros, >3000 euros (partially based on interviewers' assessments)	2.114	0.696	1	3
Economic satisfaction	Absolutely/rather dissatisfied (coded 1), neither satisfied nor dissatisfied (coded 2), absolutely/rather satisfied (coded 3)	2.288	0.734	1	3
Wealth: neither saver nor borrow.	Dummy	0.154	0.361	0	1
Wealth: saver	Dummy	0.642	0.479	0	1
Wealth: borrower	Dummy	0.203	0.403	0	1
Education: lower secondary	Lower secondary (coded 1), middle secondary (coded 2), higher secondary/tertiary (coded 3)	1.874	0.754	1	3
Children: yes	Dummy	0.599	0.490	0	1
Internet use	Never (coded as 1), monthly (coded as 2), weekly (coded as 3), daily (coded as 4)			1	4

Age	Age of respondent	50.566	18.259	14	94
Age squared	Age of respondents squared	2890.14	1823.96	196	8836
Sex: female	Dummy	0.532	0.499	0	1
Empl.: employed	Dummy	0.563	0.496	0	1
Empl.: unemployed	Dummy	0.026	0.159	0	1
Empl.: retiree	Dummy	0.288	0.453	0	1
Empl.: housewife/househusband	Dummy	0.038	0.191	0	1
Empl.: apprenticesh./milit. service	Dummy	0.024	0.153	0	1
Empl.: attending school/university	Dummy	0.062	0.241	0	1
Family status: single	Dummy	0.229	0.420	0	1
Family status: living with partner	Dummy	0.111	0.314	0	1
Family status: married	Dummy	0.478	0.500	0	1
Fam. status: widowed/div./sep.	Dummy	0.180	0.384	0	1
Voting intention: CDU	Dummy	0.238	0.426	0	1
Voting intention: SPD	Dummy	0.168	0.374	0	1
Voting intention: AfD	Dummy	0.106	0.308	0	1
Voting intention: FDP	Dummy	0.066	0.247	0	1
Voting intention: Leftist Party	Dummy	0.080	0.271	0	1
Voting intention: Green Party	Dummy	0.103	0.304	0	1
Voting intention: other party	Dummy	0.059	0.235	0	1
Voting intention: would not vote	Dummy	0.181	0.385	0	1
Share Muslim refugees: don't know	Dummy	0.339	0.474	0	1
Share Muslim refugees: < 50%	Dummy	0.136	0.343	0	1
Share Muslim refugees: 50% – 75%	Dummy	0.234	0.423	0	1
Share Muslim refugees: > 75%	Dummy	0.290	0.454	0	1
Share war refugees: don't know	Dummy	0.312	0.463	0	1

Share war refugees: < 40%	Dummy	0.325	0.469	0	1
Share war refugees: 40% - 60%	Dummy	0.190	0.392	0	1
Share war refugees: > 60%	Dummy	0.173	0.378	0	1
Costs: don't know	Dummy	0.308	0.462	0	1
Costs: < €1000	Dummy	0.116	0.320	0	1
Costs: €1000 - €2000	Dummy	0.307	0.461	0	1
Costs: > €2000	Dummy	0.269	0.444	0	1