Does Living in Districts with Higher Levels of Ethnic Violence Affect Refugees' Attitudes Towards the Host Country? Empirical Evidence from Germany

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Abstract: While there are many quantitative studies examining the determinants of ethnic violence from the perspective of offenders, less is known about the effects of violence on the victims or target groups. In light of the increased refugee migration in Germany in 2015/2016, we provide empirical evidence that living in districts with a past of ethnic violence against refugees affects refugees' perception of the host country negatively. We are using survey data from the German Socio-Economic Panel which we matched with data on ethnic violence. Albeit refugees had positive attitudes towards Germany – they felt overwhelmingly welcome, safe, and were barely worried about xenophobia – they were considerably less likely to feel this positive in districts with a high accumulated share of arson attacks on refugee homes. As living in contexts with higher levels of past and present ethnic violence can influence refugees' attitudes, this has implications for integration processes.

Keywords: Ethnic violence, refugees, integration, xenophobia, immigration, SOEP

Introduction

According to the United Nations High Commissioner for Refugees, over 80 million people were forcibly displaced in 2020 (UNHCR 2020). Both internal and cross-border displacements considerably increased in the last decade. The field of refugee and forced migration studies has emerged in the 1920s and since developed into a formal field of research (FitzGerald and Arar 2018; Chimni 2009; Skran and Daughtry 2007). In this field, researchers examine "the experience of refugees", measure "linguistic, educational, economic, residential, and marital markers of integration", focus on "resettlement programs" in the Global North and "forced encampment" in the Global South (see FitzGerald and Arar 2018, especially pp. 397, for an overview).

An increasing number of quantitative studies in this field document psychological distress (most often related to experiences in the origin country and the migration journey) of refugees in host countries (e.g., Steel et al. 2002 for Australia; Taylor et al. 2014 for the US; Ben Farhat et al. 2018 for Greece; Leiler et al. 2019 for Sweden; Kiselev 2020 for Switzerland; Loebel 2020 for Germany; Sonderskov et al. 2021 for Denmark). Yet, refugees' experience with violence in transition and host countries, caused by the local population, is still a "blind spot", especially in quantitative research (Ben Farhat et al. 2018). An exception is Ben Farhat et al. (2018) who document and describe experiences with violence and psychological distress of refugees and migrants, especially Syrians, based on a survey conducted in Greece in 2016/17. This study reports a high prevalence of violence starting in the country of origin, on the journey and at a decreasing rate in the country of transition/destination. Incidents of violence included beatings and perpetrations by the police. Ethnic violence caused by the local population was less prevalent; however, this particular finding is based on relatively low case numbers (less than 200 observations). In another study, Bouhenia et al. (2017) report on violence experienced by refugees in Calais, France. According to their survey of 402 refugees, most respondents experienced acts of violence during their journey and in Calais, most often assault and battery. However, the study does not offer any detail on the offenders.

Much quantitative research on ethnic violence in the context of refugee migration in the Global North is devoted to the questions where violence is more likely to occur, who is more likely to be violent and how violence affects attitudes of native citizens towards immigration and the political determinants surrounding it (e.g., Jäckle and König 2017, 2018; Liebe and Schwitter 2021; Schmidt-Catran and Czymara 2020; Frey 2020; Marbach and Ropers 2018; Lehmann

and Masterson 2020; Galariotis et al. 2017; Romarri 2020; see for an overview also Dancygier 2010). Also, a large body of research is concerned with the public opinion of the local population on refugees and their anti-immigration attitudes (e.g., Coenders et al. 2005; Bansak et al. 2016; Steele and Abdelaaaty 2019; Gessler et al. 2021; Hangartner et al. 2019; Gerhards et al. 2016; Meidert and Rapp 2019; see for a meta-analysis Cowling et al. 2019). However, much less is known about the opinion of the refugee population on their situation.

In this paper we focus on potential targets of ethnic violence and ask whether living in districts with higher levels of ethnic violence influences three different measures of refugees' perception of and attitudes about their host country, in this case Germany. We focus on whether refugees feel welcome in their host country, whether they worry about anti-foreigner sentiments, and whether they feel safe in their neighbourhood, and differentiate two different forms of ethnic violence, arson attacks on refugee accommodation and personal attacks against refugees. We contribute to filling the research gap regarding effects of violence and violent contexts on refugees and asylum seekers in host countries in the global North. The remainder of the paper is structured as follows: In the next section, we will provide some empirical background on the German context and discuss previous research on refugee integration in Germany. Following this, we will present our theoretical considerations and our hypotheses. We will then give an overview of the methods and data used, present our results, and conclude by discussing our findings.

Empirical Background

The German Context

In 2015/2016, Europe experienced a large influx of refugees and Angela Merkel's decision in the summer of 2015 to keep Germany's border open to shelter refugees was applauded around the world (see e.g., BBC 2015). The term "welcome culture" was coined as thousands of Germans were literally welcoming refugees at train stations, offering food, clothes, and other necessities (DW 2015a). In 2016 around one-third of the population helped refugees in the form of monetary or material donations and ten per cent helped them on site (Jacobsen et al. 2017). However, critical discussions emerged at the same time and people started to question whether Angela Merkel's decision was a mistake, how integration can best be achieved and whether there is a limit to the number of refugee which can be granted asylum (e.g., DW 2015b). Studies have shown that the public attitude towards foreigners' impact on society is seen rather negatively across European countries (e.g., Semyonov et al. 2008), even more so in the case of refugees (e.g., Meidert and Rapp 2019). Negative and even hostile attitudes towards refugees were not only expressed in discussions in daily life, in the (social) media, and in political discourses, but also led to violence against refugees and attacks on refugee housing. Several research studies have analysed the occurrence of such violent attacks, taking into account economic, political, and social factors (see e.g., Jäckle and König 2017, 2018, 2019; Liebe and Schwitter 2021; Wagner et al. 2020). These studies suggest that the presence of populist and right-wing parties boosts the likelihood of attacks on refugees, but this might depend on the context such as differences between East and West Germany. They also find support for effects of diffusion processes, geographical proximity to previous attacks, and opportunities of contact with foreigners. Also, they show that the type of violence – arson attacks, or personal and miscellaneous attacks – matters.

Other studies on ethnic violence in Germany focus on the effects of social media and threatening events such as terrorist attacks on refugees (Jäckle and König 2018; Frey 2020; Müller and Schwarz 2020; Schmidt-Catran and Czymara 2020; Ziller and Goodman 2020). For example, Jäckle and König (2018) found a temporary rise in ethnic violence following publicly visible threatening events related to terrorist attacks and warnings in Germany as well as neighbouring countries. They also found an effect of mediatised negative statements of members of anti-immigration parties about refugees. Schmidt-Catran and Czymara (2020) found an effect of the Islamist terror attack on the Christmas market in Berlin in 2016 on public opinion on refugees; they did not find, however, a relationship between online media reports

and public opinion. Combining social media data and data on anti-refugee incidents in Germany, the empirical study by Müller and Schwarz (2020) indicates that anti-refugee sentiment on Facebook can predict crimes against refugees. Ziller and Goodman (2020) provide and empirically support (for Germany and the Netherlands) arguments that local government efficiency decreases ethnic violence towards refugees and immigrants.

Previous research on refugee integration in contemporary Germany

Besides studies that examine the causes of ethnic violence as well as (changing) attitudes of natives towards refugees, there are several studies which analyse refugees' integration into German society. Brücker et al. (2020) show, among other things, that 91 per cent of all refugee children aged 6 to 17 attend primary and secondary schools. Up to 16 per cent of refugees with a secondary school education attend further education. In 2017, over 80 per cent of refugees attended at least one language course and over 50 per cent finished a course, albeit there is a gender gap with less participation of women. Brücker et al. (2020: p. 44) conclude that "[i]n summary, refugees have largely been absorbed into the extant German institutional environment, with supplemental public service provision pertaining to social and cultural integration and language acquisition".

While this sounds encouraging, Kosyakova and Brenzel (2020) show that inefficient asylum procedures without timely legal certainty can discourage refugees' integration processes. They also found that labour market integration and language learning is faster for the younger, the generally better skilled, and those having resided in Germany longer.

The studies by Brücker et al. (2020) and Kosyakova and Brenzel (2020) were part of a special issue on refugee reception and integration into Germany (see Kogan and Kalter 2020 for an overview). This special issue revealed some important insights: Refugees who arrived in Germany were a selective group but not much different from non-humanitarian migrants. While refugee migrants need to be characterised as a vulnerable (traumatised) group, this, at least in short term, did not affect their integration in terms of language acquisition, education, and labour market participation. The studies by Brücker et al. (2020) and Kosyakova and Brenzel (2020) as well as other studies in the special issue have made use of the same data set we are analysing in this study, the refugee survey of the socio-economic household panel (IAB-BAMF-SOEP). Providing reliable information on the circumstances of people who have sought protection in Germany recent years, this data set is the first to permit large-scale analysis of

this subpopulation. For example, it has also allowed to explore the determinants of different dimensions of health of refugees (Bauer et al. 2020; Löbel 2020; Walther et al. 2020), to analyse the effect of human and social capital on asylum procedures (Kosyakova and Brücker 2020), and to study the circumstances for applying for credential recognition (Jacobsen 2019). We contribute to this literature by combining the SOEP survey data with a dataset on ethnic violence, and analysing how living in contexts, i.e., districts, with higher past or present levels of ethnic violence, affects refugees' attitudes and perceptions of Germany.

Theoretical Considerations on Ethnic Violence as a Context Effect

The three explananda of this study are (1) whether refugees feel welcome in their host country, (2) whether they worry about anti-foreigner sentiments, and (3) whether they feel safe in their neighbourhood. The main explanatory factor is the extent of ethnic violence at the district level. Theoretical approaches such as intergroup threat theory (Stephan and Stephan 2000) and the rejection-identification model (Branscombe et al. 1999) can help to understand why contexts of violence affect refugees' attitudes towards the host country. Ethnic violence can be seen as a "realistic threat" (Stephan and Stephan 2000: p. 25) to the well-being of refugees. In this regard, Stephan and Stephan (2000: p. 25) refer to *perceived* realistic threats (also Stephan et al. 2002). We argue that in contexts with higher levels of past and present ethnic violence, refugees are more likely to perceive more threats so that they feel less welcome, worry more about anti-foreigner sentiments, and feel less safe in their neighbourhood. In line with the rejection-identification model such realistic threats can also affect identification processes of refugees resulting in stronger ethnic identification and preventing identification with the host country (e.g., Branscombe et al. 1999; Te Lindert et al. 2008; Jasinskaja-Lahti et al. 2009; de Vroome et al. 2011, 2014b; di Saint Pierre et al. 2015; Bobowik et al. 2017).

While we can show whether social contexts with higher levels of ethnic violence affect refugees' attitudes towards the host country, we cannot clarify the exact mechanism that links the context effect and individual perceptions. For example, at the micro-level we simply do not know whether in contexts with a high level of violence towards refugees in the past, refugees receive information about such past (and present) incidents from peers or (social) media. On the other hand, in contexts with more past and/or present ethnic violence, refugees might also be more exposed to non-violent forms of discrimination in everyday life and this in turn might affect their attitude towards the host country. Further, the causal relationship between our three explananda is not clear and the data we use in the empirical analysis do not allow to disentangle

these relationships; for example, worries about anti-foreigner sentiments can affect whether refugees feel welcome and vice versa. Therefore, we analyse our explananda separately.

Keeping in mind limitations regarding identifying causal mechanisms, we propose and test the following three hypotheses:

H1 (feeling welcome): The higher the levels of past and present ethnic violence in a district, the less welcome refugees feel in the host country.

H2 (anti-foreigner sentiments): The higher the levels of past and present ethnic violence in a district, the more refugees worry about anti-foreigner sentiments.

H3 (feeling unsafe): The higher the levels of past and present ethnic violence in a district, the less safe refugees feel in their neighbourhood.

Data and Methods

Our analysis is based on the German Socio-Economic Panel (SOEP, wave 34; Goebel et al. 2019; SOEP 2019) and relies on regional data on the level of districts (*Kreise*). The SOEP is a longitudinal panel dataset of the population in Germany. It is a household-based study which started in 1984 and re-interviews adult household members annually. In cooperation with the Institute for Employment Research and the Research Centre on Migration, Integration, and Asylum of the Federal Office of Migration and Refugees, the SOEP has also sampled and longitudinally surveyed a sample of refugees with data being available in the core data release (wave 34) for the years 2016 and 2017 (Brücker et al. 2016, 2019). The sample includes individuals which have entered Germany between January 2013 and December 2016 with an asylum application. The respondents are sampled from the Central Register of Foreign Nationals and include 3,320 households (9,965 individuals) in 2016 and 1,519 households (4,161 individuals) in 2017 (sample M3/M4 and sample M5). Participation in the survey is voluntary, and it is being conducted by specially trained interviewers as computer-assisted face-to-face interview. The questionnaires cover a broad range of topics and were available in multiple languages.

Dependent variables

Perceived welcomeness

We aim to investigate how the objective exposure to violence, i.e., living in districts which experienced ethnic violence against refugees, influences the subjective perception of welcomeness. In the first survey respondents fill out, they are asked how welcome they currently feel in Germany (n= 6,892 observations belonging to 4,674 distinct households; 4,130 observations from 2016 and 2,762 observations from 2017). On a scale from 0 (not at all) to 4 (completely), respondents were asked if they currently feel welcome in Germany. Overall, respondents tend to feel very welcome in Germany at the time of the survey as shown in Figure 1, panel A. To allow for better analysis, we dichotomise the variable ("for the most part" and "completely" vs. rest).

Xenophobic worries

We further want to assess the effect of ethnic violence on the extent refugees are concerned about xenophobia. The SOEP survey includes a question in which respondents are asked about how concerned they are about different issues, one of them being anti-foreigner sentiment and xenophobia in Germany. Respondents answered on a scale from 0 (not concerned at all) to 2 (very concerned). As shown in Figure 1, panel B, they tend to have some to no worries (answered by n= 6,770 observations belonging to 4,603 distinct households; 4,039 observations from 2016 and 2,731 observations from 2017). To allow for better comparability with the other dependent variables, we dichotomise the variable ("very concerned" and "somewhat concerned" vs. "not concerned at all").

Feeling safe in the neighbourhood

Lastly, we include satisfaction with the safety in respondents' neighbourhood. On a scale from 0 (completely dissatisfied) to 10 (completely satisfied), respondents were asked to rate their satisfaction with the safety of their neighbourhood in their current living arrangements. This question was only asked in 2016 (n= 4,085; 3,027 distinct households). Most respondents are very satisfied with the safety of their neighbourhood (see Figure 1, panel C). In the following, we will assume that being satisfied with the safety in the neighbourhood also means that respondents feel safe. We also dichotomise this variable (binning categories 0-7 vs. 8-10).

The three measures are all significantly associated with each other in the expected directions (feeling welcome and being worried about xenophobia: Cramér's V = -0.17, $\chi^2 = 187.5$; feeling welcome and feeling safe in the neighbourhood: Cramér's V = 0.14, $\chi^2 = 76.8$; being worried about xenophobia and feeling safe in the neighbourhood: Cramér's V= - 0.14, $\chi^2 = 76.0$).

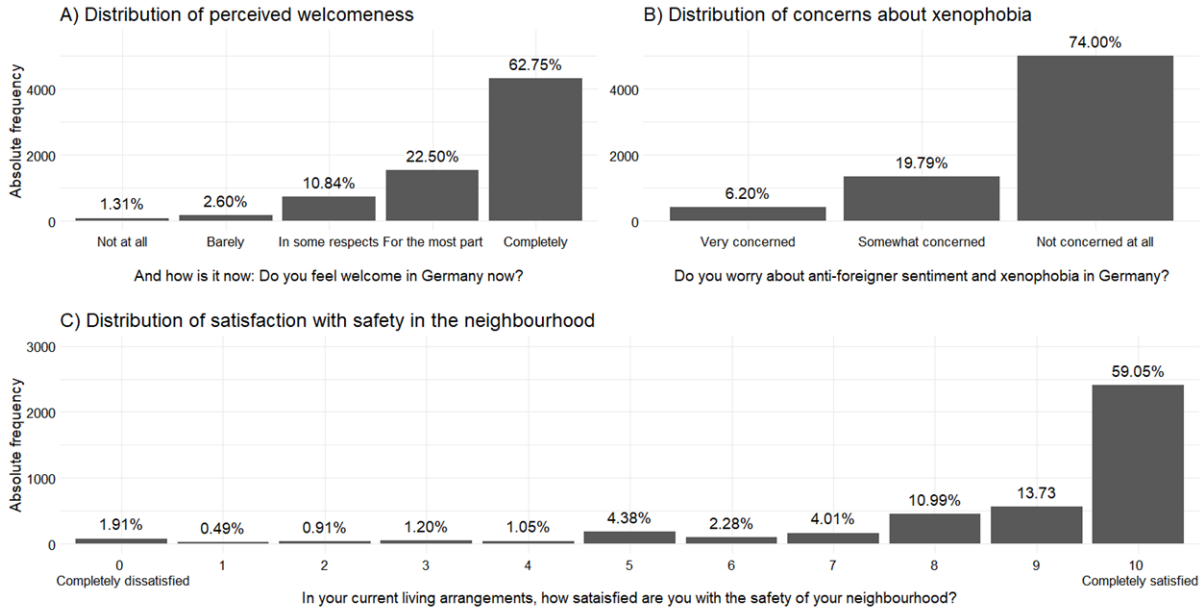

Figure 1: Distribution of dependent variables.

Independent variables

Descriptive information on all independent variables is given in Table 1 and discussed in detail in the following.

Violent attacks

Violent attacks on refugees form our main independent variable. The Amadeu Antonio Foundation and the association PRO ASYL collect cases of violence against refugees in their chronicle of hostile incidents against refugees since the beginning of 2014 (Amadeu Antonio Stiftung 2015, 2018). Various sources, including but not limited to news reports, press releases by the police, and parliamentary interpellations are surveyed to achieve a database of ethnic violence which is as comprehensive as possible and offers more details than governmental sources such as the Federal Criminal Police Office.

We web scraped the information from the online chronicles on 21st October 2017 and collected all incidents recorded by the foundation up to this date since January 1st 2014. We geocoded the attacks using the GoogleMaps and OpenStreetMap API.

Four different types of hostile attacks against refugees are documented in the chronicles: 1) arson attacks on refugee housing, 2) demonstrations against refugees, 3) personal injuries, 4) miscellaneous attacks on housing and refugees (such as shots, insults or graffiti and other attacks lacking detailed information). We create two variables; on one hand, we sum all previous arson attacks on refugee housing per district per day, and on the other hand, we sum all previous personal injuries and miscellaneous attacks per district per day[1]. We make this differentiation as arson attacks are a very severe form of violence targeting a large number of people. Arson attacks are more strategic than other incidents, and they involve more planning as well as preparation, and oftentimes receive more media attention. They can be compared to the right-wing terrorist attacks in Northern Europe in the 1990s and can be classified as heavy violence (Koopmans 1996: pp. 192). Previous research has also shown different determinants for the prevalence of arson and other attacks (Liebe and Schwitter 2021). We exclude demonstrations from our measure as the method of data collection has changed substantially throughout the years and because they do not refer to actual attacks. We match this information about the number of attacks per district since 2014 to the SOEP respondents in terms of their district and interview date. Respondents surveyed in November or December of 2017 (n=247) are assigned the latest number of previous attacks we have collected.

The number of previous personal and miscellaneous attacks ranges from 0 to 325 with a mean of 25.7 and a median of 10 attacks (standard deviation 52.3), and the number of the much rarer arson attacks ranges from 0 to 21 with a mean of 1.8 and a median of 0 (standard deviation 0.05). As the median suggests, most respondents do not live in districts experiencing arson attacks, while only 1.2 per cent of respondents live in districts without any personal or miscellaneous attacks. Five per cent of respondents live in one of the three districts which have experienced over 100 attacks against refugees. These districts are urban and populous. To account for the very varying sizes of German districts (ranging from roughly 35,000 to 3,500,000), we calculate a relative measure of attack rate: number of attacks divided by population size.

The attack rate of personal and miscellaneous attacks ranges from 0 to 0.6 attacks per 1000 inhabitants of a district (mean 0.06, median 0.04, standard deviation 0.05), and the attack rate

[1] To be more exact, we count previous days with incidents. We exclude multiple attacks per day in the same district as they often refer to connected incidents.

of arson attacks ranges from 0 to 0.03 (mean 0.003, median 0, standard deviation 0.005). To account for the skewed distributions, we take the natural logarithm of the attack rates after adding a constant of one in the following analyses.

Control variables

We control for several contextual and individual factors which can be expected to or have been shown to influence the attitudes of refugees.

On a contextual level, we control for the degree of urbanisation, differentiating four categories (from large cities to sparsely populated rural districts) and the logged population size the districts, as well as whether the district is in East or West Germany. Living in stark and densely populated districts enhances the opportunity for violent attacks. Furthermore, the prevalence of attacks of violence against refugees is considerably larger in East than in West Germany (see e.g., Liebe and Schwitter 2021). Additionally, we control for the year respondents have been surveyed to capture any overall trends in attitudes.

On an individual level, we control for basic socio-demographic characteristics: age, gender, marital status, and citizenship. We distinguish six different categories of citizenships: The four largest single groups of nationalities are Syrian, Afghan, Eritrean, and Iraqi. Our reference categories are refugees with a European citizenship, and we subsume all other citizenships into a sixth group, made up mostly from refugees from African countries.

We further control for whether respondents live in a group housing accommodation. Also, we control for the outcome of the respondents' applications for asylum. Respondents were asked whether their application for asylum had been approved by the Federal Office for Migration and Refugees distinguishing five different decision states. Our reference category are refugees who do not have received an outcome to their application

We further expect that factors regarding social integration influence the perception of Germany. We control for three different measures of social integration: number of new German contacts, employment situation, and German language skills. Number of new German contacts has been measured as a continuous variable in the survey with right-skewed answers ranging from 0 up to 300 with a mean of 5.5. To account for this skewed distribution, we take the natural logarithm of the number of friends (after adding a constant of one). Integration into the

labour market is a binary measure and German language skills is a summative index of self-reported skills regarding reading, speaking, and writing German (each dimension measured on a scale from 0 to 4, with 0 meaning cannot read/speak/write German at all and 4 meaning can read/speak/write German very well).

Lastly, we also control for how long respondents have been living in Germany in months. We calculate this measure by subtracting the date of the survey happening with the self-reported date of arriving in Germany. If no arrival month is given, we set it to June.

For better interpretation, we grand-mean centre all continuous district-level variables and group-mean centre all person-level variables. The descriptive details of all variables as included in the regression models are given in Table 1.

Table 1: Descriptive details of all variables.

Variable		**Mean / median or %**	**SD**	**Minimum / maximum**
Personal attack rate (log, centred)		-0.0026 / -0.013	0.042	-0.054 / 0.40
Arson attack rate (log, centred)		-0.000072 / -0.0031	0.0044	-0.0031 / 0.030
Urbanisation	Large cities	31.1%		
	Urban districts	38.5%		
	Rural districts with densely populated areas	17.8%		
	Sparsely populated rural districts	12.7%		
Population size (log, centred)		0.0020 / -0.14	0.94	-2.035 / 2.60
Part of Germany (1=East Germany)		17.6 %		
Age (centred)		-0.83 / -2.26	10.82	-.28.87 / 62.32
Gender (1=Woman)		39.4 %		
Marital Status	Single and never married (reference)	33.7 %		
	Married / in civil partnership	64.3 %		
	Widowed / divorced	2 %		

Citizenship	European (reference)	4.8 %		
	Syrian	50.8 %		
	Afghan	13.6 %		
	Eritrean	4.3 %		
	Iraqi	13.1 %		
	Other	13.4 %		
Type of accommodation (1= Group accommodation)		34.4 %		
Outcome of asylum application	No outcome received (reference)	28.7%		
	Recognised as refugee	53.5 %		
	Recognised as being entitled to asylum	6.0 %		
	Recognised as being entitled to other form of protection	2.7 %		
	Rejected: Tolerated	5.6 %		
	Rejected: Need to leave the country	3.6 %		
Social integration	German contacts (log, centred)	0.0039 / -0.036	0.99	-2.63 / 5.07
	Labour market participation	10.1%		
	German language skills (centred)	-0.32 / -0.27	2.86	-7.56 / 8.67
Months in Germany (centred)		-3.64 / -4.46	8.90	-41.2 / 40.56
Survey Year (1=2017)		40.08%		

Statistical Analysis

We employ multilevel logit models with cluster robust standard error to analyse our data. Our observations cover 258 out of the 401 districts in Germany in the analysis on welcomeness and xenophobia, and 193 districts in the analysis on safety in the neighbourhood (number of respondents per district range from 1 for some smaller districts to 330/273 for Berlin, mean 26.2/21.2). We fit logit models amended to allow random effects for each district. In the analysis, all continuous variables are mean-centred; individual variables are group-mean

centred. We run separate models including either the arson attack rate or the personal attack rate.

The long tail of the attack rates results in cases with high leverage. As these observations might be influential, we run alternative models excluding the bottom and top one per cent of observations (dropping n=173 cases when including personal attack rate and n=3,846 when including arson attack rate due to the large number of districts with zero arson attacks).

We also run a number of alternative models as robustness checks, see online supplementary material (Tables C1-C6). We run models in which the two different attack rates are included simultaneously, as well as a model which does not distinguish between personal and attack rates but instead uses their sum as a measure of a total attack rate. While we dichotomised the dependent variables for our main analysis, we also ran multilevel ordered logit models. Furthermore, as respondents are nested in households, we run separate models on household heads only, as well as models in which we exclude districts in which we have not observed more than ten respondents. In the case of welcomeness, we run a model where we additionally control for the respondents' answer to the question how welcome they have felt at arrival in Germany. The main results of this paper are stable throughout these model specifications; some differences occur when using a total attack rate instead of distinguishing between the two different kinds of ethnic violence. We discuss the differences when excluding the bottom and top per cent of observations in the main text as excluding these observations reduces the effect sizes.[2]

Results

Based on multilevel logit models, Figures 2 and 3 present the main results of our analysis (see Tables A1-A4 in the appendix for full regression tables). Figure 2 presents predicted probabilities for both bivariate and multivariate models, and Figure 3 shows the effects of the attack rates comparing models including all observations and models excluding those observations with the one per cent lowest or the one per cent highest attack rate.

[2] We also tested whether any factors of social integration moderate the effect of the crime rate, but we did not observe robust interaction effects.

Overall, we find significant differences across districts. The empty models (see Table A0 in the appendix) indicate that eight per cent of the variation of feeling welcome in Germany, 11 per cent of the variation of being worried about xenophobia, and 16 per cent of the variation of perception the neighbourhood as safe can be attributed to differences between districts.

In the bivariate case, the probability to feel welcome in Germany is predicted to be 86.5 (86.2) per cent when there is a very low rate of personal and miscellaneous (arson) attacks in a refugee's district. This probability falls to 68.7 (71.6) per cent when living in a district with a very high number of personal (arson) attacks. The predicted probability to be worried about xenophobia lies at 24.6 (26.1) per cent for a respondent in a district with a low rate of personal/miscellaneous attacks (arson attacks) but rises to 54.7 (43.0) per cent in a district with a higher number of personal (arson) attacks in the bivariate specification. In a district with no personal (arson) attacks, the predicted probability to be feel safe in the neighbourhood is predicted to be 86.1 (86.0) per cent and drops to 60.9 (62.1) per cent in a district with many personal (arson) attacks in the bivariate model. We find significant effects on all three dependent measures of interest for both the personal and the arson attack rate: The higher the rate of ethnic violence in a district, the less welcome refugees feel, the more worried they are about xenophobia, and the less satisfied they are with the safety in their neighbourhood. This supports our theoretical hypotheses H1 to H3 (see figure 2, left).

To predict the probabilities in the multivariate model specifications, we hold the predictors at the mean for all continuous variables and at the mode for all categorical variables. We thus predict probabilities for a Syrian man, aged 33 who is married but not employed. He has an average amount of German contacts, was interviewed in 2016, and lived in an urban district with an average population size in West Germany. He has been recognised as a refugee and was not accommodated in group housing. We vary the rate of personal and miscellaneous attacks (arson attacks) of the district he lives in. For this person, we find that if his district has not experienced any personal and miscellaneous attacks (arson attacks) on refugees, he feels welcome in Germany with a predicted probability of 87.7 (87.4) per cent, worries about xenophobia with a predicted probability of 17.6 (16.5) per cent and feels safe in his neighbourhood with a predicted probability of 93.0 (93.7) per cent. In contrast, if this person is living in a district with a high share of accumulated arson attacks, we find that his predicted probability to feel welcome drops to 73.0 (67.8) per cent, his predicted probability to worry

about xenophobia drops to 11.5 (rises to 23.6) per cent, and he feels safe in his neighbourhood with a predicted probability of 92.8 (84.2) per cent (see figure 2, right).

The effect of the rate of personal and miscellaneous attacks diminishes in all models when including the control variables, while the effect of the rate of arson attacks remains stable. It is particularly the strong effect of East Germany which is responsible for the bivariate relationships to diminish.

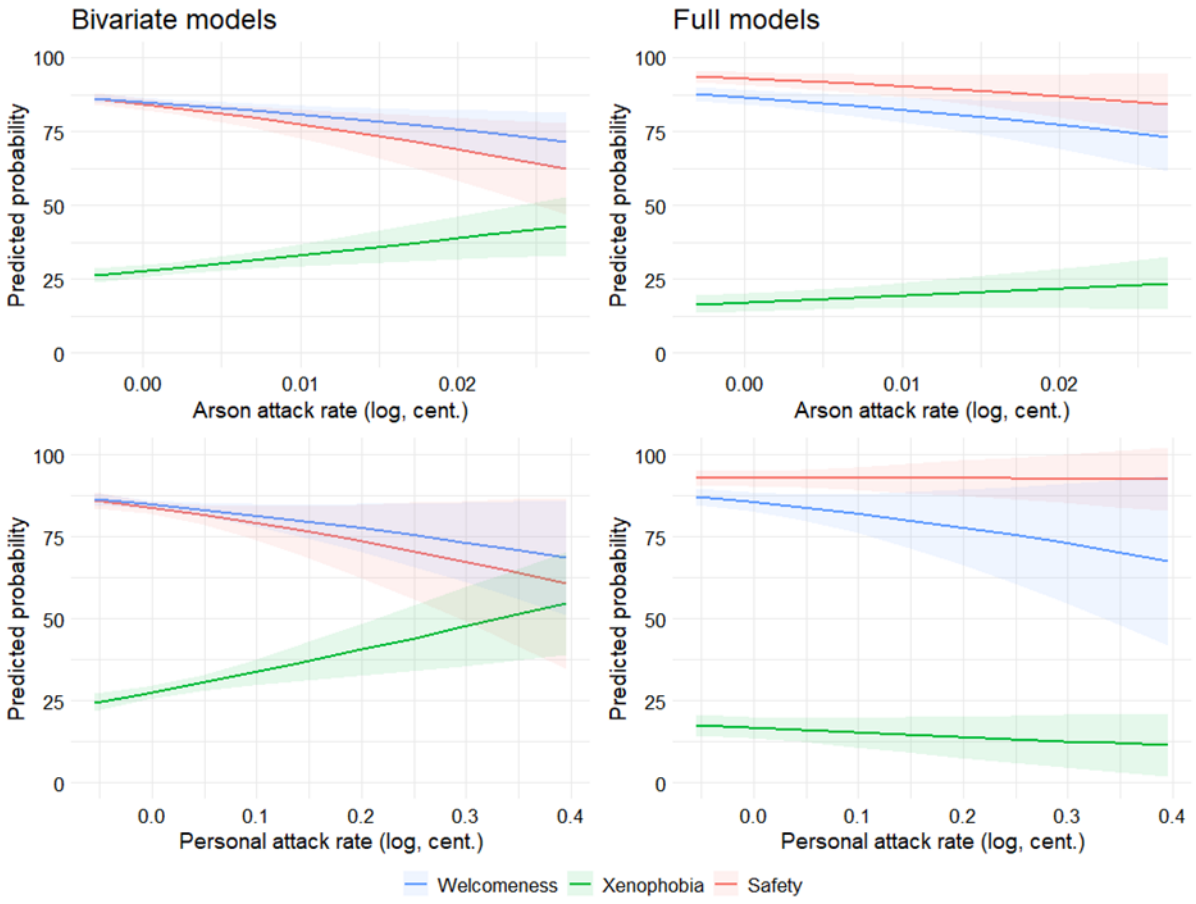

Figure 2: Predicted probabilities of bivariate and full models for the effects of arson and personal attacks. Note: See Tables A1-A4 in the appendix for model results and Tables B1-B6 in the supplementary online material for the predicted probabilities. Effects are statistically significant at the 5% level, except for effects of the arson attack rate in the full model on xenophobia (10% significance level); effects of the personal attack rate in full models on welcomeness and xenophobia (both 10% significance level), as well as safety (statistically insignificant).

Figure 3 contrasts the results of the full multilevel logit models obtained by including all observations (left) versus excluding those observations which have observed the one per cent lowest or the one per cent highest attack rate (right). Overall, we find that the rate of personal and miscellaneous attacks on refugees has far less of an influence on the attitudes of refugees than the rate of arson attacks. The rate of personal and miscellaneous attacks does not significantly impact how worried they are about xenophobia, or how satisfied they are with the safety in their neighbourhood. Respondents tend to feel less welcome in Germany when the rate or personal and miscellaneous attack rate is high (significant on a 10% level). On the other hand, the rate of arson attacks significantly influences how safe and welcome refugees feel and how worried they are about xenophobia (10%) when including all observations. Excluding those observations which have observed the least or the most violence changes the effects: only the measure of welcomeness is still significantly impacted by the observed rate of violence. This suggests that both one's perception of safety and worry about xenophobia might be negatively impacted in areas with especially high levels of violence.

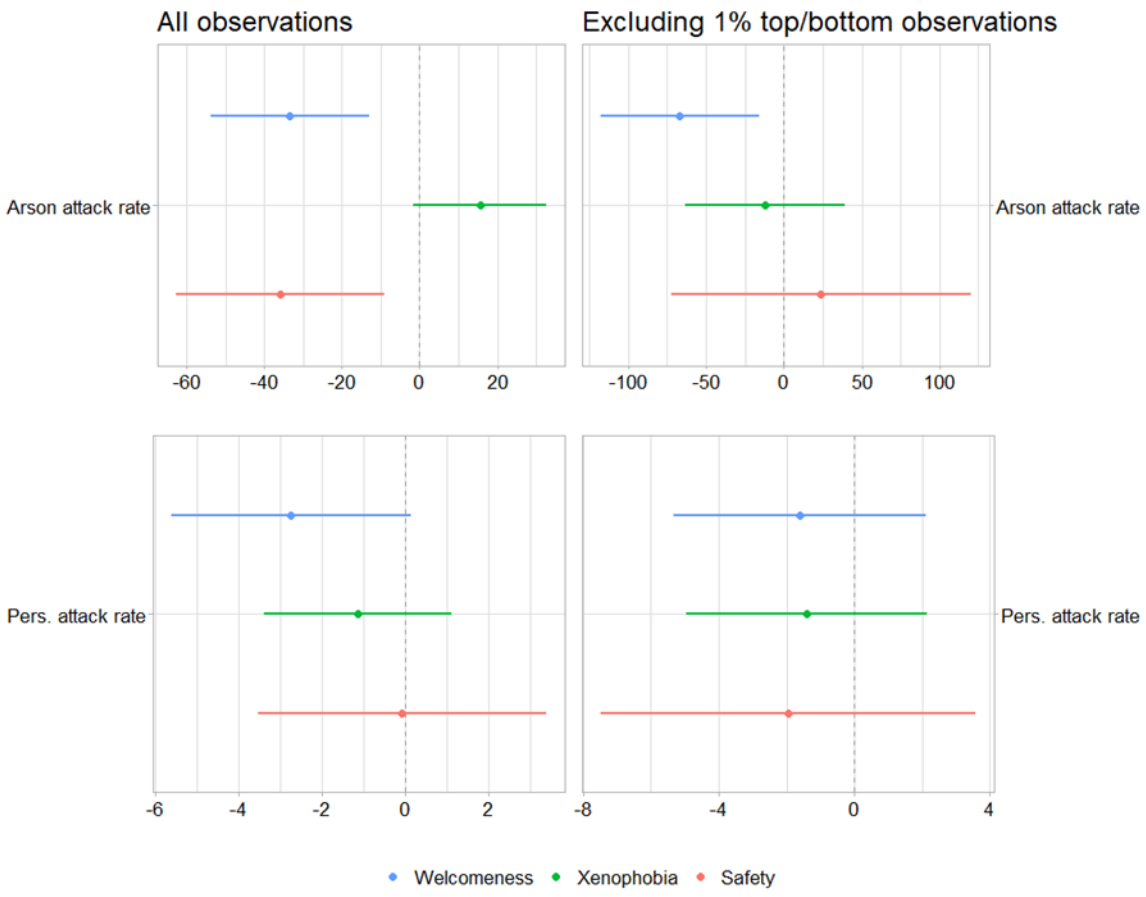

Figure 3: Effects and 95% confidence intervals of arson and personal attack rate on xenophobia, welcomeness, and safety. Note: See Tables A1-A4 in the appendix for model results.

Regarding the control variables, we partly find differing effects on our three dependent measures (the estimated coefficients are shown in Table A1-A4 in the appendix). In all models, we find that being married influences the perception of Germany positively: they feel more welcome, less worried about xenophobia, and safer in their neighbourhood (at least on 10 per cent level). We find that refugees feel significantly less welcome in the case of a rejected asylum application, if they are accommodated in group housing, and the longer they have already lived in Germany (models 1.2). Regarding the indicators of social integration, we find differing effects: The number of new German contacts has a positive effect on feeling welcome in Germany, while proficiency in the German language has a negative one. We further find an inverted u-shaped relationship between age and feeling welcome. Refugees feel significantly more welcome if their asylum application has been accepted and they have been recognised as refugees. In the model on xenophobia (models 2.2), we find that refugees are less worried about anti-foreigner sentiment if they have been recognised as refugee or asylum seeker. The number of months refugees have already lived in Germany increases their xenophobic worries. Like in the model on welcomeness, we also find a positive effect of German language skills in terms of xenophobia, meaning that refugees with better language skills are more worried about anti-foreigner sentiments. Syrian and Iraqi refugees are significantly less worried about xenophobia than the reference category of refugees from European countries, while Afghan refugees are more worried (10 per cent level).

In both, the model on xenophobia (models 2.2) and the model on safety in the neighbourhood (models 3.2), we find a strong and significant effect of East Germany. Refugees living in districts located in East Germany are much more likely to be worried about anti-foreigner sentiments and to feel unsafe in their neighbourhood. Further, the model on the safety in the neighbourhood (models 3.2) particularly shows a strong and negative effect of living in a group accommodation, and that Syrian refugees tend to feel less safe (10 per cent level) than the European reference category, and we further find positive effect of German contacts, meaning that refugees with more German friends feel safer in their neighbourhood.

Discussion and Conclusion

Against the backdrop of a remarkable increase (and following decrease) in violent incidents towards refugees in Germany since 2014, as well as a persistence of hostile behaviour across Europe (FRA 2019), we tested how refugees' attitudes towards Germany are influenced by the accumulated extent of ethnic violence present in the district they live in. We assessed this using three different attitudinal measures: 1) whether refugees feel welcome in Germany; 2) whether refugees are worried about xenophobia in Germany; and 3) whether refugees feel safe (i.e., are satisfied with the level of safety in their local neighbourhood).

In line with our hypotheses, we have found significant negative effects of a district's accumulated attack rate on refugees' attitudes towards Germany, but it depends on the type of attack and on the level of violence: Refugees feel significantly less welcome in Germany, feel significantly less safe in their neighbourhood and tend to worry more about xenophobia if the district they live in has experienced more arson attacks on refugee housing in the past, even when controlling for a number of other contextual and individual factors. This is not so much the case when focusing on other personal and miscellaneous attacks on refugees: While we find very strong bivariate associations between the personal attack rate and refugees' perceptions of Germany, these effects diminish when controlling for further factors. Particularly, respondents tend to feel less safe and more worried in East Germany than West Germany. In this regard, future research could reveal, for example, whether the relationship between East and West Germany, ethnic violence and refugees' attitudes towards Germany can be explained by differences in social, economic and political conditions between East and West Germany.

When respondents living in districts with the lowest and highest observed levels of violence are excluded, only the negative effect of past arson attacks on feeling welcome in Germany remains robust. This suggests that it is particularly districts with the highest levels of violence which have the strongest impact on refugees' perception of safety and worry about xenophobia. Instead of treating these high-violence districts as "outliers", future studies can follow up this finding with more concrete and in-depth case studies on high-violence contexts and their effects on refugees' perceptions, attitudes, and wellbeing in host countries.

Even though the majority of respondents does not live in districts with a history of arson attacks on refugee housing, living in a district which has experienced such a severe form of violence

brought significant negative consequences to those refugees. Compared with other incidents, arson attacks put a larger group of refugees at risk, are more strategic and planning-intensive, and can also be expected to constitute a part of the collective memory. Refugees living in districts with such a history of severe attacks feel significantly less welcome, even if only few arson attacks have taken place.

Considering further effects, we find that refugees feel less safe and less welcome when accommodated in group housing. In terms of social integration, a greater number of German friends make refugees feel more welcome and safer, but we also find some evidence for the so-called discrimination/immigration paradox: refugees with above average German skills feel generally less welcome in Germany and are more worried about xenophobia. This negative direct effect of integration indicators has previously been found in other contexts (e.g., Lajevardi et al. 2020; Steinmann 2019; Tuppat and Gerhards 2021; van Doorn et al. 2013; de Vroome et al. 2014a; ten Teije et al. 2013). As suggested by Portes et al. (1980), better language skills might lead to a stronger comprehension of negative portrayals of refugees in Germany. Only when refugees in Germany are able to understand the language well enough, they are able to consume and follow German media and political debates which might express more negative attitudes and perceptions towards refugees and the "refugee crisis" than what they experience in their everyday life.

Our study and the data we used have several limitations that need to be considered. First, while we used the best available measure of ethnic violence, we cannot guarantee that we captured all incidents that happened between 2014 and 2017. Furthermore, it is important to note that we focus on districts in our analysis and assign the number of violent attacks (number of days with violent attacks) in the district to the refugees living in it at the time of the survey; we do not focus on the personal experience of violence and do not have a direct measure of exposure to ethnic violence. Additional limitations resulting from the SOEP data need to be considered as the answers given in the SOEP survey might suffer from response and selection biases. While all three attitudinal measures paint a very positive picture, they might be confounded through a social desirability bias and the interviewed refugees might not be representative for the whole refugee population in Germany even if they are randomly chosen. Also, as the SOEP survey version we use only includes two waves, we cannot disentangle the causal relationships between our dependent variables of feeling welcome, worrying about xenophobia, and feeling safe in one's neighbourhood. Notwithstanding these limitations, we find robust and notable

effects of ethnic violence at the district level on the perception of Germany of refugees who immigrated during the 2010s refugee migration.

Future research needs to further explore the mechanisms behind the negative effect of ethnic violence. As the refugees taking part in the SOEP continue being surveyed, this longitudinal data will allow for a better identification of causal relationships and more fine-grained analyses. Also, micro-level analyses are needed that can clarify the exact mechanisms linking experiences of violence and refugees' attitudes. Such data would include information on whether a refugee has experienced violence in the host country. While we provide first results for the effect of ethnic violence on the perception of Germany and make use of the variation across different districts, future research needs to expand the analysis to other nations. This will help to clarify how robust the effects of ethnic violence are across various national contexts and how the perception of different host countries is affected by local circumstances. This is crucial because contexts of ethnic violence can affect refugees' sense of belonging related to the host country and knowing what weakens this type of rejection-identification link can help to promote refugee integration into host societies and communities. With focusing on Germany, we have analysed refugees which have arrived in a country within the European Union where they want to stay. Future research should not only explore the effects of ethnic violence in other host countries but can also focus on the very different realities of refugees when arriving in a country at the border of the European Union and when transiting through other nations in the EU. This will shed more light on not only the integration process in the host country, but the experiences during forced migration as a whole.

Disclosure Statement

The authors report there are no competing interests to declare.

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Appendix

The main models from the text are shown below in Table A0 (empty models), Tables A1 and A2 (including all observations) and Tables A3 and A4 (excluding the bottom and top one per cent of observations regarding the level of their attack rate).

Table A0: Empty models

	Welcomeness Model A0 1	**Xenophobia Model A0 2**	**Safety Model A0 3**
Constant	1.823*** (32.49)	-1.038*** (-19.22)	1.865*** (20.79)
Var Constant	0.296*** (4.39)	0.410*** (5.57)	0.639*** (4.92)
N	6892	6770	4085
AIC	5702.0	7578.1	3512.1
BIC	5715.6	7591.7	3524.7
LL	-2849.0	-3787.1	-1754.0

Notes: z statistics in parentheses; + p<0.10, * p<0.05, ** p<0.01, *** p<0.001.

Table A1: Main models for personal attack rate

	Welcomeness Model A1 1.1	**Model A1 1.2**	**Xenophobia Model A1 2.1**	**Model A1 2.2**	**Safety Model A1 3.1**	**Model A1 3.1**
Personal attack rate (log, cent.)	-2.494* (-2.29)	-2.743+ (-1.87)	3.140*** (3.52)	-1.140 (-0.99)	-3.399* (-2.14)	-0.0751 (-0.04)
Population (log, cent.)		0.0742 (0.99)		-0.147+ (-1.83)		-0.150 (-0.98)
Urbanisation (ref: large cities)						
Urban areas		0.0815 (0.62)		-0.224 (-1.41)		0.125 (0.53)
Rural areas densely populated		0.247 (1.38)		-0.0447 (-0.25)		0.0598 (0.23)
Rural areas sparsely populated		0.187 (0.88)		-0.196 (-0.99)		0.134 (0.48)
East Germany (ref: West)		-0.115 (-0.60)		0.846*** (4.70)		-0.657** (-2.84)
Survey Year 2017 (ref: 2016)		0.0855 (0.65)		-0.0675 (-0.61)		
Employed (ref: no employment)		0.0555 (0.43)		0.0349 (0.37)		0.145 (0.74)
German language skills (group cent.)		-0.0424** (-2.77)		0.0583*** (4.84)		-0.0202 (-0.98)
Number of new German contacts (group cent.)		0.228*** (5.58)		-0.0533 (-1.57)		0.125* (2.29)

Woman (ref: man)		0.109 (1.33)		0.0452 (0.70)		-0.135 (-1.32)
Age (group cent.)		-0.000140 (-0.03)		-0.00595 (-1.35)		-0.00400 (-0.62)
Age (group cent.) squared		0.00119*** (4.67)		-0.000207 (-0.77)		0.000252 (0.63)
Nationality (ref: European)						
Syrian		-0.393 (-1.63)		-0.547** (-3.11)		0.470+ (1.87)
Afghan		0.278 (1.14)		0.328+ (1.93)		0.156 (0.60)
Iraqi		0.000290 (0.00)		-0.945*** (-5.01)		0.369 (1.60)
Eritrean		0.481 (1.55)		-0.308 (-1.44)		0.327 (1.12)
Other		-0.224 (-1.09)		0.200 (1.21)		-0.101 (-0.39)
Marital status (ref: single/never married)						
Married/civil partnership		0.442*** (4.21)		-0.183+ (-1.90)		0.331** (2.62)
Divorced/widowed		-0.00915 (-0.04)		-0.0768 (-0.29)		0.332 (0.94)
Months in Germany (group cent.)		-0.0138* (-2.40)		0.00905* (2.33)		0.00213 (0.30)
Group accommodation (ref: other accommodation)		-0.301** (-2.85)		-0.0262 (-0.32)		-1.125*** (-9.16)
Asylum application outcome (ref: no decision)						
Recognised refugees		0.338** (3.02)		-0.230* (-2.34)		0.133 (1.05)
Recognised for asylum		0.116 (0.60)		0.266+ (1.72)		0.148 (0.75)
Recognised for protection		-0.255 (-0.96)		0.0847 (0.44)		-0.201 (-0.93)
Rejected, tolerated		-0.331* (-1.97)		0.225 (1.59)		0.202 (0.73)
Rejected, forced to leave		-0.808*** (-4.59)		-0.0472 (-0.29)		0.0430 (0.14)
Constant	1.820*** (33.09)	1.401*** (5.70)	-1.038*** (-20.03)	-0.515* (-2.32)	1.847*** (21.11)	1.742*** (5.78)
Var Constant	0.267*** (4.16)	0.219*** (3.66)	0.361*** (4.93)	0.304*** (3.85)	0.608*** (5.03)	0.528*** (4.85)
N	6892	6892	6770	6770	4085	4085
AIC	5698.4	5533.3	7570.9	7231.3	3509.9	3343.0
BIC	5718.9	5731.6	7591.3	7429.0	3528.9	3519.8
LL	-2846.2	-2737.7	-3782.4	-3586.6	-1752.0	-1643.5

Notes: z statistics in parentheses; + p<0.10, * p<0.05, ** p<0.01, *** p<0.001.

Table A2: Main models for arson attack rate

	Welcomeness		**Xenophobia**		**Safety**	
	Model A2 1.1	**Model A2 1.2**	**Model A2 2.1**	**Model B2 2.2**	**Model A2 3.1**	**Model B2 3.2**
Arson attack rate (log, cent.)	-31.50*** (-3.30)	-33.45** (-3.22)	27.32*** (3.30)	15.54+ (1.77)	-48.22*** (-3.51)	-35.93** (-2.63)
Population (log, cent.)		0.141* (2.01)		-0.157* (-2.00)		-0.108 (-0.72)
Urbanisation (ref: large cities)						
Urban areas		0.172 (1.28)		-0.262 (-1.60)		0.213 (0.91)
Rural areas densely populated		0.311+ (1.73)		-0.0997 (-0.54)		0.159 (0.59)
Rural areas sparsely populated		0.306 (1.43)		-0.243 (-1.22)		0.202 (0.73)
East Germany (ref: West)						-0.514** (-2.68)
		-0.222 (-1.33)		0.688*** (4.97)		
Survey Year 2017 (ref: 2016)		0.0582 (0.46)		-0.0942 (-0.86)		
Employed (ref: no employment)		0.0602 (0.47)		0.0330 (0.34)		0.149 (0.77)
German language skills (group cent.)		-0.0422** (-2.75)		0.0580*** (4.83)		-0.0199 (-0.97)
Number of new German contacts (group cent.)		0.227*** (5.55)		-0.0530 (-1.57)		0.123* (2.26)
Woman (ref: man)		0.109 (1.32)		0.0445 (0.70)		-0.135 (-1.33)
Age (group cent.)		-0.0000230 (-0.00)		-0.00600 (-1.36)		-0.00367 (-0.57)
Age (group cent.) squared		0.00119*** (4.64)		-0.000205 (-0.76)		0.000232 (0.59)
Nationality (ref: European)						
Syrian		-0.408+ (-1.69)		-0.540** (-3.04)		0.455+ (1.82)
Afghan		0.261 (1.07)		0.332+ (1.94)		0.149 (0.58)
Iraqi		-0.00866 (-0.04)		-0.946*** (-4.98)		0.364 (1.58)
Eritrean		0.456 (1.47)		-0.294 (-1.37)		0.303 (1.04)

Other		-0.242 (-1.18)		0.205 (1.23)		-0.117 (-0.46)
Marital status (ref: single/never married)						
Married/civil partnership		0.435*** (4.18)		-0.182+ (-1.89)		0.326** (2.58)
Divorced/widowed		-0.0144 (-0.06)		-0.0748 (-0.28)		0.321 (0.91)
Months in Germany (group cent.)		-0.0140* (-2.43)		0.00907* (2.32)		0.00218 (0.31)
Group accommodation (ref: other accommodation)		-0.313** (-2.94)		-0.0210 (-0.26)		-1.128*** (-9.20)
Asylum application outcome (ref: no decision)						
Recognised refugees		0.336** (3.02)		-0.230* (-2.35)		0.130 (1.03)
Recognised for asylum		0.103 (0.53)		0.268+ (1.74)		0.144 (0.73)
Recognised for protection		-0.257 (-0.96)		0.0800 (0.41)		-0.199 (-0.92)
Rejected, tolerated		-0.317+ (-1.88)		0.221 (1.57)		0.209 (0.74)
Rejected, forced to leave		-0.798*** (-4.54)		-0.0447 (-0.27)		0.0418 (0.14)
Constant	1.824*** (33.41)	1.404*** (5.64)	-1.042*** (-19.59)	-0.455* (-2.02)	1.858*** (21.16)	1.675*** (5.61)
Var Constant	0.255*** (4.03)	0.200*** (3.43)	0.388*** (5.22)	0.298*** (3.75)	0.565*** (4.74)	0.492*** (4.72)
N	6892	6892	6770	6770	4085	4085
AIC	5694.6	5527.4	7573.3	7229.9	3504.1	3338.0
BIC	5715.1	5725.7	7593.7	7427.6	3523.1	3514.8
LL	-2844.3	-2734.7	-3783.6	-3585.9	-1749.1	-1641.0

Notes: z statistics in parentheses; + p<0.10, * p<0.05, ** p<0.01, *** p<0.001.

Table A3: Main models for personal attack rate excluding the bottom and top one per cent of observations regarding the level of their personal attack rate.

	Welcomeness		**Xenophobia**		**Safety**	
	Model A3 1.1	**Model A3 1.2**	**Model A3 2.1**	**Model A3 2.2**	**Model A3 3.1**	**Model A3 3.2**
Personal attack rate (log, cent.)	-1.848 (-1.18)	-1.606 (-0.84)	3.899** (2.70)	-1.404 (-0.78)	-6.021** (-2.73)	-1.955 (-0.69)
Population (log, cent.)		0.0849 (1.09)		-0.143+ (-1.70)		-0.167 (-1.07)
Urbanisation (ref: large cities)						
Urban areas		0.0602 (0.45)		-0.187 (-1.15)		0.0456 (0.20)

Rural areas densely populated	0.211 (1.13)	0.0135 (0.07)	-0.0219 (-0.08)
Rural areas sparsely populated	0.123 (0.54)	-0.144 (-0.69)	0.158 (0.57)
East Germany (ref: West)	-0.158 (-0.80)	0.849*** (4.45)	-0.610* (-2.46)
Survey Year 2017 (ref: 2016)	0.0513 (0.39)	-0.0523 (-0.46)	
Employed (ref: no employment)	0.0420 (0.32)	0.00931 (0.10)	0.137 (0.70)
German language skills (group cent.)	-0.0422** (-2.73)	0.0590*** (4.85)	-0.0191 (-0.91)
Number of new German contacts (group cent.)	0.239*** (5.74)	-0.0577+ (-1.68)	0.131* (2.37)
Woman (ref: man)	0.115 (1.36)	0.0221 (0.34)	-0.145 (-1.42)
Age (group cent.)	-0.000130 (-0.03)	-0.00669 (-1.48)	-0.00319 (-0.48)
Age (group cent.) squared	0.00113*** (4.44)	-0.000238 (-0.85)	0.000354 (0.86)
Nationality (ref: European)			
Syrian	-0.349 (-1.45)	-0.521** (-2.85)	0.487+ (1.91)
Afghan	0.305 (1.25)	0.382* (2.18)	0.152 (0.58)
Iraqi	0.0478 (0.20)	-0.968*** (-4.92)	0.367 (1.56)
Eritrean	0.493 (1.59)	-0.303 (-1.37)	0.315 (1.07)
Other	-0.202 (-0.99)	0.200 (1.16)	-0.0899 (-0.35)
Marital status (ref: single/never married)			
Married/civil partnership	0.434*** (4.02)	-0.183+ (-1.83)	0.337** (2.63)
Divorced/widowed	-0.0150 (-0.06)	-0.0778 (-0.29)	0.322 (0.91)
Months in Germany (group cent.)	-0.0131* (-2.25)	0.00918* (2.31)	0.00198 (0.28)
Group accommodation (ref: other accommodation)	-0.280** (-2.63)	-0.0280 (-0.34)	-1.135*** (-9.15)
Asylum application outcome (ref: no decision)			
Recognised refugees	0.357** (3.11)	-0.241* (-2.40)	0.129 (1.00)
Recognised for asylum	0.0980 (0.50)	0.241 (1.51)	0.110 (0.55)
Recognised for protection	-0.270 (-1.01)	0.0930 (0.48)	-0.216 (-1.00)
Rejected, tolerated	-0.343* (-2.04)	0.221 (1.51)	0.189 (0.68)

Rejected, forced to leave		-0.799*** (-4.53)		-0.0503 (-0.30)		0.0337 (0.11)
Constant	1.825*** (32.03)	1.418*** (5.62)	-1.040*** (-19.63)	-0.559* (-2.45)	1.822*** (20.76)	1.762*** (5.83)
Var Constant	0.271*** (4.03)	0.221*** (3.54)	0.372*** (4.83)	0.317*** (3.85)	0.564*** (4.93)	0.494*** (4.86)
N	6719	6719	6600	6600	3997	3997
AIC	5539.0	5378.3	7348.4	7009.2	3436.7	3269.5
BIC	5559.5	5575.8	7368.8	7206.3	3455.6	3445.7
LL	-2766.5	-2660.1	-3671.2	-3475.6	-1715.4	-1606.7

Notes: z statistics in parentheses; + p<0.10, * p<0.05, ** p<0.01, *** p<0.001.

Table A4: Main models for arson attack rate excluding the bottom and top one per cent of observations regarding the level of their arson attack rate.

	Welcomeness		**Xenophobia**		**Safety**	
	Model A4 1.1	**Model A4 1.2**	**Model A4 2.1**	**Model A4 2.2**	**Model A4 3.1**	**Model A4 3.2**
Arson attack rate (log, cent.)	-46.17* (-2.23)	-67.01** (-2.58)	36.98+ (1.76)	-12.46 (-0.48)	-16.21 (-0.46)	23.91 (0.49)
Population (log, cent.)		0.0644 (0.53)		-0.122 (-1.20)		-0.128 (-0.52)
Urbanisation (ref: large cities)						
Urban areas		0.0339 (0.17)		-0.262 (-1.60)		0.213 (0.91)
Rural areas densely populated		0.577 (1.64)		0.238 (0.98)		-0.221 (-0.56)
Rural areas sparsely populated		0.579+ (1.69)		0.191 (0.65)		-0.451 (-0.80)
East Germany (ref: West)		-0.278 (-1.07)		0.275 (1.01)		-0.131 (-0.30)
Survey Year 2017 (ref: 2016)		-0.188 (-1.01)		0.978*** (5.03)		-0.917** (-2.93)
Employed (ref: no employment)		0.198 (1.02)		-0.0116 (-0.08)		
German language skills (group cent.)		-0.0431+ (-1.71)		0.109 (0.82)		-0.250 (-0.83)
Number of new German contacts (group cent.)		0.240*** (3.69)		0.0634*** (3.65)		-0.0234 (-0.76)
Woman (ref: man)		0.123 (0.94)		-0.0514 (-0.92)		0.116+ (1.69)
Age (group cent.)		0.00121 (0.17)		-0.0250 (-0.26)		-0.159 (-1.08)
Age (group cent.) squared		0.00162*** (4.25)		-0.00352 (-0.58)		0.00444 (0.47)
Nationality (ref: European)						

Syrian		-0.351 (-0.90)		-0.603* (-2.03)		1.060** (3.17)
Afghan		0.325 (0.85)		0.375 (1.28)		0.471 (1.31)
Iraqi		0.0890 (0.25)		-1.079*** (-3.56)		0.692* (2.27)
Eritrean		1.220* (2.38)		-0.586 (-1.49)		0.396 (0.66)
Other		-0.145 (-0.44)		0.0324 (0.12)		0.159 (0.43)
Marital status (ref: single/never married)						
Married/civil partnership		0.435** (2.75)		-0.141 (-1.03)		0.107 (0.53)
Divorced/widowed		-0.165 (-0.50)		-0.424 (-1.12)		0.679 (1.12)
Months in Germany (group cent.)		-0.0187* (-2.21)		0.0114* (2.07)		0.0127 (1.29)
Group accommodation (ref: other accommodation)		-0.245 (-1.46)		-0.0290 (-0.27)		-1.181*** (-6.51)
Asylum application outcome (ref: no decision)						
Recognised refugees		0.507** (2.85)		-0.289* (-2.17)		-0.0644 (-0.35)
Recognised for asylum		0.0697 (0.21)		0.605* (2.21)		-0.126 (-0.49)
Recognised for protection		-0.0578 (-0.17)		-0.0150 (-0.06)		-0.401 (-1.22)
Rejected, tolerated		0.0493 (0.20)		0.353 (1.64)		0.564 (1.31)
Rejected, forced to leave		-0.748** (-2.77)		0.00485 (0.02)		0.290 (0.71)
Constant	1.917*** (18.22)	1.380*** (3.40)	-1.105*** (-8.52)	-0.674+ (-1.77)	1.694*** (9.13)	1.910*** (4.25)
Var Constant	0.233* (2.13)	0.157 (1.41)	0.471*** (4.07)	0.301** (3.26)	0.614** (2.80)	0.604** (2.90)
N	3046	3046	3006	3006	1635	1635
AIC	2628.7	2553.2	3398.8	3225.9	1565.4	1499.2
BIC	2646.7	2727.8	3416.8	3400.2	1581.6	1650.4
LL	-1311.3	-1247.6	-1696.4	-1584.0	-779.7	-721.6

Notes: z statistics in parentheses; + p<0.10, * p<0.05, ** p<0.01, *** p<0.001.