

Suffering and prejudice: do negative emotions predict immigration concerns?

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Supplementary material

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Appendix A Known determinants of immigration concerns

Why should one care about citizens' immigration concerns? In answering this question, existing research discusses real-life implications of citizens' immigration attitudes. Citizens' disapproval of immigration can lead to ethnic discrimination in the labor market and hinder immigrants' integration in the host country (Carlsson & Eriksson, 2017; Constant et al., 2009) and, ultimately, their well-being (Angelini et al., 2015). Gorinas & Pytliková (2017) hypothesize that such hindrances increase immigration costs, making immigration unappealing and reducing future immigration flows to the country (also see Mayda, 2006, p. 512). More directly, researchers show that the rise of anti-immigration hostility and far-right politics is detrimental to immigrants' social assimilation and well-being in the host country (Knabe et al., 2013; Deole, 2019). More generally, the anti-immigration backlash induced in the aftermath of Islamist terror attacks is shown to adversely affect the socio-economic assimilation of Islamic immigrants in the host country (Gould & Klor, 2016; Elsayed & de Grip, 2018). Consequently, understanding the triggers of immigration concerns can be deemed essential for their disparate adverse socio-economic effects.

In this appendix, we list the known determinants of individuals' opposition to international migration. Extensive social science research investigates determinants of citizens' immigration concerns. A sizeable majority of this research consists of correlation studies that list individual-level characteristics and macroeconomic indicators associated with citizens' immigration concerns. This strand of the literature proposes many theories indicating various threats natives perceive about immigration, helping us explain their various concerns about international migration. First, citizens worry that immigrants increase the job competition in the labor market (i.e., fear of job loss), adversely affecting their labor market outcomes (O'Rourke & Sinnott, 2006; Ortega & Polavieja, 2012). Furthermore, researchers indicate that the impact of immigration on labor market concerns is heterogeneous across natives' education/skill levels, showing more notable increases in labor market concerns among those with lower education/skill levels (Card et al., 2005; Hainmueller & Hiscox, 2007; Huber & Oberdabernig, 2016; Mayda, 2006; Scheve & Slaughter, 2001; Pryce, 2018). Second, researchers consider that natives are generally worried about the state of the welfare system in their country and are concerned that immigrants may be taking more than what they contribute to the system. Previous research shows that natives' welfare concerns are associated with their immigration concerns (Facchini & Mayda, 2009), and also predict their voting behaviors (Edo et al., 2019). Others show that natives' other worries may also carry over to determine their immigration concerns, e.g., worries about their financial situation (Tucci, 2005), and crime (Nunziata, 2015). Finally, in contrast to the first two theories, researchers propose that natives' intergroup contact with immigrants reduces their general

opposition to immigration (Enos, 2014; Janmaat, 2014; Laurence & Bentley, 2016), a hypothesis otherwise known as the *contact hypothesis*.

Many economists investigate the *causal* role of citizens' various characteristics in explaining their immigration concerns and find that citizens' education (d'Hombres & Nunziata, 2016; Finseraas et al., 2018; Cavaille & Marshall, 2019; Margaryan et al., 2021) and labor market concerns (Haaland & Roth, 2020) impact immigration concerns. Others show natives' increased exposure and general contact with immigrants (Bursztyn et al., 2021; Hangartner et al., 2019), particularly in the aftermath of the *2015 European refugee crisis* (Deole & Huang, 2024; Sola, 2018), as relevant determinants. Moreover, many macroeconomic indicators are also listed as known predictors of citizens' immigration concerns, including the country's immigrant population share (Dustmann & Preston, 2001; Davis & Deole, 2021), GDP per capita (Mayda, 2006), unemployment rate (Wilkes et al., 2008; Davis & Deole, 2021), immigration policy (Bauer et al., 2000), and communist legacy (Carl, 2018).

Beyond objective characteristics, new research investigates the role of individuals' subjective variables. For example, Poutvaara & Steinhardt (2018) find that individuals' sense of bitterness is associated with heightened immigration concerns and support for the extreme right. Gallego & Pardos-Prado (2014) highlight the pertinence of individuals' *Big Five* personality traits and find that pro-immigration attitudes are positively correlated with individuals' *agreeableness* and are negatively correlated with their *neuroticism* (also, see Dinesen et al., 2016). Dustmann & Preston (2007) suggest that natives' racial prejudice is an essential component of their immigration attitudes, especially their attitudes towards immigration from countries with ethnically different populations. Jeong (2013) employs American data and finds that citizens' patriotism, measured in their self-reported feelings of nationalism, national identity, and national pride, is intimately associated with how they perceive immigration.

Moreover, researchers underline the pertinence of life-changing and emotion-inducing events in generating anti-immigration views. Using data from Germany and Britain, Oswald & Powdthavee (2010) show that having sons leads people to favor right-wing parties. Others find that Islamist terror events induce anti-immigration views among the natives (Finseraas et al., 2011; Schüller, 2016) and reduce worries concerning xenophobic hostility in their surroundings (Schüller, 2016).

Appendix B Negative emotion index

The *principal component analysis* uses an orthogonal transformation to transform different variables that are correlated with each other into a number of uncorrelated principal components, and the first principal component has the largest variation available of the original variables in the sample (Kalfa & Piracha, 2018). In our analysis, we exploit anger, fear, and sadness to construct the PCA index, i.e., *NE index*.

Our estimation sample has a panel data structure. However, directly applying PCA to the dataset does not consider the panel structure feature. Following the strategy applied in Kalfa & Piracha (2018), we calculate the principal components for each year. After that we merge for each person the first components from different years together. Table B-1 shows the eigenvalues and the cumulative proportion from 2007 to 2019. It is obvious that in each year the first component can explain about 60% of the total variation available and it is less likely that information from one specific year would drive the estimation results.

TABLE B-1: **Eigenvalues and cumulative proportion**

	2007		2008		2009		2010	
	Eigenvalue	Cumulative proportion	Eigenvalue	Cumulative proportion	Eigenvalue	Cumulative proportion	Eigenvalue	Cumulative proportion
Component 1	1.8113	0.6038	1.8145	0.6048	1.8030	0.6010	1.7941	0.5980
Component 2	0.7024	0.8379	0.7013	0.8386	0.6992	0.8341	0.7144	0.8361
Component 3	0.4863	1.0000	0.4842	1.0000	0.4978	1.0000	0.4916	1.0000
	2011		2012		2013		2014	
	Eigenvalue	Cumulative proportion	Eigenvalue	Cumulative proportion	Eigenvalue	Cumulative proportion	Eigenvalue	Cumulative proportion
Component 1	1.8326	0.6109	1.8016	0.6005	1.8377	0.6126	1.8120	0.6040
Component 2	0.6752	0.8359	0.7055	0.8357	0.6725	0.8367	0.6777	0.8299
Component 3	0.4922	1.0000	0.4929	1.0000	0.4898	1.0000	0.5104	1.0000
	2015		2016		2017		2018	
	Eigenvalue	Cumulative proportion	Eigenvalue	Cumulative proportion	Eigenvalue	Cumulative proportion	Eigenvalue	Cumulative proportion
Component 1	1.8043	0.6014	1.8195	0.6065	1.7978	0.5993	1.8021	0.6007
Component 2	0.6873	0.8305	0.6658	0.8284	0.6870	0.8282	0.6832	0.8284
Component 3	0.5084	1.0000	0.5147	1.0000	0.5153	1.0000	0.5147	1.0000
	2019							
	Eigenvalue	Cumulative proportion						
Component 1	1.8349	0.6116						
Component 2	0.6696	0.8348						
Component 3	0.4955	1.0000						

Notes: This table shows the eigenvalues and the cumulative proportion for each year from 2007 to 2019 when we generate the *NE index* using *anger*, *fear*, and *sadness*.

Table B-2 reports the eigenvectors obtained for the first principal component in each year. For instance, the first principal component used as a proxy for negative emotions in year 2007 can be represented as the

following equation:

$$NE\ index_{2007} = 0.5201\ Anger_{2007} + 0.5957\ Fear_{2007} + 0.6120\ Sadness_{2007}.$$

$NE\ index_{2007}$ is a function of the corresponding three eigenvectors in that year. The $NE\ index$ for other years can be obtained in the same way.

TABLE B-2: **The first principal component (eigenvectors)**

	2007	2008	2009	2010	2011	2012	
Anger	0.5201	0.5203	0.5235	0.5168	0.5311	0.5194	
Fear	0.5957	0.5952	0.5957	0.5964	0.5926	0.5985	
Sadness	0.6120	0.6124	0.6092	0.6142	0.6056	0.6099	
	2013	2014	2015	2016	2017	2018	2019
Anger	0.5320	0.5345	0.5318	0.5392	0.5309	0.5336	0.5334
Fear	0.5911	0.5909	0.5898	0.5902	0.5994	0.5913	0.5927
Sadness	0.6063	0.6042	0.6078	0.6008	0.5991	0.6047	0.6035

Notes: This table shows the eigenvectors for the first principal component from 2007 to 2019.

Appendix C Additional checks

TABLE C-1: Adding covariates to the model step by step (OLS & FE estimates)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	OLS					FE				
Panel (A): Anger										
Anger	0.063*** (0.002)	0.078*** (0.002)	0.072*** (0.002)	0.073*** (0.002)	0.073*** (0.002)	0.008*** (0.002)	0.016*** (0.002)	0.016*** (0.002)	0.015*** (0.002)	0.013*** (0.002)
Panel (B): Fear										
Fear	0.063*** (0.002)	0.061*** (0.002)	0.054*** (0.002)	0.054*** (0.002)	0.053*** (0.002)	0.013*** (0.002)	0.011*** (0.002)	0.011*** (0.002)	0.011*** (0.002)	0.008*** (0.002)
Panel (C): Sadness										
Sadness	0.062*** (0.002)	0.060*** (0.002)	0.048*** (0.002)	0.049*** (0.002)	0.051*** (0.002)	0.006*** (0.002)	0.007*** (0.002)	0.007*** (0.002)	0.007*** (0.002)	0.008*** (0.002)
Demographic characteristics	no	Yes	Yes	Yes	Yes	no	Yes	Yes	Yes	Yes
Labor market characteristics	no	no	Yes	Yes	Yes	no	no	Yes	Yes	Yes
State-level covariates	no	no	no	Yes	Yes	no	no	no	Yes	Yes
month/year/state fixed effects	no	no	no	no	Yes	no	no	no	no	Yes
Observations						266,241				
Number of respondents						42,575				

Notes: In this table we show the association between immigration concerns and negative emotions for the whole sample. OLS estimates are depicted in columns (1)–(5) and FE estimates in columns (6)–(10). In columns (1) and (6), we do not have any covariates in the regression model. In columns (2) and (7), we include to the model respondents' age, living in the rural/urban area, being female, and being married. In columns (3) and (8), we additionally control for individuals' education, working experience, and their labor market status. In columns (4) and (9), we add state-level covariates to the specification. Finally, in columns (5) and (10), we control for month fixed effects, year fixed effects and state fixed effects. Robust standard errors (clustered at individual level) in parentheses: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

TABLE C-2: Negative emotions (lagged) and immigration concerns

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	OLS	FE	OLS	FE	OLS	FE	OLS	FE
Panel (A): All								
a. Anger (lagged)	0.067*** (0.002)	0.003** (0.002)						
b. Fear (lagged)			0.048*** (0.003)	-0.000 (0.002)				
c. Sadness (lagged)					0.044*** (0.002)	-0.003** (0.002)		
d. NE index (lagged)							0.050*** (0.002)	-0.000 (0.001)
Observations					217,983			
Number of respondents					42,102			
Panel (B): Females								
a. Anger (lagged)	0.061*** (0.003)	0.003 (0.002)						
b. Fear (lagged)			0.047*** (0.003)	0.001 (0.002)				
c. Sadness (lagged)					0.045*** (0.003)	-0.002 (0.002)		
d. NE index (lagged)							0.048*** (0.002)	0.000 (0.002)
Observations					116,724			
Number of respondents					22,425			
Panel (C): Males								
a. Anger (lagged)	0.072*** (0.004)	0.004 (0.003)						
b. Fear (lagged)			0.050*** (0.004)	-0.001 (0.003)				
c. Sadness (lagged)					0.041*** (0.004)	-0.005* (0.003)		
d. NE index (lagged)							0.053*** (0.003)	-0.001 (0.002)
Observations					101,259			
Number of respondents					19,677			

Notes: This table shows the correlation between lagged negative emotions and immigration concerns in Germany. Negative emotions are measured by anger, fear, sadness, and the *NE index*, lagged by one year. OLS estimates are shown in odd-number columns and FE estimates in even-number columns. Panel (A) shows the results for the whole sample, Panel (B) for females, and Panel (C) for males. All covariates are the same as in the baseline regression in Table 2. Robust standard errors (clustered at individual level) in parentheses: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

TABLE C-3: Negative emotions as categorical variables

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable: Immigration concerns						
Negative emotions:	Anger		Fear		Sadness	
	OLS	FE	OLS	FE	OLS	FE
Panel (A): All						
Rarely	0.044*** (0.007)	0.009* (0.005)	0.064*** (0.004)	0.013*** (0.003)	0.044*** (0.005)	0.009*** (0.003)
Sometimes	0.115*** (0.007)	0.022*** (0.005)	0.109*** (0.006)	0.019*** (0.004)	0.090*** (0.006)	0.019*** (0.004)
Often	0.205*** (0.008)	0.036*** (0.006)	0.153*** (0.009)	0.023*** (0.006)	0.156*** (0.008)	0.027*** (0.005)
Very often	0.295*** (0.011)	0.051*** (0.008)	0.202*** (0.015)	0.025** (0.011)	0.210*** (0.012)	0.019** (0.009)
Observations	266,241					
Number of respondents	42,575					
Panel (B): Females						
Rarely	0.049*** (0.009)	0.011* (0.006)	0.067*** (0.006)	0.020*** (0.004)	0.042*** (0.007)	0.015*** (0.005)
Sometimes	0.108*** (0.010)	0.023*** (0.007)	0.112*** (0.008)	0.028*** (0.005)	0.087*** (0.008)	0.022*** (0.006)
Often	0.191*** (0.011)	0.035*** (0.008)	0.157*** (0.010)	0.029*** (0.007)	0.157*** (0.010)	0.029*** (0.007)
Very often	0.266*** (0.015)	0.040*** (0.010)	0.197*** (0.017)	0.037*** (0.013)	0.208*** (0.015)	0.020* (0.010)
Observations	142,478					
Number of respondents	22,658					
Panel (C): Males						
Rarely	0.039*** (0.010)	0.005 (0.006)	0.061*** (0.007)	0.006 (0.004)	0.043*** (0.007)	0.005 (0.005)
Sometimes	0.120*** (0.010)	0.021*** (0.007)	0.110*** (0.009)	0.009 (0.007)	0.094*** (0.008)	0.017*** (0.006)
Often	0.220*** (0.012)	0.039*** (0.008)	0.149*** (0.015)	0.017 (0.011)	0.149*** (0.013)	0.026*** (0.009)
Very often	0.332*** (0.018)	0.070*** (0.012)	0.216*** (0.030)	0.003 (0.024)	0.205*** (0.023)	0.025 (0.017)
Observations	123,763					
Number of respondents	19,917					

Notes: In this table we show the effect of anger, fear, and sadness on immigration concerns in columns (1)–(2), (3)–(4), and (5)–(6), respectively. Negative emotion frequencies are measured with categorical variables. For each emotion, the reference group are individuals who reported “*very rare*”. OLS estimates are shown in columns (1), (3), and (5), and FE estimates in columns (2), (4), and (6). Panel (A) depicts results for the whole sample, Panel (B) for females, and Panel (C) for males. All covariates are the same as in the baseline regression in Table 2. Robust standard errors (clustered at individual level) in parentheses: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

TABLE C-4: **Alternative indexes for negative emotions**

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable: Immigration concerns						
Negative emotions:	Scale average			Scale sum		
	OLS	FE	IV FE	OLS	FE	IV FE
Panel (A): All						
negative emotions	0.098*** (0.003)	0.019*** (0.002)	0.067 (0.057)	0.033*** (0.001)	0.006*** (0.001)	0.022 (0.019)
<i>First stage</i>						
death of a parent			0.132*** (0.008)			0.396*** (0.025)
Effective F statistic			243.443			243.443
Observations			266,241			
Number of respondents			42,575			
Panel (B): Females						
negative emotions	0.092*** (0.004)	0.019*** (0.003)	0.143** (0.065)	0.031*** (0.001)	0.006*** (0.001)	0.048** (0.022)
<i>First stage</i>						
death of a parent			0.158*** (0.012)			0.474*** (0.036)
Effective F statistic			170.023			170.023
Observations			142,478			
Number of respondents			22,658			
Panel (C): Males						
negative emotions	0.105*** (0.005)	0.020*** (0.004)	-0.085 (0.114)	0.035*** (0.002)	0.007*** (0.001)	-0.028 (0.038)
<i>First stage</i>						
death of a parent			0.101*** (0.012)			0.302*** (0.035)
Effective F statistic			76.170			76.170
Observations			123,763			
Number of respondents			19,917			

Notes: In this table, we show the effect of negative emotions on immigration concerns using different constructions of the NE index. The main explanatory variables include the average (in columns (1)–(3)) and the sum (in columns (4)–(6)) of the three negative emotion scores. OLS estimates are depicted in columns (1) and (4), FE estimates in columns (2) and (5), and IV FE estimates in columns (3) and (6). Panel (A) shows results for the whole sample, Panel (B) for females, and Panel (C) for males. All covariates are the same as in the baseline regression in Table 2. Robust standard errors (clustered at individual level) in parentheses: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

TABLE C-5: Using anger and fear to generate the NE index

	(1) OLS	(2) FE	(3) OLS	(4) FE	(5) OLS	(6) FE
Panel (A): All						
a. PCA (anger & fear)	0.065*** (0.002)	0.012*** (0.001)				
b. Scale average (anger & fear)			0.094*** (0.003)	0.017*** (0.002)		
c. Scale sum (anger & fear)					0.047*** (0.001)	0.009*** (0.001)
Observations			266,241			
Number of respondents			42,575			
Panel (B): Females						
a. PCA (anger & fear)	0.061*** (0.003)	0.012*** (0.002)				
b. Scale average (anger & fear)			0.087*** (0.004)	0.017*** (0.003)		
c. Scale sum (anger & fear)					0.044*** (0.002)	0.009*** (0.001)
Observations			142,478			
Number of respondents			22,658			
Panel (C): Males						
a. PCA (anger & fear)	0.071*** (0.003)	0.012*** (0.002)				
b. Scale average (anger & fear)			0.103*** (0.005)	0.017*** (0.003)		
c. Scale sum (anger & fear)					0.051*** (0.002)	0.009*** (0.002)
Observations			123,763			
Number of respondents			19,917			

Notes: This table shows the correlation between negative emotions and immigration concerns in Germany. The indexes for negative emotions are generated by anger and fear. OLS estimates are shown in odd-number columns and FE estimates in even-number columns. Panel (A) shows the results for the whole sample, Panel (B) for females, and Panel (C) for males. All covariates are the same as in the baseline regression in Table 2. Robust standard errors (clustered at individual level) in parentheses: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

TABLE C-6: Being *very* concerned about immigration and negative emotions measured by
Scale average

	(1)	(2)	(3)
	OLS	FE	IV FE
Panel (A): All			
Scale average	0.050*** (0.002)	0.011*** (0.001)	0.046 (0.038)
<i>First stage</i>			
Death of a parent			0.132*** (0.008)
Effective F statistic			243.443
Observations		266,241	
Number of respondents		42,575	
Panel (B): Female			
Scale average	0.049*** (0.002)	0.011*** (0.002)	0.100** (0.045)
<i>First stage</i>			
Death of a parent			0.158*** (0.012)
Effective F statistic			170.023
Observations		142,478	
Number of respondents		22,658	
Panel (C): Male			
Scale average	0.051*** (0.003)	0.011*** (0.002)	-0.061 (0.073)
<i>First stage</i>			
Death of a parent			0.101*** (0.012)
Effective F statistic			76.170
Observations		123,763	
Number of respondents		19,917	

Notes: In this table, we show results estimated using the linear probability model of the effect of negative emotions (measured with the scale average method) on being *very* concerned about immigration to Germany (a dummy variable). OLS estimates are depicted in column (1), FE estimates in column (2), and IV FE estimates in column (3). Panel (A) shows results for the whole sample, Panel (B) for females, and Panel (C) for males. All covariates are the same as in the baseline regression in Table 2. Robust standard errors (clustered at individual level) in parentheses: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

TABLE C-7: **Heterogeneous effects: Cohorts and social network (FE estimates)**

	(1)	(2)	(3)	(4)
	Old & Often	Old & Rarely	Young & Often	Young & Rarely
Panel (A): All				
a. Anger	0.010** (0.004)	0.011*** (0.003)	0.016*** (0.005)	0.013* (0.007)
b. Fear	0.008* (0.005)	0.005* (0.003)	0.003 (0.005)	0.002 (0.007)
c. Sadness	0.003 (0.004)	0.006** (0.002)	0.011** (0.005)	0.005 (0.006)
d. NE index	0.008** (0.004)	0.008*** (0.002)	0.011*** (0.004)	0.007 (0.005)
Observations	32,053	96,994	27,078	15,243
Number of respondents	3,146	9,800	3,185	1,630
Panel (B): Female				
FE estimates				
a. Anger	0.011* (0.006)	0.009*** (0.004)	0.009 (0.006)	0.018** (0.009)
b. Fear	0.007 (0.006)	0.008** (0.004)	0.000 (0.006)	0.013 (0.008)
c. Sadness	0.003 (0.006)	0.007** (0.003)	0.005 (0.006)	0.009 (0.008)
d. NE index	0.007 (0.005)	0.009*** (0.003)	0.005 (0.005)	0.014** (0.007)
Observations	16,536	51,512	14,901	8,090
Number of respondents	1,629	5,195	1,743	860
Panel (C): Male				
FE estimates				
a. Anger	0.009 (0.006)	0.013*** (0.004)	0.025*** (0.007)	0.006 (0.010)
b. Fear	0.011 (0.008)	0.001 (0.004)	0.009 (0.009)	-0.018 (0.011)
c. Sadness	0.004 (0.006)	0.004 (0.004)	0.019** (0.008)	0.001 (0.009)
d. NE index	0.009 (0.006)	0.007** (0.003)	0.020*** (0.007)	-0.003 (0.008)
Observations	15,517	45,482	12,177	7,153
Number of respondents	1,517	4,605	1,442	770

Notes: This table shows the FE results of the heterogeneous relationship between negative emotions and immigration concerns by the interaction of cohorts and the social network usage for all respondents in Panel (A), females in Panel (B), and males in Panel (C), respectively. Column (1) shows results for individuals who are old (born in/before 1970) and use the online social network on average often (at least once per month). In column (2) we observe individuals who are old and use the online social network on average rarely. Individuals observed in column (3) are young (born after 1970) and use the online social network on average often. Persons in column (4) are young and use the online social network on average rarely. As the main independent variable, we apply anger, fear, sadness, and the NE index in the corresponding specification. All other covariates are the same as in the baseline regression in Table 2. Robust standard errors (clustered at individual level) in parentheses: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

TABLE C-8: **Other types of concerns**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Terrorism			Crime			Job security		
	OLS	FE	IV FE	OLS	FE	IV FE	OLS	FE	IV FE
Panel (A): Females									
NE index	0.036*** (0.003)	0.008*** (0.002)	0.103** (0.051)	0.052*** (0.002)	0.011*** (0.002)	-0.030 (0.033)	0.086*** (0.003)	0.040*** (0.002)	-0.011 (0.039)
Observations		63,497			142,304			77,868	
Number of respondents		13,713			22,645			14,361	
Panel (B): Males									
NE index	0.033*** (0.003)	0.006** (0.003)	0.053 (0.103)	0.056*** (0.003)	0.011*** (0.002)	0.032 (0.059)	0.110*** (0.003)	0.053*** (0.003)	0.105* (0.063)
Observations		56,667			123,633			76,487	
Number of respondents		12,284			19,906			13,930	

Notes: This table shows the relationship between negative emotions and other types of concerns for females (Panel (A)) and males (Panel (B)), respectively. The outcome variables include concerns about terrorism (columns (1)–(3)), crime (columns (4)–(6)), and job security (columns (7)–(9)). We restrict the sample to working individuals in columns (7)–(9). All covariates are the same as in the baseline regression in Table 2. Robust standard errors (clustered at individual level) in parentheses: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Appendix D Immigration concerns as an ordinal variable

As noted in the paper, our dependent variable is ordinal. However, a one-unit increase in immigration concerns from “*not concerned at all*” to “*somewhat concerned*” may be different from the one-unit change from “*somewhat concerned*” to “*very concerned*”. Therefore, we transform the dependent variable into a binary variable and interpret the results using a Linear Probability model. For this exercise, we generate a new dummy variable that takes the value of one if the respondent is “*very concerned*” about immigration and zero if “*somewhat concerned*” or “*not concerned at all*”. The results shown in Table D-1 indicate that being *very concerned* about immigration is positively associated with a higher frequency of negative emotions. Additionally, in Table D-2, we report estimates obtained using the Probit model. The table presents marginal effects of negative emotions on the likelihood of being *very concerned* about immigration. Since the Probit model cannot control for person fixed effects, following Mundlak (1978), we additionally control for the within-person mean value of all continuous explanatory variables. A broad reading of the results indicates that the main message of the paper holds. In the end, using the original variable for immigration concerns, we estimate the baseline regression with the Ordered Probit model. The marginal effects, shown in Table D-3, suggest that the likelihood of reporting “*very concerned*” increases and the likelihood of reporting “*not concerned at all*” decreases when the value of *NE index* rises. We find similar results when applying other emotion indexes or separately doing regressions for anger, fear, and sadness.

TABLE D-1: Immigrations concerns as a binary outcome variable

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	OLS			FE			IV FE		
	All	Females	Males	All	Females	Males	All	Females	Males
a. Anger	0.041*** (0.001)	0.037*** (0.002)	0.045*** (0.002)	0.008*** (0.001)	0.006*** (0.001)	0.010*** (0.001)			
b. Fear	0.024*** (0.001)	0.026*** (0.002)	0.021*** (0.002)	0.004*** (0.001)	0.006*** (0.001)	0.002 (0.002)			
c. Sadness	0.025*** (0.001)	0.027*** (0.002)	0.022*** (0.002)	0.004*** (0.001)	0.004*** (0.001)	0.003** (0.002)			
d. NE index	0.028*** (0.001)	0.028*** (0.001)	0.029*** (0.002)	0.006*** (0.001)	0.006*** (0.001)	0.006*** (0.001)	0.026 (0.021)	0.056** (0.025)	-0.034 (0.041)
<i>First stage</i>									
Death of a parent							0.236*** (0.015)	0.282*** (0.021)	0.180*** (0.020)
Effective <i>F</i> statistic							256.393	178.464	80.746
Observations	266,241	142,478	123,763	266,241	142,478	123,763	266,241	142,478	123,763
Number of respondents	42,575	22,658	19,917	42,575	22,658	19,917	42,575	22,658	19,917

Notes: In this table we show the effect of negative emotions on being *very* concerned about immigration in Germany. The outcome variable takes the value of one if individuals reported being *very* concerned about immigration, and zero otherwise. OLS estimates are shown in columns (1)–(3), FE estimates in columns (4)–(6), and IV FE estimates in columns (7)–(9). Columns (1), (4), and (7) show the results for the whole sample, columns (2), (5), and (8) for females, and columns (3), (6), and (9) for males. As the main independent variable, we apply anger, fear, sadness, and the NE index in the corresponding specification. All covariates are the same as in the baseline regression of Table 2. Individual fixed effects are controlled for in columns (4)–(9). Robust standard errors (clustered at individual level) in parentheses: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

TABLE D-2: **Probit estimates**

	(1)	(2)	(3)
	All	Females	Males
a. Anger	0.007*** (0.001)	0.006*** (0.001)	0.009*** (0.001)
b. Fear	0.003*** (0.001)	0.005*** (0.001)	0.001 (0.002)
c. Sadness	0.003*** (0.001)	0.004*** (0.001)	0.002 (0.001)
d. NE index	0.005*** (0.001)	0.005*** (0.001)	0.004*** (0.001)
Observations	266,241	142,478	123,763
Number of respondents	42,575	22,658	19,917

Notes: In this table we show the marginal effect of negative emotions on being *very* concerned about immigration in Germany using a probit model. Column (1) shows the results for the whole sample, column (2) for females, and column (3) for males. As the main independent variable, we apply anger, fear, sadness, and the NE index in the corresponding specification. In addition to the covariates used in the baseline regression in Table 2, we further control for the within-person mean value of all continues explanatory variables. Robust standard errors (clustered at individual level) in parentheses: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

TABLE D-3: Ordered Probit estimates

	(1)	(2)	(3)	(4)	(5)	(6)
	All		Females		Males	
	Coeff.	Mar. eff.	Coeff.	Mar. eff.	Coeff.	Mar. eff.
Panel (A): Anger						
Anger	0.032*** (0.004)		0.027*** (0.005)		0.039*** (0.006)	
Not concerned at all		-0.007*** (0.001)		-0.005*** (0.001)		-0.008*** (0.001)
Somewhat concerned		4e-05 (2.93e-05)		-9.8e-05** (3.93e-05)		0.0002*** (6.03e-05)
Very concerned		0.006*** (0.001)		0.006*** (0.0011)		0.008*** (0.001)
Panel (B): Fear						
Fear	0.021*** (0.004)		0.027*** (0.005)		0.011* (0.007)	
Not concerned at all		-0.004*** (0.001)		-0.005*** (0.001)		-0.002* (0.001)
Somewhat concerned		3.05e-05 (1.98e-05)		-9.27e-05** (3.91e-05)		7.3e-05 (4.54e-05)
Very concerned		0.004*** (0.001)		0.006*** (0.001)		0.002* (0.001)
Panel (C): Sadness						
Sadness	0.019*** (0.004)		0.019*** (0.005)		0.020*** (0.006)	
Not concerned at all		-0.004*** (0.001)		-0.004*** (0.001)		-0.004*** (0.001)
Somewhat concerned		3.04e-05* (1.84e-05)		-6.31e-05** (2.94e-05)		0.0001*** (4.64e-05)
Very concerned		0.004*** (0.001)		0.004*** (0.001)		0.004*** (0.001)
Panel (D): NE index						
NE index	0.027*** (0.003)		0.027*** (0.004)		0.027*** (0.005)	
Not concerned at all		-0.005*** (0.001)		-0.005*** (0.001)		-0.006*** (0.001)
Somewhat concerned		3.8e-05 (2.43e-05)		-9.27e-05** (3.7e-05)		0.0002*** (4.75e-05)
Very concerned		0.005*** (0.001)		0.005*** (0.001)		0.005*** (0.001)
Observations	266,241		142,478		123,763	
Number of respondents	42,575		22,658		19,917	

Notes: In this table we show the effect of negative emotions on immigration concerns in Germany using an Ordered Probit model. The main explanatory variables include anger (Panel A), fear (Panel B), sadness (Panel C), and the *NE index* (Panel D). Columns (1)–(2) shows the results for the whole sample, columns (3)–(4) for females, and columns (5)–(6) for males. Marginal effects of negative emotions on different outcome values are depicted in columns (2), (4), and (6). In addition to the covariates used in the baseline regression in Table 2, we further control for the within-person mean value of all continuous explanatory variables. Robust standard errors (clustered at individual level) in parentheses: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Appendix E Robustness of the IV FE strategy

In this appendix, we introduce several robustness checks for the IV FE estimation and present the results.

Discussion on the exclusion restriction

As discussed in subsection 4.2.2, we have tested whether bereavement affects individuals' labor market decisions, affects employed respondents' worries about job security, induces changes in the household income, and increases individuals' worries about their financial situation. Results presented in Table E-1 suggest that the aforementioned channels seem not to exist, which supports the exclusion restriction assumption.

Furthermore, following the strategy in Meier (2022), we test whether experiencing the death of a parent is correlated with predicted negative emotions and expect no correlations. To do this, we first predict the *NE index* by regressing it on several variables using FE models. As stated in Table E-2, column (1) uses the logarithm of household income, dummy variables for individuals' labor market status, and a dummy for being married. Column (2) additionally includes the logarithm of dividend income, the logarithm of income from rental and leasing, the logarithm of housing benefit, the logarithm of losses from capital investment, and the logarithm of losses from renting and leasing. Column (3) additionally includes individuals' worries about their personal financial situation and worries about job security. Column (4) additionally includes variables for satisfaction with health, work, housework, household income, personal income, dwelling, amount of leisure time, and family life. Afterwards, we calculate the correlation between the predicted *NE index* and the death of a parent by controlling for individual, age, year, and month fixed effects. Our results show no significant effects, suggesting that the aforementioned-variables do not change after the death of a parent.

Additional relevant factors

Next, we consider the possibility of additional relevant factors biasing our results. Along with three distinct negative emotions, the SOEP module collected information on individuals' fourth affective well-being variable, i.e., their frequency of feeling happy in the last four weeks. It is highly likely that positive affect (happiness) is negatively correlated with our explanatory variable of interest (negative emotions) and may have a simultaneously independent and negative impact on immigration concerns, potentially positively biasing our baseline estimates. In response, we re-estimate the IV FE specification after including individuals' frequency of experiencing happiness as a covariate (*see* Panel (A) of Table E-3) and confirm

the robustness of the IV FE results.

Second, individuals' religiosity and economic preferences (e.g., risk-taking) are known to be intimately associated with their emotional state (Hainmueller & Hiscox, 2007; Meier, 2022) and may also influence their immigration concerns. While we argue that IV is uncorrelated with such factors and their omission does not bias our IV FE estimates, we re-estimate IV FE specifications after accounting for their distinct associations separately. To account for the respondents' religiosity, we employ the SOEP variable recording their visiting frequency of religious events, a variable ranging from one (*never*) to five (*daily*). The risk-taking measure is the respondents' self-reported willingness to take risks, a variable ranging from zero (*risk averse*) to ten (*fully prepared to take risks*). We confirm that the results (depicted in Panel (B) of Table E-3) are robust to including these covariates. We also re-estimate baseline specification after including year-by-state fixed effects to account for other state-specific time-varying factors, e.g., changing economic and non-economic conditions, simultaneously affecting respondents' emotions and anti-immigration sentiments. The estimated coefficients (shown in Panel (C) of Table E-3) are qualitatively similar to the IV FE estimates reported in subsection 5.4.

Finally, we discuss the role played by mental illnesses in causing or even exacerbating the relationship of interest. As noted earlier, bereavement can induce various mental illnesses, such as depression, anxiety, and bipolar disorder, in the surviving member, which may further prolong or even intensify the negative emotions experienced by the surviving member. If the surviving members were suffering from mental illnesses in the period before the bereavement, then bereavement would likely exacerbate these illnesses, posing a threat to our identification. SOEP provides information on the respondent's mental health (as indicated in the variable labeled as *MCS: Summary Scale Mental (NBS)*). As per SOEP Group (2021), explorative factor analysis (PCA, varimax rotation) is used to calculate mental health. As this information is not collected every year, we employ the information from the previous and the following year and calculate the mean of the two values and replace the missing values for the years the question was not asked. We then re-estimate baseline specification after including the individuals' mental health information as covariates. Results (depicted in Panel (D) of Table E-3) show that our baseline results are virtually unchanged after accounting for individuals' mental health status.

Potential bad controls

Individuals' marital status and labor market status may be influenced by their emotions and then impact on their attitudes towards immigrants. If such channels would exist, the baseline specification may suffer from the bad control problem. Therefore, we now run regressions, excluding the variable for being married

and the dummy variables for labor market status from the model. Results depicted in Table E-4 suggest that our findings hold even if bad controls would exist.

Sample restriction and alternative measures of the death of a parent

Now we address the possibility that our IV disproportionately “excludes” younger respondents from the first-stage estimation as their parents are more likely to be relatively younger and, hence, are less likely to experience timely death than those of older respondents. Unsurprisingly, most bereaving respondents in the estimation sample experienced a parent’s death at 40 years old or above (80%). A consequence of this observation is that younger respondents may be more shocked by parents’ untimely death and may drive our first-stage estimates upwards. At the same time, older individuals may be less shocked by their parent’s death, especially when their parents are much older with relatively deteriorating health. In response, in column (1) of Table E-5 in the appendix, we test whether our baseline results hold if we restrict the sample to those who reported being aged 40 years or above at least once during the sample period. As expected, the first-stage coefficient is smaller in magnitude than baseline results but still statistically significant. More importantly, the second-stage results provide supporting evidence to our baseline results.

Next, we formally consider the anticipation of the parent’s death from respondents, a likely possibility if their health situation worsened and affected the respondent’s negative emotions long before the actual death event. Raw data depicted in Figure 3 provided supporting evidence that this likelihood is minimal and that we do not observe any increase in negative emotions in periods before the actual occurrence of the parent’s death. We assume that the parents’ death deteriorated long before the actual death and generate a dummy variable indicating the 15 months before the month of actual death. We use this dummy indicator as an additional control to the baseline specification and re-estimate the model with the sample used for the analysis in column (1) of Table E-5. We present the results in column (2). We first observe that the baseline first-stage results hold with effective F statistics comfortably above 10. We also note that respondents report increases in the aggregate negative emotions as early as 15 months before the month of their parent’s actual death, but the increase is not statistically significant. We conclude that the increases in negative emotions are more prominent after the parent’s death than before. Notwithstanding, the second-stage results align with baseline findings.

We now employ alternative IV definitions and test the robustness of our main results. In doing so, we address a crucial criticism that baseline IV did not consider the exactness of the date of a parent’s death. The IV variable took the value of one if the respondent reported parent’s death in the current or the last year, which is a rather broad definition ranging anywhere between 0–24 months from the interview month.

Therefore, we now exploit the SOEP information on the exact month of the parent’s death and generate new IVs based on varying windows of periods after the parent’s death. To do this, we divide the sample of bereaving respondents into windows of quartiles of the period after the parent’s death and generate two distinct IVs to denote respondents in the first quartile (0–14 months) and the first two quartiles (0–34 months) of months after bereavement. In other words, the first IV takes the value of one if the interview takes place within 0–14 months since the bereavement and zero otherwise. The second IV takes the value of one if the interview takes place within 0–34 months after the parent’s death and zero otherwise. The results are presented in columns (3)–(4) of Table E-5. Due to missing values in the variable recording exact month of the parent’s death, the number of observations is smaller than the baseline specification. The magnitudes of the first-stage estimates indicate a decreasing trend from the first IV to the second. The second-stage results confirm our baseline results that negative emotions indeed lead individuals to report increased immigration concerns.

Moreover, we focus on the first 0–15 months since the bereavement, a total 16 months period that includes the month in which bereavement occurs (0th month) and 15 months afterward. In addition to capturing the level difference between this period and the reference period, we also consider the marginal effect associated with the number of months since the death. For doing this, we apply a dummy variable for the first 16 months since bereavement and the interaction term between the newly generated dummy variable and the continuous variable indicating the number of months since the death. Results are depicted in column (5) of Table E-5. Evidently, the respondents report increased negative emotions in the post-bereavement period (0–15 months). Moreover, we also observe that their negative emotions gradually decrease as time passes by, indicating individuals’ slow recovery from losing a parent. The second-stage results hold though the significance of the coefficient for females is now 10%.

TABLE E-1: **Potential channels (FE estimates)**

	(1)	(2)	(3)	(4)	(5)
	Non-working	Unemployment	Worries about job security	log(HH income)	Worries about own financial situation
Panel (A): All					
Death of a parent	-0.000 (0.003)	0.000 (0.003)	0.008 (0.008)	-0.005 (0.004)	-0.006 (0.007)
Observations	266,241	171,516	154,355	252,416	265,922
Number of respondents	42,575	30,728	28,291	40,864	42,552
Panel (B): Females					
Death of a parent	0.002 (0.004)	0.000 (0.004)	-0.003 (0.012)	-0.007 (0.005)	-0.010 (0.009)
Observations	142,478	86,515	77,868	134,894	142,284
Number of respondents	22,658	15,617	14,361	21,732	22,644
Panel (C): Males					
Death of a parent	-0.003 (0.004)	0.000 (0.003)	0.020 (0.012)	-0.003 (0.005)	-0.002 (0.010)
Observations	123,763	85,001	76,487	117,522	123,638
Number of respondents	19,917	15,111	13,930	19,132	19,908

Notes: This table shows FE estimates by regressing the variables representing potential channels on the baseline IV variable. Panels (A), (B), and (C) show the results for the whole sample and the female and male subsamples, respectively. In column (1), we employ the entire sample and estimate the likelihood of being non-working (a dummy indicator). In column (2), we restrict the sample to those active in the labor market (working and unemployed) and estimate the likelihood of being unemployed. The results in columns (3) and (5) are estimated using all available information on individuals' worries about job security and own financial situation. And in column (4), we study whether bereavement is associated with individuals' logarithm of monthly household income. All covariates are the same as in the baseline regression of Table 2, except that we omit the dummy variables for different labor market status in columns (1)–(3). Robust standard errors (clustered at the individual level) in parentheses: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

TABLE E-2: **Predicted negative emotions and IV (FE estimates)**

	(1)	(2)	(3)	(4)
<i>Dependent variable</i>	Negative emotions predicted based on fixed effects and: Household income + Asset variables + Financial worries + Satisfaction variables Employment status Being married			
Panel (A): All				
Death of a parent	0.000 (0.001)	0.000 (0.001)	0.000 (0.002)	0.010 (0.006)
Observations	253,396	253,396	153,685	121,244
Number of respondents	41,844	41,844	31,380	27,846
Panel (B): Females				
Death of a parent	0.001 (0.001)	0.001 (0.001)	-0.001 (0.003)	0.013 (0.008)
Observations	135,410	135,410	77,982	66,606
Number of respondents	22,248	22,248	16,149	14,829
Panel (C): Males				
Death of a parent	0.000 (0.001)	0.000 (0.001)	0.003 (0.003)	0.008 (0.009)
Observations	117,986	117,986	75,703	54,638
Number of respondents	19,596	19,596	15,231	13,017

Notes: The table shows the estimated relationship between the *NE index*, predicted based on the covariates indicated in the column headings, and the instrumental variable, the death of a parent. We follow the strategy in Meier (2022). The predicted *NE index* is predicted based on the following covariates: Column (1) uses the logarithm of household income, dummy variables for individuals' labor market status, and a dummy for being married. Column (2) additionally includes the logarithm of dividend income, the logarithm of income from rental and leasing, the logarithm of housing benefit, the logarithm of losses from capital investment, and the logarithm of losses from renting and leasing. Column (3) additionally includes individuals' worries about their personal financial situation and worries about job security. Column (4) additionally includes variables for satisfaction with health, work, housework, household income, personal income, dwelling, amount of leisure time, and family life. All specifications use individual, age, year, and month fixed effects. Robust standard errors (clustered at the individual level) in parentheses: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

TABLE E-3: **Baseline results after accounting for additional covariates**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	OLS			FE			IV FE		
	All	Females	Males	All	Females	Males	All	Females	Males
Panel (A): Happiness									
							<i>Second stage</i>		
NE index	0.057*** (0.002)	0.051*** (0.002)	0.063*** (0.003)	0.011*** (0.001)	0.010*** (0.002)	0.012*** (0.002)	0.041 (0.035)	0.092** (0.043)	-0.048 (0.064)
							<i>First stage</i>		
Death of a parent							0.213*** (0.014)	0.239*** (0.020)	0.177*** (0.020)
Observations	266,241	142,478	123,763	266,241	142,478	123,763	266,241	142,478	123,763
Number of respondents	42,575	22,658	19,917	42,575	22,658	19,917	42,575	22,658	19,917
Effective F statistic	-	-	-	-	-	-	228.858	143.643	81.617
Panel (B): Religiosity & risk preferences									
							<i>Second stage</i>		
NE index	0.056*** (0.002)	0.053*** (0.002)	0.059*** (0.003)	0.009*** (0.001)	0.010*** (0.002)	0.009*** (0.002)	0.031 (0.035)	0.083** (0.038)	-0.080 (0.073)
							<i>First stage</i>		
Death of a parent							0.232*** (0.016)	0.285*** (0.023)	0.168*** (0.022)
Observations	229,940	123,080	106,860	229,940	123,080	106,860	229,940	123,080	106,860
Number of respondents	38,193	20,356	17,837	38,193	20,356	17,837	38,193	20,356	17,837
Effective F statistic	-	-	-	-	-	-	216.008	159.972	60.375
Panel (C): State-by-year fixed effects									
							<i>Second stage</i>		
NE index	0.055*** (0.002)	0.052*** (0.002)	0.059*** (0.003)	0.011*** (0.001)	0.010*** (0.002)	0.011*** (0.002)	0.037 (0.032)	0.080** (0.036)	-0.051 (0.064)
							<i>First stage</i>		
Death of a parent							0.235*** (0.015)	0.282*** (0.021)	0.180*** (0.020)
Observations	266,241	142,478	123,763	266,241	142,478	123,763	266,241	142,478	123,763
Number of respondents	42,575	22,658	19,917	42,575	22,658	19,917	42,575	22,658	19,917
Effective F statistic	-	-	-	-	-	-	254.859	177.925	80.572
Panel (D): Mental health									
							<i>Second stage</i>		
NE index	0.049*** (0.002)	0.045*** (0.002)	0.055*** (0.003)	0.010*** (0.001)	0.010*** (0.002)	0.010*** (0.002)	0.037 (0.037)	0.089** (0.043)	-0.060 (0.071)
							<i>First stage</i>		
Death of a parent							0.204*** (0.014)	0.238*** (0.020)	0.162*** (0.019)
Observations	260,783	139,509	121,274	260,783	139,509	121,274	260,783	139,509	121,274
Number of respondents	42,089	22,414	19,675	42,089	22,414	19,675	42,089	22,414	19,675
Effective F statistic	-	-	-	-	-	-	207.682	136.201	71.591

Notes: In this table we show the effect of negative emotions on immigration concerns in Germany by controlling for further covariates. OLS estimates are shown in columns (1)–(3), FE estimates in columns (4)–(6), and IV FE estimates in columns (7)–(9). Columns (1), (4), and (7) show the results for the whole sample, columns (2), (5), and (8) for females, and columns (3), (6), and (9) for males. All covariates are the same as in the baseline regression of Table 2, except that we apply state-by-year fixed effects instead of state fixed effects and year fixed effects in Panel (C). In Panels (A) and (D), we additionally include individuals' frequency of experiencing happiness and a mental health indicator as control variables, respectively. In Panel (B), we include individuals' frequency of visiting religious events and their self-reported willingness to take risks as controls. Robust standard errors (clustered at individual level) in parentheses: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

TABLE E-4: **Excluding potential bad control variables**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	OLS			FE			IV FE		
	All	Females	Males	All	Females	Males	All	Females	Males
							<i>Second stage</i>		
NE index	0.055*** (0.002)	0.053*** (0.002)	0.059*** (0.003)	0.010*** (0.001)	0.010*** (0.002)	0.011*** (0.002)	0.038 (0.032)	0.080** (0.036)	-0.048 (0.064)
							<i>First stage</i>		
Death of a parent							0.236*** (0.015)	0.283*** (0.021)	0.180*** (0.020)
Observations	266,241	142,478	123,763	266,241	142,478	123,763	266,241	142,478	123,763
Number of respondents				42,575	22,658	19,917	42,575	22,658	19,917
Effective F statistic	-	-	-	-	-	-	256.414	178.611	80.493

Notes: In this table we show the effect of negative emotions on immigration concerns in Germany by excluding potential bad control variables. OLS estimates are shown in columns (1)–(3), FE estimates in columns (4)–(6), and IV FE estimates in columns (7)–(9). Columns (1), (4), and (7) show the results for the whole sample, columns (2), (5), and (8) for females, and columns (3), (6), and (9) for males. All covariates are the same as in the baseline regression of Table 2, except that we exclude the marital status and the labor market status of individuals from the regression model. Robust standard errors (clustered at individual level) in parentheses: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

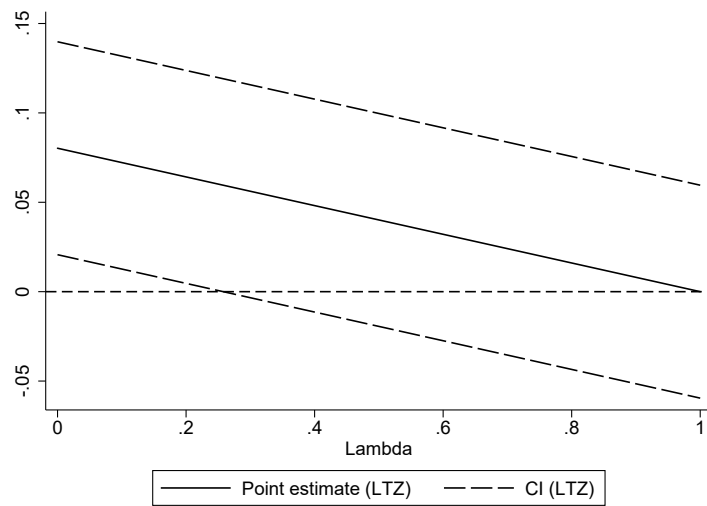
TABLE E-5: **Robustness checks – Alternative IVs (older respondents, IV FE estimates)**

	(1)	(2)	(3)	(4)	(5)
IVs:	death of a parent		First q percent of period after death of a parent		0–15 months after death & # of months to the death
			$q = 25$ (0–14 months)	$q = 50$ (0–34 months)	
Panel (A): All					
NE index	0.054 (0.036)	0.055 (0.038)	0.021 (0.035)	0.046 (0.057)	0.002 (0.027)
<i>First stage</i>					
Death of a parent	0.217*** (0.015)	0.220*** (0.016)			
15 months bf. death		0.022 (0.018)	0.026 (0.018)	0.022 (0.018)	0.027 (0.018)
first $q\%$			0.239*** (0.016)	0.127*** (0.014)	
0–15 months after death (0/1)					0.482*** (0.027)
0–15 months after death (0/1) × # of months since death					-0.034*** (0.003)
Observations	210,143	208,714	208,714	208,714	208,714
Number of pid	30,628	30,474	30,474	30,474	30,474
Effective F statistic	204.832	189.309	213.578	85.941	183.190
Panel (B): Females					
<i>Second stage</i>					
NE index	0.104*** (0.040)	0.117*** (0.043)	0.092** (0.039)	0.169** (0.069)	0.051* (0.031)
<i>First stage</i>					
Death of a parent	0.268*** (0.022)	0.269*** (0.023)			
15 months bf. death		0.032 (0.024)	0.037 (0.024)	0.031 (0.025)	0.038 (0.024)
first $q\%$			0.295*** (0.023)	0.151*** (0.020)	
0–15 months after death (0/1)					0.577*** (0.039)
0–15 months after death (0/1) × # of months since death					-0.040*** (0.004)
Observations	111,969	111,139	111,139	111,139	111,139
Number of respondents	16,209	16,122	16,122	16,122	16,122
Effective F statistic	149.612	136.453	157.898	58.711	127.316
Panel (C): Males					
<i>Second stage</i>					
NE index	-0.049 (0.074)	-0.070 (0.076)	-0.118 (0.073)	-0.167 (0.111)	-0.082 (0.052)
<i>First stage</i>					
Death of a parent	0.158*** (0.021)	0.164*** (0.022)			
15 months bf. death		0.011 (0.025)	0.014 (0.025)	0.013 (0.026)	0.015 (0.025)
first $q\%$			0.176*** (0.022)	0.100*** (0.019)	
0–15 months after death (0/1)					0.376*** (0.037)
0–15 months after death (0/1) × # of months since death					-0.028*** (0.004)
Observations	98,174	97,575	97,575	97,575	97,575
Number of respondents	14,419	14,352	14,352	14,352	14,352
Effective F statistic	59.168	56.370	61.915	29.014	58.994

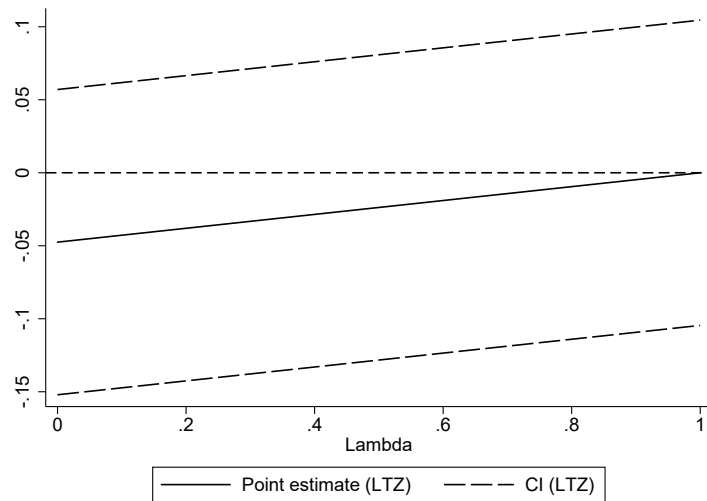
Notes: This table shows results of the impact of *NE index* on immigration concerns for all individuals (Panel A), females (Panel B), and males (Panel C), respectively. The sample is restricted to older respondents who reported being 40 or above at least once during the observation period. The results in columns (1) and (2) are estimated using the baseline IV. In columns (3)–(4), we apply dummy variables for the first 25% and 50% of the period (on and) after bereavement as IVs, respectively. In column (5), we employ two IVs: 1) a dummy representing the first 0–15 months after bereavement, 2) the interaction term between the dummy indicator noted above and the exact number of months since bereavement (a continuous variable). Due to missing information on the exact month of bereavement for some individuals, the number of respondents and observations decreases in columns (2)–(6). All covariates are the same as in the baseline regression in Table 2. In columns (2)–(5), we additionally include the dummy variable for the first 0–15 months after bereavement to the model. Robust standard errors (clustered at individual level) in parentheses: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Appendix F Plausibly exogenous

FIGURE F-1: Instrumental variable analysis: Plausibly exogenous



(a) Females



(b) Males

Notes: We use the Stata command *plausexog* to calculate the point estimate and confidence interval and generate the figures. Λ represents the share of the reduced-form effect of the IV (the death of a parent) on the second-stage outcome (immigration concerns) that is independent of negative emotions. The black line is the point estimate of the *NE index* for different values of Λ . The long-dashed lines depict the 90% confidence intervals if we assume that the variance of the effect of the IV on immigration concerns independent of negative emotions is zero.

References

- Angelini, V., Casi, L., & Corazzini, L. (2015). Life satisfaction of immigrants: Does cultural assimilation matter? *Journal of Population Economics*, 28(3):817–844.
- Bauer, T. K., Lofstrom, M., & Zimmermann, K. F. (2000). Immigration policy, assimilation of immigrants and natives’ sentiments towards immigrants: Evidence from 12 OECD countries. *Swedish Economic Policy Review*, 7:11–53.
- Bursztyn, L., Chaney, T., Hassan, T. A., & Rao, A. (2021). The immigrant next door: Exposure, prejudice, and altruism. NBER Working paper #28448.
- Card, D., Dustmann, C., & Preston, I. (2005). Understanding attitudes to immigration: The migration and minority module of the first European Social Survey. CReAM Discussion Paper Series No 03/05.
- Carl, M. (2018). The effect of Communism on people’s attitudes toward immigration. Available at SSRN: <https://ssrn.com/abstract=3246617>.
- Carlsson, M. & Eriksson, S. (2017). Do attitudes expressed in surveys predict ethnic discrimination? *Ethnic and Racial Studies*, 40(10):1739–1757.
- Cavaille, C. & Marshall, J. (2019). Education and anti-immigration attitudes: Evidence from compulsory schooling reforms across Western Europe. *American Political Science Review*, 113(1):254–263.
- Constant, A. F., Kahanec, M., & Zimmermann, K. F. (2009). Attitudes towards immigrants, other integration barriers, and their veracity. *International Journal of Manpower*, 30(1/2):5–14.
- Davis, L. S. & Deole, S. S. (2021). Refining the salience hypothesis: Does the response to immigration differ across countries? *International Migration*, 59(1):21–37.
- Deole, S. S. (2019). Justice delayed is assimilation denied: Right-wing terror and immigrants’ assimilation in Germany. *Labour Economics*, 59:69–78.
- Deole, S. S. & Huang, Y. (2024). How do new immigration flows affect existing immigrants? Evidence from the refugee crisis in Germany. In Sauer, R. M., editor, *World Scientific Handbook of Global Migration*, volume 1.
- d’Hombres, B. & Nunziata, L. (2016). Wish you were here? Quasi-experimental evidence on the effect of education on self-reported attitude toward immigrants. *European Economic Review*, 90:201–224.

- Dinesen, P. T., Klemmensen, R., & Nørgaard, A. S. (2016). Attitudes toward immigration: The role of personal predispositions. *Political Psychology*, 37(1):55–72.
- Dustmann, C. & Preston, I. (2001). Attitudes to ethnic minorities, ethnic context and location decisions. *Economic Journal*, 111(470):353–373.
- Dustmann, C. & Preston, I. P. (2007). Racial and economic factors in attitudes to immigration. *The B.E. Journal of Economic Analysis & Policy*, 7(1). Article 62.
- Edo, A., Giesing, Y., Öztunc, J., & Poutvaara, P. (2019). Immigration and electoral support for the far-left and the far-right. *European Economic Review*, 115:99–143.
- Elsayed, A. & de Grip, A. (2018). Terrorism and the integration of Muslim immigrants. *Journal of Population Economics*, 31(1):45–67.
- Enos, R. D. (2014). Causal effect of intergroup contact on exclusionary attitudes. *Proceedings of the National Academy of Sciences*, 111(10):3699–3704.
- Facchini, G. & Mayda, A. M. (2009). Does the welfare state affect individual attitudes toward immigrants? evidence across countries. *The Review of Economics and Statistics*, 91(2):295–314.
- Finseraas, H., Jakobsson, N., & Kotsadam, A. (2011). Did the murder of Theo van Gogh change Europeans’ immigration policy preferences? *Kyklos*, 64(3):396–409.
- Finseraas, H., Skorge, Ø. S., & Strøm, M. (2018). Does education affect immigration attitudes? Evidence from an education reform. *Electoral Studies*, 55:131–135.
- Gallego, A. & Pardos-Prado, S. (2014). The big five personality traits and attitudes towards immigrants. *Journal of Ethnic and Migration Studies*, 40(1):79–99.
- Gorinas, C. & Pytliková, M. (2017). The influence of attitudes toward immigrants on international migration. *International Migration Review*, 51(2):416–451.
- Gould, E. D. & Klor, E. F. (2016). The long-run effect of 9/11: Terrorism, backlash, and the assimilation of Muslim immigrants in the West. *The Economic Journal*, 126(597):2064–2114.
- Haaland, I. & Roth, C. (2020). Labor market concerns and support for immigration. *Journal of Public Economics*, 191:104256.

- Hainmueller, J. & Hiscox, M. J. (2007). Educated preferences: Explaining attitudes toward immigration in Europe. *International Organization*, 61(2):399–442.
- Hangartner, D., Dinas, E., Marbach, M., Matakos, K., & Xeferis, D. (2019). Does exposure to the refugee crisis make natives more hostile? *American Political Science Review*, 113(2):442–455.
- Huber, P. & Oberdabernig, D. A. (2016). The impact of welfare benefits on natives’ and immigrants’ attitudes toward immigration. *European Journal of Political Economy*, 44:53–78.
- Janmaat, J. G. (2014). Do ethnically mixed classrooms promote inclusive attitudes towards immigrants everywhere? A study among native adolescents in 14 countries. *European Sociological Review*, 30(6):810–822.
- Jeong, H. O. (2013). Do national feelings influence public attitudes towards immigration? *Journal of Ethnic and Migration Studies*, 39(9):1461–1477.
- Kalfa, E. & Piracha, M. (2018). Social networks and the labour market mismatch. *Journal of Population Economics*, 31(3):877–914.
- Knabe, A., Rätzl, S., & Thomsen, S. L. (2013). Right-wing extremism and the well-being of immigrants. *Kyklos*, 66(4):567–590.
- Laurence, J. & Bentley, L. (2016). Does ethnic diversity have a negative effect on attitudes towards the community? A longitudinal analysis of the causal claims within the ethnic diversity and social cohesion debate. *European Sociological Review*, 32(1):54–67.
- Margaryan, S., Paul, A., & Siedler, T. (2021). Does education affect attitudes towards immigration? Evidence from Germany. *Journal of Human Resources*, 56(2):446–479.
- Mayda, A. M. (2006). Who is against immigration? A cross-country investigation of individual attitudes toward immigrants. *The Review of Economics and Statistics*, 88(3):510–530.
- Meier, A. N. (2022). Emotions and risk attitudes. *American Economic Journal: Applied Economics*, 14(3):527–558.
- Mundlak, Y. (1978). On the pooling of time series and cross section data. *Econometrica*, 46(1):69–85.
- Nunziata, L. (2015). Immigration and crime: Evidence from victimization data. *Journal of Population Economics*, 28(3):697–736.

- O'Rourke, K. H. & Sinnott, R. (2006). The determinants of individual attitudes towards immigration. *European Journal of Political Economy*, 22(4):838–861.
- Ortega, F. & Polavieja, J. G. (2012). Labor-market exposure as a determinant of attitudes toward immigration. *Labour Economics*, 19(3):298–311.
- Oswald, A. J. & Powdthavee, N. (2010). Daughters and left-wing voting. *Review of Economics and Statistics*, 92(2):213–227.
- Poutvaara, P. & Steinhardt, M. F. (2018). Bitterness in life and attitudes towards immigration. *European Journal of Political Economy*, 55:471–490.
- Pryce, D. K. (2018). U.S. citizens' current attitudes toward immigrants and immigration: A study from the General Social Survey. *Social Science Quarterly*, 99(4):1467–1483.
- Scheve, K. F. & Slaughter, M. J. (2001). Labor market competition and individual preferences over immigration policy. *Review of Economics and Statistics*, 83(1):133–145.
- Schüller, S. (2016). The effects of 9/11 on attitudes toward immigration and the moderating role of education. *Kyklos*, 69(4):604–632.
- SOEP Group (2021). SOEP-Core v36 – HEALTH. SOEP Survey Papers 1042: Series D – Variable Descriptions and Coding. Berlin: DIW Berlin/SOEP.
- Sola, A. (2018). The 2015 refugee crisis in Germany: Concerns about immigration and populism. SOEP Papers 966-2018.
- Tucci, I. (2005). Explaining attitudes towards immigration: New pieces to the puzzle. DIW Discussion Papers No. 484.
- Wilkes, R., Guppy, N., & Farris, L. (2008). “No thanks, we’re full”: Individual characteristics, national context, and changing attitudes toward immigration. *International Migration Review*, 42(2):302–329.