

**Does Health Vulnerability Predict Voting for
Right-Wing Populist Parties in Europe?**
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Appendix

Variable Preparation

We used the ESS cumulative file containing waves 1–8 (v. 1.0), merged with the ninth ESS wave (v. 2.0). Interviews were conducted between 2002 and early 2020.

In the main models, we analyzed the 24 countries with right-wing populist parties that were itemized by both the ESS and Inglehart and Norris (2016 and 2019) (**Table A.1**) The following countries were surveyed by the ESS but included only in robustness models: Cyprus (no major right-wing populist parties listed by Inglehart and Norris), Estonia (same), Ireland (same), Portugal (same), and Luxembourg (whose right-wing populist party, the Alternative Democratic Reform Party [ADR], was not itemized by the ESS).

The following countries were excluded from all analyses: Iceland (not included in the Chapel Hill Expert Survey (Bakker et al., 2015), which Inglehart and Norris used to make their lists), Montenegro (same), Serbia (same), Ukraine (same), Israel (not in Europe), and Russia (non-democratic). Romania was evaluated by the Chapel Hill Expert Survey and had right-wing populist parties but was not included in the ESS cumulative file.

In the main models, i.e. with countries that have right-wing populist parties, there were 192,896 unweighted cases, 188,477.6 post-stratification-weighted cases, and 190,437.3 country population-weighted cases. In robustness models that included all 29 ESS countries (see above), there were 226,030 unweighted cases and 220,119.6 post-stratification-weighted cases. Lastly, in robustness models that included non-voters, also on all ESS countries, there were 337,732 unweighted and 340,550.2 weighted cases.

Table A.1. Unweighted cases and right-wing populist parties in each country. *Countries excluded from main models. Some robustness models include all countries.

Country		Mainstr. voters	Populist voters	Non-voters	Right-wing populist parties (abbreviations)
Austria	AT	6,951	960	3,147	FPO, TS
Belgium	BE	10,466	667	3,462	VB, FN
Bulgaria	BG	5,060	538	2,988	ATAKA, VMRO-BND, NFSB, BBT/BBZ, NDSV
Switzerland	CH	5,309	1,621	7,336	EDU/UDF, SVP/UDC, LdT
Cyprus*	CY	2,908	0	1,038	–
Czechia	CZ	8,908	81	7,629	USVIT
Germany	DE	16,197	343	6,465	NPD, AfD

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Denmark	DK	7,919	801	1,514	DF
Estonia*	EE	7,979	0	6,494	–
Spain	ES	9,755	104	5,059	Vox
Finland	FI	10,831	865	4,367	Sp-P
France	FR	8,410	872	6,134	FN, MPF
Great Britain	GB	12,429	276	6,130	UKIP, NF, BNP
Greece	GR	3,122	2,117	1,957	XA, ANEL, LAOS, ND
Croatia	HR	1,237	1,202	1,451	HSS, HDSS, HDSSB, HSP, HSP-AS, HDZ
Hungary	HU	4,201	4,132	4,224	JOBBIK, Fidesz, MIEP
Ireland*	IE	13,311	0	5,728	–
Italy	IT	2,056	1,298	2,106	M5S, LN, FdI
Lithuania	LT	4,175	452	4,497	DK, TT-LDP
Luxembourg*	LU	1,357	0	1,290	ADR
Latvia	LV	411	90	327	NA, NsL, LRa
Netherlands	NL	11,487	1,201	3,617	PVV, SGP, LPF
Norway	NO	9,439	1,525	3,197	FrP
Poland	PL	5,762	2,632	5,669	PiS, SP, KNP/UPR
Portugal*	PT	7,579	0	5,481	–
Sweden	SE	12,177	411	2,532	SD
Slovenia	SI	4,293	1,892	3,943	SDS, NSI
Slovakia	SK	4,883	948	2,827	SNS, KDH, OLaNO
Turkey	TR	2,223	167	1,093	MHP

Source of right-wing populist parties: (Inglehart & Norris, 2016; Norris & Inglehart, 2019)

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Table A.2. Variables used in the main models. Descriptive statistics provided for the valid, non-imputed cases in the main models. User-missing responses (e.g. “Refusal” or “Don’t know”) were coded as “NA” and later imputed. Scale variables are followed by their constituent variables. *Reverse-coded relative to the ESS. †All variable names represent the ESS names unless noted by a dagger.

Variable	Description	Valid N (%)	Mean	Median	SD	Min.	Max.
Weights							
pspwght	Post-stratification weights	192,896 (100)	0.98	0.92	0.46	<0.01	5.03
pweight	Population size weights	192,896 (100)	1.01	0.48	0.98	0.11	5.45
pspwght × pweight	Design weights × population size weights	192,896 (100)	0.99	0.46	1.16	<0.01	16.35
Right-wing populist voting							
vote_choice †	Voted for mainstream or right-wing populist party in country’s most recent general elections (0 = Mainstream party, 1 = Right-wing populist)	192,896 (100)	0.13	0	0.34	0	1
Demographic variables							
agea	Age of respondent	192,352 (>99)	51.63	52	17.01	14	102
gndr *	Gender of respondent (0 = female, 1 = male)	192,810 (>99)	0.48	0	0.50	0	1
edyrs	Completed years of full-time education	191,425 (>99)	12.86	13	4.11	0	60
rlgdgr	How religious are you? (0 = Not at all, 10 = Very)	191,866 (>99)	4.65	5	3.02	0	10
blgetmg *	Belong to minority ethnic group in country (0 = No, 1 = Yes)	191,194 (>99)	0.03	0	0.18	0	1
Socioeconomic variables							
job †	Respondent’s occupation in the Goldthorpe social class scheme (based on isco0 and isco08)	180,842 (94)					
	Managerial and professional class	47,450					
	Routine non-manual workers	75,467					
	Petty bourgeoisie	1,612					
	Skilled workers	20,491					
	Non-skilled workers	35,822					

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income[†]	Income of respondent by approximate decile within each country (based on hinctnt and hinctnta) (0 = Lowest decile, 1 = Highest decile)	162,518 (84)	5.87	6	2.70	1	10
hincfel	Feeling about household's income nowadays (self-reported economic insecurity) (0 = Living comfortably on present income, 4 = Very difficult on present income)	190,089 (99)	1.89	2	0.83	1	4
incomesrc[†]	Main source of household's income from government (based on hincsrc and hincsrca) (0 = No, 1 = Yes)	189,316 (98)	0.04	0	0.19	0	1
uemp3m*	Ever unemployed and seeking work for a period more than three months	192,266 (>99)	0.26	0	0.44	0	1
domicil	Urban-rural description of respondent's domicile (1 = Big city, 5 = Farm or home in countryside)	192,569 (>99)	2.94	3	1.20	1	5
Cultural variables							
imgratt*[†]	SCALE: Negative attitudes about immigrants (0 = More positive, 10 = More negative)	191,215 (>99)	4.75	4.67	2.11	0	10
imbgeco*	Immigration bad or good for country's economy (0 = Good, 10 = Bad)	187,038 (97)	5.05	5	2.40	0	10
imueclt*	Country's cultural life undermined or enriched by immigrants (0 = Enriched, 10 = Undermined)	187,399 (97)	5.71	6	2.52	0	10
imwbcnt*	Immigrants make country worse or better place to live (0 = Better, 10 = Worse)	186,614 (97)	5.01	5	2.26	0	10
nattrst*[†]	SCALE: Mistrust of national institutions (0 = More trust, 10 = More mistrust)	192,664 (>99)	5.37	5.33	2.05	0	10
trstplt*	Trust in politicians (0 = Complete trust, 10 = No trust at all)	191,408 (>99)	3.91	4	2.34	0	10
stfgov*	Satisfaction with the national government (0 = Extremely satisfied, 10 = Extremely diss.)	190,171 (99)	4.47	5	2.44	0	10
stfdem*	How satisfied with the way democracy works in respondent's country (0 = Extremely satisfied, 10 = Extremely diss.)	189,511 (98)	5.53	6	2.45	0	10

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intrst*†	SCALE: Mistrust of international institutions (0 = More trust, 10 = More mistrust)	185,075 (96)	5.00	5	2.22	0	10
trstun*	Trust in the United Nations (0 = Complete trust, 10 = No trust at all)	180,139 (93)	5.45	6	2.43	0	10
trstep*	Trust in the European Parliament (0 = Complete trust, 10 = No trust at all)	178,839 (93)	4.54	5	2.39	0	10
authval*†	SCALE: Espousing authoritarian values (0 = Less authoritarian values, 10 = More)	188,570 (98)	4.37	4.4	0.88	1	6
ipfrule*	Important to do what is told and follow rules (0 = Not like me at all, 10 = Very much like me)	186,987 (97)	3.10	3	1.38	1	6
impsafe*	Important to live in secure and safe surroundings (0 = Not like me at all, 10 = Very much like me)	187,793 (97)	2.40	2	1.23	1	6
ipbhprp*	Important to behave properly (0 = Not like me at all, 10 = Very much like me)	187,424 (97)	2.61	2	1.22	1	6
ipstrgv*	Important that government is strong and ensures safety (0 = Not like me at all, 10 = Very much like me)	186,601 (97)	2.37	2	1.21	1	6
imptrad*	Important to follow traditions and customs (0 = Not like me at all, 10 = Very much like me)	187,856 (97)	2.66	2	1.33	1	6
lrscale	Placement on left-right scale (0 = Left, 10 = Right)	184,275 (96)	5.14	5	2.33	0	10
Health variables							
health	Subjective general health (1 = Very good, 5 = Very bad)	192,896 (100)	2.21	2	0.89	1	5
hlthhmp*	Hampered in daily activities by illness/disability/infirmity/mental problem (0 = No, 1 = Yes, to some extent, 3 = Yes, a lot)	192,561 (>99)	0.33	0	0.58	0	2
stflife*	How satisfied with life as a whole nowadays (0 = Extremely satisfied, 10 = Extremely dissatisfied)	192,509 (>99)	2.80	2	2.13	0	10
stfhlth*	State of health services in country nowadays (0 = Extremely good, 10 = Extremely bad)	191,572 (>99)	4.39	4	2.45	0	10

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Respondents were coded as having voted mainstream, right-wing populist, or not voted. Main models only included voters. Respondents were excluded from all analyses if they refused to state the party for which they voted or were unsure. Those who cast an invalid, spoiled, or blank ballot were coded as non-voters. Mixed ballots were coded as mainstream voters. In Germany, the second round of voting were used, and in Lithuania, the first round. Some right-wing populist parties across a number of countries (e.g. USVIT in Czechia) were not itemized in an ESS variable for some years or at all. In those cases, because they were included under “Other,” their voters were coded as non-populist.

We maintained Inglehart and Norris’ coding scheme with a few exceptions: Vox of Spain, which postdated their coding scheme, was coded as a right-wing populist party. The two left-wing populist parties, Podemos of Spain and Syriza of Greece, were coded as mainstream. While health vulnerability might inspire left-wing populist sentiment, their sample sizes were insufficient to empirically test the claim. Notes on the coding of ambiguous parties are provided in **Table A.3**. These choices affected few respondents. Even if they did impact our findings, their bias should be expected to favor the null hypothesis that poorer self-reported health does *not* predict voting for right-wing populist parties.

Table A.3. Coding of ambiguous parties in Inglehart and Norris’ lists.

Country	Political party	Coding	Notes
Bulgaria	<i>Natsionalno dvijenie za spasenie na Otechestvoto</i> (NDSO)	Mainstream	Excluded from Inglehart and Norris’ lists
Croatia	Croatian Democratic Party (HDZ)	Right-wing populist	Included in their lists, even though center-right
Cyprus	National Popular Front (ELAM)	Mainstream	Excluded from their lists
Estonia	<i>Eesti Konservatiivne Rahvaerakond</i> (formerly, <i>Rahvaliid</i>)	Mainstream	Excluded from their lists
France	Movement for France (MPF)	Right-wing populist	Misnamed on their 2016 list as “Popular Republican Movement”
Greece	New Democracy (ND)	Right-wing populist	Included in their 2016 list, even though center-right
Netherlands	Political Reformed Party (SGP)	Right-wing populist	Named on their 2016 list and some ESS waves as “Social Reformed Party”
Poland	Kukiz’15	Mainstream	Excluded from their lists
Slovenia	Slovenian National Party (SNS)	Mainstream	Excluded from their lists

We explored four health-related variables (subjective general health, being hampered, dissatisfaction with life, and dissatisfaction with the health system) using a factor analysis (**Table A.4**). They shared a Cronbach’s alpha of 0.46. Subjective general health and

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being hampered shared a Pearson correlation of 0.57. While the variables showed some empirical overlap, we decided to include the four separately in the regression models.

Table A.4. One-solution factor analysis with varimax rotation for health-related variables in the ESS among the 192,896 voters in the main models.

Variable	Loading factor
health	0.938
hlthhmp*	0.603
stfhlth*	0.152
stflife*	0.348

For education, the ESS maintained two variables that are consistent across countries and waves of the survey: completed years of full-time education (**eduyrs**) and the harmonized, ES–ISCED highest level of education (**eisced**). While Inglehart and Norris used the ES–ISCED level, this variable had a high degree of missingness (roughly 20%), so we instead opted to use years of education to minimize the burden of imputation.

For occupation, the ESS used the International Standard Classification of Occupations (ISCO), which we categorized into the Goldthorpe social class scheme in keeping with other analyses of populist voting (Inglehart & Norris, 2016; Oesch, 2008).

Table A.5. Goldthorpe occupation classifications of ISCO codes (Goldthorpe et al., 1980).

	Goldthorpe classifications	ISCO classifications	ISCOCO codes	ISCO–08 codes
1	Managerial and professional class	Managers, professionals	1000 to 2449	100 to 110, 1000 to 2639
2	Routine non-manual workers	Technicians and associate professionals, clerical support workers, and service and sales workers	2460 to 2499, 3000 to 5999	3000 to 5999
3	Petty bourgeoisie	Subset of professionals (e.g. artisans)	2450 to 2455	2640 to 2999
4	Skilled workers	Craft and related trades workers	7000 to 7999	7000 to 7999
5	Non-skilled workers	Plant and machine operators, assemblers, and elementary occupations	100, 6000 to 6999, 8000 to 9999	0, 200 to 310, 6000 to 6999, 8000 to 9999

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Income predicts health apart from other markers of socioeconomic status (Woolf & Braveman, 2011). While not included by Inglehart and Norris, we considered it a necessary control. The ESS changed the coding scheme for its income variable after 2004 to reflect deciles within each country. The redesigned version of the variable (**hinctnta**) ranged from 1 to 10, while the original (**hinctnt**) ranged from 1 to 12. We harmonized the two versions by pooling the highest three responses of the original version (i.e. 10, 11, and 12), which were not well populated. The resulting ten categories were fairly comparable in frequency. The two versions of the question were then collapsed together.

For being on government benefits, we categorized the main source of a respondent's household income as either government-derived or not (**incomesrc**), based on the ESS variables **hincsrc** for wave 1 and **hincsrca** for waves 2–9. The response options “unemployment/redundancy benefit” and “any other social benefits or grants” constituted government-derived income; all other responses were categorized as not.

For cultural attitudes, we averaged relevant variables into scales, as did Inglehart and Norris (2016). For these variables, ESS respondents rated their agreement with prompted statements. We averaged and reverse-coded these values, such that higher values indicated more negative attitudes, mistrust, or authoritarian values. If participants were missing information for one (or more) variable(s), we took the average of the remaining variable(s). The resulting scales had Cronbach's alphas of 0.85 (negative attitudes about immigrants), 0.80 (mistrust of national institutions), 0.79 (mistrust of international institutions), and 0.72 (authoritarian values) among respondents in the main models. Factor analyses for the scales with at least three variables are provided in **Table A.6**.

Table A.6. One-solution factor analyses with varimax rotation for ESS variables used to produce cultural attitude scales, among the 192,896 voters in the main models.

Negative attitudes about immigrants		Mistrust of national institutions		Authoritarian values	
Variable	Loading factor	Variable	Loading factor	Variable	Loading factor
imbgeco*	0.768	trstplt*	0.708	ipfrule*	0.510
imueclt*	0.822	stfgov*	0.800	impsafe*	0.632
imwbcnt*	0.852	stfdem*	0.767	ipbhprp*	0.633
				ipstrgv*	0.627
				imptrad*	0.519

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Binomial Logistic Regressions

All models used complete cases for voting (**vote_choice**) and subjective general health (**health**). For imputation, a dataset containing all variables in Model 3 was constructed, and missing responses for those variables were multiply imputed using a bootstrapping algorithm by the “Amelia II” package in R (v. 1.7.6; James Honaker, Gary King, and Matthew Blackwell). The package used a predictive model and fixed random seed to produce five imputed datasets (Honaker & King, 2010; King et al., 2001). We trained the package to treat four variables as nominal: gender (**gndr***), being an ethnic minority (**blgetmg***), being on government benefits (**incomesrc**), and having been unemployed for 3+ months (**uemp3m***), i.e. it input discrete values for those variables. All others were imputed along a normal distribution using the mean and standard deviation of non-missing responses.

We performed binomial logistic regressions using the “Survey” package (v. 4.0; Thomas Lumley) with survey weights and without clusters. Regressions were executed separately on each of the five imputed datasets; betas, errors, and other parameters were then extracted and averaged across the five models. In the main models, we weighted all respondents by the ESS post-stratification weights (**pspwght**). These correct for sampling bias as well as non-response rates by age-group, gender, education, and region within each country; their inclusion is recommended by the ESS. Select robustness analyses were also weighted by country population size (i.e. **pspwght** × **pweight**). We used the “lm.beta” package (v. 1.5-1; Stefan Behrendt) to obtain standardized betas from the models. Lastly, betas were exponentiated into odds ratios, and 95% confidence intervals were calculated for the unstandardized odds ratios. These are reported in the tables below.

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Table A.7. Main binomial logistic regression models of populist voting (vs. mainstream voting) using post-stratification weights and populist countries (see above for full list of countries). 95% confidence intervals and standardized odds ratios are provided. ¹Reference group: Female. ²Reference group: Managerial and professional class.

Variable	Model 1 n _{weighted} =188,477.6				Model 2 n _{weighted} =188,477.6				Model 3 n _{weighted} =188,477.6			
	OR	95% CI	P-val	Std. OR	OR	95% CI	P-val	Std. OR	OR	95% CI	P-val	Std. OR
Intercept	0.001	0.001–0.001	<0.001	1.000	0.001	0.001–0.001	<0.001	1.000	0.001	0.001–0.001	<0.001	1.000
Country fixed effects	Included				Included				Included			
Interview year fixed effects	Included				Included				Included			
Demographic variables												
Age	0.989	0.988–0.990	<0.001	0.568	0.989	0.988–0.991	<0.001	0.581	0.989	0.988–0.990	<0.001	0.566
Gender: Male ¹	1.222	1.177–1.269	<0.001	1.346	1.219	1.174–1.266	<0.001	1.342	1.222	1.177–1.269	<0.001	1.347
Education (years)	0.975	0.969–0.980	<0.001	0.732	0.974	0.969–0.980	<0.001	0.728	0.975	0.969–0.981	<0.001	0.732
Religiosity	1.019	1.012–1.027	<0.001	1.189	1.020	1.013–1.027	<0.001	1.189	1.019	1.012–1.026	<0.001	1.188
Ethnic minority	0.538	0.479–0.604	<0.001	0.712	0.538	0.479–0.604	<0.001	0.713	0.538	0.479–0.604	<0.001	0.712
Socioeconomic variables												
Routine non-manual workers ²	1.342	1.277–1.410	<0.001	1.538	1.342	1.277–1.409	<0.001	1.538	1.342	1.277–1.409	<0.001	1.537
Petty bourgeoisie ²	1.000	0.812–1.232	0.704	1.000	0.999	0.811–1.230	0.707	1.000	0.999	0.811–1.230	0.707	1.000
Skilled workers ²	1.626	1.521–1.738	<0.001	1.590	1.629	1.524–1.741	<0.001	1.593	1.626	1.521–1.738	<0.001	1.590
Non-skilled workers ²	1.503	1.413–1.598	<0.001	1.615	1.504	1.414–1.599	<0.001	1.616	1.502	1.412–1.597	<0.001	1.614
Income decile	0.991	0.983–0.999	0.040	0.931	0.991	0.983–0.999	0.037	0.930	0.991	0.983–1.000	0.043	0.932
Self-reported economic insecurity	1.023	0.994–1.053	0.131	1.057	1.025	0.996–1.055	0.094	1.064	1.022	0.993–1.052	0.142	1.056
On government benefits	1.183	1.071–1.307	0.001	1.103	1.179	1.067–1.303	0.002	1.101	1.179	1.067–1.303	0.002	1.101
Unemployed for 3+ months	1.117	1.071–1.166	<0.001	1.156	1.118	1.071–1.166	<0.001	1.156	1.117	1.070–1.166	<0.001	1.156
Rural living	1.027	1.012–1.043	<0.001	1.101	1.028	1.012–1.044	<0.001	1.102	1.027	1.012–1.043	<0.001	1.101
Cultural variables												
Negative attitudes about immigrants	1.199	1.187–1.211	<0.001	3.119	1.199	1.187–1.211	<0.001	3.125	1.198	1.186–1.211	<0.001	3.117
Mistrust of national institutions	1.053	1.040–1.066	<0.001	1.368	1.053	1.040–1.066	<0.001	1.368	1.053	1.040–1.065	<0.001	1.367
Mistrust of international institutions	1.080	1.070–1.090	<0.001	1.657	1.080	1.070–1.090	<0.001	1.659	1.080	1.070–1.090	<0.001	1.657
Authoritarian values	1.056	1.031–1.082	<0.001	1.153	1.056	1.031–1.081	<0.001	1.152	1.056	1.031–1.081	<0.001	1.152
Right-wing self-placement	1.455	1.442–1.468	<0.001	13.323	1.454	1.441–1.467	<0.001	13.293	1.455	1.442–1.468	<0.001	13.317
Health variables												
Worse subjective general health	1.059	1.034–1.084	<0.001	1.163					1.046	1.018–1.075	0.001	1.127
Hampered by disability, etc.					1.067	1.033–1.103	<0.001	1.119	1.034	0.996–1.074	0.078	1.060
Dissatisfaction with health system	1.001	0.992–1.010	0.858	1.006	1.001	0.993–1.010	0.767	1.010	1.001	0.992–1.010	0.841	1.007
Dissatisfaction with life	0.990	0.980–1.001	0.068	0.941	0.993	0.983–1.003	0.165	0.955	0.990	0.980–1.000	0.059	0.939
Nagelkerke R²	0.224				0.224				0.224			

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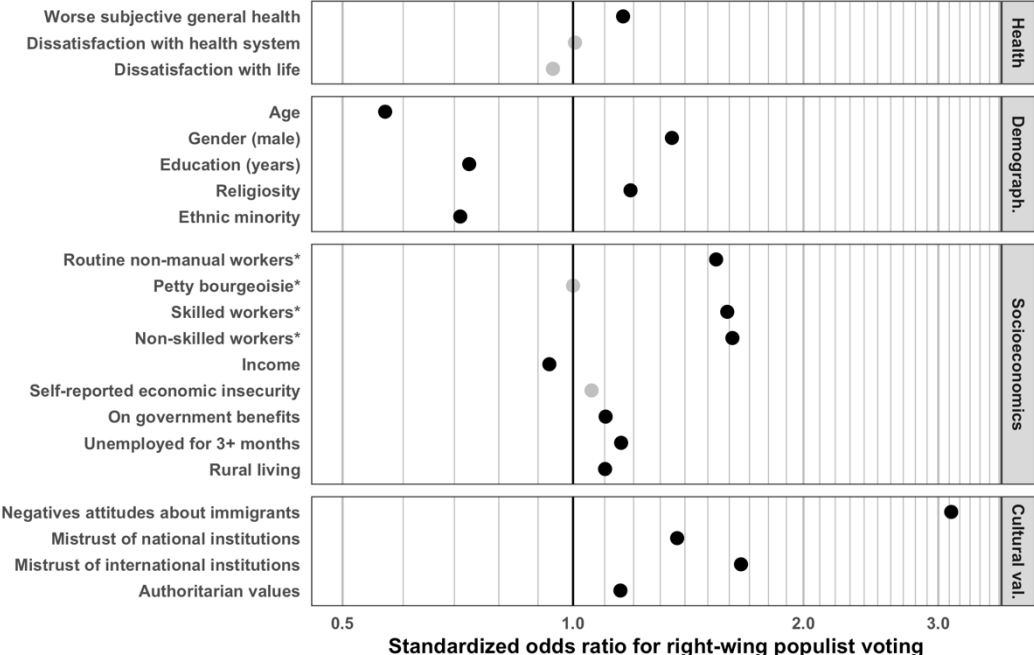


Figure A.1. Coefficient plot of standardized odds ratios from Model 1 in Table A.7. For this and the subsequent figures, black dots indicate significance at the $P < 0.05$ level, while grey dots are not significant. Country and year fixed effects, right-wing self-placement, and the intercept are not shown. *Reference group: Managerial and professional class.

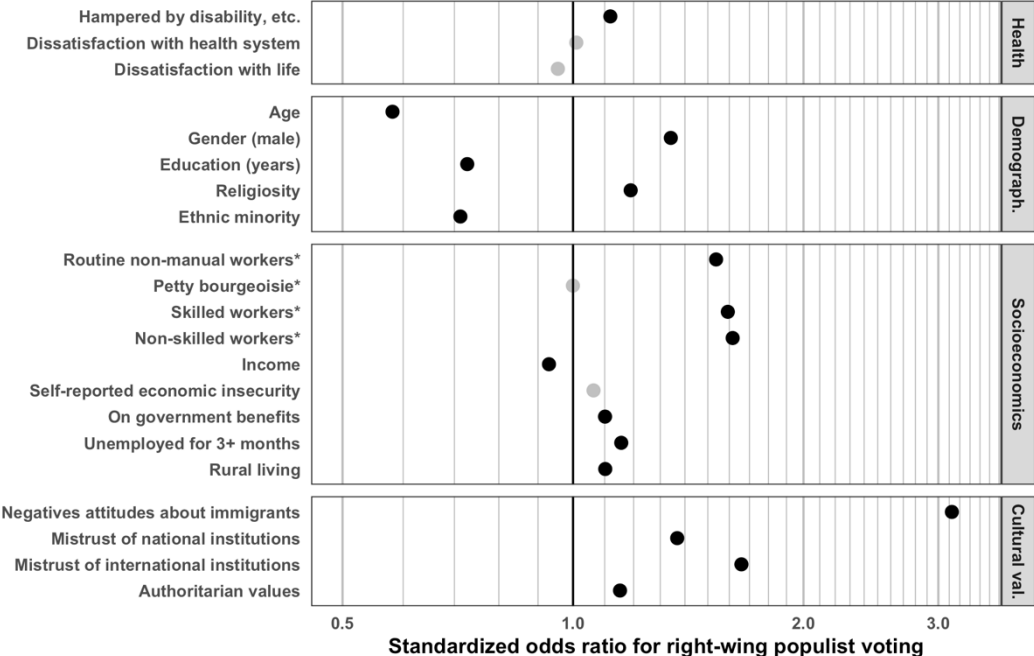


Figure A.2. Coefficient plot of standardized odds ratios from Model 2 in Table A.7.

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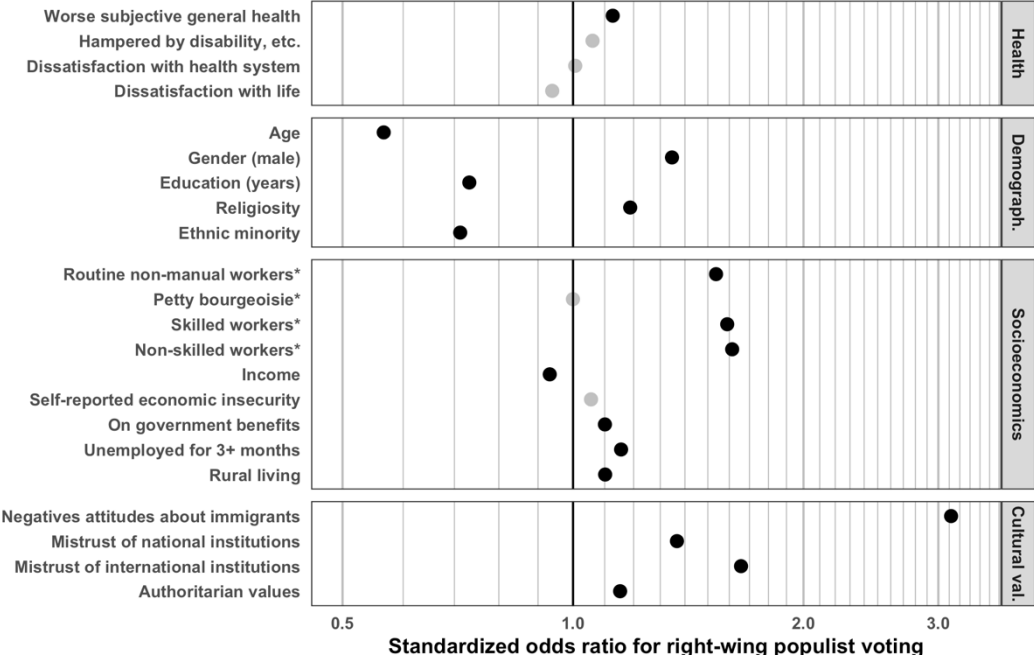


Figure A.3. Coefficient plot of standardized odds ratios from Model 3 in Table A.7.

Robustness analyses

For the robustness analyses below, we describe how they differ from the main models. Otherwise, they used the same specifications: binomial logistic regressions on voters, countries with right-wing populist parties, continuous self-reported health variables, full controls, and post-stratification weights, with estimations averaged across 5 imputations. For convenience, only the odds ratios of the health measures are provided.

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Table A.8. Robustness analysis using dichotomized self-reported health measures. For subjective general health, voters in “fair,” “bad,” or “very bad” health were compared against those in “very good” or “good” health. For being hampered by illness, voters endorsing “yes, to some extent” and “yes, a lot” were compared against those endorsing “no.”

	Model 1	Model 2	Model 3
Subjective general health (dichotomized)	1.072 (1.027 to 1.118) P=0.002	Not included	1.048 (0.999 to 1.098) P=0.05
Being hampered by disability, etc. (dichotomized)	Not included	1.077 (1.032 to 1.124) P<0.001	1.055 (1.006 to 1.106) P=0.03
Standardized odds ratios	1.102	1.102	1.068 1.073
Controls	Included	Included	Included
Unweighted voters	192,896	192,896	192,896
Weighted voters	188,478	188,478	188,478
Nagelkerke R ²	0.224	0.224	0.224

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Table A.9. Robustness analysis using multinomial probit models with non-voters and a polytomous outcome (voting mainstream [reference], voting right-wing populist, and not voting), on all 29 ESS countries. Models were executed using the “nnet” package in R (7.3-14; Brian Ripley and William Venables), which estimates models using feed-forward neural networks.

	Model 1		Model 2		Model 3	
	Populist	Not voting	Populist	Not voting	Populist	Not voting
Subjective general health	1.049 (1.029 to 1.070) P<0.001	1.118 (1.106 to 1.130) P<0.001	Not included	Not included	1.047 (1.024 to 1.070) P<0.001	1.076 (1.063 to 1.089) P<0.001
Being hampered by disability, etc.	Not included	Not included	1.039 (1.011 to 1.069) P=0.007	1.186 (1.167 to 1.205) P<0.001	1.008 (0.976 to 1.040) P=0.65	1.128 (1.108 to 1.149) P<0.001
Controls	Included		Included		Included	
Unweighted respondents	337,732		337,732		337,732	
Weighted respondents	340,550		340,550		340,550	

Table A.10. Robustness analysis with successive additions of blocks of controls to Model 1 (i.e. only subjective general health).

	Base	Demo.	SES	Cult.	Demo. + SES	Demo. + Cult.	Demo. + SES + Cult.
Sub. general health	1.089 (1.069 to 1.110) P<0.001	1.086 (1.064 to 1.109) P<0.001	1.025 (1.005 to 1.045) P=0.02	1.021 (1.000 to 1.042) P=0.05	1.059 (1.037 to 1.082) P<0.001	1.075 (1.051 to 1.100) P<0.001	1.054 (1.030 to 1.078) P<0.001
Being hampered	Not included	Not included	Not included	Not included	Not included	Not included	Not included
Std. odds ratios	1.254	1.245	1.067	1.056	1.165	1.212	1.148
Country fixed eff.	Included	Included	Included	Included	Included	Included	Included
Year fixed eff.	Included	Included	Included	Included	Included	Included	Included
Demographics	Not included	Included	Not included	Not included	Included	Included	Included
Socioeconomics	Not included	Not included	Included	Not included	Included	Not included	Included
Cultural vars.	Not included	Not included	Not included	Included	Not included	Included	Included
Dis. w/health syst.	Not included	Not included	Not included	Not included	Not included	Not included	Not included
Dis. w/life	Not included	Not included	Not included	Not included	Not included	Not included	Not included
Unweighted voters	192,896	192,896	192,896	192,896	192,896	192,896	192,896
Weighted voters	188,478	188,478	188,478	188,478	188,478	188,478	188,478
Nagelkerke R ²	0.146	0.157	0.153	0.218	0.160	0.222	0.224

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Table A.11. Robustness analysis with successive additions of blocks of controls to Model 2 (i.e. only hampered by illness, etc.).

	Base	Demo.	SES	Cult.	Demo. + SES	Demo. + Cult.	Demo. + SES + Cult.
Sub. general health	Not included	Not included	Not included	Not included	Not included	Not included	Not included
	1.124	1.110	1.047	1.036	1.078	1.091	1.063
Being hampered	(1.093 to 1.155)	(1.077 to 1.143)	(1.017 to 1.077)	(1.005 to 1.067)	(1.046 to 1.111)	(1.056 to 1.126)	(1.030 to 1.099)
	P<0.001	P<0.001	P=0.002	P=0.03	P<0.001	P<0.001	P<0.001
Std. odds ratios	1.224	1.197	1.082	1.062	1.140	1.162	1.112
Country fixed eff.	Included	Included	Included	Included	Included	Included	Included
Year fixed eff.	Included	Included	Included	Included	Included	Included	Included
Demographics	Not included	Included	Not included	Not included	Included	Included	Included
Socioeconomics	Not included	Not included	Included	Not included	Included	Not included	Included
Cultural vars.	Not included	Not included	Not included	Included	Not included	Included	Included
Dis. w/health syst.	Not included	Not included	Not included	Not included	Not included	Not included	Not included
Dis. w/life	Not included	Not included	Not included	Not included	Not included	Not included	Not included
Unweighted voters	192,896	192,896	192,896	192,896	192,896	192,896	192,896
Weighted voters	188,478	188,478	188,478	188,478	188,478	188,478	188,478
Nagelkerke R ²	0.146	0.157	0.153	0.218	0.160	0.222	0.224

Table A.12. Robustness analysis with successive additions of blocks of controls to Model 3 (i.e. both self-reported health variables).

	Base	Demo.	SES	Cult.	Demo. + SES	Demo. + Cult.	Demo. + SES + Cult.
Sub. general health	1.063	1.064	1.011	1.011	1.043	1.058	1.042
	(1.039 to 1.088)	(1.038 to 1.090)	(0.987 to 1.035)	(0.986 to 1.036)	(1.017 to 1.069)	(1.031 to 1.086)	(1.014 to 1.070)
	P<0.001	P<0.001	P=0.37	P=0.39	P<0.001	P<0.001	P=0.003
Being hampered	1.064	1.059	1.037	1.026	1.046	1.046	1.033
	(1.029 to 1.101)	(1.023 to 1.096)	(1.002 to 1.074)	(0.989 to 1.064)	(1.011 to 1.083)	(1.008 to 1.086)	(0.995 to 1.072)
	P<0.001	P=0.001	P=0.04	P=0.18	P=0.01	P=0.02	P=0.09
Std. odds ratios	1.176	1.178	1.029	1.029	1.117	1.161	1.114
	1.114	1.104	1.066	1.045	1.082	1.081	1.058
Country fixed eff.	Included	Included	Included	Included	Included	Included	Included
Year fixed eff.	Included	Included	Included	Included	Included	Included	Included
Demographics	Not included	Included	Not included	Not included	Included	Included	Included
Socioeconomics	Not included	Not included	Included	Not included	Included	Not included	Included
Cultural vars.	Not included	Not included	Not included	Included	Not included	Included	Included
Dis. w/health syst.	Not included	Not included	Not included	Not included	Not included	Not included	Not included
Dis. w/life	Not included	Not included	Not included	Not included	Not included	Not included	Not included
Unweighted voters	192,896	192,896	192,896	192,896	192,896	192,896	192,896
Weighted voters	188,478	188,478	188,478	188,478	188,478	188,478	188,478
Nagelkerke R ²	0.146	0.157	0.153	0.218	0.160	0.222	0.224

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Table A.13. Subgroup analysis with voters aged <40.

	Model 1	Model 2	Model 3
Subjective general health	1.061 (1.009 to 1.116) P=0.02	Not included	1.052 (0.997 to 1.111) P=0.07
Being hampered by disability, etc.	Not included	1.075 (0.985 to 1.173) P=0.11	1.037 (0.945 to 1.139) P=0.45
Standardized odds ratios	1.139	1.090	1.118 1.045
Controls	Included	Included	Included
Unweighted voters	52,443	52,443	52,443
Weighted voters	54,827	54,827	54,827
Nagelkerke R ²	0.235	0.235	0.235

Table A.14. Subgroup analysis with voters aged 40–64.

	Model 1	Model 2	Model 3
Subjective general health	1.057 (1.021 to 1.094) P=0.002	Not included	1.043 (1.002 to 1.085) P=0.04
Being hampered by disability, etc.	Not included	1.068 (1.018 to 1.120) P=0.007	1.037 (0.981 to 1.096) P=0.20
Standardized odds ratios	1.152	1.119	1.113 1.064
Controls	Included	Included	Included
Unweighted voters	90,666	90,666	90,666
Weighted voters	89,264	89,264	89,264
Nagelkerke R ²	0.220	0.220	0.220

Table A.15. Subgroup analysis with voters aged 65+.

	Model 1	Model 2	Model 3
Subjective general health	1.011 (0.968 to 1.055) P=0.64	Not included	0.986 (0.936 to 1.037) P=0.58
Being hampered by disability, etc.	Not included	1.051 (0.995 to 1.110) P=0.08	1.061 (0.994 to 1.132) P=0.08
Standardized odds ratios	1.028	1.105	0.962 1.127
Controls	Included	Included	Included
Unweighted voters	49,243	49,243	49,243
Weighted voters	43,855	43,855	43,855
Nagelkerke R ²	0.229	0.229	0.229

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Table A.16. Subgroup analysis with responses in years 2002–2007.

	Model 1	Model 2	Model 3
Subjective general health	1.083 (1.036 to 1.132) P<0.001	Not included	1.096 (1.041 to 1.153) P<0.001
Being hampered by disability, etc.	Not included	1.032 (0.969 to 1.098) P=0.33	0.967 (0.900 to 1.039) P=0.36
Standardized odds ratios	1.266	1.062	1.310 0.937
Controls	Included	Included	Included
Unweighted voters	63,396	63,396	63,396
Weighted voters	62,807	62,807	62,807
Nagelkerke R ²	0.206	0.206	0.206

Table A.17. Subgroup analysis with responses in years 2009–2020.

	Model 1	Model 2	Model 3
Subjective general health	1.056 (1.025 to 1.088) P<0.001	Not included	1.031 (0.997 to 1.067) P=0.08
Being hampered by disability, etc.	Not included	1.093 (1.048 to 1.140) P<0.001	1.070 (1.020 to 1.123) P=0.005
Standardized odds ratios	1.144	1.155	1.080 1.117
Controls	Included	Included	Included
Unweighted voters	114,312	114,312	114,312
Weighted voters	110,973	110,973	110,973
Nagelkerke R ²	0.260	0.260	0.260

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Table A.18. Robustness analysis with controls for country-year GDP growth, life expectancy, percentage of national health expenditures funded by public sources, percentage of health expenditures funded by out-of-pocket payments, and Varieties of Democracy's health equality index.

	Model 1	Model 2	Model 3
Subjective general health	1.054 (1.030 to 1.080) P<0.001	Not included	1.040 (1.013 to 1.068) P=0.004
Being hampered by disability, etc.	Not included	1.069 (1.034 to 1.104) P<0.001	1.040 (1.002 to 1.080) P=0.04
Standardized odds ratios	1.150	1.122	1.110 1.070
Controls	Included	Included	Included
Unweighted voters	192,896	192,896	192,896
Weighted voters	188,478	188,478	188,478
Nagelkerke R ²	0.227	0.227	0.227

Notes: The health equality index was obtained from the V-Dem Institute, and all other country-year variables from the World Bank, indicators NY.GDP.MKTP.KD.ZG (annual percentage GDP growth), SP.DYN.LE00.IN (life expectancy at birth), SH.XPD.GHED.CH.ZS (domestic government health expenditure), and SH.XPD.OOPC.CH.ZS (out-of-pocket health expenditure). For many variables, the most recent available year was 2017, 2018, or 2019, in which case the most recent year of data was applied to subsequent years. Similarly, Greece was missing data on two variables for 2002 and 2003, in which case the values for 2004 were applied backward.

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Table A.19. Robustness analysis using population size weights (*pspwght* × *pweight*).

	Model 1	Model 2	Model 3
Subjective general health	1.059 (1.021 to 1.097) P=0.002	Not included	1.048 (1.006 to 1.093) P=0.03
Being hampered by disability, etc.	Not included	1.063 (1.011 to 1.117) P=0.02	1.030 (0.972 to 1.091) P=0.32
Standardized odds ratios	1.163	1.111	1.133 1.052
Controls	Included	Included	Included
Unweighted voters	192,896	192,896	192,896
Weighted voters	190,437	190,437	190,437
Nagelkerke R ²	0.212	0.212	0.212

Table A.20. Robustness analysis using all 29 ESS countries, i.e. those with and without right-wing populist parties (minus Iceland, Israel, Montenegro, Serbia, Russia, Ukraine).

	Model 1	Model 2	Model 3
Subjective general health	1.058 (1.034 to 1.084) P<0.001	Not included	1.046 (1.018 to 1.074) P=0.001
Being hampered by disability, etc.	Not included	1.068 (1.033 to 1.103) P<0.001	1.035 (0.997 to 1.075) P=0.07
Standardized odds ratios	1.176	1.128	1.136 1.066
Controls	Included	Included	Included
Unweighted voters	226,030	226,030	226,030
Weighted voters	220,120	220,120	220,120
Nagelkerke R ²	0.225	0.225	0.225

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Table A.21. Robustness analyses treated as a jackknife with one-by-one omission of each country with a right-wing populist party.

Country omitted	Un-weighted	Weighted		Model 1			Model 2			Model 3		
				OR	95% CI	P-val	OR	95% CI	P-val	OR	95% CI	P-val
Austria	184,985	180,609	General Hampered	1.061	1.036–1.087	<0.001	1.071	1.036–1.107	<0.001	1.047	1.019–1.076	0.001
Belgium	181,763	177,653	General Hampered	1.054	1.029–1.080	<0.001	1.063	1.028–1.099	<0.001	1.043	1.014–1.072	0.003
Bulgaria	187,298	183,162	General Hampered	1.057	1.032–1.083	<0.001	1.064	1.029–1.100	<0.001	1.045	1.017–1.074	0.002
Switzerland	185,966	181,633	General Hampered	1.062	1.037–1.089	<0.001	1.072	1.037–1.109	<0.001	1.049	1.020–1.078	<0.001
Czechia	183,907	179,578	General Hampered	1.061	1.036–1.086	<0.001	1.066	1.032–1.102	<0.001	1.050	1.022–1.078	<0.001
Germany	176,356	172,438	General Hampered	1.057	1.032–1.082	<0.001	1.063	1.028–1.099	<0.001	1.046	1.018–1.074	0.002
Denmark	184,176	180,012	General Hampered	1.063	1.037–1.089	<0.001	1.071	1.036–1.108	<0.001	1.050	1.021–1.079	<0.001
Spain	183,037	178,632	General Hampered	1.059	1.034–1.084	<0.001	1.067	1.033–1.103	<0.001	1.046	1.019–1.075	0.001
Finland	181,200	177,160	General Hampered	1.055	1.030–1.081	<0.001	1.067	1.032–1.104	<0.001	1.042	1.014–1.071	0.004
France	183,614	179,938	General Hampered	1.057	1.032–1.083	<0.001	1.066	1.031–1.102	<0.001	1.045	1.017–1.074	0.002
Great Britain	180,191	175,846	General Hampered	1.056	1.031–1.082	<0.001	1.070	1.035–1.106	<0.001	1.042	1.014–1.070	0.003
Greece	187,657	183,370	General Hampered	1.054	1.029–1.080	<0.001	1.062	1.027–1.098	<0.001	1.042	1.014–1.071	0.004
Croatia	190,457	186,103	General Hampered	1.053	1.028–1.079	<0.001	1.062	1.027–1.097	<0.001	1.041	1.013–1.070	0.004
Hungary	184,563	180,243	General Hampered	1.071	1.045–1.098	<0.001	1.071	1.035–1.108	<0.001	1.061	1.032–1.091	<0.001
Italy	189,542	185,192	General Hampered	1.066	1.041–1.092	<0.001	1.069	1.034–1.105	<0.001	1.055	1.026–1.084	<0.001
Lithuania	188,269	183,893	General Hampered	1.062	1.036–1.087	<0.001	1.070	1.035–1.106	<0.001	1.049	1.020–1.078	<0.001

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Latvia	192,395	187,997	General Hampered	1.059	1.034–1.084	<0.001	1.068	1.033–1.103	<0.001	1.046	1.018–1.075	0.001
Netherlands	180,208	176,146	General Hampered	1.052	1.026–1.077	<0.001	1.059	1.024–1.096	<0.001	1.041	1.013–1.070	0.005
Norway	181,932	177,966	General Hampered	1.055	1.030–1.082	<0.001	1.054	1.019–1.091	0.003	1.048	1.019–1.078	0.001
Poland	184,502	180,139	General Hampered	1.058	1.032–1.085	<0.001	1.071	1.035–1.109	<0.001	1.044	1.015–1.074	0.003
Sweden	180,308	175,893	General Hampered	1.056	1.031–1.082	<0.001	1.063	1.028–1.099	<0.001	1.045	1.017–1.074	0.002
Slovenia	186,711	182,375	General Hampered	1.065	1.039–1.091	<0.001	1.073	1.036–1.110	<0.001	1.052	1.023–1.082	<0.001
Slovakia	187,065	182,842	General Hampered	1.050	1.025–1.075	<0.001	1.061	1.026–1.097	<0.001	1.037	1.009–1.066	0.010
Turkey	190,506	186,166	General Hampered	1.059	1.034–1.084	<0.001	1.066	1.032–1.102	<0.001	1.047	1.019–1.076	<0.001

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