

From Shock to Disengagement: How Natural Disasters Reshape Politics in Low-Trust Democracies

Appendix

Appendix

A1 Composition of groups

Table 1: Sample Group Composition and Maximum Sampling Deviation (Wave 1)

Category	HE	ME	LE	Max. Deviation
<i>Gender</i>				
Male	45.00%	45.60%	50.40%	5.40%
Female	55.00%	54.40%	49.60%	5.40%
<i>Age</i>				
18–24	3.80%	3.40%	1.80%	2.00%
25–34	12.60%	11.80%	12.20%	0.80%
35–44	21.20%	22.00%	20.80%	1.20%
45–54	26.80%	26.60%	25.40%	1.40%
55–64	22.80%	23.40%	24.00%	0.60%
65+	12.80%	12.80%	15.80%	3.00%

Table 2: Sample Group Composition and Maximum Sampling Deviation (Wave 2)

Category	HE	ME	LE	Max. Deviation
<i>Gender</i>				
Male	46.20%	47.40%	47.00%	1.20%
Female	53.80%	52.60%	53.00%	1.20%
<i>Age</i>				
18–24	2.80%	2.80%	2.40%	0.40%
25–34	10.20%	10.00%	9.40%	0.80%
35–44	16.40%	17.00%	16.20%	0.80%
45–54	28.20%	28.00%	28.40%	0.40%
55–64	25.20%	24.80%	25.80%	1.00%
65+	17.20%	17.40%	17.80%	0.60%

A2 Measuring the intensity of the crisis: exposure groups and distance to the floods

A2.1 Balance test across groups

Table 3: Balance test across exposure groups

Variable	(1) Low Exposure	(2) High Exposure	(3) Medium Exposure	(4) Diff HE-LE	(5) Diff ME-LE
gender	1.496 (0.500)	1.550 (0.498)	1.544 (0.499)	0.054* (0.088)	0.048 (0.129)
age	50.362 (13.410)	48.830 (13.485)	49.026 (13.475)	-1.532* (0.072)	-1.336 (0.116)
education_r	2.702 (1.050)	2.622 (1.087)	2.880 (1.084)	-0.080 (0.237)	0.178*** (0.009)
ideology (categories)	1.960 (0.947)	2.048 (1.004)	1.984 (1.019)	0.088 (0.154)	0.024 (0.700)
Radical right past vote (VOX)	0.092 (0.289)	0.108 (0.311)	0.062 (0.241)	0.016 (0.400)	-0.030* (0.075)
incumbent past vote (PP) (individual)	0.198 (0.399)	0.202 (0.402)	0.202 (0.402)	0.004 (0.875)	0.004 (0.875)
abstention rate	0.166 (0.372)	0.146 (0.353)	0.172 (0.378)	-0.020 (0.384)	0.006 (0.800)
incumbent (PP) vote at local level	39.370 (8.312)	31.772 (9.720)	34.403 (8.128)	-7.598*** (0.000)	-4.966*** (0.000)
radical right vote at local level	10.692 (4.607)	10.833 (4.090)	10.670 (3.933)	0.141 (0.615)	-0.021 (0.938)
unemployment at local level	6.632 (1.351)	6.026 (0.838)	5.522 (0.666)	-0.606*** (0.000)	-1.110*** (0.000)
Observations	500	500	500	1,500	1,500

A2.2 Distance to the floods

Table 4 reports the distribution of respondents across distance quintiles to the flooded areas, computed as the straight-line distance in kilometres between each postal code centroid and the flood footprint using QGIS. Ground Zero is defined as municipalities falling within the first and second quintiles of this distance measure. Table 5 reports the share of Ground Zero and non-Ground Zero municipalities within each exposure group. As shown in Tables 4 and 5, the exposure classification maps closely onto the distance distribution: virtually all High Exposure respondents reside in the two closest quintiles and in Ground Zero municipalities (95.1%), while all Low Exposure respondents fall in the two farthest quintiles with no Ground Zero presence, by construction. The Medium Exposure group is more heterogeneous, spread primarily across quintiles 2 and 3, with approximately one quarter residing in Ground Zero municipalities (24.1%). Together, these tables validate the geographical consistency of the exposure classification across both survey waves. Finally, Figure 1 shows the calculated distance from municipalities included in the survey sample and the nearest distance to the floods.

Table 4: Distribution of exposure groups by distance quintile to flooded areas (%)

Quintile	High Exp.	Medium Exp.	Low Exp.
1 (closest)	57.2	2.5	0.0
2	39.4	22.4	0.0
3	3.4	55.0	0.0
4	0.1	20.1	39.8
5 (farthest)	0.0	0.0	60.2
<i>N</i>	985	967	915

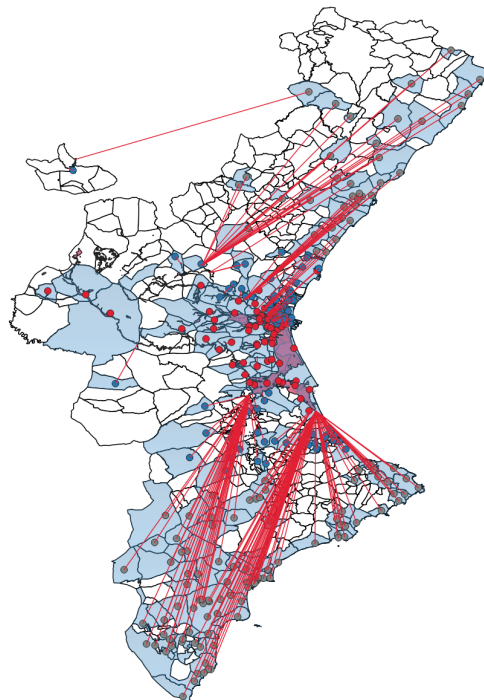
Note: Column percentages, both waves pooled. Quintiles based on distance in km to the nearest flooded area.

Table 5: Ground Zero municipalities by exposure group (%)

	High Exp.	Medium Exp.	Low Exp.
Non-Ground Zero	4.9	75.9	100.0
Ground Zero	95.1	24.1	0.0
<i>N</i>	1,000	1,000	1,000

Note: Column percentages, both waves pooled. Ground Zero corresponds to quintiles 1 and 2.

Figure 1: Shortest distance from the local centroid to the flooded area

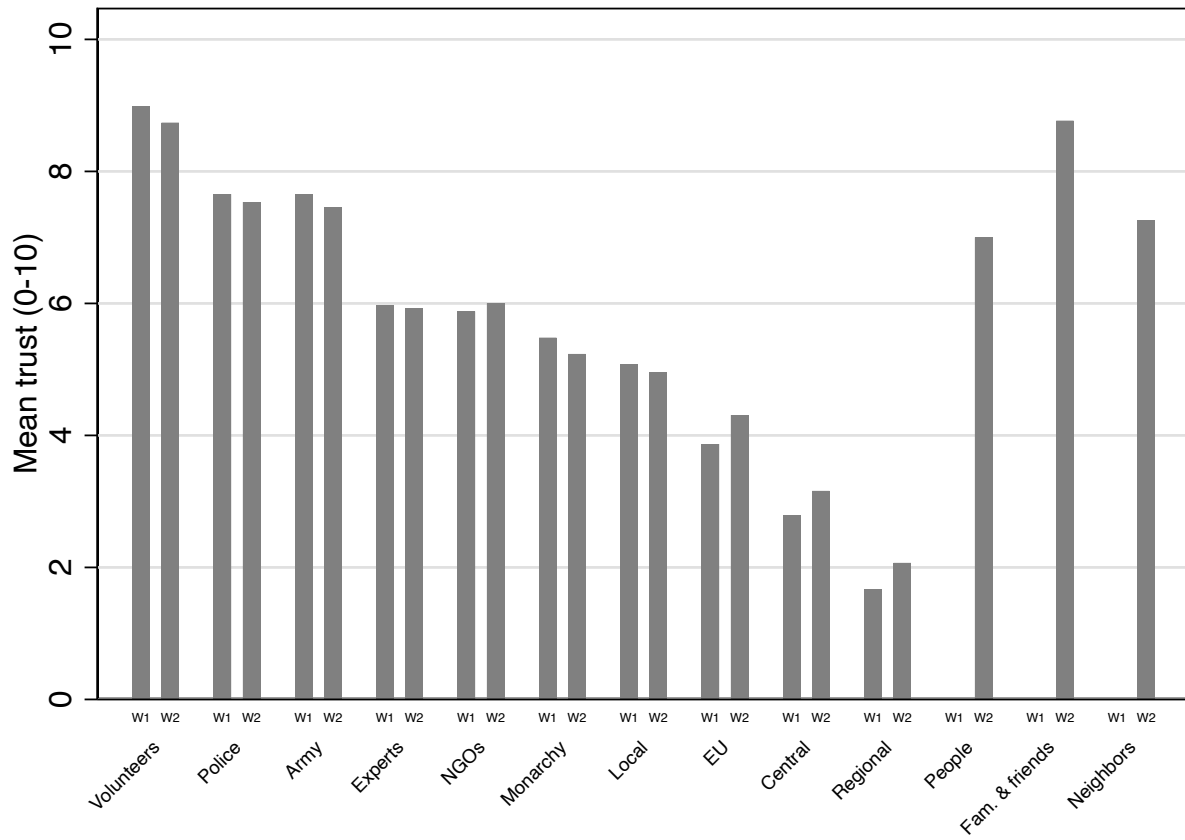


A3 Mean levels of trust in political and non-political actors by wave

Descriptive results shown in Figure 2 indicate that in the overall sample, personalized trust (trust in friends and family) and social trust (volunteers, neighbors, and people more generally) are highest, followed by trust in implementing institutions such as the army and state security forces, whereas political trust is the least regarded form of trust.

Within political actors, local governments, together with the European Union, are the political institutions viewed most favorably, while regional governments receive a notably lower evaluation across waves. Local and European authorities are usually more trusted than intermediate levels of government (regional, central), which in our sample failed to surpass the minimum approval threshold of 5. This finding corroborates previous empirical evidence in the region of Valencia and in Spain more generally (?).

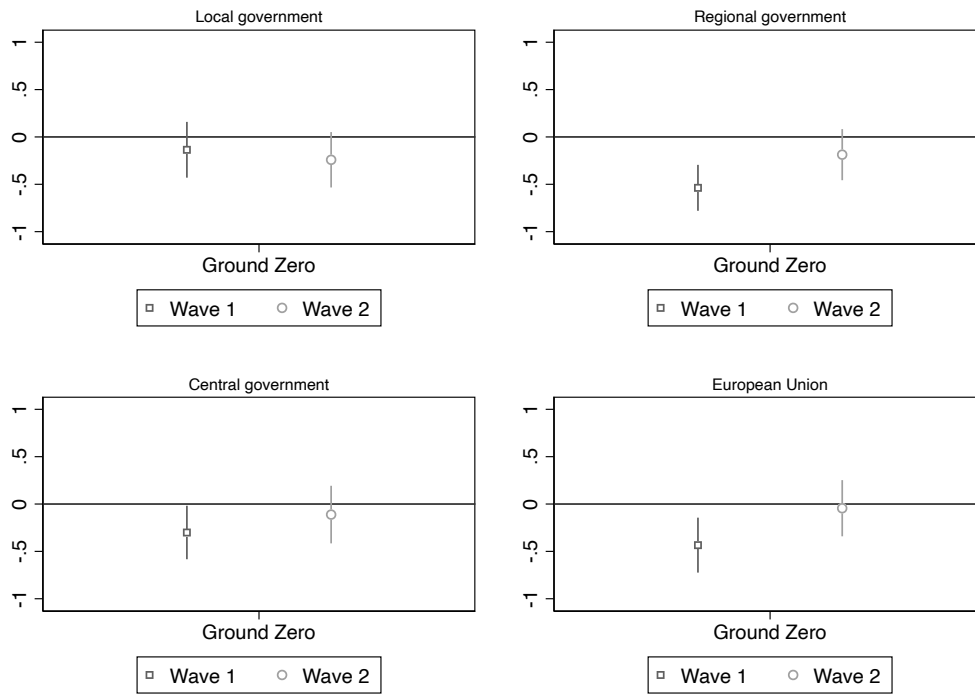
Figure 2: Trust in political, institutional and social actors by waves



A4 Trust in political and non-political actors by crisis exposure and wave

A4.1 Trust in political actors by distance to the floods (Ground Zero areas – GZ – vs rest) and wave

Figure 3: Trust in political actors and crisis-exposure measured by distance to floods



A4.2 Coarsened Exact Matching and political trust

Figure 4: Coarsened Exact Matching and political trust (by group and wave)

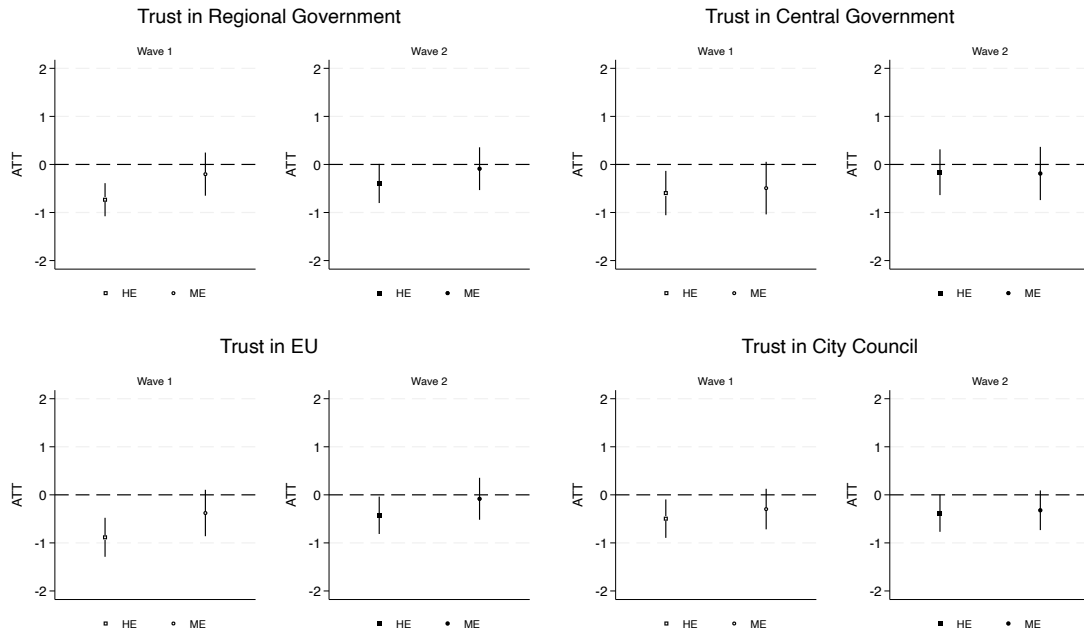
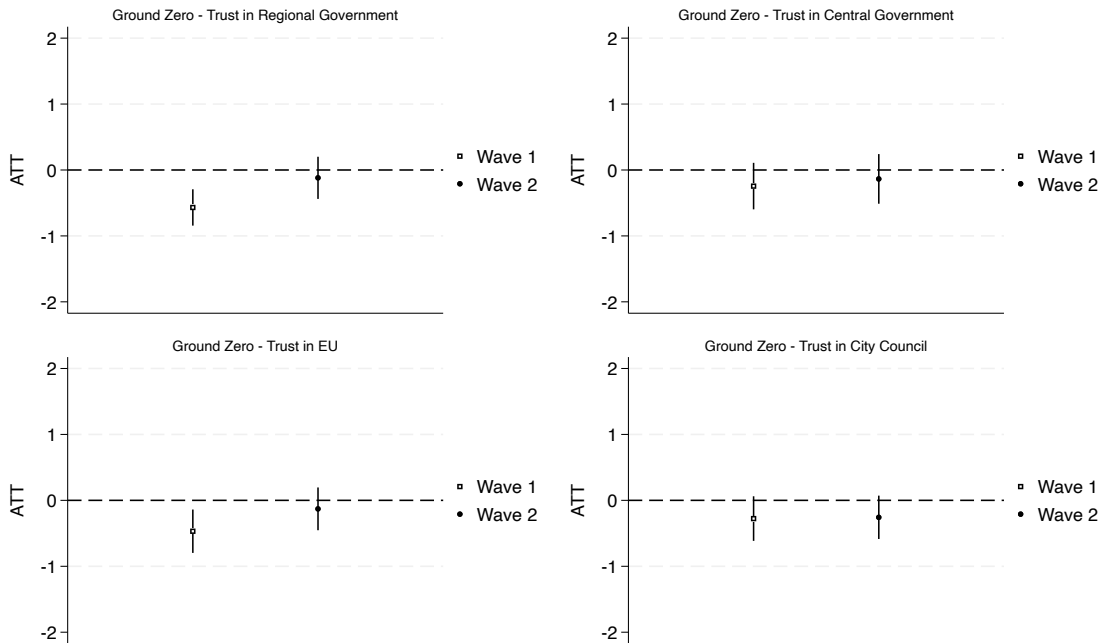
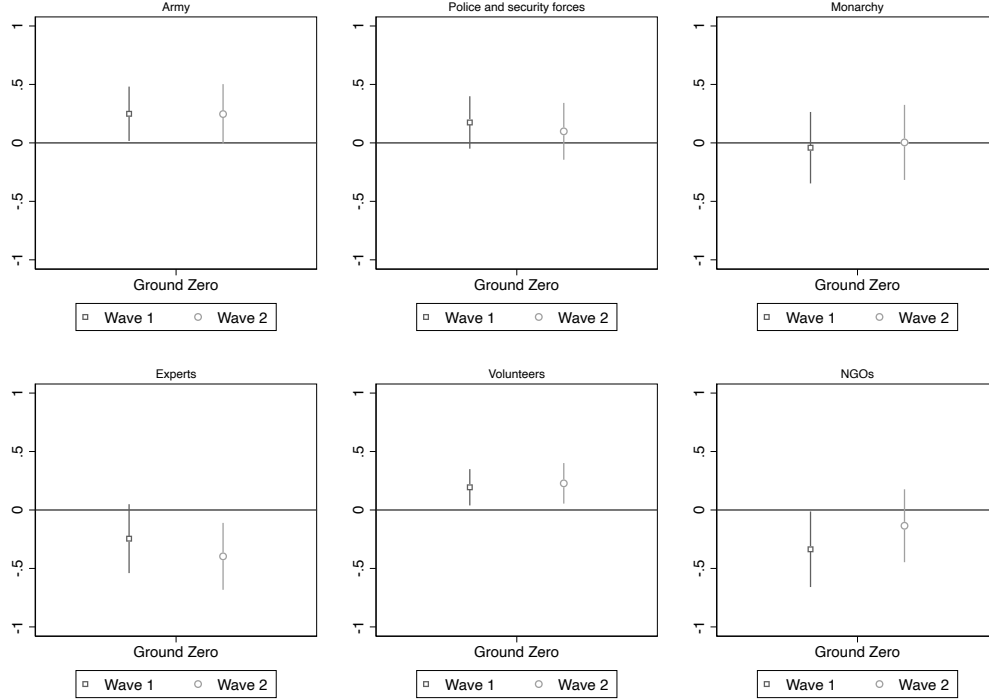


Figure 5: Coarsened Exact Matching and political trust (by distance to floods and wave)



A4.3 Trust in non-political actors by distance to the floods (Ground Zero areas – GZ – vs rest)

Figure 6: Trust in non-political actors and crisis-exposure measured by distance to floods



A5 Anti-political attitudes

The populist variable captures agreement with three statements emphasizing the primacy of the people over elites: (1) *Politicians should follow the will of the people,* (2) *I prefer to be represented by an ordinary citizen rather than a specialized politician,* and (3) *It is important for a political leader to be like the people they represent.* The technocratic variable reflects support for governance based on expertise rather than ideology, aggregating responses to: (4) *Social problems should be addressed based on scientific evidence, not ideological preferences,* (5) *The problems my country faces require experts to solve them,* and (6) *Politicians should act as managers and fix what is not working in society.* Finally, the anti-system variable measures distrust toward politicians and political institutions, summing responses to: (7) *Political parties do more harm than good to society,* (8) *Politicians spend all their time seeking re-election instead of solving problems,* and (9) *Politicians only seek to promote the interests of those who vote for them, rather than the interests of the entire country.* Higher values on each index indicate stronger agreement with the respective attitude.

A6 Coarsened Exact Matching on anti-political attitudes

We use our analyses of crisis exposure and populist and technocratic attitudes by using Coarsened Exact Matching (?). We match individuals based on prior support for the radical-right party Vox in regional elections, which serves as a direct proxy for pre-existing populist attitudes; on Vox's local electoral in respondent's municipality, as a proxy for pre-crisis contextual conditions; and on age, gender, and educational attainment to account for demographic differences across exposure zones that could independently predict populism. Results are shown in Figure 7 and Figure 8.

Figure 7: Populist and Technocratic Attitudes by group and wave (Coarsened Exact Matching on populist individual vote, local populist support, age, gender and education)

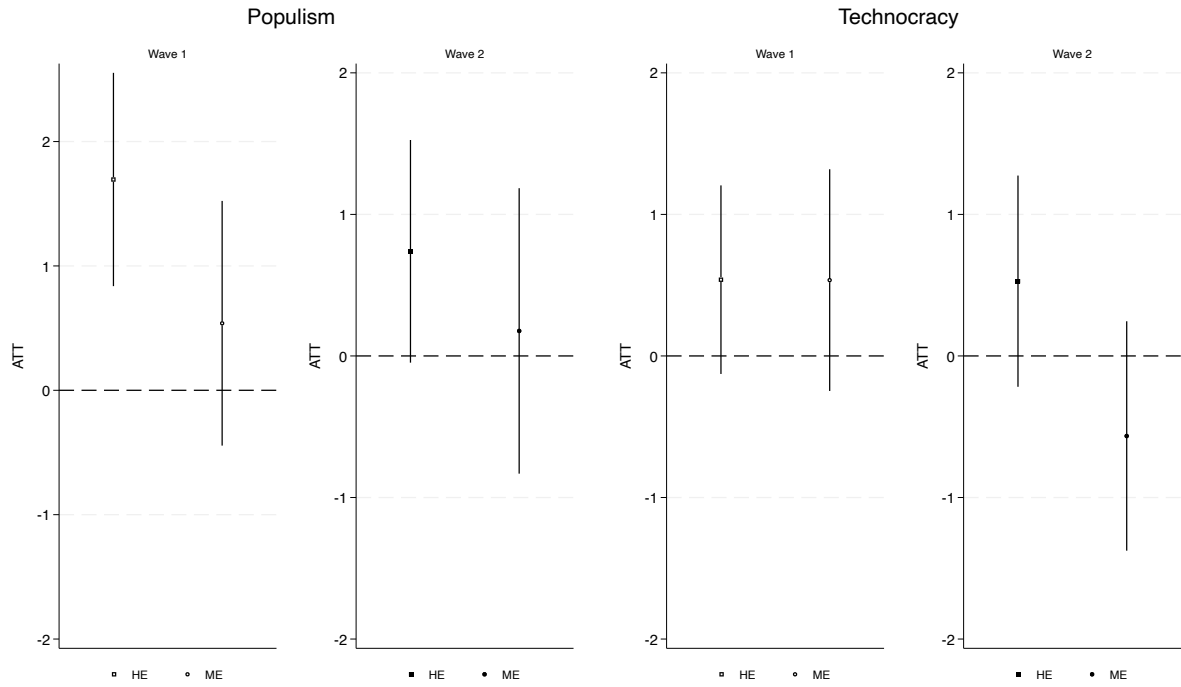
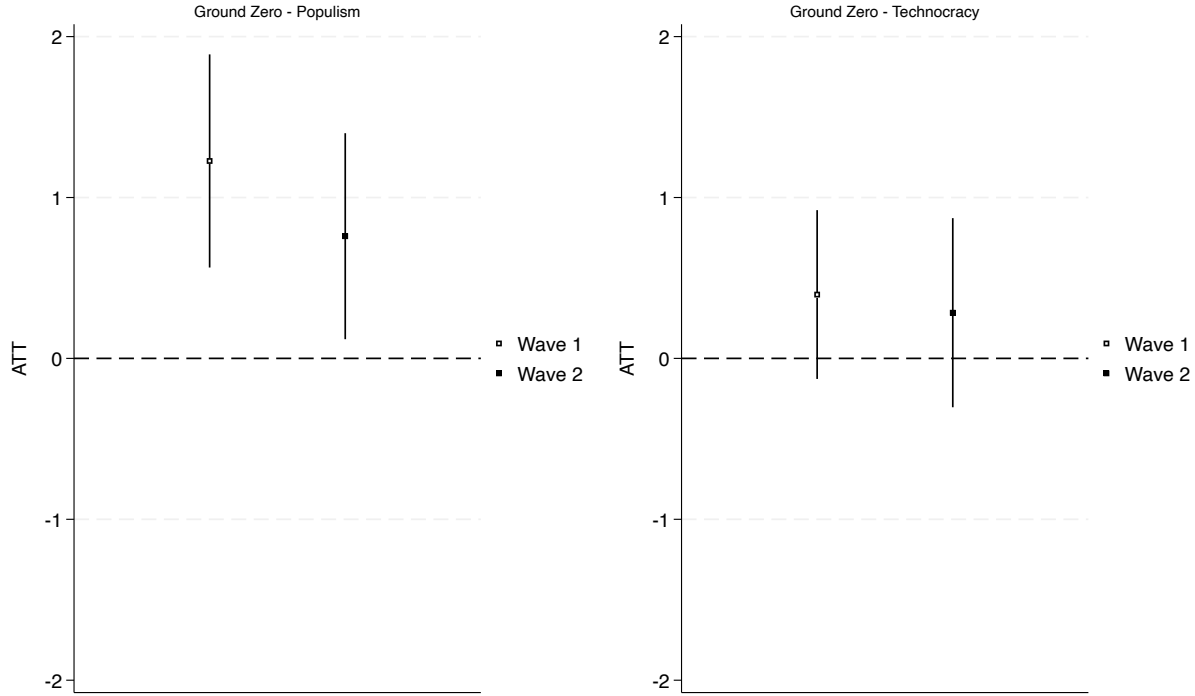


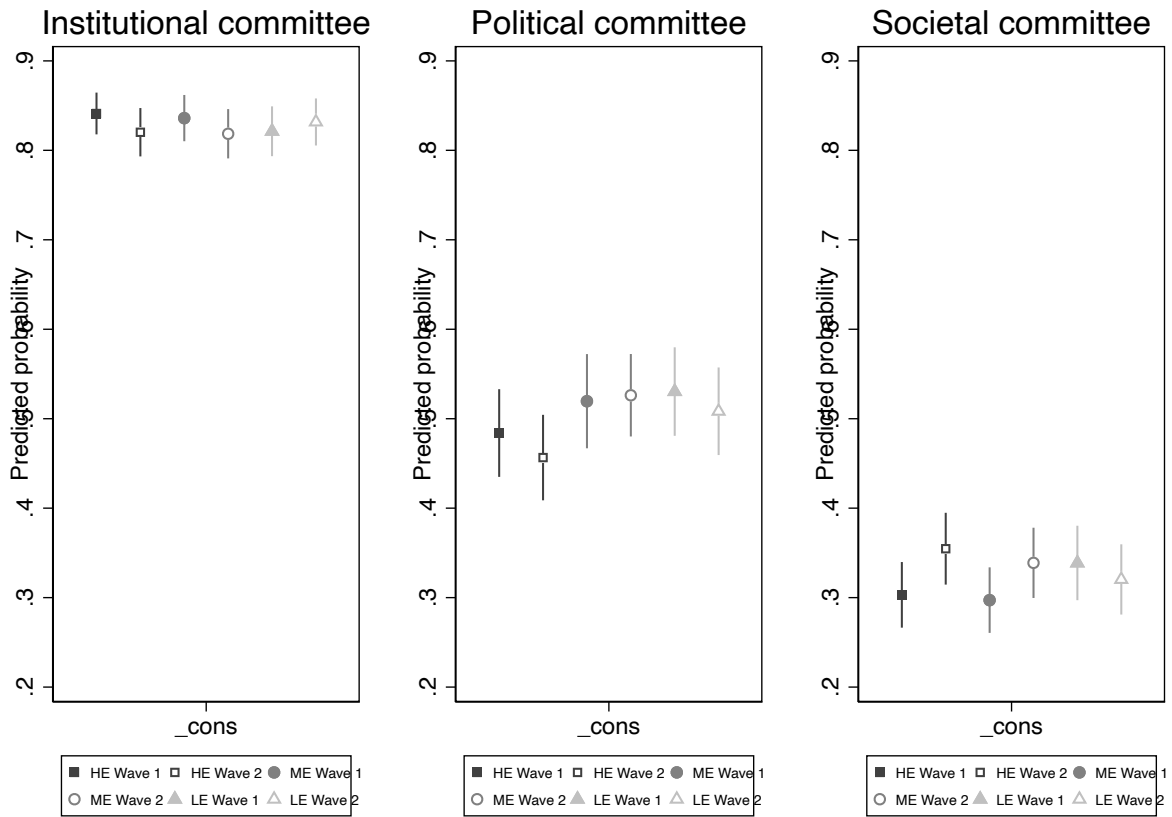
Figure 8: Populist and Technocratic Attitudes by distance to floods (Ground Zero vs rest) and wave (Coarsened Exact Matching on populist individual vote, local populist support, age, gender and education)



A7 Simulation of preferred committees for crisis-management

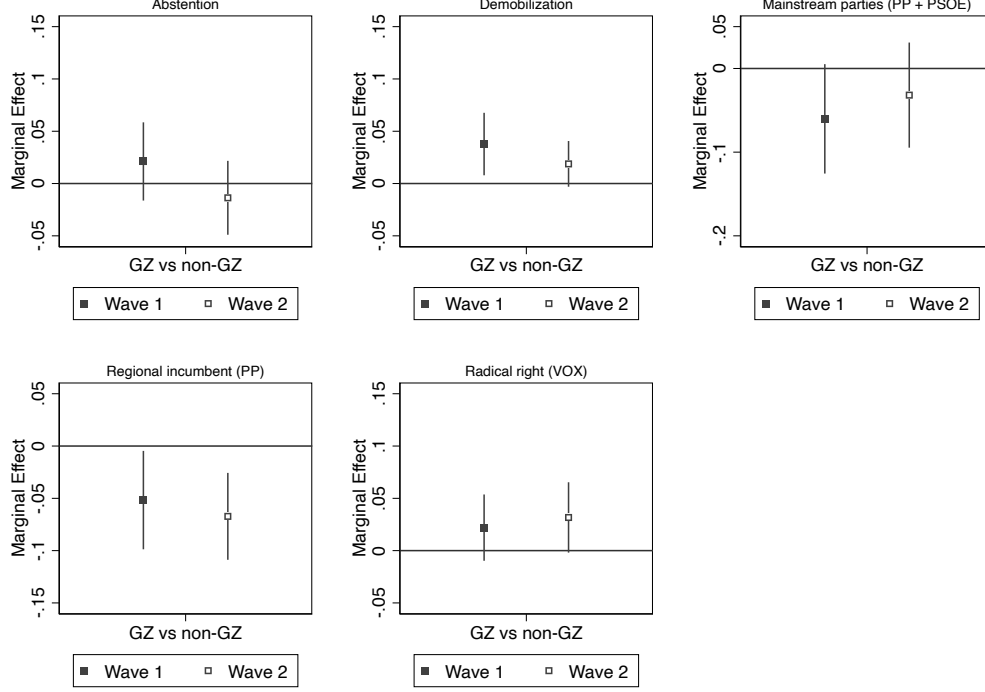
A simulation of the predicted values from the conjoint experiment by level of exposure is shown in Figure 9. The graph on the left-hand side displays the probability of selecting a committee composed of representatives from the Army, State Security Forces and Corps, as well as Experts, across different experimental groups. The middle graph shows the predicted probabilities of choosing a committee made up of political representatives from the local, regional, and central administration. The right-hand side graph displays the predicted probabilities of selecting a committee composed of societal actors. Comparing these graphs reveals that institutional representatives and experts are generally more likely to be chosen as the preferred actors to manage the natural disaster than political or societal representatives. Critically, however, preferences are remarkably stable across all exposure groups.

Figure 9: Probability of choosing a committee by type of representatives



A8 Electoral behavior and distance to floods

Figure 10: Electoral behavior by distance to floods (Ground Zero areas – GZ – vs rest)



A9 Coarsened Exact Matching on Electoral behavior

We conduct Coarsened Exact Matching (CEM) analyses on four electoral outcome variables—abstention, demobilization, vote intention for the incumbent party (PP), and support for the radical right party VOX—each using three distinct matching contexts that vary by pre-existing municipal electoral predispositions: municipal abstention context (municipal abstention rate quartile in the 2023 local elections), municipal VOX context (respondents’ municipality classified by quartiles of VOX vote share in the 2023 local elections), and municipal PP incumbent context (PP vote share median split in the 2023 local elections). For each outcome variable and matching context, we estimated treatment effects comparing high exposure (HE) versus low exposure (LE) and medium exposure (ME) versus low exposure groups across both survey waves in Figure 11 and then separately using distance to the floods (Ground Zero municipalities) in Figure 12. Matching covariates also included sociodemographic characteristics (age, education, gender).

Figure 11: Coarsened Exact Matching on Electoral Behavior (by group and wave)

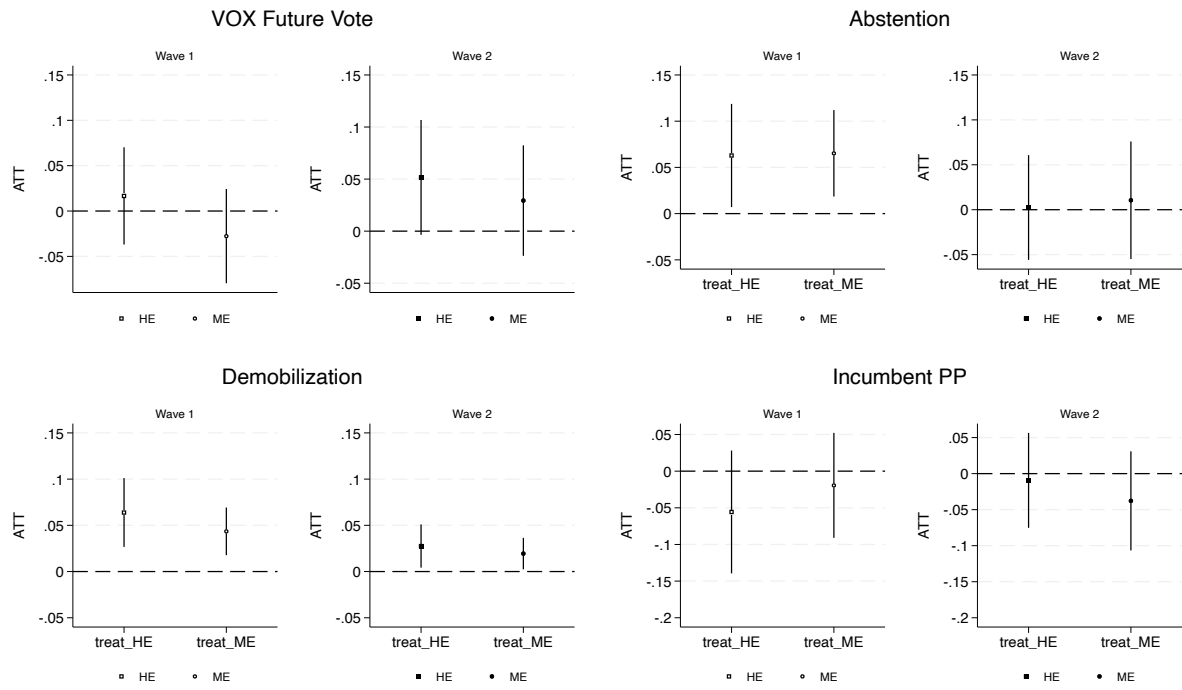
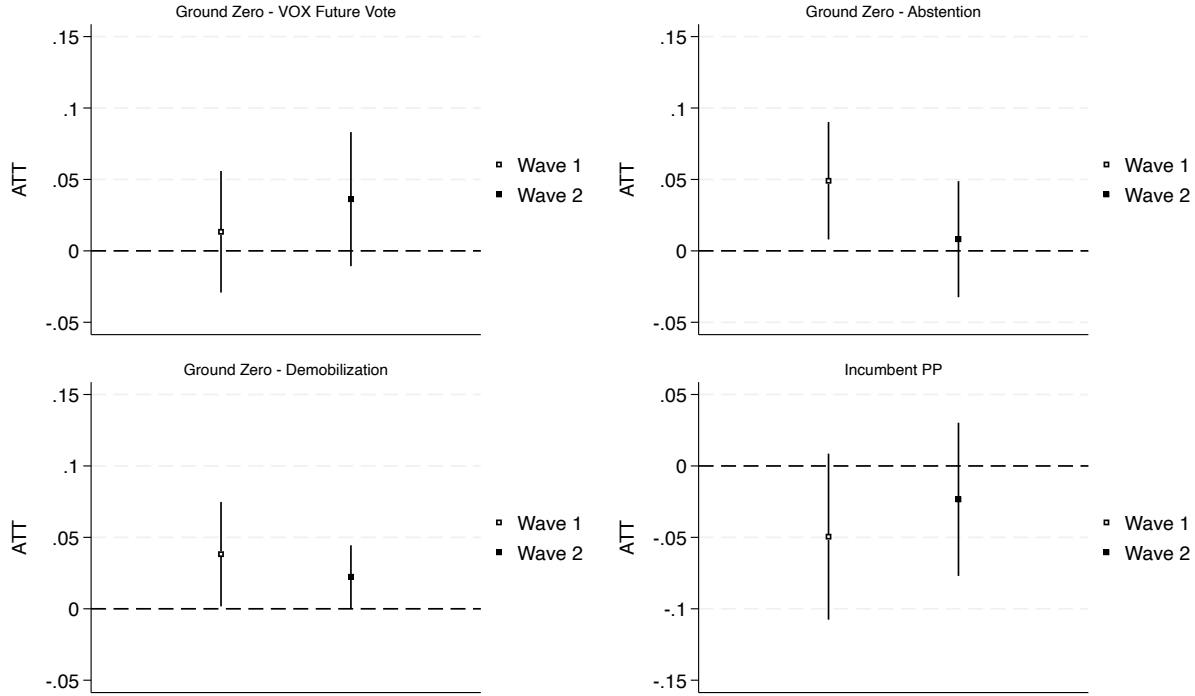


Figure 12: Coarsened Exact Matching on Electoral Behavior (using distance to floods – Ground Zero vs rest – and wave)



A10 Panel attrition analysis

Of the 1,500 respondents interviewed in Wave 1, 665 (44.3%) participated again in Wave 2, yielding an attrition rate of 55.7%. Table 6 shows that dropout rates are similar across the three exposure groups.

Table 6: Panel attrition by exposure group

	Attrited	Retained	Total
High Exposure	267 (53.4%)	233 (46.6%)	500
Medium Exposure	291 (58.2%)	209 (41.8%)	500
Low Exposure	277 (55.4%)	223 (44.6%)	500
Total	835 (55.7%)	665 (44.3%)	1,500

To assess whether attrition is differential by treatment status, we regress panel retention on Wave 1 sociodemographic and attitudinal characteristics using logistic regression. The results in Figure 13 show no significant differences in retention rates across exposure groups (High Exposure vs. Low Exposure: $AME = 0.028$, $p = 0.37$; Medium Exposure vs. Low Exposure: $AME = -0.030$, $p = 0.34$) or between Ground Zero and non-Ground Zero municipalities ($AME = 0.024$, $p = 0.35$). The only significant predictor of retention is age ($AME = 0.006$, $p < 0.001$), with older respondents being more likely to participate in both waves — a common pattern in panel surveys. All trust and attitudinal measures from Wave 1 are non-significant predictors of attrition. These results indicate that panel dropout is effectively random with respect to crisis exposure, supporting the internal validity of the panel analyses.

Figure 13: Attrition predictors

Table: Panel Attrition — No W1 Characteristic Predicts Re-interview		
	Model 1: Groups	Model 2: Ground Zero
HE vs LE (ref.)	0.032 (0.032)	—
ME vs LE (ref.)	-0.008 (0.032)	—
Ground Zero (vs non-GZ)	—	0.000 (.)
Female	0.000 (.)	0.017 (0.027)
Age	-0.034 (0.027)	-0.034 (0.027)
Trust: regional gov.	0.006*** (0.001)	0.006*** (0.001)
Trust: central gov.	-0.005 (0.006)	-0.006 (0.006)
Trust: EU	0.003 (0.006)	0.003 (0.006)
Trust: local gov.	-0.005 (0.006)	-0.005 (0.006)
Populism	0.014** (0.005)	0.014*** (0.005)
Technocracy	0.000 (0.003)	0.000 (0.003)
Education: upper secondary (ref.: lower sec.)	0.000 (.)	0.000 (.)
Education: post-secondary	0.034 (0.042)	0.033 (0.042)
Education: university+	0.058 (0.048)	0.057 (0.048)
Ideology: center (ref.: left)	0.000 (.)	0.000 (.)
Ideology: right	0.037 (0.038)	0.039 (0.038)
Ideology: DK / no answer	0.018 (0.039)	0.020 (0.039)
N	1374	1374

*Average marginal effects from logit models. Outcome = 1 if re-interviewed in Wave 2. Robust SE in parentheses. * $p < 0.10$ ** $p < 0.05$ *** $p < 0.01$. Reference categories: exposure = Low Exposure; education = lower secondary or less; ideology = left.*