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Are Bad Institutions Always Bad for Society? Trust and Cooperation in Times of Crisis

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Are Bad Institutions Always Bad for Society?

Trust and Cooperation in Times of Crisis

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Abstract

This paper investigates how institutional and social trust respond to crisis situations, and to what extent different kinds of trust interact in such a context. In an online survey experiment on 4,400 representative respondents from Italy, participants are exposed to a real-world flooding scenario and randomly assigned to information treatments portraying institutions as effective, ineffective, or neither of the two. When institutions are framed as effective, institutional trust and donations to a grassroots environmental NGO increase, while social trust and cooperation norms remain stable. When institutions are seen as unprepared, participants do not compensate by trusting others or stressing cooperation. Instead, they increase support for the NGO as well, suggesting crisis management delegation to motivated and organised citizens. When no information is provided about institutional quality all trust indicators rise, albeit more noisily. These findings suggest delegation as a distinct response to institutional failure and point to the need to study trust in civic movements as an intermediate form between institutional and interpersonal trust.

Keywords— Social trust; Institutional trust; External shocks; Online survey experiment; Climate change; Cooperation; Grassroot movements; Delegation

JEL codes— D91; H84; Z13; C93; D83; H11; P16

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1 Introduction

Recent research suggests a positive relationship between institutional trust and social trust (Herreros, 2023). However, other studies show that both types of trust can diverge following external shocks (Aassve et al., 2024, Daniele et al., 2023). This paper aims to further investigate the link between perceived institutional quality and social trust, and to shed light on one of its potential mechanisms: exogenous crisis events. Building on previous studies on trust, we hypothesize that the well-documented positive relationship between social and institutional trust in normal times (Sønderskov and Dinesen, 2016, Seifert, 2018, Mewes et al., 2021, Dinesen et al., 2022) can be put under pressure in periods of crisis. At such critical junctures, these two forms of trust may continue moving in tandem, or they may begin to diverge.

When citizens face an external, unpredictable threat, such as a pandemic or an extreme natural event, they expect institutions to provide timely assistance and protection, or at least to have made necessary investments to mitigate the adverse effects of the shock. If these expectations are met, citizens feel they can count on “good” institutions (e.g. Bechtel and Hainmueller, 2011, Persson and Povitkina, 2017), with government effectiveness considered here as a component of institutional quality (Rothstein and Teorell, 2008). The resulting rise in institutional trust can then also boost trust in the wider society and other people—what we term the “mirroring hypothesis”. In such cases, citizens perceive institutions as universalistic, power-sharing, and uncorrupt, which acts as a catalyst for shared norms of good conduct and fosters the belief that others in society are equally trustworthy.

Conversely, when citizens perceive they cannot rely on institutional support—such as in cases where inadequate infrastructural or health investments exacerbate the negative effects of a crisis—they may feel abandoned by the very actors from which they expect support. This sense of institutional failure can foster the perception of a “bad” institutional environment, in which public authorities are seen as unprepared, unresponsive, or indifferent to citizens’ needs. As a result, institutional distrust may spill over into social distrust. Citizens might begin to suspect that anonymous others—such as those who voted for the current leadership—bear some responsibility for institutional failure. This perception can further undermine social trust, reinforcing the belief that, in times of crisis, neither institutions nor fellow citizens can be relied upon for support.

However, the inverse could also happen. When citizens are disappointed by how key institutional actors manage both the pre-crisis and crisis periods, they may redirect their search for support toward other segments of society and rely on other, unknown people for recovery and solidarity (Aassve et al., 2024). Motivated by an outward search for connection and support (Gambetta and Morisi, 2022), citizens who feel abandoned by public institutions may form positive expectations that other victims of the same misfortune will be willing to help. In these cases, institutional and social trust to move in opposite directions—declining in the former while rising in the latter—consistent with what we define as the “divergence hypothesis”.

To test the divergence versus the mirroring hypotheses, we conduct a large scale experiment where respondents are exposed to a crisis scenario based on a recent extreme natural event. This real-world stimulus is intended to evoke feelings of threat and anxiety associated with an unexpected external shock. Subsequently, respondents are randomly exposed to one of the information treatments that frame institutions as either prepared or unprepared to respond to the crisis. This approach enables us to test whether exposure to external shocks—combined with varying perceptions of institutional performance—can indeed drive a wedge between social and institutional trust.

Our experimental design contributes to a still underexplored area of research by examining how perceived institutional quality interacts with external shocks to shape various dimensions of social trust, including trust in grassroots movements, cooperation norms, and trust in both known and unknown others. In doing so, it offers valuable insights into the underlying mechanisms that drive trust dynamics in times of crisis.

2 Pre-registered hypotheses

We test the following set of pre-registered hypotheses¹:

1. When citizens experience an external, unexpected shock and turn to their institutions for support, either of the following outcomes can occur:
 - (a) ‘Mirroring’ hypothesis: when institutions are perceived as effective and hence capable of facing the threat, political trust will grow alongside social trust. Institutional quality then acts as a catalyst for shared norms of good conduct throughout society, boosting social trust.
 - (b) ‘Divergence’ hypothesis: when institutions are perceived as ineffective, and hence incapable of facing the threat, political trust will drop whilst social trust will rise. Social trust thus compensates for poor institutional quality as people turn to each other for assistance.
 - (c) If no information on institutional effectiveness is available, social and political trust can either diverge or move in tandem, depending on the strength of the respective effects described above.
2. In normal times, when no unexpected shocks occur, social and political trust tend to correlate positively.

¹Pre-registration is available at the following link: <https://www.socialscienceregistry.org/trials/14910>

3 Methods

3.1 Experimental Design

We test for the causal effect of institutional effectiveness on cooperation, social trust, and institutional trust in the presence of severe environmental crises.

To activate a crisis response, we distribute images of the catastrophic floods ravaging central Italy in 2023, where urban settings are observed submerged under floodwater. We manipulate perceptions of the institutions by distributing information on public administrations' disaster preparedness and on the adoption of climate change adaptation measures.²

We first set the scene by informing the respondents, contextually to the presentation of the image, about the need for environmental and land protection to avoid or curb the effects of natural disasters. We use the recommendations of the Italian National Institute for Environmental Protection and Research (ISPRA), advising increased investment in environmental and land protection, to establish a benchmark for institutional performance.³ This provides a common interpretative framework across all experimental conditions, enabling respondents to assess whether public action is aligned—or misaligned—with the Institute's guidance on preparing the Italian territory for the impacts of climate change.

We then leverage trends in municipal public expenditure on environmental and land protection to convey information about increasing (*prepared institutions*) or decreasing (*unprepared institutions*) investment. This information is not tied to any specific locality, thereby avoiding geographic anchoring. Instead, it is presented to give respondents a general impression of how prepared local administrations may be in the face of disasters.

To ensure comprehensibility and relevance, we avoid citing absolute budget figures that might be difficult for respondents to contextualize. Instead, we report percentage changes in expenditure over time. Specifically, respondents in the *Disaster + Unprepared Institutions* condition are told:

“Public budget records suggest that many Italian municipalities might be unprepared, having reduced environmental and land protection budgets by approximately 50% between 2017 and 2020.”

In contrast, those in the *Disaster + Prepared Institutions* condition are told:

“Public budget records suggest that many Italian municipalities might be prepared, having increased environmental and land protection budgets by approximately 50% between 2017 and 2020.”

²For combined use of information and images to activate reference frameworks, see [Campedelli et al. \(2023\)](#).

³This information is extracted from ISPRA's reports and adapted for our purposes. ISPRA is a public legal entity subject to the Italian Ministry for the Environment, Territory and Sea endowed with technical, scientific, organizational, managerial, administrative, and financial autonomy. Among its functions is that of advising and providing recommendations to the Ministry for the Environment in its functions of minimising environmental risk and responding to environmental challenges.

Importantly, the images shown remain identical across conditions. The only exogenous variation lies in the portrayal of institutional performance. This defines a self-contained “treatment-to-treatment” design that separates respondents based on perceived institutional preparedness, allowing us to identify how such perceptions influence the outcomes of interest.

We introduce two baseline conditions to gain insights into: (i) the simple effect of crisis exposure, and (ii) the added effect of information about institutional activity. In our active baseline condition, *Disaster*, participants are exposed to the same images used in the main interventions, accompanied by information derived from ISPRA’s reports, but without any reference to institutional behaviour. Our pure baseline condition, *No Disaster – Control*, presents neutral images of urban settings and omits any reference to natural disasters or institutional performance. Instead, it includes unrelated filler text, providing a clean control environment.

By comparing outcomes across these two baseline interventions, we can identify the effect of simple crisis exposure on our different measures of trust. Further comparisons with the main intervention conditions enable us to assess the added impact of perceiving institutions as high- or low-performing during a crisis.

3.2 Main outcomes

Our main outcome variables are behavioral and attitudinal measures of cooperation, social trust, and institutional trust.

We take a number of steps to mitigate potential demand effects originating in the congruence between the information conditions and the outcomes. First, we use an incentivised measure of social trust in the form of a donation to a grassroots, apolitical and non-institutional environmental organisation with widespread presence across Italy. Second, the between-subjects design ensures the respondents are not exposed to information about other branches of the experimental setup that are irrelevant to their own condition. Finally, we introduce plausible yet unrelated filler questions between the intervention and the measurement of key outcomes to obfuscate the true aim of the study (Campedelli et al., 2023). At the end of the survey, we also ask respondents to identify what they believe the main purpose of the study was,⁴ and conduct robustness checks excluding those who selected options (i), (iii), or (iv), which indicate a potential awareness of the experiment’s true aim and thus risk introducing experimenter demand effects.

1. **Cooperation / Incentivised social trust:** We elicit an incentivized measure of willingness to cooperate for the common good through participants’ decisions to donate any portion of a €3 endowment to the Italian NGO Legambiente. Legambiente is a grassroots organization that promotes

⁴Translated from Italian: “*In your opinion, what is the main objective of this survey?*” Options included: (i) correlating institutional performance with measures of social and institutional capital; (ii) understanding how the use of images influences the interpretation of statistical information; (iii) measuring awareness of the need for land and environmental rehabilitation; (iv) measuring the responsiveness of the social fabric to natural disasters; (v) identifying the best format for presenting media content; (vi) analyzing preferences and trends in news consumption; and (vii) understanding the survival of traditional media in the digital age.

environmental awareness and undertakes direct action across Italy through the voluntary engagement of private citizens. Participants receive a description of the organization that emphasizes its non-governmental, grassroots, and apolitical nature.⁵ This variable serves as a money-incentivized measure of cooperation, capturing a key underlying component of it: trust in competent, motivated, and civically engaged members of society. In our experimental setting, this measure allows us to assess the extent to which individuals are willing to self-organize in response to institutional action that is perceived as either adequate or lacking—thus reflecting the tendency to substitute or complement grassroots action for institutional intervention.

2. **Institutional trust** We elicit stated (non-behavioural) measures of trust in a range of institutions: national politicians, the government, regional politicians, municipal politicians, the police, and public administrations. For each institution, respondents indicate their level of trust on a scale from 1 (none) to 10 (a lot), in response to the prompt: “How much do you trust [institution]?” We construct a composite institutional trust index by averaging responses across the six items. As a robustness check, we also compute an alternative index based on the first principal component extracted from a factor analysis of these responses.

We expect institutional trust to shift mechanically upward or downward in response to information about increasing or decreasing institutional preparedness, as described above. Our objective is to assess the extent to which institutional trust and the various measures of social trust move in the *same* or *opposite* directions across treatment arms. In this sense, institutional trust serves as a relatively straightforward benchmark against which we can interpret the directional movement of our distinct measures of social trust, also described below.

3.3 Secondary outcomes

1. **Social trust:** A non-incentivized measure of trust in others—both known individuals (particularized trust) and strangers (generalized trust)—elicited using standard questions from the World Values Survey.⁶
2. **Social norms:** We elicit perceptions of cooperative norms using a non-incentivized within-sample opinion-matching approach. Participants are first asked to indicate their level of agreement with the statement: “It is everyone’s duty to cooperate with others for the common good,” using a four-point scale (Completely disagree, Disagree, Agree, Completely agree). Norm perceptions are

⁵Translated from Italian, this read: “*Legambiente is an apolitical nonprofit association that was formed through the collaboration of citizens committed to protecting the environment, quality of life and promoting a more equitable society. Through volunteerism and direct engagement, the association advocates change toward a sustainable future, relying on scientific environmentalism that collects ecosystem data as the basis for its work. Active for more than 40 years, Legambiente aims to protect the environment for a better quality of life.*”

⁶See the attached questionnaire for the exact wording.

measured, on the following screen, by asking the respondents to guess the most frequently selected level of agreement by all survey participants.

3.4 Prior and posterior beliefs

We elicit respondents' prior perceptions of institutional performance by asking them to estimate the change in the budget allocated by their local administration to environmental and land protection.⁷ Estimates are provided on a scale ranging from -100% (complete decrease) to $+100\%$ (doubling of the budget).⁸

In the experimental conditions providing information about institutional behaviour, respondents' priors are elicited *contextually* to the delivery of information from ISPRA. This information, which *precedes* the experimental manipulation, only highlights the urgency for local institutions to prepare the territory to mitigate natural disasters and is common to both the *Disaster + Unprepared Institutions* and *Disaster + Prepared Institutions* conditions. By contrast, participants assigned to the *No Disaster* and *Disaster* conditions are not exposed, respectively, to information about disasters or about institutional activity prior to the measurement of key outcomes. For these groups, we therefore postpone the elicitation of prior beliefs to avoid contaminating their responses.

We elicit posterior beliefs about institutional effectiveness by asking respondents to evaluate the ability of local administrations to respond efficiently, effectively, and rapidly to emergencies occurring within the Italian territory. Responses are recorded on a scale from 1 to 10, where 1 indicates complete inefficacy and 10 indicates full efficacy.

Importantly, respondents are not expected to be accurate in their subjective priors and posteriors. Regardless of correctness, their responses serve as meaningful indicators of both baseline (prior) and posterior (manipulated) perceptions of institutional effectiveness. Moreover, by eliciting priors and posteriors that are distinct from one another and from the outcome variables, we reduce the risk of benchmarking and consistency biases. This design supports a cleaner analysis of beliefs as potential mediating channels for the experimental effects (Haaland et al., 2023, Fuster and Zafar, 2023).

⁷We are not concerned with the accuracy or precision of these estimates. Our objective is to capture whether respondents perceive their local institutions as moving toward increased or decreased preparedness. This type of prior information is inherently difficult to incentivize. Public budgets are often opaque to citizens, and it is challenging to obtain *meaningful* subjective estimates of public budgetary trends. For this reason, we chose not to incentivize the elicitation of these priors.

⁸We use the following question: "According to you, how has the average municipal public spending for environmental and territorial protection changed over the past 5 years? Please answer in percentage terms from -100% to $+100\%$, where: -100% indicates a complete reduction in public spending; $+100\%$ indicates that public spending has doubled; 0% indicates no change in public spending. The slider will appear when you click on the bar. Reminder: Negative values indicate that you believe spending has decreased; positive values indicate that you believe it has increased."

3.5 Controls and heterogeneity analysis

We elicit standard socio-demographic characteristics—including gender, age, income, and education—as well as measures of political orientation, environmental concern, social connectedness (i.e., the number of associations in which participants are involved), prior beliefs, and personal exposure to natural disasters. Our empirical strategy controls for all these covariates, in addition to prior beliefs and macroarea fixed effects.

Preregistered heterogeneity analyses focus on political orientation, environmental concern, social connectedness, and disaster exposure. In robustness checks, we further include region or province fixed effects to account for variation in local public expenditure on environmental protection and land requalification.

3.6 Obfuscation and attention

To mitigate the risk of demand effects or social desirability bias, we obscure the true purpose of our study by framing it as an investigation into communication strategies and the use of images in news media. To support this obfuscation, we include questions about respondents’ preferences for images and infographics, as well as their perceptions of how information is conveyed when accompanied by visual content. These questions are strategically placed at two key points in the survey: first, between the socio-demographic block and the experimental information treatments; and second, immediately following the information treatments and preceding the elicitation of outcome variables.

To further enhance respondent attention to the relevant content—within the context of our obfuscation strategy—we ask participants to evaluate the congruence between the informational text and the accompanying images provided during the treatment delivery.

3.7 Sample and data collection

Our design consists of four between-subject branches. With a target sample size of 1000 units per branch (i.e., 4000 in total), we are able to detect a minimum effect size $ME=0.125$ (12.5% of a standard deviation) at power $p = 0.8$ and alpha $\alpha = 0.05$ over standardized outcomes.

Online respondents are recruited through Qualtrics. Given the importance of geolocation for our treatment conditions, and to ensure generalizability through a sample that closely mirrors the Italian population, we implement quotas based on age, gender, education, and macroarea of residence.

The final sample used in our analyses consists of 4,400 completed surveys. Summary statistics are reported in Table B.2 and Table B.3 in the Appendix, along with the Variable Legend (Table B.1) and tests for the balance of sociodemographic characteristics across conditions (Table B.4).

3.8 Empirical strategy

We investigate each element in our vector of outcome variables \mathbf{y} , described in Section 3.2 and 3.3, using standard OLS regressions. Our baseline estimation is described by

$$\mathbf{y} = \beta_0 + \beta_1 C + \beta_2 \mathbf{X} + \phi + \varepsilon \quad (1)$$

where the elements of y are our measures for posterior beliefs, cooperation, social and institutional trust. Further, C is an indicator variable taking values 0 to 3 for each of our experimental conditions, and ε is the error term. We use robust standard errors.

Because our experimental conditions are randomised at the individual level, we expect (1) to suffice to reveal the effects of interest.

We account for potential heterogeneity of effects by controlling for \mathbf{X} , i.e. a vector of individual characteristics (see above), and ϕ , i.e. macroarea (NUTS1) fixed effects.

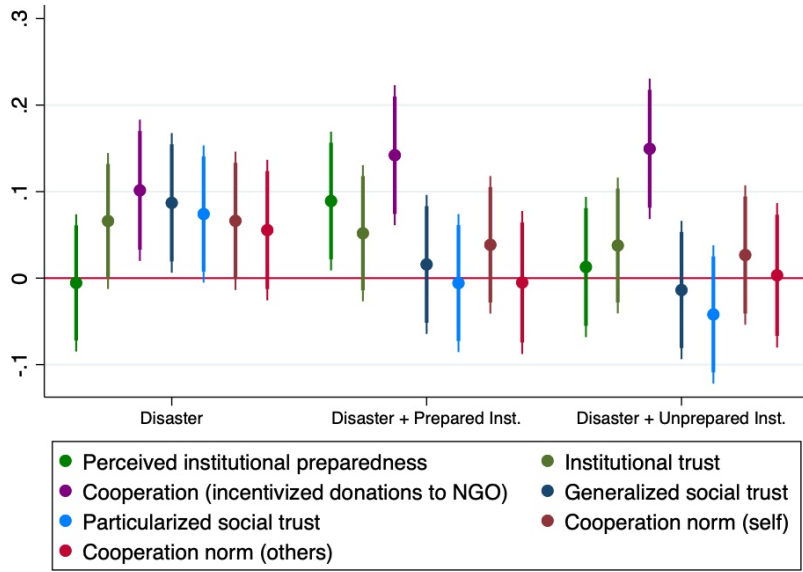
4 Results

As shown in the central panel of Figure 1, we find that when institutions are framed as effective, both perceived institutional preparedness and institutional trust increase, alongside cooperation measured by incentivized donations to a grassroots organisation (Legambiente). However, we observe no significant changes in social trust, willingness to cooperate, or cooperative normative expectations. In relation to our theoretical framework, these findings suggest that the mirroring effect extends primarily to grassroots activism—indicating some responsiveness of cooperative behavior to institutional cues—but does not generalize to interactions with anonymous others. We discuss this pattern in Section 5.

Next, when institutional failure is emphasized on the right hand side of Figure 1, respondents do not report higher levels of social trust to compensate for ineffective policies, nor do they stress the importance of cooperation. Instead, they respond solely by increasing grassroots donations. We interpret this pattern as a form of partial compensation, which may reflect an attempt to offset institutional shortcomings through direct civic engagement. A more detailed discussion of this “in-between” response is provided in Section 5.

Lastly, when institutional quality is not mentioned, we observe modest gains in both institutional and social trust, hinting at mirrored social optimism and solidarity in crisis contexts.

Figure 1: Treatment effects on primary and secondary outcomes

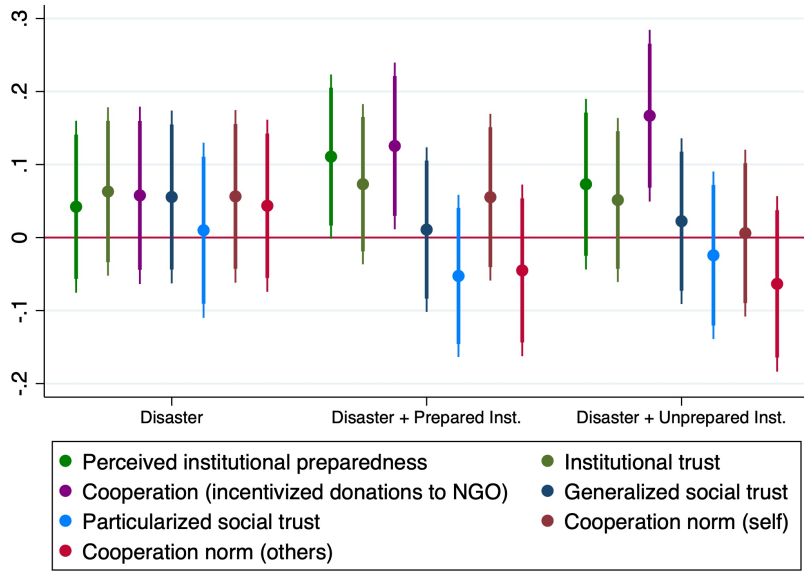


Notes: Figure shows coefficients from regressions controlling for age, gender, education, income, environmental concern, exposure to natural disasters, n. of associations the participant is involved in, macroarea fixed effects, and duration of the survey. Outcome variables are standardized. Robust standard errors. The omitted benchmark is *No Disaster*.

These results could be due to experimenter demand effects (EDE). As shown by Figure C.1 in Appendix, obfuscation only worked to a certain degree as some respondents managed to at least partially tease out aspects of our design. Omitting these for robustness in Figure 2 renders the treatment effects in the crisis condition non-significant, meaning social optimism could partially be a product of the survey.

However, the main findings under both institutional information conditions remain robust, including the result on donations to the environmental NGO. This is particularly relevant because an alternative explanation for the increase in donations to Legambiente could be that the treatments include an environmental priming component. This may account for the effect observed in the *Disaster* treatment in Figure 1, which disappears in Figure 2. In other words, by excluding respondents more susceptible to priming, we can more confidently interpret the remaining effect as a proxy for increased cooperation, specifically, towards an environmentally focused NGO. Lastly, in Figure C.5 and Figure C.6 we interact treatment effects with concern for environmental disasters (elicited prior to treatment) and previous exposure to disasters, showing no heterogeneous effects for the Legambiente donation outcome, also when correcting for EDE (Figure C.7 and Figure C.8).

Figure 2: Treatment effects on primary and secondary outcomes (*no EDE*)



Notes: Figure shows coefficients from regressions controlling for age, gender, education, income, prior beliefs, environmental concern, exposure to natural disasters, n. of associations the participant is involved in, macroarea fixed effects, and duration of the survey. Outcome variables are standardized. Robust standard errors. The omitted benchmark is *No Disaster*. Participants whose reported survey aim is only partially consistent with the aim of this study are excluded from the analyses (i.e., those reporting the survey aim is to: correlate institutional performance with measures of social and institutional capital [correct answer]; measure awareness of the need for land and environmental rehabilitation [partially related]; or measure the responsiveness of the social fabric to natural disasters [partially related]).

Romano-Wolf adjusted p-values for the main outcomes are reported in Table B.5 in the Appendix. Results suggest that the only treatment effect robust to multiple hypotheses correction is on Cooperation (donations to Legambiente), which remains statistically significant across all treatment arms—though less so in the Disaster Only condition.

In the Appendix, we also present a series of additional checks exploring the heterogeneity of the treatment effects. Specifically, we examine whether the results differ by identification with the local community (Figure C.9), political orientation (Figure C.10), degree of social isolation (Figure C.11), residence in provinces with high levels of environmental spending (Figure C.12), or location within specific macroareas (Figure C.13). Overall, we find limited evidence of heterogeneous treatment effects. However, a noteworthy exception concerns prior beliefs about institutional preparedness, which appear to moderate the impact of the intervention (Figure C.3 and Figure C.4). In particular, individuals with high expectations — when unmet — experience declines in both institutional and social trust, as well as in all measures of cooperation. This pattern suggests the presence of a threshold beyond which unmet expectations trigger disillusionment, rather than a compensatory shift toward civic engagement or social reliance.

The robustness of the findings is further supported by several sensitivity analyses reported in the Appendix. These include: aggregating trust measures using principal component analysis (Figure C.14); controlling for region fixed effects (Figure C.15); clustering standard errors at both the province (Figure C.16) and region levels (Figure C.17); and excluding respondents whose survey completion times fall below the 5th or above the 95th percentile (Figure C.18).

Next, as preregistered, we estimate the causal role of posteriors in the outcomes of interest. We examine the exogenous component of the shift in beliefs (from priors to posteriors) induced by our intervention as a driver of the observed effects on the outcome variables. To this end, we rely on an Instrumental Variables approach, using as an instrument for the posteriors the distance between the individual’s prior belief B about the change in institutional preparedness and the information i we provided (Fuster and Zafar, 2023). More specifically, defining the perception gap $\Delta = B - i$ as the distance between the individual’s perception and the value we provided in two out of the four conditions (i.e., +50% or -50%), we estimate the following first-stage equation:

$$P = \beta_0 + \beta_1 C + \beta_2 \Delta + \varepsilon, \quad (2)$$

where P is the individual’s (posterior) beliefs about institutional preparedness. We then estimate the following (second-stage) equation:

$$\mathbf{y} = \beta_0 + \beta_1 \tilde{P} + \varepsilon, \quad (3)$$

where \tilde{P} is the vector of predicted values of the posteriors from (2). This strategy isolates the potentially endogenous components of the posteriors by instrumenting them using the experimental intervention and the perception gap, both of which are exogenous. Second-stage results are shown in Figure C.2 in the Appendix. They suggest that posterior beliefs, as exogenously shifted by information provision, positively affect institutional trust, generalized social trust, and cooperation (incentivized donations to the NGO). This indicates that our main findings are driven by a personal change in perceptions of institutional preparedness.

Lastly, we also find positive correlations between all trust outcomes in the pure condition as shown in Table B.6. Assuming respondents reason as they would in normal times in this case, being a scenario where no unexpected shocks occur, this confirms our mirroring hypothesis 2, i.e. in normal times social and political trust correlate positively.

5 Discussion

This paper examined how institutional and social trust respond in crisis situations, testing the mirroring and divergence hypotheses through a survey experiment built around a recent natural disaster. Our results show that institutional and social trust do not always move together.

When institutions fail to meet expectations during crises, citizens may respond in two ways. First, if they retain trust in one another and believe that cooperation will intensify under pressure, they may rely on mutual aid to collectively address the crisis. This pattern corresponds to the “divergence” mechanism outlined in our theoretical framework. However, if they doubt that others will fulfill their responsibilities, or do not anticipate an increase in cooperative behavior during crises—as our empirical findings suggest—they may instead pursue a “third way”: delegating responsibility to a motivated, capable group of citizens—often organized within community-based organizations or NGOs—committed to developing solutions to the crisis.

This interpretation aligns with the idea that in contexts where social trust has eroded, local NGOs and community organizations can step in to rebuild social capital. More broadly, trust in NGOs is consistently shown to outperform trust in governments,⁹ whilst trust in NGOs and generalised social trust mostly coincide, with social trust sometimes coming in the lowest. This pattern emerges in both our full sample and the control group, with generalized social trust reported at approximately at ~45%, notably below institutional trust at around 50%. Italy, along with France, consistently reports among the lowest levels of social trust in Europe (World Values Survey, waves 1-7).

Our survey can thus offer suggestive evidence supporting this “third way” interpretation. In the condition where institutions are framed as ineffective, participants (i) show no significant increase in social trust; (ii) do not expect a higher level of cooperation from others for the common good, and consequently do not themselves stress the importance of cooperation (both cooperation rates and cooperative norms remain constant); *and* (iii) increase donations to Legambiente, a grassroots environmental NGO. This behavior indeed suggests a kind of delegation is at play, where respondents entrust crisis management to an organization of individuals seen as more competent, motivated, and active in pursuing collective welfare than the anonymous others with whom interpersonal cooperation is typically framed.

Viewed through the lens of our theoretical framework, these results then point to a “partial divergence” pattern: respondents do not rely on generalized social trust or diffuse collective action, but rather show a preference for targeted delegation to trusted civic actors. This assumes, as outlined in our Pre-Analysis Plan and incorporated into our informational treatment, that participants recognize the voluntary and grassroots nature of Legambiente and perceive its members as trustworthy agents working towards the public good.

Interestingly, this interpretation is not incompatible with the presence of strong institutions during a crisis. Individuals may choose to simultaneously delegate problem-solving both to capable institutions and to competent actors within grassroots organizations, without necessarily relying on trust in and cooperation with unknown others for support. When institutions are framed as effective, we indeed observe an increase in both institutional trust and donations to Legambiente, yet social trust and cooperation

⁹Recent *Edelman Trust Barometers* (2024 and 2025) show that NGOs score approximately 6–8 percentage points higher than governments in global trust rankings. For example, in North America and Western Europe, NGO trust tends to remain in the high-40s to low-50s, while trust in government lingers in the high-30s to low-40s.

(norms) remain unchanged. Following the reasoning of our pre-registered hypotheses, this would hence correspond to a case of “partial mirroring.”

While our findings offer new insights, future work should investigate trust in civic movements as a distinct dimension — neither fully institutional nor fully interpersonal — to better understand how citizens navigate collective challenges in both crisis and non-crisis settings. Understanding when and why citizens delegate responsibility—and the role civic movements play in that process—may be crucial to explaining how people come together when institutions fall short and trust in others can no longer be taken for granted.

References

- Aassve, A., Capezzone, T., Cavalli, N., Conzo, P. and Peng, C. (2024), ‘Social and political trust diverge during a crisis’, *Scientific Reports* **14**(1), 331.
- Bechtel, M. M. and Hainmueller, J. (2011), ‘How lasting is voter gratitude? an analysis of the short-and long-term electoral returns to beneficial policy’, *American journal of political science* **55**(4), 852–868.
- Campedelli, G. M., Daniele, G., Martinangeli, A. F. and Pinotti, P. (2023), ‘Organized crime, violence and support for the state’, *Journal of Public Economics* **228**, 105029.
- Daniele, G., Martinangeli, A. F., Passarelli, F., Sas, W. and Windsteiger, L. (2023), ‘Externalities and the erosion of trust’.
- Dinesen, P. T., Sønderskov, K. M., Sohlberg, J. and Esaiasson, P. (2022), ‘Close (causally connected) cousins? evidence on the causal relationship between political trust and social trust’, *Public Opinion Quarterly* **86**(3), 708–721.
- Fuster, A. and Zafar, B. (2023), Survey experiments on economic expectations, in ‘Handbook of Economic Expectations’, Elsevier, pp. 107–130.
- Gambetta, D. and Morisi, D. (2022), ‘Covid-19 infection induces higher trust in strangers’, *Proceedings of the National Academy of Sciences* **119**(32), e2116818119.
- Haaland, I., Roth, C. and Wohlfart, J. (2023), ‘Designing information provision experiments’, *Journal of economic literature* **61**(1), 3–40.
- Herreros, F. (2023), ‘The state and trust’, *Annual Review of Political Science* **26**, 117–134.
- Mewes, J., Fairbrother, M., Giordano, G. N., Wu, C. and Wilkes, R. (2021), ‘Experiences matter: A longitudinal study of individual-level sources of declining social trust in the united states’, *Social Science Research* **95**, 102537.
- Persson, T. A. and Povitkina, M. (2017), ‘“Gimme Shelter”: The Role of Democracy and Institutional Quality in Disaster Preparedness’, *Political Research Quarterly* **70**(4), 833–847. Publisher: SAGE Publications Inc.

URL: <https://doi.org/10.1177/1065912917716335>

- Rothstein, B. O. and Teorell, J. A. (2008), ‘What is quality of government? a theory of impartial government institutions’, *Governance* **21**(2), 165–190.
- Seifert, N. (2018), ‘Yet another case of nordic exceptionalism? extending existing evidence for a causal relationship between institutional and social trust to the netherlands and switzerland’, *Social Indicators Research* **136**(2), 539–555.
- Sønderskov, K. M. and Dinesen, P. T. (2016), ‘Trusting the state, trusting each other? the effect of institutional trust on social trust’, *Political Behavior* **38**, 179–202.

Appendix

A Main regression tables

Table A.1: Regression Results: Treatment effects on Institutional Trust, Social Trust, and Cooperation Measures

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Institutional preparedness	Institutional trust	Cooperation (donation)	Generalized social trust	Particularized social trust	Cooperation norm (self)	Cooperation norm (others)
Disaster	-0.006 (0.040)	0.066* (0.040)	0.101** (0.042)	0.087** (0.041)	0.074* (0.040)	0.066 (0.041)	0.056 (0.041)
Disaster + Prepared Institutions	0.089** (0.041)	0.052 (0.040)	0.142*** (0.041)	0.016 (0.041)	-0.006 (0.041)	0.039 (0.041)	-0.005 (0.042)
Disaster + Unprepared Institutions	0.013 (0.041)	0.038 (0.040)	0.150*** (0.041)	-0.014 (0.041)	-0.042 (0.041)	0.027 (0.041)	0.003 (0.043)
Prior	0.003*** (0.000)	0.003*** (0.000)	0.003*** (0.000)	0.003*** (0.000)	0.001*** (0.000)	-0.000 (0.000)	0.001** (0.000)
Income: €1,000–1,999	0.130*** (0.048)	0.184*** (0.046)	0.023 (0.046)	0.085* (0.046)	0.341*** (0.050)	0.122*** (0.047)	0.110** (0.049)
Income: €2,000–2,999	0.276*** (0.052)	0.280*** (0.050)	0.114** (0.050)	0.182*** (0.049)	0.398*** (0.052)	0.231*** (0.050)	0.069 (0.054)
Income: €3,000–3,999	0.223*** (0.059)	0.306*** (0.056)	0.133** (0.058)	0.162*** (0.057)	0.418*** (0.059)	0.157*** (0.058)	0.117** (0.058)
Income: €4,000–4,999	0.226*** (0.074)	0.333*** (0.070)	0.316*** (0.070)	0.229*** (0.070)	0.543*** (0.069)	0.211*** (0.076)	0.117 (0.078)
Income: €5,000–5,999	-0.076 (0.100)	0.048 (0.100)	0.151 (0.097)	0.042 (0.102)	0.351*** (0.102)	0.247** (0.109)	0.122 (0.110)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Income: €6,000–6,999	0.050 (0.130)	0.299** (0.122)	0.206 (0.131)	0.061 (0.127)	0.275** (0.123)	0.307** (0.134)	0.399*** (0.129)
Income: €7,000 or more	0.059 (0.100)	0.012 (0.098)	0.020 (0.099)	0.133 (0.097)	0.586*** (0.091)	0.143 (0.115)	0.192* (0.111)
Gender: Male	-0.011 (0.030)	0.030 (0.029)	0.052* (0.030)	0.176*** (0.030)	0.005 (0.030)	-0.018 (0.030)	-0.006 (0.031)
Political orientation: Center-left	0.047 (0.038)	0.059 (0.037)	-0.105*** (0.038)	-0.040 (0.038)	0.049 (0.039)	0.006 (0.039)	0.040 (0.039)
Political orientation: Center-right	0.283*** (0.040)	0.482*** (0.040)	-0.116*** (0.042)	0.088** (0.040)	0.025 (0.041)	-0.108*** (0.041)	0.077* (0.042)
Political orientation: Right	0.195*** (0.043)	0.432*** (0.041)	-0.141*** (0.041)	0.122*** (0.043)	0.072* (0.042)	-0.076* (0.042)	0.061 (0.043)
Environmental concern	-0.157*** (0.032)	-0.194*** (0.030)	0.254*** (0.031)	-0.042 (0.032)	0.273*** (0.031)	0.451*** (0.031)	0.178*** (0.032)
Disaster experience	-0.028 (0.034)	0.100*** (0.033)	-0.006 (0.033)	0.074** (0.033)	-0.028 (0.032)	-0.095*** (0.034)	-0.102*** (0.035)
Age: 25–34	-0.132** (0.059)	-0.157*** (0.056)	0.211*** (0.058)	0.043 (0.060)	0.032 (0.059)	0.131** (0.063)	0.266*** (0.067)
Age: 35–44	-0.122** (0.057)	-0.134** (0.055)	0.293*** (0.058)	0.020 (0.059)	-0.059 (0.059)	0.081 (0.063)	0.315*** (0.065)
Age: 45–54	-0.203*** (0.057)	-0.155*** (0.055)	0.341*** (0.058)	-0.025 (0.058)	-0.007 (0.058)	0.126** (0.062)	0.297*** (0.065)

[illegible]

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
R-squared	0.075	0.128	0.069	0.088	0.104	0.092	0.030

Notes: Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. *Omitted categories:* Age: 18–24; Political orientation: Left; Income: Less than €1,000; Gender: Female or Other; Macroarea: Center.

Table A.2: Regression Results: Treatment effects on Institutional Trust, Social Trust, and Cooperation Measures (*No EDE*)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Institutional preparedness	Institutional trust	Cooperation (donation)	Generalized social trust	Particularized social trust	Cooperation norm (self)	Cooperation norm (others)
Disaster	0.042 (0.060)	0.063 (0.059)	0.058 (0.062)	0.056 (0.060)	0.010 (0.061)	0.056 (0.060)	0.044 (0.060)
Disaster + Prepared Institutions	0.111* (0.057)	0.073 (0.056)	0.125** (0.058)	0.011 (0.057)	-0.053 (0.057)	0.055 (0.058)	-0.045 (0.060)
Disaster + Unprepared Institutions	0.073 (0.060)	0.051 (0.057)	0.167*** (0.060)	0.022 (0.058)	-0.024 (0.059)	0.006 (0.058)	-0.063 (0.061)
Prior	0.003*** (0.001)	0.003*** (0.000)	0.004*** (0.001)	0.003*** (0.001)	0.002*** (0.001)	-0.000 (0.001)	0.002*** (0.001)
Income: €1,000–1,999	0.280*** (0.068)	0.262*** (0.064)	0.044 (0.065)	0.050 (0.064)	0.312*** (0.070)	0.024 (0.068)	0.212*** (0.071)
Income: €2,000–2,999	0.394*** (0.075)	0.349*** (0.071)	0.067 (0.071)	0.185*** (0.071)	0.288*** (0.075)	0.177** (0.072)	0.117 (0.080)
Income: €3,000–3,999	0.376*** (0.085)	0.380*** (0.082)	0.103 (0.084)	0.204** (0.082)	0.333*** (0.085)	0.128 (0.081)	0.214** (0.083)
Income: €4,000–4,999	0.367*** (0.106)	0.451*** (0.102)	0.293*** (0.102)	0.278*** (0.100)	0.549*** (0.101)	0.222* (0.116)	0.182 (0.119)
Income: €5,000–5,999	-0.058 (0.154)	0.031 (0.148)	0.017 (0.136)	0.195 (0.161)	0.341** (0.145)	0.341** (0.144)	0.038 (0.182)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Income: €6,000–6,999	0.063 (0.206)	0.455** (0.199)	0.053 (0.204)	0.012 (0.205)	0.281 (0.189)	0.169 (0.216)	0.342* (0.174)
Income: €7,000 or more	0.133 (0.142)	0.052 (0.138)	0.075 (0.145)	0.109 (0.144)	0.508*** (0.129)	0.076 (0.175)	0.225 (0.169)
Gender: Male	-0.021 (0.044)	0.002 (0.042)	0.039 (0.044)	0.151*** (0.043)	0.025 (0.044)	0.025 (0.043)	-0.002 (0.045)
Political orientation: Center-left	-0.002 (0.056)	0.021 (0.054)	-0.105* (0.057)	-0.072 (0.055)	0.078 (0.058)	0.013 (0.056)	-0.049 (0.058)
Political orientation: Center-right	0.230*** (0.057)	0.498*** (0.057)	-0.043 (0.062)	0.100* (0.057)	0.064 (0.058)	-0.031 (0.057)	0.051 (0.059)
Political orientation: Right	0.175*** (0.063)	0.421*** (0.059)	-0.094 (0.059)	0.110* (0.062)	0.074 (0.063)	-0.048 (0.064)	-0.055 (0.063)
Environmental concern	-0.146*** (0.047)	-0.195*** (0.045)	0.271*** (0.047)	-0.031 (0.047)	0.261*** (0.047)	0.455*** (0.046)	0.211*** (0.047)
Disaster experience	-0.086* (0.052)	0.034 (0.049)	0.057 (0.050)	0.017 (0.048)	-0.060 (0.049)	-0.153*** (0.052)	-0.110** (0.053)
Age: 25–34	-0.147 (0.091)	-0.249*** (0.083)	0.248*** (0.085)	-0.034 (0.094)	-0.006 (0.090)	0.229** (0.100)	0.334*** (0.103)
Age: 35–44	-0.101 (0.086)	-0.162** (0.079)	0.321*** (0.084)	-0.084 (0.089)	-0.015 (0.089)	0.129 (0.100)	0.226** (0.100)
Age: 45–54	-0.258*** (0.086)	-0.230*** (0.079)	0.304*** (0.084)	-0.208** (0.088)	-0.010 (0.088)	0.147 (0.097)	0.221** (0.099)

[illegible]

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
R-squared	0.090	0.152	0.074	0.105	0.094	0.092	0.046

Notes: Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Omitted categories: Age: 18–24; Political orientation: Left; Income: Less than €1,000; Gender: Female or Other; Macroarea: Center.

B Additional tables

Table B.1: Variable Legend: Descriptions, Types, and Construction of Outcome and Control Variables

Variable	Label	Type	Description
Institutional trust	Institutional trust	Continuous (standardized)	Average of 6 items asking about trust in national, regional, local politicians, government, police, and public administration. Each on a 1–10 scale. Then standardized.
Generalized social trust	Generalized social trust	Continuous (standardized)	Response to a 10-point scale question: 'Do you think most people can be trusted?' Standardized.
Particularized social trust	Particularized social trust	Continuous (standardized)	Response to a 10-point scale question about trust in people around you (e.g., family, friends). Standardized.
Cooperation (donation)	Cooperation (incentivized donations to NGO)	Continuous (standardized)	Participants could donate any part of a €3 endowment to Legambiente, an environmental NGO. This is the amount donated in cents, standardized.
Cooperation norm (self)	Cooperation norm (self)	Continuous (standardized from ordinal)	Level of agreement (0–3) with: 'It is everyone's duty to cooperate with others for the common good.' Then standardized.
Cooperation norm (others)	Cooperation norm (others)	Continuous (standardized from ordinal)	Guess of the most common response by others to the cooperation norm statement (same 0–3 scale). Then standardized.
Age	Age category (18–24, 25–34, etc.)	Categorical	Categorical variable derived from age brackets asked in the demographics block.
Female	Gender (0 = Male, 1 = Female, 2 = Other)	Categorical	Self-reported gender identity as recorded in the demographics block.

Variable	Label	Type	Description
Degree	University degree (binary)	Binary	Binary variable equal to 1 if the respondent holds at least a university degree (first-level, second-level, or PhD); 0 otherwise.
Income	Household net monthly income (categorical)	Ordinal	Self-reported total household monthly net income, in pre-defined brackets.
Environmental concerned	Environmental concern (1–10 scale)	Binary	Concern about environmental disasters rated on a 1–10 scale. Indicator equal to one if respondent is above median answer to this question.
Disaster experience	Experience with environmental disasters (Yes/No)	Binary	Binary variable based on whether the respondent or their close network experienced an environmental disaster.
Associations.count	Number of associations/groups involved in	Count	Count of types of associations the respondent is part of, from a multi-response list (e.g. sport, religion, volunteering).
Macroarea	Macro-area fixed effects (North, Center, South)	Categorical	Region-based categorical variable grouping respondents by macro area (North, Center, South).
Survey Duration	Duration of the survey (in logs)	Continuous	Time (in seconds) taken to complete the survey, recorded automatically.
Institutional preparedness	Perceived preparedness of local institutions (1–10)	Continuous	Posterior belief about how well local institutions are prepared to manage environmental disasters, on a 1–10 scale [by design, influenced by the treatment(s)].
Priors	Perceived change in public spending on environment (–100 to +100)	Continuous	Belief about change in local public spending on environmental protection in the last 5 years, from –100% to +100% [by design, not influenced by the treatment(s)].
Political orientation	Political orientation (4 categories)	Categorical	Self-placement on the political spectrum from 1 (left) to 10 (right), recoded into 4 categories based on quantiles: left, center-left, center-right, right.

Table B.2: Summary Statistics of Continuous Variables

Label	Obs.	Mean	Std. Dev.	Min / Max
Institutional preparedness	4,401	0.000	1.000	-1.877 / 1.855
Institutional trust	4,401	0.000	1.000	-1.911 / 2.386
Generalized social trust	4,401	0.000	1.000	-1.408 / 2.214
Particularized social trust	4,401	0.000	1.000	-2.508 / 1.214
Cooperation (incentivized donations to NGO)	4,401	0.000	1.000	-1.549 / 1.415
Cooperation norm (self)	4,401	0.000	1.000	-3.604 / 1.183
Cooperation norm (others)	4,401	0.000	1.000	-2.935 / 1.575
Perceived change in env. spending	4,401	9.519	45.290	-100 / 100
Duration of the survey (log)	4,401	2.240	0.526	1.121 / 5.522
Number of associations	4,401	1.361	1.394	0 / 9

Table B.3: Summary Statistics of Categorical Variables

Categorical Variable	Category	Freq.	Percent
Experimental condition	Control	1,120	25.45
	Disaster	1,096	24.90
	Disaster + Prepared Inst.	1,082	24.59
	Disaster + Unprepared Inst.	1,103	25.06
Income	< 1000	674	15.31
	1000–1999 Euro	1,461	33.20
	2000–2999 Euro	1,086	24.68
	3000–3999 Euro	581	13.20
	4000–4999 Euro	289	6.57
	5000–5999 Euro	119	2.70
	6000–6999 Euro	63	1.43
	7000 Euro and more	128	2.91
Male	0	2,254	51.22
	1	2,147	48.78
Political orientation	1	1,399	31.79
	2	1,143	25.97
	3	880	20.00

Categorical Variable	Category	Freq.	Percent
	4	979	22.24
Environmental concern	0	2,701	61.37
	1	1,700	38.63
Disaster experience	0	3,189	72.46
	1	1,212	27.54
Age group	18–24	436	9.91
	25–34	686	15.59
	35–44	846	19.22
	45–54	969	22.02
	55+	1,464	33.27
Married	0	1,990	45.22
	1	2,411	54.78
University degree	0	3,251	73.87
	1	1,150	26.13
Macroarea	Center	892	20.27
	Islands	494	11.22
	North-East	808	18.36
	North-West	1,189	27.02
	South	1,018	23.13

Table B.4: Balancing Test

	C=0	C=1	C=2	C=3	$\Delta : 1 - 0$	$\Delta : 2 - 0$	$\Delta : 3 - 0$
Income	1.879 (1.575)	1.883 (1.617)	1.907 (1.564)	1.966 (1.608)	0.004 (0.068)	0.027 (0.067)	0.087 (0.067)
Male	0.478 (0.500)	0.505 (0.500)	0.498 (0.500)	0.471 (0.499)	0.028 (0.021)	0.020 (0.020)	-0.007 (0.020)
Political orientation	2.338 (1.131)	2.294 (1.125)	2.357 (1.163)	2.320 (1.144)	-0.044 (0.048)	-0.018 (0.049)	-0.017 (0.048)
Disaster experience	0.246 (0.431)	0.288 (0.453)	0.271 (0.441)	0.297 (0.457)	0.043** (0.019)	0.049 (0.019)	0.052*** (0.019)
Environmental concern	0.400 (0.490)	0.370 (0.483)	0.405 (0.491)	0.370 (0.483)	-0.030 (0.021)	0.005 (0.021)	-0.030 (0.021)
Age group	3.596 (1.318)	3.499 (1.368)	3.533 (1.351)	3.497 (1.360)	-0.096* (0.057)	-0.099* (0.057)	-0.099* (0.057)
Married	0.585 (0.493)	0.528 (0.499)	0.528 (0.499)	0.549 (0.498)	-0.057*** (0.021)	-0.057*** (0.021)	-0.035* (0.021)
University degree	0.262 (0.440)	0.256 (0.437)	0.268 (0.443)	0.259 (0.438)	-0.005 (0.019)	0.006 (0.019)	-0.002 (0.019)
Observations	1,120	1,096	1,082	1,103	2,216	2,202	2,223

Notes: Sample balance table displaying the difference in means across all four conditions Control (0), Disaster (1), Disaster + Prepared Inst.(2), Disaster + Unprepared Inst.(3) for all our observables, and their significance. Standard errors in parentheses, * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table B.5: Romano-Wolf Adjusted p-values for Treatment Effects on Main Outcomes

Outcome	Disaster Only	Disaster + Prepared Institutions	Disaster + Unprepared Institutions
Perceived institutional preparedness	0.9005	0.1614	0.9835
Institutional trust	0.3113	0.6527	0.8701
Generalized social trust	0.1709	0.9780	0.9835
Particularized social trust	0.2589	0.9870	0.8701
Cooperation (incentivized donations to NGO)	0.0805	0.0040	0.0025
Cooperation norm (self)	0.3113	0.8156	0.9435
Cooperation norm (others)	0.3208	0.9870	0.9835

Notes: Romano-Wolf step-down adjusted p-values for each treatment vs. the baseline (no disaster), based on 2,000 resamples. Bold values indicate significance at the 10% level or below.

Table B.6: Pairwise Correlations [No Disaster/baseline condition]

	(1)	(2)	(3)	(4)	(5)	(6)
(1) Institutional trust	1.000					
(2) Generalized social trust	0.429***	1.000				
(3) Particularized social trust	0.210***	0.310***	1.000			
(4) Cooperation (donations to NGO)	0.091***	0.139***	0.135***	1.000		
(5) Cooperation norm (self)	-0.020	0.059**	0.208***	0.121***	1.000	
(6) Cooperation norm (others)	0.033	0.063**	0.157***	0.042	0.229***	1.000

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

C Additional figures

Figure C.1: Distribution of perceived aim of the study

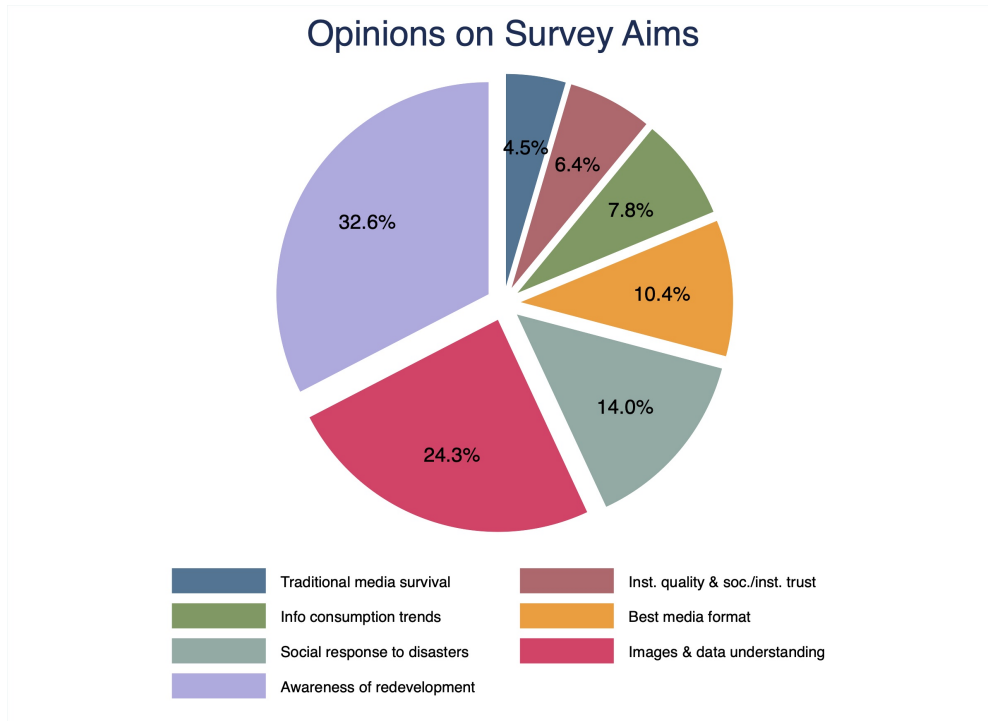
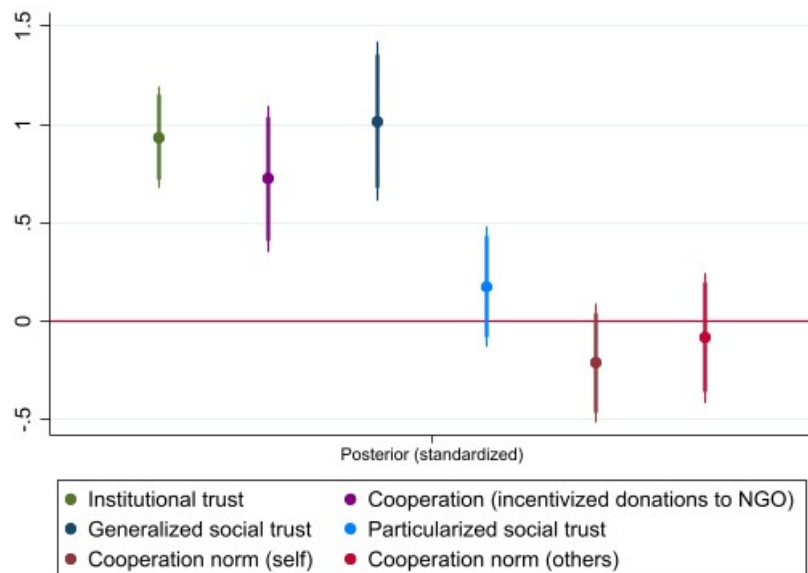
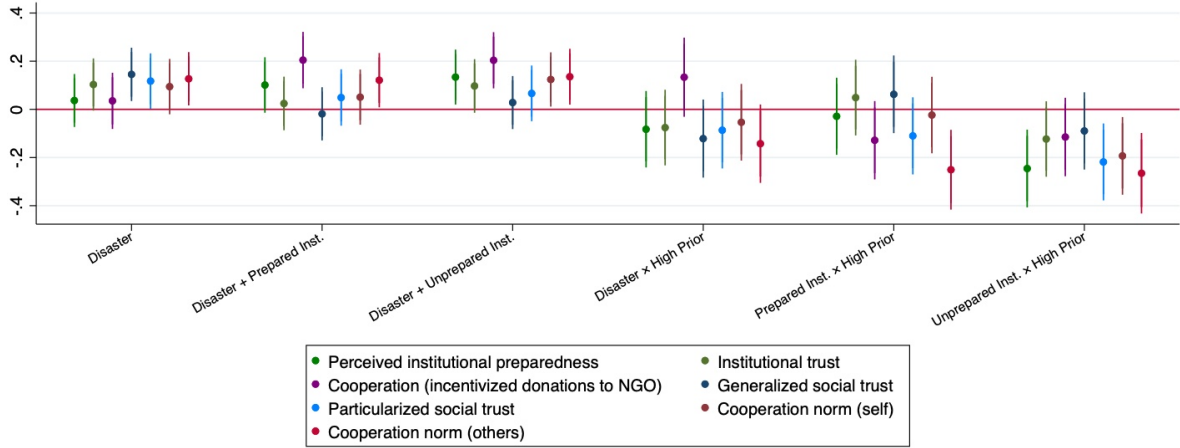


Figure C.2: The causal role of the (instrumented) posterior beliefs



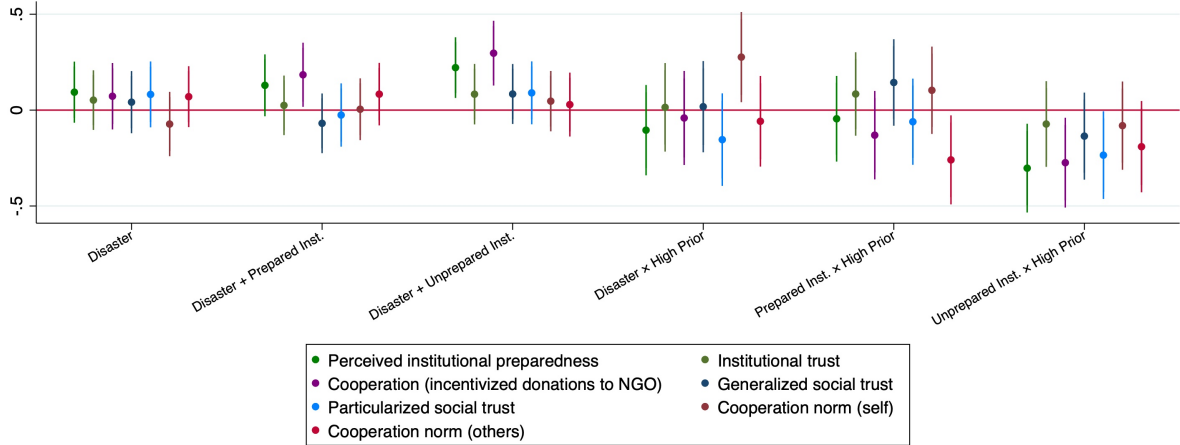
Notes: Figure presents second-stage results from an instrumental variables strategy estimating the causal effect of posterior beliefs about institutional preparedness on the outcome variables. Posteriors are instrumented using the perception gap, defined as the difference between individuals' prior beliefs and the information provided in two of the four experimental conditions. This approach isolates the exogenous variation in beliefs induced by the information treatment and estimates its effect on the outcomes of interest.

Figure C.3: Treatment effects on primary and secondary outcomes - by prior beliefs



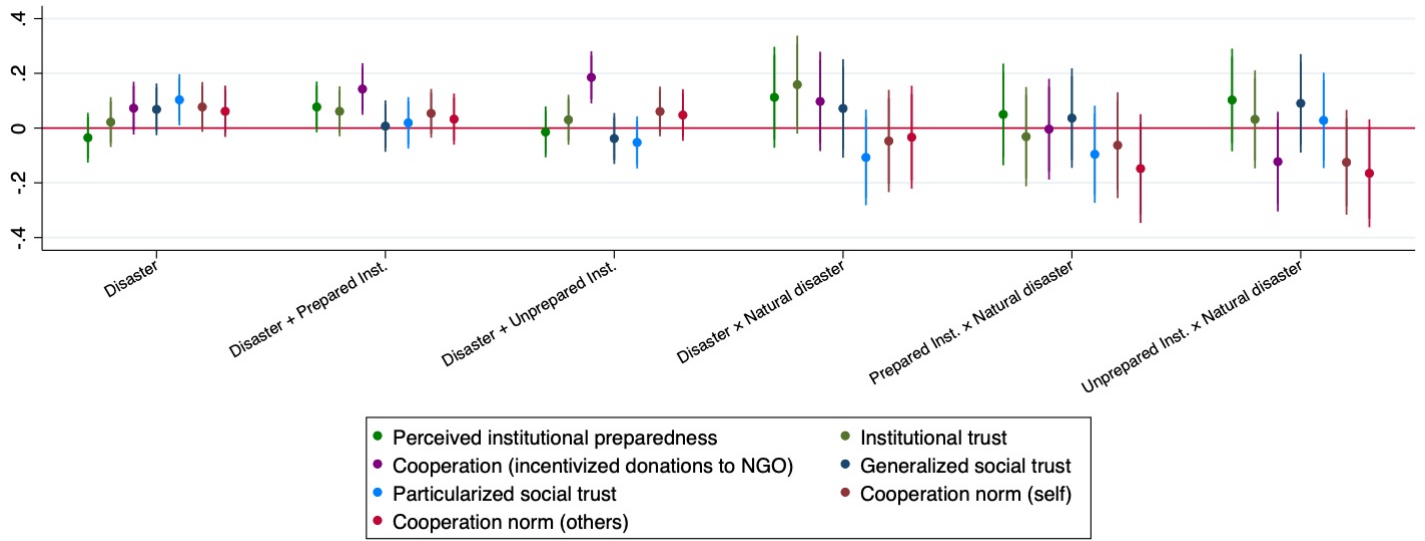
Notes: Figure shows coefficients from regressions controlling for age, gender, education, income, environmental concern, exposure to natural disasters, n. of associations the participant is involved in, macroarea fixed effects, and duration of the survey. Positive prior is an indicator variable for participants reporting that, on average, local expenditures for environmental protection has increased in the last 5 years. Outcome variables are standardized. Robust standard errors. The omitted benchmark is *No Disaster*.

Figure C.4: Treatment effects on primary and secondary outcomes - by prior beliefs (*no EDE*)



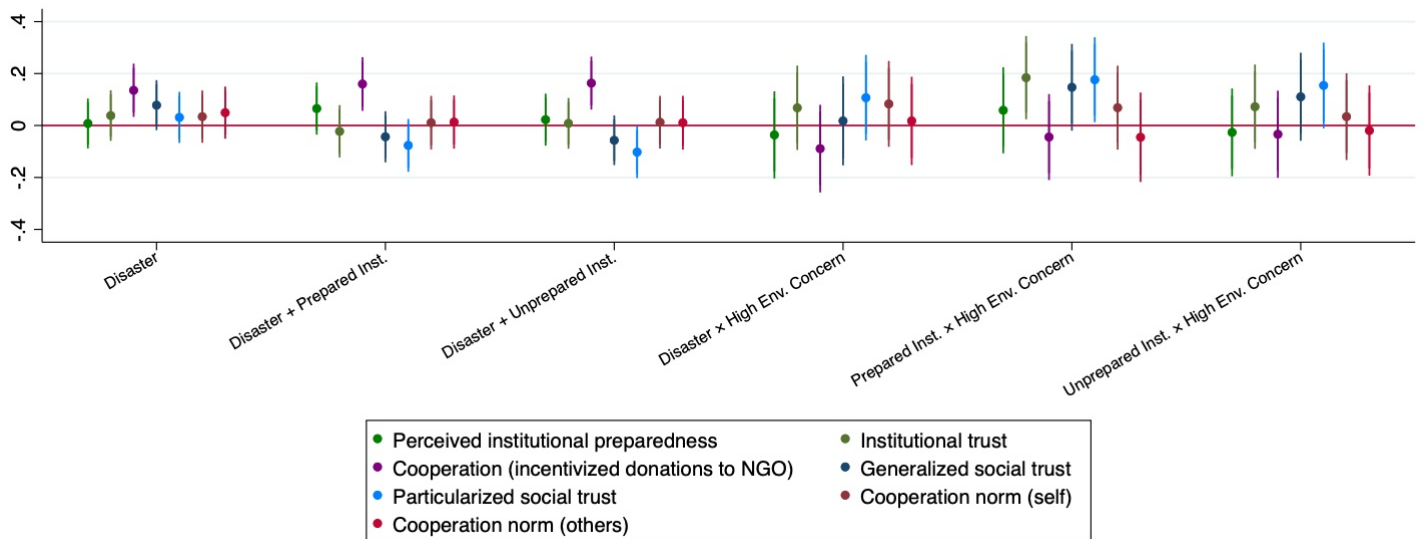
Notes: Figure shows coefficients from regressions controlling for age, gender, education, income, environmental concern, exposure to natural disasters, n. of associations the participant is involved in, macroarea fixed effects, and duration of the survey. Positive prior is an indicator variable for participants reporting that, on average, local expenditures for environmental protection has increased in the last 5 years. Outcome variables are standardized. Robust standard errors. The omitted benchmark is *No Disaster*. Participants whose reported survey aim is only partially consistent with the aim of this study are excluded from the analyses (i.e., those reporting the survey aim is to: correlate institutional performance with measures of social and institutional capital [correct answer]; measure awareness of the need for land and environmental rehabilitation [partially related]; or measure the responsiveness of the social fabric to natural disasters [partially related]).

Figure C.5: Treatment effects on primary and secondary outcomes - by exposure to natural disasters



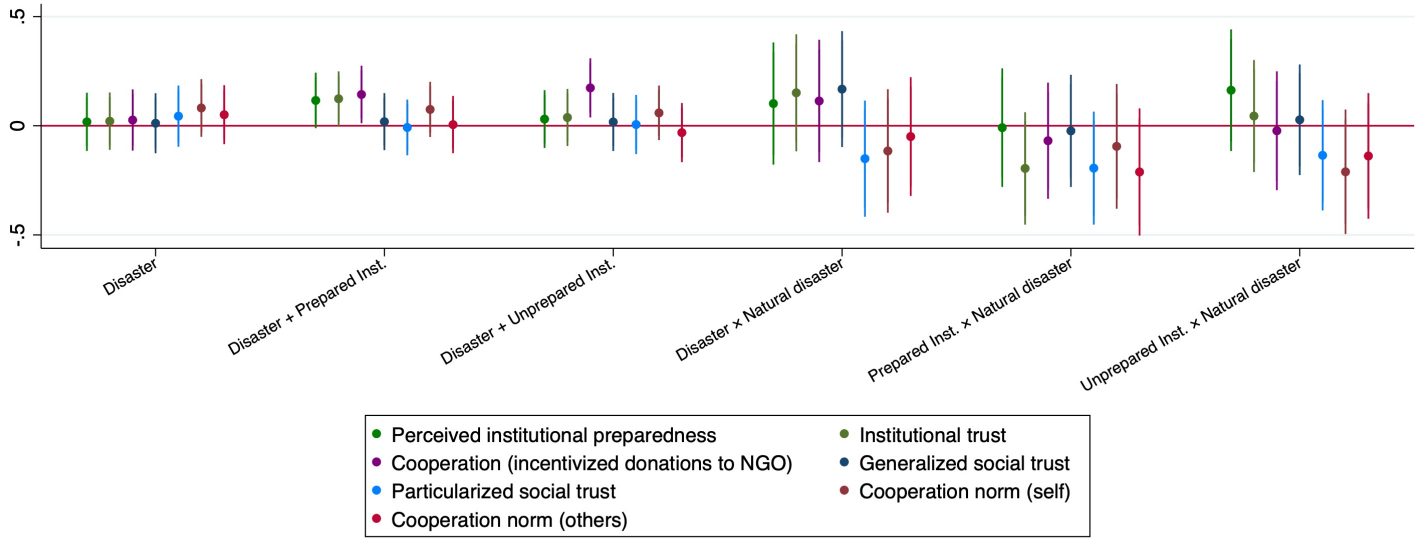
Notes: Figure shows coefficients from regressions controlling for age, gender, education, income, environmental concern, exposure to natural disasters, n. of associations the participant is involved in, macroarea fixed effects, and duration of the survey. Outcome variables are standardized. Robust standard errors. The omitted benchmark is *No Disaster*.

Figure C.6: Treatment effects on primary and secondary outcomes - by environmental concern



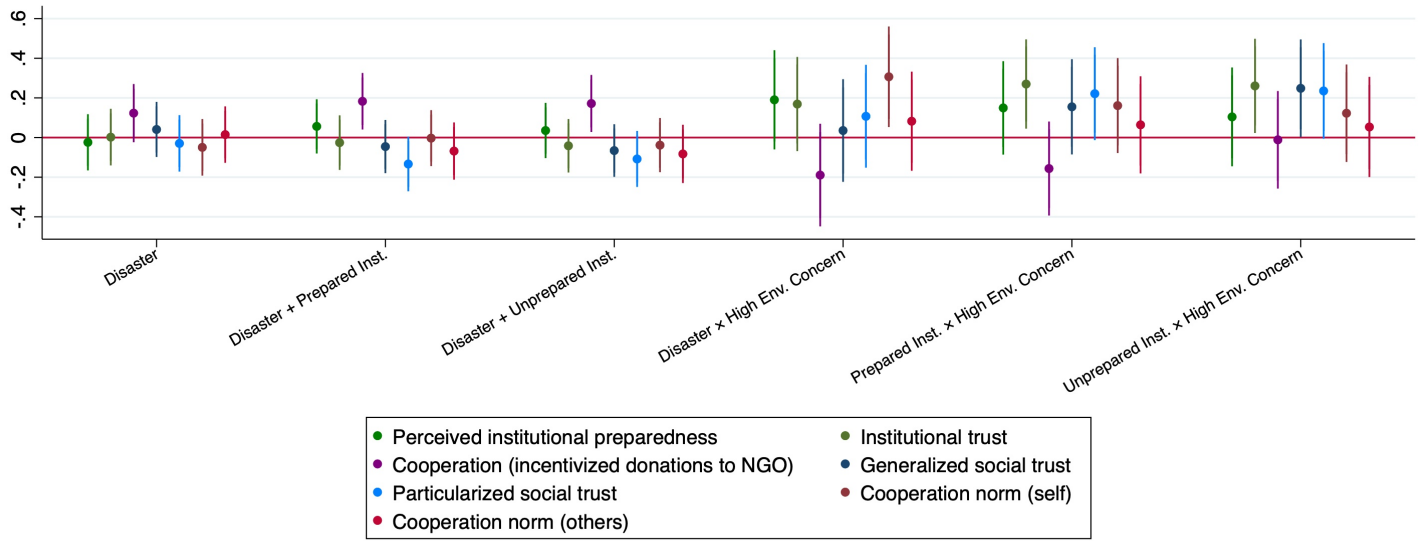
Notes: Figure shows coefficients from regressions controlling for age, gender, education, income, environmental concern, exposure to natural disasters, n. of associations the participant is involved in, macroarea fixed effects, and duration of the survey. Outcome variables are standardized. Robust standard errors. The omitted benchmark is *No Disaster*.

Figure C.7: Treatment effects on primary and secondary outcomes - by exposure to natural disasters (*no EDE*)



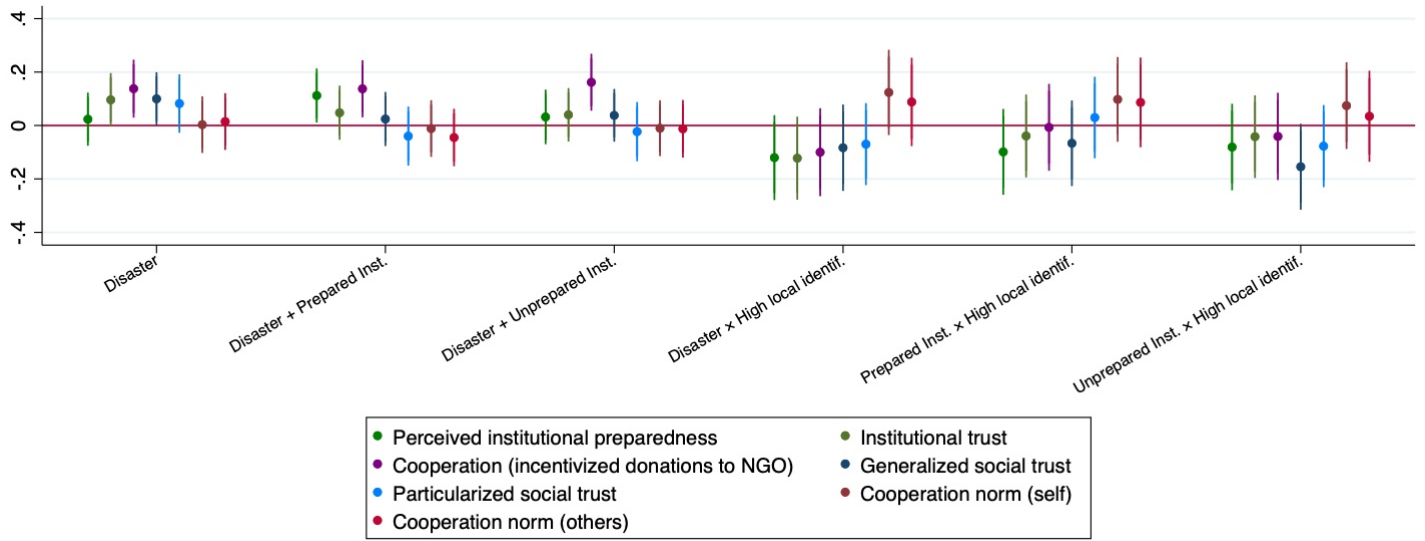
Notes: Figure shows coefficients from regressions controlling for age, gender, education, income, environmental concern, exposure to natural disasters, n. of associations the participant is involved in, macroarea fixed effects, and duration of the survey. Outcome variables are standardized. Robust standard errors. The omitted benchmark is *No Disaster*. Participants whose reported survey aim is only partially consistent with the aim of this study are excluded from the analyses (i.e., those reporting the survey aim is to: correlate institutional performance with measures of social and institutional capital [correct answer]; measure awareness of the need for land and environmental rehabilitation [partially related]; or measure the responsiveness of the social fabric to natural disasters [partially related]).

Figure C.8: Treatment effects on primary and secondary outcomes - by environmental concern
(*no EDE*)



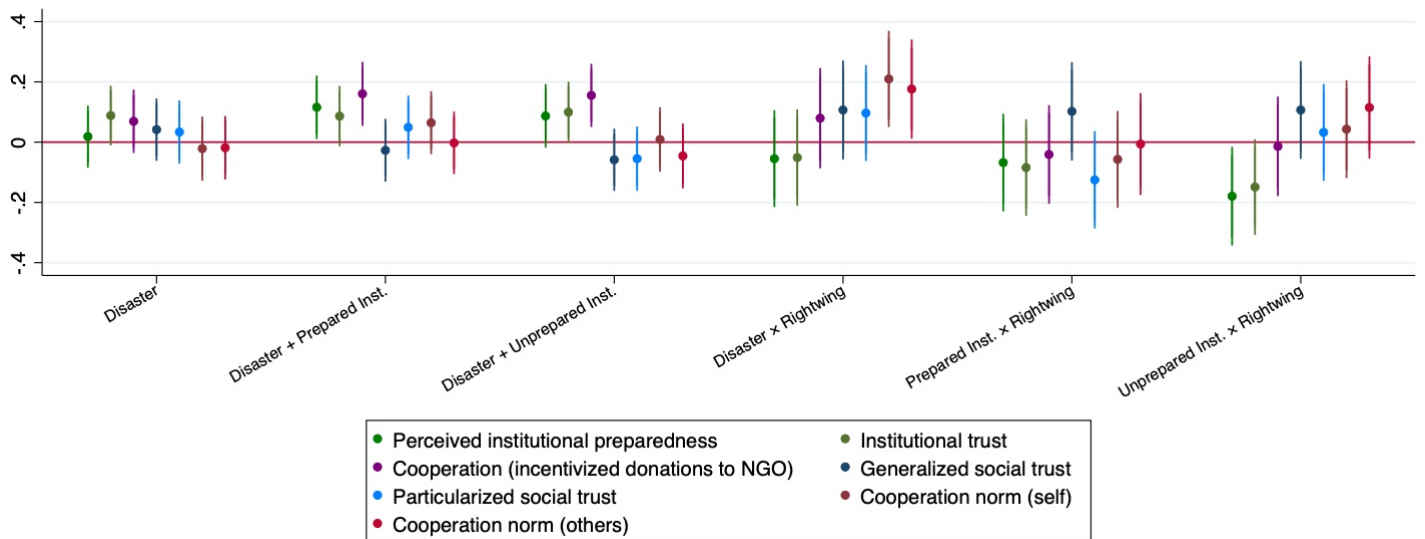
Notes: Figure shows coefficients from regressions controlling for age, gender, education, income, environmental concern, exposure to natural disasters, n. of associations the participant is involved in, macroarea fixed effects, and duration of the survey. Outcome variables are standardized. Robust standard errors. The omitted benchmark is *No Disaster*. Participants whose reported survey aim is only partially consistent with the aim of this study are excluded from the analyses (i.e., those reporting the survey aim is to: correlate institutional performance with measures of social and institutional capital [correct answer]; measure awareness of the need for land and environmental rehabilitation [partially related]; or measure the responsiveness of the social fabric to natural disasters [partially related]).

Figure C.9: Treatment effects on primary and secondary outcomes - by high identification with local community



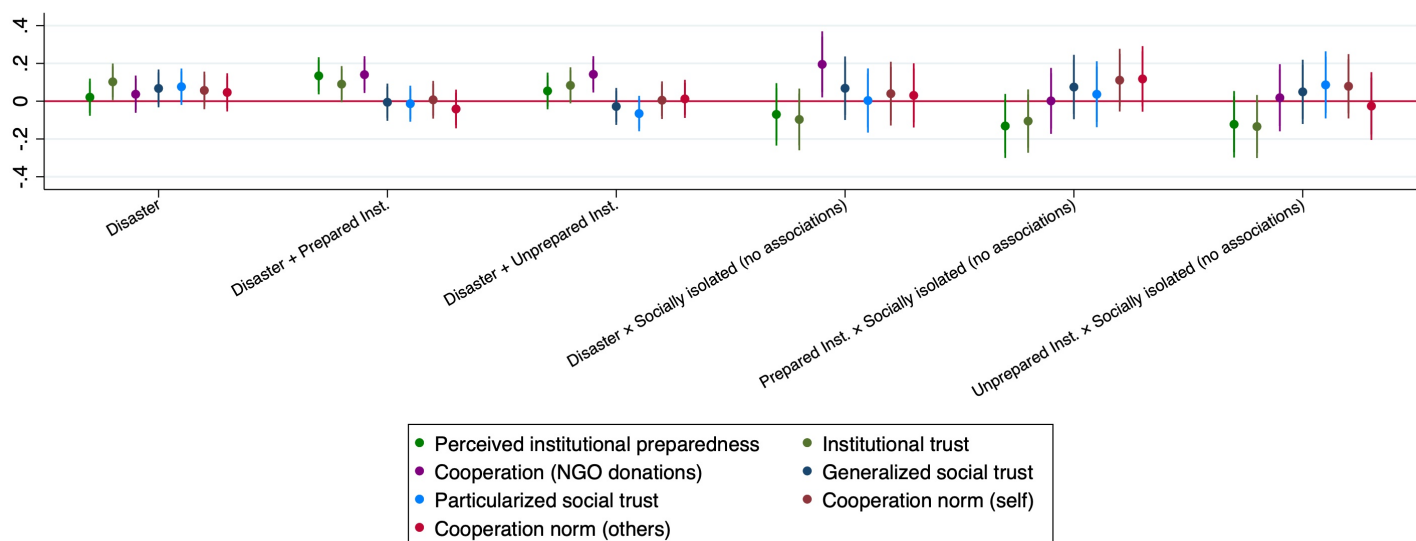
Notes: Figure shows coefficients from regressions controlling for age, gender, education, income, environmental concern, exposure to natural disasters, n. of associations the participant is involved in, macroarea fixed effects, and duration of the survey. Outcome variables are standardized. Robust standard errors. The omitted benchmark is *No Disaster*.

Figure C.10: Treatment effects on primary and secondary outcomes - by political orientation



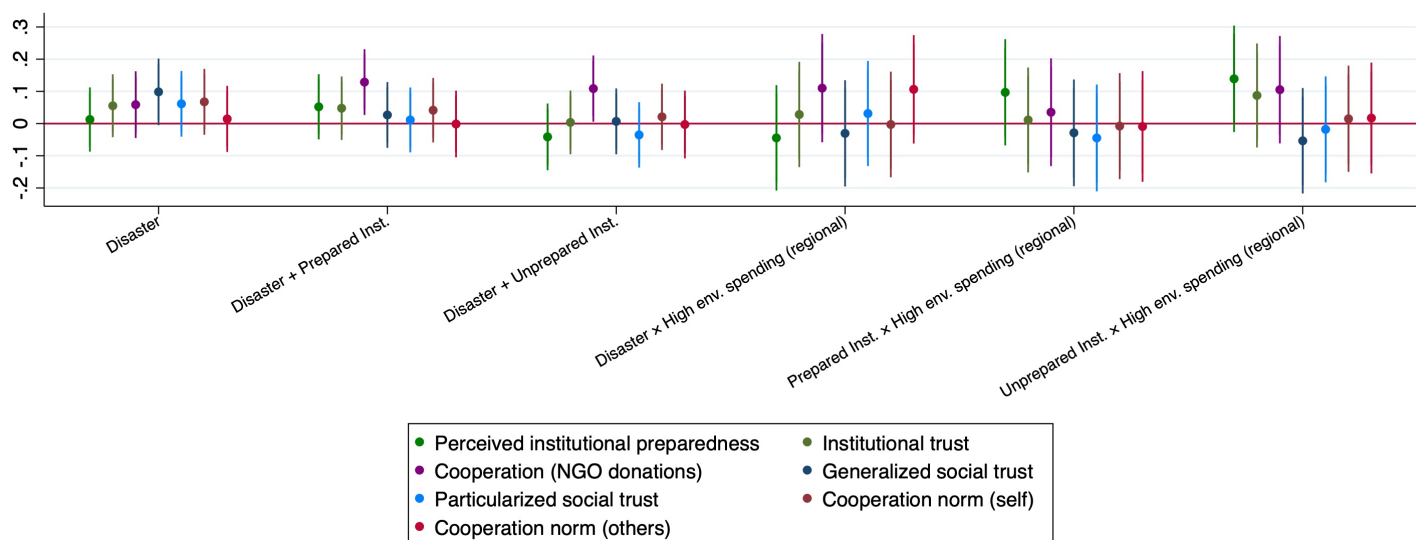
Notes: Figure shows coefficients from regressions controlling for age, gender, education, income, environmental concern, exposure to natural disasters, n. of associations the participant is involved in, macroarea fixed effects, and duration of the survey. Outcome variables are standardized. Robust standard errors. The omitted benchmark is *No Disaster*.

Figure C.11: Treatment effects on primary and secondary outcomes - by social isolation



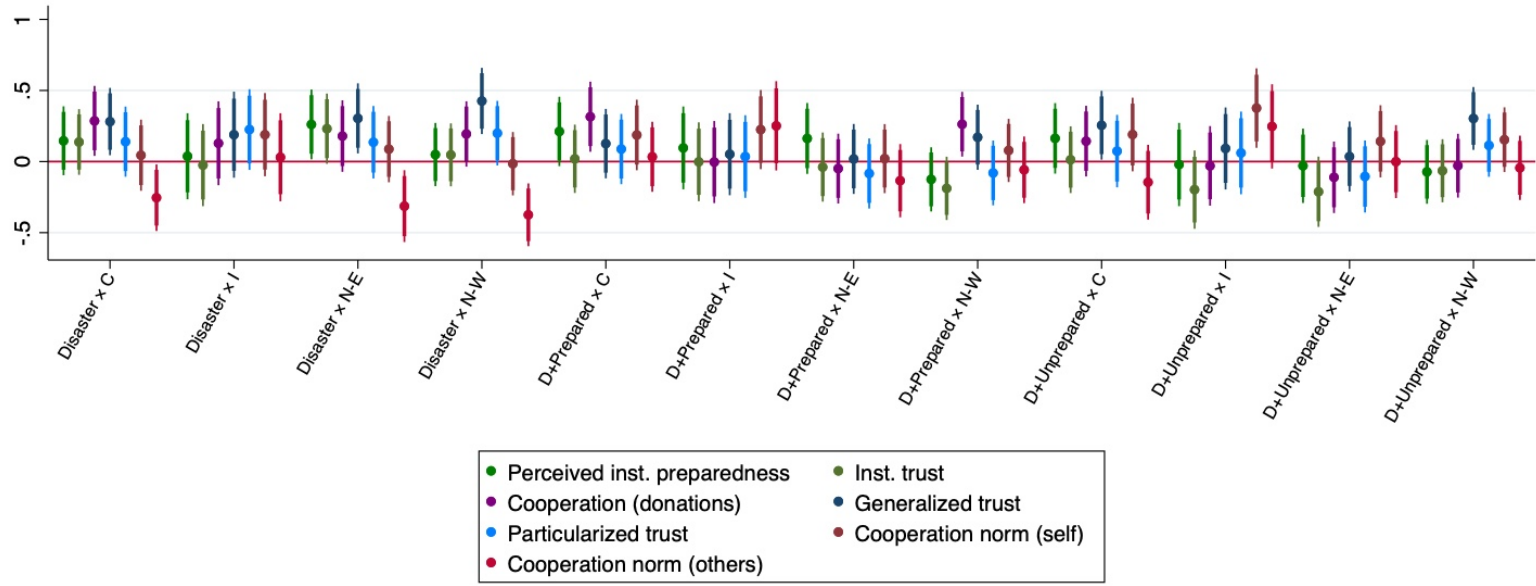
Notes: Figure shows coefficients from regressions controlling for age, gender, education, income, environmental concern, exposure to natural disasters, n. of associations the participant is involved in, macroarea fixed effects, and duration of the survey. Outcome variables are standardized. Robust standard errors. The omitted benchmark is *No Disaster*.

Figure C.12: Treatment effects on primary and secondary outcomes - by living in a province with high environmental spending (above regional median)



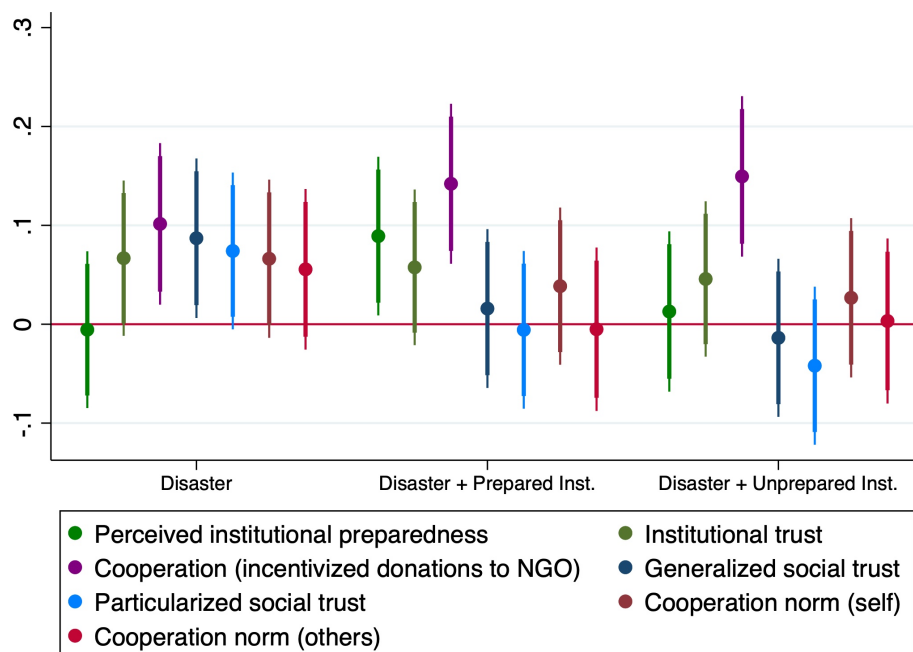
Notes: Figure shows coefficients from regressions controlling for age, gender, education, income, environmental concern, exposure to natural disasters, n. of associations the participant is involved in, macroarea fixed effects, and duration of the survey. Outcome variables are standardized. Robust standard errors. The omitted benchmark is *No Disaster*.

Figure C.13: Treatment effects on primary and secondary outcomes - by macroarea



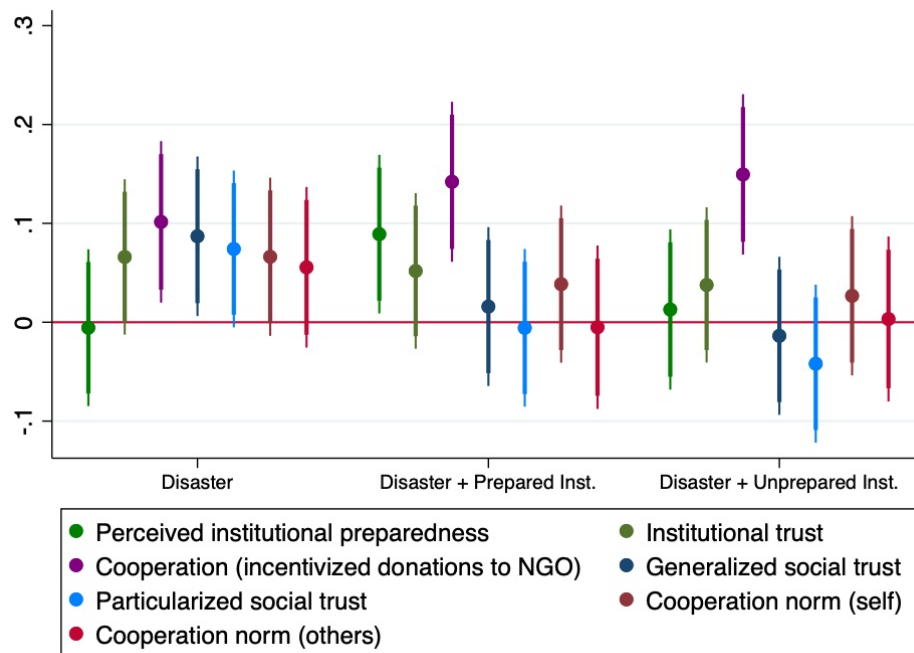
Notes: Figure shows coefficients from regressions controlling for age, gender, education, income, environmental concern, exposure to natural disasters, n. of associations the participant is involved in, macroarea fixed effects, and duration of the survey. Outcome variables are standardized. Robust standard errors. The omitted benchmark is *No Disaster* for condition, and *South* for macroarea.

Figure C.14: Treatment effects on primary and secondary outcomes (using *pca* for Institutional trust)



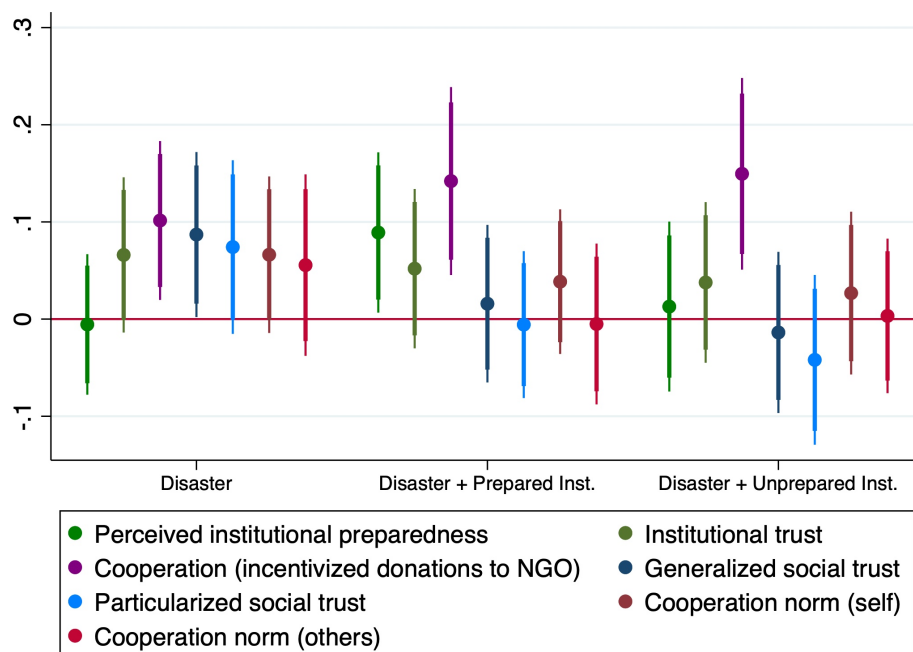
Notes: Figure shows coefficients from regressions controlling for age, gender, education, income, environmental concern, exposure to natural disasters, n. of associations the participant is involved in, region fixed effects, and duration of the survey. Outcome variables are standardized. Robust standard errors clustered at region level. The omitted benchmark is *No Disaster*.

Figure C.15: Treatment effects on primary and secondary outcomes (controlling for region fixed effects)



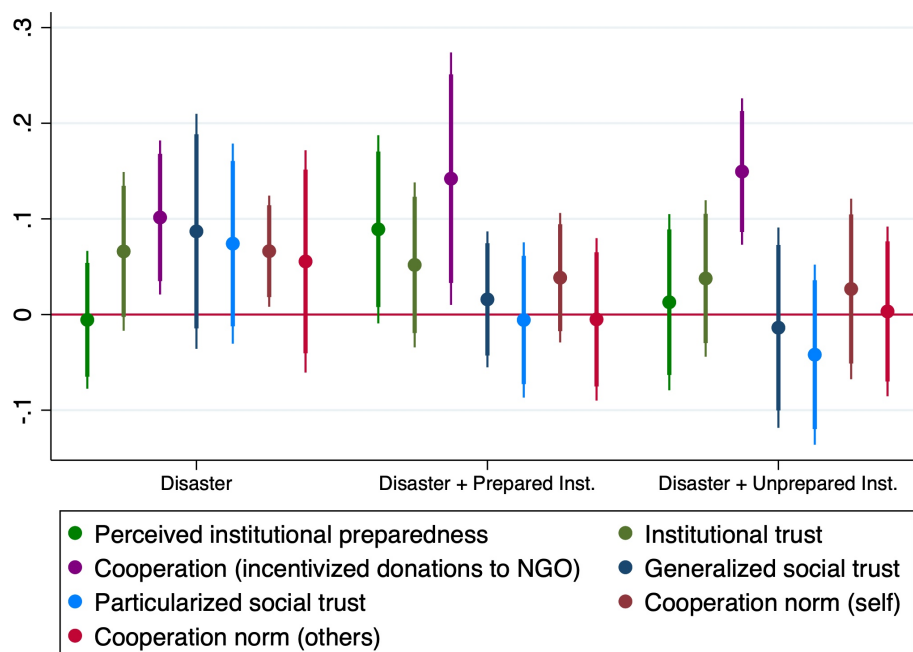
Notes: Figure shows coefficients from regressions controlling for age, gender, education, income, environmental concern, exposure to natural disasters, n. of associations the participant is involved in, region fixed effects, and duration of the survey. Outcome variables are standardized. Robust standard errors clustered at region level. The omitted benchmark is *No Disaster*.

Figure C.16: Treatment effects on primary and secondary outcomes (std. err. clustered at province level)



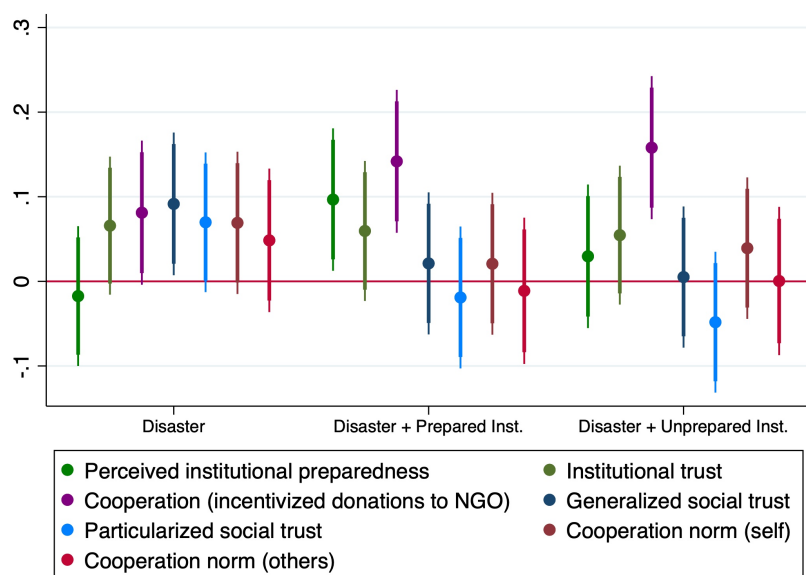
Notes: Figure shows coefficients from regressions controlling for age, gender, education, income, environmental concern, exposure to natural disasters, n. of associations the participant is involved in, macroarea fixed effects, and duration of the survey. Outcome variables are standardized. Robust standard errors clustered at province level. The omitted benchmark is *No Disaster*.

Figure C.17: Treatment effects on primary and secondary outcomes (std. err. clustered at region level)



Notes: Figure shows coefficients from regressions controlling for age, gender, education, income, environmental concern, exposure to natural disasters, n. of associations the participant is involved in, macroarea fixed effects, and duration of the survey. Outcome variables are standardized. Robust standard errors clustered at region level. The omitted benchmark is *No Disaster*.

Figure C.18: Treatment effects on primary and secondary outcomes (no time outliers)

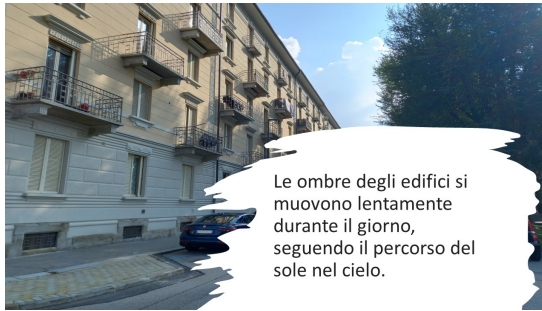


Notes: Figure shows coefficients from regressions controlling for age, gender, education, income, environmental concern, exposure to natural disasters, n. of associations the participant is involved in, macroarea fixed effects, and duration of the survey. Outcome variables are standardized. Robust standard errors. Respondents falling below the 5th or above the 95th percentile of the survey duration distribution are excluded. The omitted benchmark is *No Disaster*.

D Experimental design

D.1 No institutions, no disaster baseline (*No Disaster Condition*)

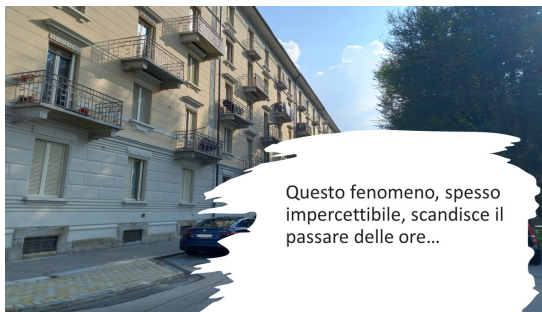
The images below are displayed to the respondents in *No Disaster* condition, who must not be exposed to disaster information, nor institutional action in response. This condition serves as a pure baseline against which to evaluate the impact of disaster information on institutional and social trust.



The shadows of buildings slowly move during the day, following the movement of the sun through the sky.



In the morning, the shadows extend towards the west, while in the afternoon they shorten and slide towards the east.



This phenomenon, often imperceptible, marks the passing of the hours...



...creating a natural rhythm that intersects with the constant movement of urban life.

D.2 Information from ISPRA

The information presented below is common to the *Disaster*, *Disaster + Unprepared Institutions*, and *Disaster + Prepared Institutions* conditions. It is shown prior to any content concerning institutional budgeting trends (where applicable). The purpose of this information is to alert respondents to the exposure of the Italian territory to natural disaster risk.



Recent studies indicate that Italy has become more **vulnerable** to **natural calamities**...



...because of an **intensive** and **not planned** use of the territory.



It is important that Italy, as well as other countries, **invest** adequately in environmental and land protection...



...to **prevent** and minimise **damages** caused to people and infrastructure by natural calamities (such as floods, landslides and earthquakes).



According to you, how has municipal public investment in environmental protection changed on average over the past 5 years? [Answer by moving the slider below, range -100% +100%]

D.3 Experimental conditions

The information presented in the following images is presented right after the information from ISPRA presented above, in a between-subjects design.

Unprepared Institutions (*Disaster + Unprepared Institutions*)



Data on public expenditures suggest that **many municipalities in Italy** might be **un-prepared...**



...having **reduced** **public expenditure** for the environmental and land protection by **approximately 50%** between 2017 and 2021.

Prepared Institutions (*Disaster + Prepared Institutions*)



Data on public expenditures suggest that **many municipalities in Italy** might be **pre-pared...**



...having **increased** **public expenditure** for the environmental and land protection by **approximately 50%** between 2017 and 2021.

D.4 No institutions (*Disaster*)

This condition is our active baseline, exposing the respondents to disaster images and information without mentioning institutional preparedness. Following the information from ISPRA presented above, this group of respondents is therefore not given further information and is not elicited prior beliefs until after the outcome variables are collected.

D.5 Attention grabber

To focus the respondents' attention on the information conditions, include the following question at the end of the series of images containing the information:

- How much do you think the images presented help understand the message conveyed by the text?
[answers on a 1-10 scale]

This question includes the information as part of the journalistic obfuscation strategy adopted in this survey.

D.6 Post-survey measures and debriefing

We elicit respondents' insight into the study's objectives by including a question that explicitly asks them to guess the main purpose of the survey, selecting the most appropriate option from a list of alternatives. Only one of the options accurately reflects the true aim of the study, while two others are loosely related to the general topic under investigation. The remaining options are entirely unrelated.

The response options are as follows: (i) correlating institutional performance with measures of social and institutional capital; (ii) understanding how the use of images influences the interpretation of statistical information; (iii) measuring awareness of the need for land and environmental rehabilitation; (iv) measuring the responsiveness of the social fabric to natural disasters; (v) identifying the best format for presenting media content; (vi) analyzing preferences and trends in news consumption; and (vii) understanding the survival of traditional media in the digital age. Option (i) is the correct answer. Options (iii) and (iv) are partially related to the study's topic, while the rest are unrelated and serve to obfuscate the true objective of the experiment.

At the very end of the study, we provide the respondents with the sources of the information they were given as part of the experimental conditions.