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Disaster and political trust: A natural experiment from the 2017 Mexico City earthquake

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A Natural Experiment from the 2017 Mexico City Earthquake

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January 2024

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Abstract

Political trust is foundational to democratic legitimacy, representative governance, and the provision of effective public policy. Various shocks can influence this trust, steering countries onto positive or negative trajectories. This study examines whether natural disasters can impact general political trust and if disaster relief efforts can mitigate these effects. We investigate the relationships between disaster, trust, and aid using novel survey data collected before and after a 7.1-magnitude earthquake struck Mexico City in September 2017. Our findings reveal that the disaster resulted in an 11% decrease in general political trust. Additionally, we demonstrate that geographical proximity to disaster relief efforts may counterbalance this decline in trust. This study contributes to the scholarship on the politics of disasters and offers policy implications, highlighting the role of disaster assistance in potentially restoring general political trust after a disaster.

JEL classifications: H84, Q54, D72, Z13

Keywords: Political trust, Natural disaster, Natural experiment, Aid relief, Development

Data collection was IRB approved by the Behavioral Sciences Committee of Vanderbilt University's Institutional Review Board. The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper. Neither the IDB nor any other party had any role in the study design, data collection and analysis, decision to publish, or preparation of the manuscript. The information and opinions presented herein are entirely those of the authors, and no endorsement by the Inter-American Development Bank, its Board of Executive Directors, or the countries they represent is expressed or implied.

1 Introduction

Political trust is essential to the well-functioning of democracy. Representative democracy rests on delegation, which requires trust (Urbinati and Warren, 2008). Trust increases public demand for welfare-enhancing policies and facilitates social cohesion, which in turn enhances trust (Keefer and Scartascini, 2022), and trust is crucial in times of disaster when private-public collaboration is necessary for effective recovery (Aldrich, 2017). It matters, then, if disasters undermine trust in public officials precisely when it is most needed. Scholarship on post-disaster trust levels has most often focused on incumbents and/or specific offices (Reinhardt, 2015, 2019), governments (Han et al., 2011; Nicholls and Picou, 2013), and social trust (Bai and Li, 2021; Becchetti et al., 2017; Carlin et al., 2014b; Stephane, 2021). We add to this body of research by addressing the effect of disaster on *general political trust*, and the conditioning role of disaster relief, in a comparatively less developed context.

Our core contention is that large-scale disasters lower general political trust—meaning, individuals’ confidence in the reliability and integrity of public officials. We argue trust falls post-disaster via two paths: stressing state capacity and increasing avenues for corruption. First, disasters signal competence and may overwhelm state capacity. Subsequent negative experiences ought to affect assessments of government benevolence, competence, and the ability to deliver to citizens (Olson and Gawronski, 2010). Additionally, the chaotic aftermath of a disaster and the need for fast disbursements create opportunities for corruption (Nikolova and Marinov, 2017; Yamamura, 2014) at a time when the public is highly sensitive to malfeasance (Gawronski and Olson, 2000). Therefore, especially where weak institutions prevail, general political trust would decline in the aftermath of a major natural disaster.

But can this fall in trust be prevented? A promising avenue for theorizing on the relationship between disaster and general political trust comes from research suggesting that the provision of welfare mitigates against negative turns in political evaluations (Lazarev et al., 2014) and social or interpersonal trust (Carlin et al., 2014b; De Juan et al., 2020; Petrova and Rosvold, 2024). In theory, aid carries the potential for the state to demonstrate capacity and beneficence. Some scholars have shown that aid can generate incumbent support (Healy and Malhotra, 2009; Bechtel and Hainmueller, 2011; Gallego, 2018; Lazarev et al., 2014). Others, however, find that aid is insufficient to counter increases in negative political evaluations, even when distributed fairly (Cole et al., 2012; Heersink et al., 2017). Moreover, aid inflows can be mishandled (Leeson and Sobel, 2008; Yamamura, 2014) or ineffectively distributed (Eichenauer et al., 2020; Francken et al., 2012; Sobel and Leeson, 2006), leading to declines in political evaluations. In short, whether aid can mitigate against currents that

diminish trust is an open question in need of empirical testing.

We test relationships among disaster, trust, and aid using data gathered immediately before and after a 7.1-magnitude earthquake struck Mexico City on September 19, 2017. The earthquake killed 369 people and injured approximately 2,000 (Andone et al., 2017; United States Geological Survey, 2017; Villegas and Ahmed, 2017). To assess the consequences of disaster for general political trust, we employ a novel design based on two rounds of surveys: one conducted immediately before (569 observations) and another two months after the earthquake (1,164 observations) in the greater Mexico City metropolitan region. These 1,164 individuals were surveyed to match the pre-earthquake sample, with each pre-earthquake individual matched to at least two comparable (on location, gender, and age) post-earthquake individuals.

Our first objective is to assess the effect of the earthquake on political trust, measured via a composite of four questions on confidence in politicians and civil servants. Although running a randomized controlled trial of exposure to an earthquake is not possible, the matched (by design) sample supports a causal interpretation of the analyses under a set of assumptions: that the approach creates two otherwise homogeneous groups and earthquake damage is independent of pre-disaster levels of trust.¹ We further test the robustness of our initial results via statistical matching. We conclude that the disaster event negatively affected general political trust: the earthquake caused a substantial drop of 11% in general political trust.

We then consider the question of disaster relief: average results may mask substantial heterogeneity if those who receive disaster relief have their general political trust restored by this demonstration of state effectiveness and benevolence. We run analyses with two measures of access to aid: subjective awareness and objective location data. We find a positive, significant relationship between trust and *perceived* proximity to distribution centers for food, water, and other essential items. Precisely, those who reported having access to such assistance reported relatively higher levels of trust. Although not as significant, we also find a positive relationship for analyses of *actual* proximity to a distribution center. Both measures have limitations. Although we control for political variables at the municipality level before the earthquake, subjective reports may be endogenous to factors we are not considering. While we scoured the web to find aid center data, the list of actual locations is likely incomplete. We conclude that the results provide suggestive evidence that aid can counter the adverse effects of a disaster on general political trust.

¹We also assume no relevant compositional changes in the population in surveyed areas.

The paper makes four contributions. First, unlike previous studies focusing on particular political figures or offices, we examine the connection between disaster and general political trust. This scope is relevant because, once low, general political trust is more difficult to restore than trust in specific individuals’/offices’ handling of a disaster (Levi and Stoker, 2000). Second, we add strong evidence that disaster decreases trust using a unique dataset with advantageous timing and survey design in which we matched post-disaster respondents to those in a pre-disaster survey. Third, we extend scholarship on the consequences of post-disaster welfare provision beyond their implications for incumbent support and social trust to the domain of general political trust. We show that, even in a context in which efficient and graft-free aid distribution is a challenge, the establishment of distribution centers—often through public-private or NGO partnerships—contains the potential to counter declines in general political trust. Fourth, we extend the scope of studies on disasters and trust from the United States and Western Europe to a comparatively less developed context. In this context, baseline general trust is low, and corruption, slow delivery, and the potential co-opting of aid delivery by third parties often complicate aid distribution. Concentrating on a developing country is important because most prior studies have focused on contexts where general trust is moderate to high, as is the state’s capacity—albeit perhaps not its willingness or organization—to deliver aid quickly and efficiently.

2 Analytical Framework

Most studies of post-disaster political trust that use systematically-collected empirical data concentrate on public confidence in incumbents in specific government offices (Reinhardt, 2015, 2019), government at different levels (Han et al., 2011; Nicholls and Picou, 2013), and society (Carlin et al., 2014b). Table A.1 in the Online Appendix A summarizes most of these studies despite not being an exhaustive list. Of these, Albrecht (2017) is closest to our study, as it examines trust in general politicians with multiple rounds of cross-country surveys and, interestingly, finds no evidence of a connection between disaster and political trust. Nevertheless, this cross-national study includes comparatively minor disasters (e.g., extreme temperatures) that may have more marginal implications for trust.

According to Hardin (1993, p.506), trust is defined as a three-part relationship where “A” trusts “B” to perform “X.” Our research expands upon existing literature by considering a broader scope for “B” and “X.” Specifically, we investigate the public’s general trust in politicians and civil servants (B) concerning their commitment to keeping promises—

reliability—and compliance with the law—integrity (X). In essence, our focus centers on the public’s general political trust, where they place their trust in *the general political community* (public officials) in matters of *core responsibilities that include but also extend beyond disaster relief*.

We fuse several lines of scholarship into a unified framework on the connections between disaster and general political trust. We detail a micro-logic that supports the expectation that general political trust will tend to fall after a major disaster. Then, we consider whether providing disaster aid from any source may mitigate that drop. In this case, we state an open expectation. On the one hand, aid availability should restore perceptions of state competence. The literature has shown that incumbents are rewarded for aid provision. However, because aid can be corrupted and ineffective, particularly in developing countries, the connection between disaster aid and general trust is far from guaranteed.

Our core thesis is that disasters place stress on political trust due to two non-rival dynamics. The first relates to the dimension of trust concerning competence (Levi and Stoker, 2000). Natural disasters overload systems, placing a significant burden on state capacity. Disasters disrupt economies, disturb infrastructure, and disorganize bureaucracies, while they multiply societal demands (Drury and Olson, 1998; Olson, 2000; Schneider, 1992). With limited time horizons and a motivation to cater to public opinion, governments tend to under-invest in preparation (Healy and Malhotra, 2009). The combination of pre-disaster under-preparedness and post-disaster disruptions and demands risks leaving states vulnerable to appearing incompetent following natural disasters (Olson and Gawronski, 2010).

The second dynamic relates to the state’s vulnerability to corruption and accusations of corruption following disaster. Perceptions of pervasive corruption matter because they signal a lack of beneficence, which may shape political trust (Chang and Chu, 2006). Widespread corruption also undermines political trust by hampering the state’s capacity to deliver resources to the people in need (Lavallée et al., 2008). Trustworthy agents do not act opportunistically even when it is beneficial for them (Keefer et al., 2020). Nevertheless, natural disasters can potentially increase opportunity and demand for corruption, especially in developing country contexts (Nikolova and Marinov, 2017; Yamamura, 2014). Research reveals that individuals are highly sensitive to corruption in bad times, including following disasters (Gawronski and Olson, 2000; Olson and Gawronski, 2010; Zechmeister and Zizumbo-Colunga, 2013). In brief, to the extent that corruption seeps into post-disaster dynamics and perceptions, there is reason to suspect that political trust will decline after a disaster.

Declines in trust’s two core dimensions—increased burden and vulnerability to corruption—

may be aggravated to the degree that negative evaluations of specific actors and offices diffuse into more general dispositions toward political trust. The effect of adverse events on an incumbent’s popularity is a predominant topic in the literature. Especially in presidential systems, citizens tend to attribute poor outcomes to the incumbent administration, which causes them to withdraw support. For example, it is near truism that economic downturns lead individuals to punish incumbent administrations, even when external factors cause negative effects (Campello and Zucco, 2016; Fiorina, 1981; Lewis-Beck and Ratto, 2013). Other unfortunate domestic events beyond the government’s control can similarly decrease incumbent support (Achen and Bartels, 2016; Newman and Forcehimes, 2010).

The extant research on public opinion in the realm of natural disasters suggests that natural disasters are among the set of adverse events that can undermine support for incumbent administrations (Arceneaux and Stein, 2006; Gasper and Reeves, 2011; Katz and Levin, 2016; Jennings, 1999). In the aftermath of a disaster, individuals may blame sitting officeholders for failing to mitigate losses or as a means to restore feelings of control by identifying a responsible party (Arceneaux and Stein, 2006; Bucher, 1957; Malhotra and Kuo, 2008; Rudolph, 2003; Wortman, 1976). Scholars have examined public trust in incumbent administrations at different levels in the United States and found that people directly affected by the disaster exhibited lower trust in local, state, and federal governments (Nicholls and Picou, 2013; Reinhardt, 2015).

Citizens’ blame for mishandling a natural disaster does not stop at political figures but extends to unelected officeholders and institutions that provide services. For example, in post-natural disaster environments, citizens express reduced trust in first responders such as local, state, and federal emergency medical assistance (EMA) (Reinhardt, 2015), and police and ambulance service (Reinhardt, 2019). In examining the government of Hong Kong’s response to a typhoon, Wong and Kwong (2021) argue that distrust cultivated public mistrust in bureaucratic agents. This dynamic may have implications for general assessments of the state’s trustworthiness *if* such negative evaluations seep into more general attitudes, including general political trust.

In brief, our expectation is:

H1 : General political trust will decrease in the aftermath of a disaster.

Aid provision demonstrates state capacity and willingness to ensure relief reaches the public. As such, aid holds the potential to shift perceptions on the two core dimensions of political trust: that the actor is, first, able, and second, willing to be responsive to the public. Empirical research suggests that aid may work to counter declines in political trust.

Studies of disaster aid show that the incumbent executive or party can benefit from the provision of aid, while a lack of aid can result in incumbents losing support (Bechtel and Hainmueller, 2011; Cole et al., 2012; Fuchs and Rodriguez-Chamussy, 2014; Gasper and Reeves, 2011; Healy and Malhotra, 2009; Lazarev et al., 2014; You et al., 2020). Studies of countries as diverse as Chile, China, and Russia have shown that support for the incumbent sometimes either *stayed constant or increased* following a disaster, in particular to the degree the government acted in the aftermath of the disasters (e.g., Carlin et al., 2014a; Lazarev et al., 2014; You et al., 2020). While these are studies of evaluations of specific offices, a similar dynamic may ensue in regard to general political trust.²

A positive connection between aid distribution and political trust is not guaranteed. Some scholars have failed to find such a connection between aid and incumbent support, even when aid was distributed fairly (Heersink et al., 2017). The distribution of disaster relief is often executed simultaneously to or in coordination with efforts by other actors (e.g., NGOs, foreign donors), which may cloud citizens' ability to recognize the state's role in such efforts (Olson and Gawronski, 2010). In other words, in the wake of a natural disaster, citizens may not know the source of the aid they receive. Moreover, assistance is not always effectively distributed (Sobel and Leeson, 2006). Corruption routinely seeps into the realm of disaster relief, in particular in developing contexts (Leeson and Sobel, 2008; Yamamura, 2014). The mishandling of aid can corrode, not build, political trust (Han et al., 2011).

A priori whether access to aid relief increases general political trust is an open question. The divergent logic—one under which aid provision signals competence and benevolence and the other in which that dynamic is undermined by corruption and inefficiency—points to rival hypotheses.

H2a : After a disaster, general political trust will be comparatively elevated among those with access to disaster relief.

H2b : After a disaster, general political trust will be no different among those with and without access to disaster relief.

²Reinhardt (2015) and You et al. (2020) illuminated the media's role in shaping public trust in the government after a natural disaster. These studies suggest that whether the media blames or champions the government's response influences public opinion. We do not directly test the media effect, but aid can function as informational cues about government responsiveness.

3 Mexico’s Administrative Landscape

To test the public opinion consequences of a natural disaster, we focus on the case of Mexico. Mexico is a useful case because it is a middle-income country with comparatively high levels of corruption and middling levels of state capacity.³ This context makes it a most-likely case for finding a connection between a major disaster and a decrease in political trust, given research suggesting that baseline levels of trust may condition the opinion consequences of natural disasters. At the same time, it makes a less-likely case for finding a connection between disaster aid and higher levels of political trust, given the greater potential for malfeasance to erode the effective and impartial distribution of relief (e.g., Yamamura, 2014).

Mexico is split into 31 states and one autonomous entity, Mexico City. Most states are then divided into municipalities (second-level subdivisions). In contrast, Mexico City is divided into 16 *alcaldías*, or mayoral administrations.⁴ Mexico City’s mayoral administrations have a democratically elected mayor and a 10-member council. During the earthquake recovery after the 2017 earthquake, each of the 16 mayoral administrations set up at least one (and in most cases, one) official government-run distribution center (in Spanish: *centro de acopio*). Alongside the mayoral administrations, several other governmental entities, such as search and rescue, are responsible for disaster relief efforts. Private entities and nongovernmental organizations also set up distribution centers.

4 Design and Data Collection

This study’s core data come from two waves of a survey of adult residents of the Greater Mexico City area: one immediately before an earthquake and another two months later. On September 19, 2017, a magnitude 7.1 earthquake shook the state of Puebla in Central Mexico, affecting the capital region. The epicenter was located by Mexico’s National Seismological Service about 120 kilometers (75 miles) southeast of the capital. The earthquake resulted in 369 deaths and approximately 2,000 injuries. It toppled dozens of buildings and damaged thousands of structures.⁵

³In 2019, Mexico ranked 130 out of 198 countries on Transparency International’s Corruption Perceptions Index (<https://www.transparency.org/en/cpi/2019/results>). On state capacity in Mexico, see Luna and Soifer (2015).

⁴In 2016, Mexico City was awarded a state’s rights, but it is referred to as an “autonomous entity.”

⁵Coincidentally, the disaster occurred on the anniversary of a massive 1985 earthquake, in which thousands died, and tens of thousands were injured, and two weeks after the largest-magnitude earthquake to hit Mexico in 100 years (an 8.2 on the Richter Scale) occurred near the southern state of Chiapas.

The pre-earthquake survey was conducted from August 31 to September 19, 2017. It was designed to include 900 individuals drawn to be representative of voting-age adults (18 or above) living in the greater Mexico City metropolitan area.⁶ The pre-earthquake survey was about two-thirds complete when the earthquake struck. Fieldwork was complete in 20 of the 45 municipalities, it was incomplete in 9, and it had not yet commenced in 16.⁷ In total, the pre-earthquake dataset consists of 569 interviews.⁸

Fieldwork was halted for two months. A post-earthquake survey was conducted from November 18, 2017, to January 18, 2018, when the team returned to collect data from a new sample that matched the pre-earthquake sample in terms of respondents’ gender, age, and location. A within-subjects panel study was not feasible because identifying information for the original participants was not collected by design. Therefore, we drew the post-earthquake sample to be comparable to the pre-earthquake sample. To create matching samples, we over-sampled individuals who fit the profile of those interviewed before the earthquake, effectively doubling the “type” surveyed in the pre-earthquake study (where “type” is defined by gender, age cohort, and geographical block). As a result, the post-earthquake dataset consists of 1,164 interviews.

There are 1,733 individuals in 29 different municipalities in the final dataset, 569 from the pre-earthquake survey and 1,164 from the post-earthquake. DATA-OPM, an experienced and reputable local firm, conducted both survey waves. Interviewers were trained and supervised in the field. Interviews were conducted using electronic devices, permitting additional oversight via audits of location, timing, and other metadata. The authors’ team coordinated

⁶We used data from the National Electoral Institute (INE) (last updated before the study, in March 2016). The sample for the 900 interviews expected initially in the pre-quake survey was drawn as an area probability sample. Each region in the Mexico City Metropolitan Area (i.e., North, Center, East, South, and West) was first designated a proportion of the 900 interviews based on population data. Next, in each region, a random sample was chosen via four stages: i) selection of several electoral sections, ii) selection of blocks of dwellings in each selected section, iii) selection of households in each selected block, and iv) selection of a respondent from each household. See details about the data collection process in the Online Appendix B.

⁷Table B.2 details the state of the pre-earthquake survey when it was halted on September 19, 2017, compared to the original design.

⁸The disruption in the original sample draw resulted in a sample no longer representative of the Mexico City population. By chance, data collection for the pre-earthquake survey was concentrated in areas with more damage. Specifically, 70% of the sample of residents interviewed prior to stopping the survey were located in the south, center, or east, where damage from the earthquake was comparatively more severe. In the post-earthquake dataset, damage reported by respondents is significantly higher in these areas compared to the other two regions—the north and west. We cannot be certain whether the decrease in trust we find represents a lower or an upper bound of the general effect in trust. On the one hand, if the decrease diminishes as the severity of experience lessens, then the effect we find may be an upper bound. On the other hand, if the media influences people outside the region we surveyed, and if the media portrays serious government failures, our estimate may reflect a lower bound.

the programming, pre-testing, and fieldwork oversight. The questionnaire includes demographic information, measures of trust in people and institutions, policy preferences, level of risk aversion, and time preferences. In addition to the core items included in the pre-survey questionnaire, the post-earthquake survey contained a new module to assess experiences with the earthquake. It evaluated citizens’ perceptions of the event on different dimensions: damage assessment, government response, and level of preparedness, among others.

The Online Appendix C contains the survey questions and balance tests. Overall, the samples are well balanced: there are no statistically significant differences in gender, age, education, number of children in the household, political support for the PRI party, share of interviews carried out in each region, level of patience (a measure of an individual’s time horizon), wealth (measured with the number of household items), and social trust (trust in general people). On average, there was a slightly larger number of adults in each household (the difference is marginally significant at the 10% level) and PRD supporters (significant at the 0.1% level) in the pre-earthquake sample. Additionally, people are more risk-averse before the earthquake. To account for these differences, we include the average for these variables at the municipality level before the earthquake as controls.

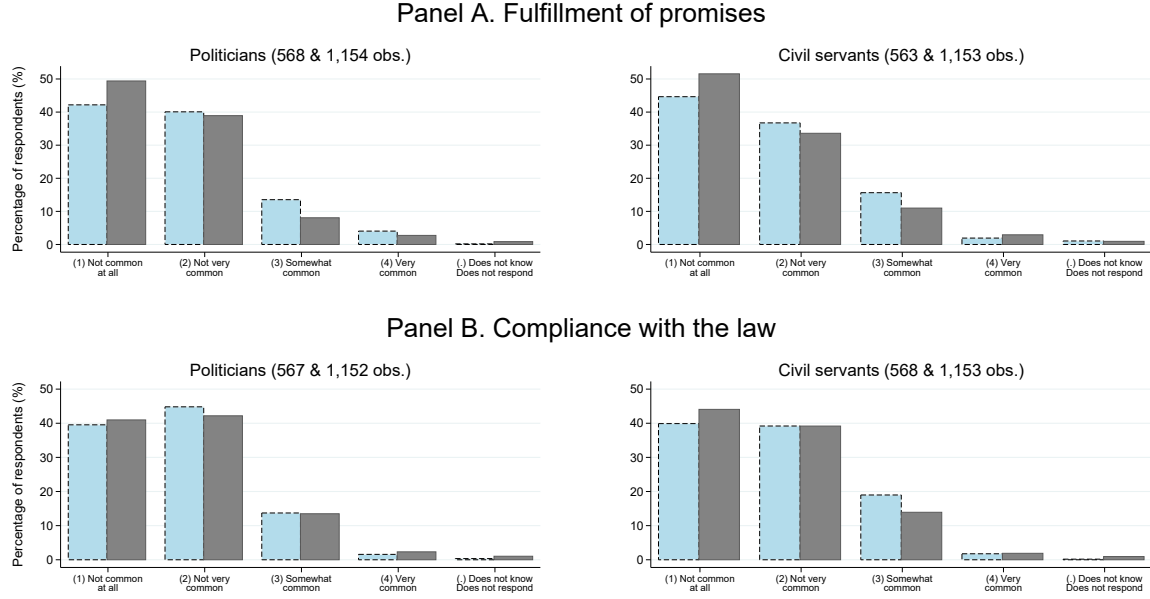
5 Estimating the Earthquake’s Effect on Political Trust

Individuals trust if they believe that others will not make promises they cannot keep, renege on promises they can keep, or violate norms to take advantage of people who adhere to them (Keefer and Scartascini, 2022; Scartascini and Valle L., 2020). According to Hardin (1993), trust requires i) a subject who offers trust, ii) an object whom to trust, and iii) a scope, i.e., trust to do what. Based on this conceptualization, we measure the public’s credibility/belief in politicians’ and civil servants’ tendency to fulfill promises (reliability) and comply with the law (integrity).

We focus on public beliefs about politicians’ and civil servants’ fulfillment of promises and compliance with the law because they epitomize the government’s capacity, rule of law, and transparency. Democracy is often associated with the rule of law (O’Donnell, 2004) and transparency (Hollyer et al., 2011). Scholars have found that democracy and state capacity have a curvilinear relationship instead of a straightforward linear relationship (Bäck and Hadenius, 2008), as states who cannot deliver are also associated with authoritarian regimes (Hanson, 2015).

We measure general political trust with four questions that ask a respondent's evaluation of how commonly politicians and civil servants fulfill their promises and comply with the law, with response options varying from "not common at all" to "very common." Figure 1 provides a first look at the distribution of responses. The figure depicts, for each variable, the proportion of respondents in each question category before (lighter color) and after the earthquake (darker color). Panel A shows that the distribution of beliefs about politicians' and civil servants' fulfillment of promises differs before and after the earthquake (Wilcoxon rank-sum tests: $p\text{-value} < 0.001$, and $p\text{-value} = 0.006$, respectively).⁹ In particular, a higher proportion of people believe that fulfilling promises is "not common at all" after the earthquake (7.58 percentage points for politicians and 6.92 percentage points for civil servants).

Figure 1: Trust before and after the Earthquake



Notes: The number of observations for the pre and post samples is included in parentheses. Lighter color shows the responses for the pre-quake sample and the darker color bars for the post-quake sample.

Regarding compliance with the country's laws and regulations, less noticeable changes are observed in Panel B for evaluations of politicians. However, there is a spike in the response category "not common at all" after the earthquake for individuals' beliefs that civil servants comply with the law (4.53 percentage points).¹⁰ Note the high percentage of respondents

⁹Additionally, we conducted chi-squared tests to check whether there were differences in the proportions before and after the earthquake in each category. The results are shown in Tables E.1 and E.2.

¹⁰For politicians, a Wilcoxon rank-sum test ($p\text{-value} = 0.721$) shows that the distribution of beliefs regarding politicians' compliance with the law is not significantly different before and after the earthquake. However, there is a significant difference in the distribution of beliefs about civil servants' compliance before

who had no confidence in politicians and civil servants before and after the earthquake. Less than 25% of respondents thought that politicians and civil servants fulfilled their promises or complied with the law before the earthquake. This fact not only offers a glimpse into the low levels of trust in the country but may also generate a ceiling effect in our estimations for reduced trust.

For our core analysis, we conducted Principal Component Analysis (PCA) using the four survey items: i) fulfillment of politicians' promises, ii) fulfillment of civil servants' promises, iii) law compliance of politicians; and 4) law compliance of civil servants. All four variables exhibit a high degree of positive correlation on the first component.¹¹ Subsequently, we use it as a latent variable for "general political trust."

Figure 2: PCA: Trust before and after the Earthquake

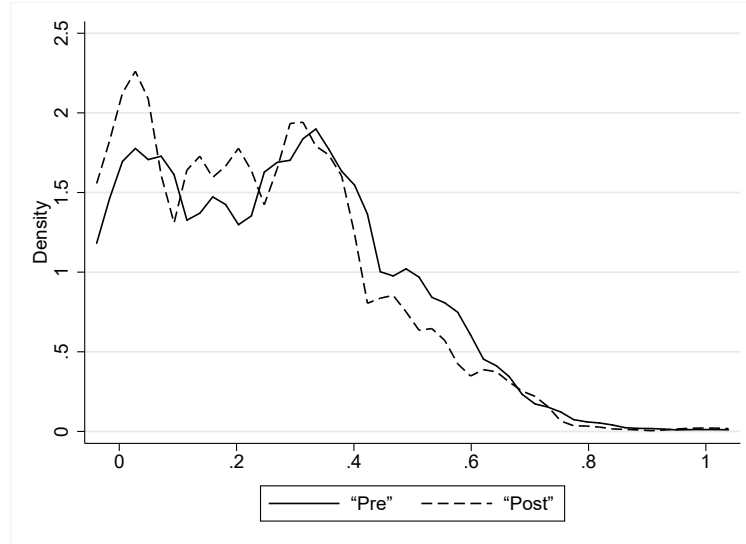


Figure 2 shows the distribution of the dependent variable before and after the earthquake once the first component of the PCA is taken as the general political trust variable and is normalized. The latent variable ranges from low (0) to high (1) trust levels. The high concentration of post-earthquake respondents' answers on the left-hand side of the distribution indicates that more people reported having "very low" general political trust after the earthquake than before the event.

and after the earthquake (Wilcoxon rank-sum test: p-value = 0.020).

¹¹See Section D.2 in the Online Appendix for details regarding the Principal Component Analysis (PCA).

Table 1: Effect of the Earthquake on General Political Trust

	General political trust					
	(1)	(2)	(3)	(4)	(5)	(6)
Earthquake	-0.029*** (0.010)	-0.029*** (0.010)	-0.029*** (0.010)	-0.029*** (0.010)	-0.029*** (0.010)	-0.029*** (0.010)
Male	-0.000 (0.009)	0.001 (0.009)	-0.000 (0.009)	-0.000 (0.009)	-0.000 (0.009)	0.001 (0.009)
Age	-0.002*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)
Last year of education approved	-0.002 (0.001)	-0.002 (0.001)	-0.002 (0.001)	-0.002 (0.001)	-0.002 (0.001)	-0.002* (0.001)
Number of adults in the household	-0.001 (0.003)	-0.001 (0.003)	-0.001 (0.003)	-0.001 (0.003)	-0.001 (0.003)	-0.002 (0.003)
Number of children in the household	0.002 (0.004)	0.002 (0.004)	0.002 (0.004)	0.002 (0.004)	0.002 (0.004)	0.002 (0.004)
PRI: pre		0.031 (0.056)				0.069 (0.073)
PRD: pre		0.146*** (0.053)				0.167*** (0.057)
Wealth: pre			0.013 (0.081)			0.087 (0.118)
Risk Aversion: pre				0.003 (0.004)		-0.002 (0.003)
Patience: pre				0.001 (0.003)		0.000 (0.003)
Social Trust: pre					-0.023 (0.036)	-0.017 (0.042)
Constant	0.340*** (0.028)	0.314*** (0.031)	0.333*** (0.049)	0.238** (0.120)	0.405*** (0.103)	0.358* (0.196)
Observations	1,651	1,651	1,651	1,651	1,651	1,651
R-squared	0.039	0.043	0.039	0.039	0.039	0.044

Notes: Clustered standard errors are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The average levels of political affiliation, risk aversion, patience, and social trust are calculated at the municipality level before the earthquake.

We estimate the effect of the earthquake on the general political trust variable using ordinary least squares. Table 1 presents the results and supports the conclusion that trust substantially decreased after the earthquake, independently of the set of controls included in the regressions. The first model controls for variables unlikely to be affected by the earthquake (i.e., gender, age, education, and number of adults and children per household) to improve efficiency. Models (2) - (5) include political affiliation, wealth, risk aversion, patience, and social trust. Given that the earthquake may affect these variables, we use pre-treatment averages at the municipality level.¹² For political affiliation, we focus on the two

¹²We considered averaging by clusters, but each cluster included only about 10 respondents, while mu-

main parties in this subregion: PRI (Institutional Revolutionary Party) and PRD (Party of the Democratic Revolution). For example, suppose 60% of the respondents in a given municipality supported PRI before the earthquake. In that case, we assign this percentage to respondents who resided in the municipality during the post-earthquake survey. All models control for regional indicator variables.

Therefore, the results support [H1](#): the earthquake reduced the level of general political trust.¹³ The estimated effect of the earthquake on general trust remains the same: -0.029, which is equivalent to a drop of 11% (0.029/0.26). Interestingly, the table also shows a positive and significant correlation between pre-earthquake support for the party of the head of the Federal District/Mexico City at the time of the earthquake (PRD: pre) and the effect on general political trust.

What could be driving the drop in trust? We mentioned two paths, one involving state capacity and another one involving corruption. We do not have micro-level data to test these mechanisms in detail. However, we do have data on blame attribution. Perceptions of government credibility and integrity ought to be affected if citizens blame public actors for the disaster’s occurrence. The post-earthquake survey shows that 62.2% of respondents believed the earthquake damage might have been averted if building regulations had been enforced.

6 Disaster Relief’s Role in Rebuilding Political Trust

Thus far, the evidence supports the hypothesis that severe disasters undermine political trust. However, the results presented for the 2017 Mexico earthquake may mask whether disaster relief in the aftermath of the earthquake, particularly aid distribution centers, positively affected political trust. If that were the case, there are two important implications. First, disaster relief would countervail the impact of the earthquake. Second, the results from the test of [H1](#) would be a lower bound of the actual effect; without aid, the drop in trust would have been higher. Thus, this section focuses on one of the most common forms of post-earthquake aid: distribution centers (tables and tents) set up in affected neighborhoods for individuals to pick up essential goods (e.g., water and food). We investigate the relevance of distribution centers via how close they were to respondents’ households in two ways: i)

municipalities averaged about 60 survey respondents.

¹³Additional analyses show that the result holds when controlling for the actual values of political support, wealth, patience, risk aversion, and social trust without averaging at the municipality level.

respondents' self-reports about the presence of distribution centers in their neighborhood, and ii) gathering the location data of distribution centers.

We note that both measures have strengths and weaknesses. Subjective assessments are helpful because they measure awareness of the resource. If a distribution center exists, but an individual is not aware of it, in theory, it should not affect attitudes. However, subjective assessments may be endogenous to factors that shape political trust or subject to expectations to receive additional aid. We control for some potential confounders but cannot eliminate this threat. Objective indicators avoid subjective biases but have two challenges: individuals may not be aware of them, and it is impossible to develop a complete list of all aid distribution locations. The latter is because, in the chaotic aftermath of a severe disaster like that in Mexico, aid stations vary in size and duration, they are set up by many different actors, and there is no single authoritative list of the placement and timing of all centers. We assess the evidence offered by these measures with these caveats in mind.

6.1 Self-reported Proximity to Distribution Centers

Table 2: Association between Self-reported Distribution Centers and General Political Trust

	General political trust					
	(1)	(2)	(3)	(4)	(5)	(6)
Self-reported DC	0.032** (0.013)	0.030** (0.013)	0.032** (0.013)	0.032** (0.013)	0.032** (0.013)	0.030** (0.013)
Male	0.003 (0.011)	0.004 (0.011)	0.003 (0.011)	0.003 (0.011)	0.003 (0.011)	0.004 (0.011)
Age	-0.002*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)
Last year of education approved	-0.001 (0.002)	-0.001 (0.002)	-0.001 (0.002)	-0.001 (0.002)	-0.001 (0.002)	-0.002 (0.002)
Number of adults in the household	0.001 (0.003)	0.001 (0.003)	0.001 (0.003)	0.001 (0.003)	0.001 (0.003)	0.001 (0.003)
Number of children in the household	0.003 (0.004)	0.003 (0.004)	0.002 (0.004)	0.003 (0.004)	0.003 (0.004)	0.003 (0.004)
PRI:pre		0.034 (0.065)				0.054 (0.087)
PRD:pre		0.148** (0.065)				0.192*** (0.071)
Wealth: pre			-0.057 (0.087)			0.014 (0.143)
Risk Aversion: pre				-0.002 (0.005)		-0.006 (0.005)
Patience: pre				0.001 (0.003)		0.000 (0.003)
Social Trust: pre					0.012 (0.037)	-0.008 (0.047)
Constant	0.284*** (0.035)	0.260*** (0.037)	0.316*** (0.056)	0.318* (0.163)	0.252** (0.106)	0.440* (0.254)
Observations	1,069	1,069	1,069	1,069	1,069	1,069
R-squared	0.056	0.061	0.057	0.057	0.056	0.063

Notes: Clustered standard errors are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The average levels of political affiliation, risk aversion, patience, and social trust are calculated at the municipality level before the earthquake.

Table 2 reports the results of self-reported distribution centers on general political trust. This table includes the same control variables and regional fixed effects in the previous section. We conduct this analysis only for post-earthquake respondents (proximity to distribution center information is irrelevant before the earthquake). We also note that the “treatment” (i.e., distribution center) is no longer assumed to have been assigned randomly. The table shows that respondents who reported having (at least) one distribution center in their neighborhood

reported higher general political trust in politicians and civil servants, and its effect size is sizeable (ranging from 0.030 to 0.032, it represents an increase of about 12% with respect to the pre-earthquake mean). As the average treatment effect of the earthquake was -0.029, those who reported observing a distribution center in their neighborhood would appear to have had their general political trust restored to the pre-earthquake level.

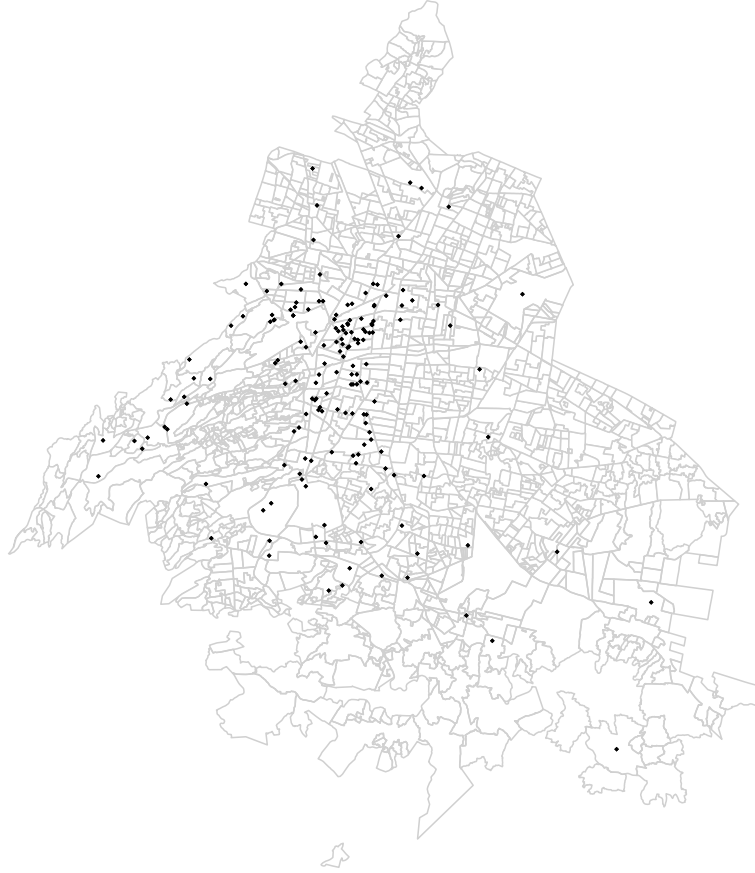
6.2 Proximity to the Objective Location of Distribution Centers

While the self-reports on distribution centers capture the awareness of the availability of aid, they may be confounded with respondents' prior beliefs about the politicians and civil servants (reverse causality: those who trust more report having seen a distribution center.) There might also be self-selection—those who needed them more took the extra steps to locate and use them. To address these concerns, we test the robustness of the results using an objective measure.

To locate distribution centers, we gathered and cross-referenced information from government, newspaper, and social media sources reporting on distribution centers established in Mexico City in the wake of the earthquake (see section E.1 for detailed sources). These sources provided partial identifying information for each distribution center, such as the name, provider, and, in some cases, latitude and longitude of a distribution center. Some information was lacking, such as the street name, neighborhood name, municipality name, and zone number. We filled in the missing information for each distribution center using publicly available maps and government documents on postal information and zoning in Mexico City. We checked each observation twice, using two different maps. We took most of the primary source materials about distribution centers from the Mexico City government website and the Collaborative Map “Rescue Mexico,” which then were corroborated with news articles from *El Universal*, *Animal Político*, and Mexican public institutions' Twitter feeds.¹⁴ We could not locate similar data on distribution centers for the State of Mexico, so our analysis here is limited to Mexico City and, thus, to fewer survey respondents. Figure 3 shows the location of the distribution centers in Mexico City identified through our scouring of available information.

¹⁴According to most sources, this collaborative map was the most used and accurate source of information after the earthquake.

Figure 3: Location of Distribution Centers in Mexico City



Source: Authors' compilation.

Notes: The gray lines indicate the boundaries of the *colonias* ("neighborhoods" in Mexico City). The diamonds represent the distribution centers found.

We determined whether a distribution center was in or near a respondent's neighborhood if the difference in zip codes was smaller than 30 and in the same municipality (for example, 77810 was the zip code of the place where the distribution was located and 77830 was the code of the respondent's residence).¹⁵ Respondents were assigned a value of 1 for having a distribution center in their neighborhood and 0 otherwise. We arrived at 30 for the cut-off via an inductive approach, where we estimated the distance between distribution centers and survey respondents' houses in kilometers and *walking* time in minutes using their geographical coordinates.¹⁶ The summary statistics in Table 3 demonstrate that respondents

¹⁵We use the neighborhood and not the municipality because we want to match the question asked in the survey. See Online Appendix C.

¹⁶We calculated the distance between each household and its closest distribution centers. After obtaining the information from Google Maps, we checked the correspondence of the addresses and the ZIP codes using the official tables of ZIP codes and human settlements provided by the Mexican government, which can be found at <https://datos.gob.mx/busca/dataset/codigos-postales-coordenadas-y-colonias/resource/7675f085-6a8f-4b20-8091-ff5117fe964e>.

coded to be residing near a distribution center live near the centers by the distance measures.

Table 3: Summary Time and Distance between Distribution Center and Households

	Mean	S.D.	Min	p25	Median	p75	Max
Time (minutes)	21.21	15.10	1.10	10.70	15.13	32.30	50.30
Distance (Km)	1.66	1.21	0.10	0.83	1.12	2.56	4.01

Table 4 reports the results of objective proximity to distribution centers, as opposed to perceived closeness to the centers, on general political trust. The regressions remain the same as before, except that the variable of interest now captures proximity to a verified location of distribution centers. The table shows that having a distribution center nearby positively correlates with respondents’ general political trust. Notably, additional analyses demonstrate that whether the government provides the distribution center or not does not affect the conclusion.

The coefficient is larger but less precisely estimated than in Table 2. Since the sample size has reduced substantially, it lowers the statistical power to detect a significant and consistent effect. In the most parsimonious model shown in column 1, the coefficient for the distribution center is significant at the 10% level. However, the significance varies depending on the controls we include.¹⁷ Considering these results and the prior ones that use the self-reported existence of distribution centers, we conclude that there is suggestive evidence supporting *H2a*.

¹⁷We also ran the regressions using different coding schemes for the *Objective DC* variable by relaxing the zip code differences to be 50 and 100. The statistical significance vanishes with the alternative variables, although the positive correlations remain. However, the two alternative coding schemes increased the distance between survey respondents’ residences and distribution centers to about 30 and 40 minutes, meaning that the distribution centers were potentially not precisely in the neighborhood.

Table 4: Association between Objective Distribution Centers and General Political Trust

	General political trust					
	(1)	(2)	(3)	(4)	(5)	(6)
Objective DC	0.045* (0.025)	0.042* (0.024)	0.045* (0.024)	0.039 (0.024)	0.045* (0.025)	0.026 (0.025)
Male	-0.002 (0.016)	-0.002 (0.016)	-0.002 (0.016)	-0.002 (0.016)	-0.002 (0.016)	-0.002 (0.016)
Age	-0.002*** (0.001)	-0.002*** (0.001)	-0.002*** (0.001)	-0.002*** (0.001)	-0.002*** (0.001)	-0.002*** (0.001)
Last year of education approved	-0.001 (0.002)	-0.001 (0.002)	-0.001 (0.002)	-0.001 (0.002)	-0.001 (0.002)	-0.001 (0.002)
Number of adults in the household	-0.001 (0.005)	-0.001 (0.005)	-0.001 (0.005)	-0.002 (0.005)	-0.001 (0.005)	-0.002 (0.005)
Number of children in the household	-0.003 (0.006)	-0.004 (0.006)	-0.003 (0.006)	-0.003 (0.006)	-0.003 (0.006)	-0.003 (0.006)
PRI:pre		-0.163 (0.196)				-0.408 (0.282)
PRD:pre		0.040 (0.124)				0.094 (0.179)
Wealth: pre			0.039 (0.263)			0.505 (0.501)
Risk Aversion: pre				0.008 (0.009)		0.007 (0.009)
Patience: pre				0.001 (0.005)		0.005 (0.006)
Social Trust: pre					0.005 (0.062)	0.065 (0.106)
Constant	0.275*** (0.043)	0.288*** (0.055)	0.254 (0.156)	0.059 (0.287)	0.260 (0.170)	-0.398 (0.582)
Observations	515	515	515	515	515	515
R-squared	0.038	0.039	0.038	0.039	0.038	0.043

Notes: Clustered standard errors are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The average levels of political affiliation, risk aversion, patience, and social trust are calculated at the municipality level before the earthquake.

6.3 Correspondence between Subjective and Objective Measures

The somewhat varying results from self-reported vs. objective locations of distribution centers raise the question: How much overlap exists between the two variables in Mexico City? We found that the variables based on self-reports and actual locations match for 62.64% of respondents.

How were the distribution centers targeted? Analyses of predictors of the self-report and

objective location measures are informative, though they also diverge in some ways. With the self-report variable, we find that those who experienced water service interruptions, had difficulties finding food and emergency products for their household, or supported PRD (i.e., the party of the head of the Federal District/Mexico City at the time of the earthquake) are more likely to report that there was a distribution center in their neighborhood compared to those who did not experience those difficulties (see Table E.1). Analyses of the actual location-based variable yield no statistically significant correlations between distribution centers in respondents’ neighborhood and experiencing water service disruptions or having difficulties locating food and other necessities. Instead, only the political variables show statistically significant correlations with the actual distribution center location variable (See Table E.2). The probability of having a distribution center nearby is positively correlated with support for the incumbent party. Altogether, the evidence indicates some misalignment between actual and perceived realities, although we caution that the potential incompleteness of the objective center list may be partially responsible for these differences.

6.4 Robustness Checks and Placebo Analysis

While the two cross-sectional data sets are useful for assessing the earthquake’s impact on trust, we want to ensure there was no selection on the sample surveyed in the second wave.¹⁸ We use weighting and different matching techniques to account for the fact that people’s baseline conditions, like education, number of children, number of adults in the household, and region, might affect the probability of facing a harder situation after the earthquake, having a distribution center in the neighborhood, and experiencing lower levels of trust.¹⁹

To guarantee that the matching estimators consistently estimate the effects of interest, we assume that surveying a person in round one or two was independent of the outcomes, conditional on the covariates and that the probability of being surveyed in the second wave is bounded away from zero and one. Using weighting and matching techniques, we confirm that the results are robust and that the two samples are comparable. The results in F.1 in the Online Appendix show that general political trust decreased significantly after the earthquake across models controlling for different control variables and matching methods.

Additionally, as we have shown in Section 6, the actual distribution center variable may include some noise. To address this concern and ensure that the reported statistical sig-

¹⁸8% (93 individuals) of the post-quake sample report that they were surveyed in both waves.

¹⁹Reweighting is competitive with the most effective matching estimators when the overlap is good (Busso et al., 2014), as in our case.

nificance is not merely coincidental, we conducted analyses with the same exact model on the pre-earthquake sample. The hypothesis was that respondents who resided in a neighborhood where distribution centers were later established after the earthquake would not exhibit significantly higher or lower general political trust compared to others. The descriptive statistics below show that the closest distribution centers are within a walkable distance to pre-earthquake respondents' residences, just like they are to post-earthquake respondents' residences (see Table G.2 in the Online Appendix).

7 Conclusion

Political trust is vital to social cohesion, and both are fundamental for resilience and recovery (Hikichi et al., 2016; Townshend et al., 2015). However, natural disasters can undermine political trust. While previous research has considered incumbent support, confidence in specific offices, and social trust, less attention has been paid to dynamics involving severe disasters and general political trust. We argue that general trust in politicians and civil servants ought to be negatively affected by disasters and consider whether aid can countervail the adverse effects of these tendencies.

We find evidence of a decrease of 11% in political trust following a major earthquake in central Mexico. Using a matched sample supplemented with additional data processing to increase our leverage to test for a causal effect, we find robust evidence that the 2017 earthquake in Mexico City generated a significant drop in trust in politicians and civil servants. This result is relevant because when trust is low, citizens are less likely to demand policies that expand the state's scope as they may not believe governments will follow the stated policy. Lack of trust also suppresses citizen demand for policies that require up-front costs to reap substantial future benefits, given that citizens may be skeptical that those benefits will ever materialize.

Lower trust does not result in smaller governments; rather, it leads to governments that invest less in public welfare and are more prone to rent-seeking. As such, a negative trust shock can lead to worse public policy and even lower preparedness levels when the next shock hits. We anticipate seeing these dynamics play out more in the context of the growing chances of natural disasters and pandemics.

To that end, it would be good news to find that disaster aid coming from any source can countervail against a decline in general political trust. Therefore, we considered whether

governments can reduce the adverse effects of disasters on political trust by reacting appropriately to them by facilitating distribution center availability. We find evidence that aid may help buttress against declines in political trust, especially when individuals are aware of such centers. In the case we examine, the results are more robust for the subjective measure than the objective one. That outcome may be driven by data challenges discussed in the manuscript. Future research should probe further into these considerations.

Several questions emerge from our work that merit additional research. First, how long does the trust drop endure? Our work focuses only on the reasonably immediate aftermath of a severe disaster. Second, does the trust drop occur in comparatively higher-functioning democratic contexts? In those contexts, individuals may be less likely to assign responsibility to the government for failing to protect citizens. Third, when does aid counter negative consequences for political trust, and when does it fail? A better understanding of the consequences of aid distribution is essential for understanding dynamics around political trust and the downstream consequences of trust. On the one hand, finding that the presence of distribution centers holds the potential to immunize the state against a loss of public confidence is good news when governments can do little to prepare. On the other hand, it may create additional incentives to allocate spending on relief rather than preparedness, even though the first is more effective in saving lives.

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Online Appendix

A Literature review

Table A.1: Selected Recent Empirical Investigations of Political Trust After A Natural Disaster

Paper	Case	Data	Explanatory variable	Trustee (DV)
Albrecht 2017	10 disasters in Europe	Survey (cross-national, multiple rounds)	Disaster	Politicians
Aldrich 2017	Earthquake & Tsunami in Japan	Observations, interviews, & news articles	Disaster	Central & local govt
Carlin et al. 2014b	Earthquakes in El Salvador, Haiti & Chile	Survey (cross-national, post-disaster)	Direct vs. indirect disaster experience	People in the community
Han et al. & 2011	Earthquake in China	Observations, interviews, & focus group	Disaster	Local govt
Mathew & Kwong 2021	Typhoon in Hong Kong	News articles	Trust in politicians after disaster	Bureaucrat
Nicholls & Picou 2013	Hurricane in the U.S.	Survey	Direct vs. indirect disaster experience	Local, state, federal govt
Reinhardt 2015	Hurricane in the U.S.	Survey	Direct vs. indirect disaster experience	president, governor, Mayor, FEMA, state/local EMA,
Reinhardt 2019	Hurricane in the U.S.	Survey	Gender	Police & ambulance service
Scott et al. 2016	Coal waste rupture in the U.S.	Survey	Time	Expert, general ppl, public officials, local govt
Scott et al. 2005	Coal waste rupture in the U.S.	Interviews	Disaster	Corporations, govt, & regulatory authorities
Strömbäck & Nord 2006	Tsunami in Indonesia	Survey, focus group	Disaster	Politicians, govt, media
You et al. 2020	Earthquake in China	Survey (2 rounds)	Disaster	Local, provincial, central govt official

Notes: DV listed include only outcomes related to trust. Studies about incumbent approval ratings and electoral outcomes are related but not mentioned here.

B Survey Design and Implementation

The pre-earthquake survey (August 31 - September 19, 2017) and the post-earthquake survey (November 18, 2017 - January 18, 2018) had IRB approval and conformed to APSA's Principles and Guidance for Human Subjects Research. Recruited individuals were read a study information sheet that informed them that they were being invited to participate in a

study about public opinion in Mexico, conducted by LAPOP and administered by DATA-OPM. They were then allowed to consent or decline to participate. There was no deception in the study. Those who consented to the study could decline any question and terminate the study at any time. As is common for standard public opinions in Mexico, and elsewhere, participants were not compensated. The study did not intervene with real-world events and only functioned as an opinion survey.¹

We designed the original survey to be representative of non-institutionalized adults (18 or above) living in the greater Mexico City metropolitan area. The original target was 900 interviews in the pre-earthquake survey. Each region of the metropolitan area was designated a proportion of the total number of interviews based on population data. A sample of people was then chosen in four stages, as shown in Table B.1.

We used geographical stratification since this increases precision by yielding smaller random sample errors than those obtained with a simple random sampling of the same sample size (Gerber and Green, 2012). A stratified sample also tends to be more representative and dispersed since it guarantees the inclusion of municipalities in the entire metropolitan area.

Table B.1: Stratified Multi-stage Clustered Sampling Design

	Sampling Unit	Unit selected	Sampling Selection Process
<u>Stratification</u>	Strata	Regions	Stratified Sampling
<u>Multistage sample from each stratum</u>			
First stage	Secondary Sampling Unit (SSU)*	Electoral sections [‡]	PPS sampling [§]
Second stage	Tertiary Sampling Unit (TSU)	Blocks of dwellings	PPS sampling
Third stage	Quaternary Sampling Unit (QSU)	Households	Systematic sampling
Fourth stage	Final Sampling Units (FSU)	Person in household	Quota by sex and age

Notes: * [‡] An electoral section is the basic geographical unit into which the national territory is divided for electoral purposes. [§] PPS denotes Probability Proportional to Size.

We used a probability proportional to the adult population sampling (PPS) method to select the electoral sections (Secondary Sampling Units, SSUs) within each region.² Since six interviews were to be conducted per electoral section, the number of interviews per region directly determined the number of electoral sections to be randomly drawn from each region.

¹In addition to survey responses, the devices were programmed to capture location, audio segments, a picture of the enumerator from the front-facing camera, and timing data; the local team audited 100% of surveys for quality control on each of these dimensions, and our team conducted a second audit of just over 20%. A small proportion of initially-recorded interviews were canceled for quality control issues (about 6-7% of completed interviews); the computer-assisted quality control procedures meant that those poor quality interviews were detected and replaced with valid high-quality interviews from the correct blocks while fieldwork was still in progress.

²There are federal electoral districts and electoral sections. We use electoral sections, the basic geographical unit into which the national territory is divided for electoral purposes. (INE, FEPADE, UNAM, Tribunal Electoral del Poder Judicial de la Federación, 2016).

Table B.2 shows each region’s participation in the survey, the number of municipalities and electoral sections, the number of interviews that had to be carried out in each region, and the number of interviews that were actually carried out before and after the earthquake.

Table B.2: Number of Interviews per Region (target and actual sample)

Region	Sample (Target)				Actual sample							
	Number of Municipalities	Number of SSUs	Number of Interviews	Proportion	Number of Municipalities	Pre - Earthquake				Post - Earthquake		
						Number of SSUs	Number of Interviews	Proportion		Number of SSUs	Number of Interviews	Proportion
Center	6	28	168	18.67%	4	19	109	19.16%		32	229	19.67%
North	14	27	162	18.00%	9	19	111	19.51%		24	229	19.67%
South	10	25	150	16.67%	6	13	78	13.71%		26	156	13.40%
East	9	47	282	31.33%	6	36	213	37.43%		62	431	37.03%
West	6	23	138	15.33%	4	10	58	10.19%		38	119	10.22%
Total	45	150	900	100%	29	97	569	100%		162	1,164	100%

Once we had randomly selected the electoral sections, we used a new PPS sampling method to select the blocks of dwellings in each SSU. The number of households in it defined the size of each block. (see [National Housing Inventory 2016](#)). Next, enumerators systematically chose households, skipping two housing units after each completed interview within a block.³ Finally, a person in each household was chosen according to gender and age quotas, which were estimated based on the distribution of the population registered in the electoral sections.⁴ Three different quota forms (A, B, and C), shown in Table B.3, were used to approximate the reference parameters for each SSU.

Table B.3: Household Forms

Gender/Age	Form A				Form B				Form C			
	18- 29	30- 50	<50	Total	18- 29	30- 50	<50	Total	18- 29	30- 50	<50	Total
Men	1	2	0	3	1	1	1	3	1	1	1	3
Women	1	1	1	3	1	2	0	3	1	1	1	3
Total	2	3	1	6	2	3	1	6	2	2	2	6

The pre-earthquake survey was about two-thirds complete (569 interviews) when the earthquake struck. The post-quake survey was conducted two months after the earthquake. The post-earthquake survey was designed to draw 900 individuals from the same SSUs as in the original design. In addition, we layered in an oversample of individuals who fit the profile of the 569 individuals who were interviewed before the earthquake. We only keep the data from respondents in the same SSUs as respondents in the first wave of the survey.

³The enumerators were instructed to locate the block’s north-eastern point to start the interviews and continue walking clockwise. In case of rejection, vacant housing, or people’s absence, the enumerator selected the adjacent housing. When survey personnel reached the end of a block without completing the quota of 3 interviews per block, they continued to the next block, following the same routine as in the previous block.

⁴Interviewees had to reside permanently in the household, not be a domestic worker or visitor. If more than two people in a house were in the same age group and gender, we recruited a person with the closest birthday.

C Survey Questions, Variables, and Balance Check

Table C.1: Questions

Questions for general political trust variable			
Variable name	Question	Response options	Note
General political trust	1./2. [Politicians in general/ public officials], do you think it is very common, somewhat common, not very common, or not common at all that when they promise something they fulfill it?	1. Not common at all 2. Not very common 3. Somewhat common 4. Very common	One composite variable is constructed from the four survey questions using PCA
	3./4. [Politicians in general/ public officials], do you think it is very common, somewhat common, not very common, or not common at all that they comply with the laws and regulations of the country?		
Question for self-reported distribution center variable			
Code	Question	Response options	Note
Self-reported DC	After the earthquake, were there distribution centers for food, water and other essential items in your neighborhood?	1. Yes 2. No	Recoded as: 1. Yes 0. No

Table C.2: Questions

Questions for control variables			
Code	Question	Response options	Note
Male	Gender	1. Male 2. Female	Recoded as: 1. Male 0. Female
Age	How old are you?	Numeric value	
Education	How many years of schooling have you completed?	Ranges from 0 (none) to 24 (doctorate degree)	
N. Adults	Including you, how many adults live in your home?	Numeric value	
N. Children	How many children under the age of 18 live in your home?	Numeric value	
PRI/PRD	Of these parties, which are you most willing to support?	1. PRI 2. PAN 3. PRD 4. MORENA 5. Green Party 6. New Alliance 7. Citizen Movement 8. Labor Party	First, coded one if a respondent supported PRI/PRD, 0 otherwise. Then, estimated the proportion of party supporters before the earthquake and assigned the average to residents of a corresponding municipality
Wealth	Could you tell me if you have the following in your house: (1) Bathroom inside the house (2) Salaried employee(s)/Domestic worker/Domestic service (3) Automobile(s)/car(s) (4) Microcomputer(s), laptops, tablets, ipads and netbooks (5) Dishwasher (6) Refrigerator (7) Freeze(s) (8) Washing machine (9) Microwave (10) Motorcycle (11) Clothes dryer (12) Television (13) Cable television, satellite television, Netflix (14) Land-line telephone (15) Cellular telephone (16) Drinking water inside the house (17) Internet service inside the house	1. Yes 2. No	Recoded each survey question as an indicator variable assigning a value of 1 if owned, then summed up the number of items that a respondent possessed, and estimated the municipality average of it before the earthquake and assigned the average to residents of a corresponding municipality
Patience	Imagine you have won 1,800 Mexican pesos in a lottery and have the option to receive the reward in a payment today of 1,800 pesos or a higher payment that you would receive in 12 months. I am going to ask you a series of questions about your preferences about receiving 1800 today or receiving a higher payment in a year.	The sequence of questions has 32 possible ordered outcomes, such that we can derive a measure of patience ranging from 1 to 32. Example: Between receiving a prize of 1,800 pesos today or 2,770 pesos in 12 months, what would you prefer? 1. To receive 1,800 pesos today. 2. To receive 2,770 pesos in a year.	We use the variable containing values from 1 to 32, where 1 indicates the lowest level of patience and 32 the highest level. We calculated the average before the earthquake and assigned it to residents of the corresponding municipality after the earthquake.
Risk aversion	Imagine you can choose between receiving a sure prize in pesos, or receiving a lottery ticket with which you could win 5,400 pesos, but you could also win nothing. Below I am going to name different prize alternatives so you can tell me which ones you would choose.	The sequence of questions has 32 possible ordered outcomes, such that we can derive a measure of risk aversion ranging from 1 to 32. Example: Between a lottery ticket, in which you have an equal chance of winning 5,400 pesos or not winning anything, and receiving a sure prize of 360 pesos, which option would you choose? 1. The lottery ticket. 2. The sure prize of 360 pesos.	We use the variable containing values from 1 to 32, where 1 indicates the lowest level of risk aversion (also called risk-loving person) and 32 the highest level of risk aversion (risk-averse person). We calculated the average before the earthquake and assigned it to residents of the corresponding municipality after the earthquake.
Social trust	In general, would you say that the majority of people are very trustworthy, somewhat trustworthy, not very trustworthy, or untrustworthy?	1. Very trustworthy 2. Somewhat trustworthy 3. Not very trustworthy 4. Untrustworthy	Estimated the municipality average before the earthquake and assigned the average to residents of a corresponding municipality

Table C.3: Descriptive Statistics

	Pre-earthquake		Post-earthquake		Difference	p-value	N _{pre}	N _{post}
	Mean	s.d.	Mean	s.d.				
Male	0.511	(0.500)	0.508	(0.500)	0.004	0.885	569	1,164
Age	39.306	(16.023)	38.942	(15.563)	0.364	0.651	568	1,164
Education	10.743	(4.292)	10.683	(3.979)	0.060	0.774	569	1,149
N. Adults	3.497	(1.830)	3.331	(2.004)	0.166	0.097	563	1,148
N. Children	1.528	(1.612)	1.431	(1.565)	0.098	0.229	562	1,145
PRI	0.148	(0.355)	0.141	(0.348)	0.007	0.707	569	1,164
PRD	0.130	(0.337)	0.083	(0.277)	0.047	0.002	569	1,164
Wealth	9.396	(3.026)	9.259	(3.187)	0.137	0.397	560	1,116
Social trust	2.692	(0.782)	2.704	(0.805)	-0.012	0.768	569	1,164
Center	0.192	(0.394)	0.197	(0.398)	-0.005	0.799	569	1,164
North	0.195	(0.397)	0.197	(0.398)	-0.002	0.935	569	1,164
South	0.137	(0.344)	0.134	(0.341)	0.003	0.861	569	1,164
East	0.374	(0.484)	0.370	(0.483)	0.004	0.869	569	1,164
West	0.102	(0.303)	0.102	(0.303)	-0.000	0.985	569	1,164
Patience	11.380	(11.715)	11.989	(11.868)	-0.609	0.343	560	850
Risk Aversion	28.073	(7.212)	26.011	(8.853)	2.062	0.000	560	816
General Trust	0.260	0.200	0.193	0.232	0.027	0.007	560	1,134

Notes: Standard deviation in parentheses. There is 1 missing value in age, 15 in education, 22 in the number of adults, 26 in the number of children, 357 in risk aversion, 323 in time-preferences (patience), and 39 in general trust

D General Political Trust

D.1 Distribution of Dependent Variables

Table D.1: Distribution of Dependent Variables
Panel 1 - Promises

	Politicians						Civil servants					
	Pre		Post		Total		Pre		Post		Total	
	N.	Col %	N.	Col %	N.	Col %	N.	Col %	N.	Col %	N.	Col %
(1) Not common at all	240	42.25%	575	49.83%	815	47.33%	254	45.12%	600	52.04%	854	49.77%
(2) Not very common	228	40.14%	453	39.25%	681	39.55%	209	37.12%	391	33.91%	600	34.97%
(3) Somewhat common	77	13.56%	94	8.15%	171	9.93%	89	15.81%	128	11.10%	217	12.65%
(4) Very common	23	4.05%	32	2.77%	55	3.19%	11	1.95%	34	2.95%	45	2.62%
Total	568	100%	1,154	100%	1722	100%	563	100%	1,153	100%	1,716	100%
Pearson chi2(3) = 17.852 p-value < 0.001							Pearson chi2(3) = 12.813 p-value = 0.005					

Panel 2 - Compliance

	Politicians						Civil servants					
	Pre		Post		Total		Pre		Post		Total	
	N.	Col %	N.	Col %	N.	Col %	N.	Col %	N.	Col %	N.	Col %
(1) Not common at all	225	39.68%	477	41.41%	702	40.84%	227	39.96%	513	44.49%	740	43.00%
(2) Not very common	255	44.97%	491	42.62%	746	43.40%	223	39.26%	456	39.55%	679	39.45%
(3) Somewhat common	78	13.76%	157	13.63%	235	13.67%	108	19.01%	162	14.05%	270	15.69%
(4) Very common	9	1.59%	27	2.34%	36	2.09%	10	1.76%	22	1.91%	32	1.86%
Total	567	100%	1,152	100%	1,719	100%	568	100%	1,153	100%	1,721	100%
Pearson chi2(3) = 1.804 p-value = 0.614						Pearson chi2(3) = 7.843 p-value = 0.049						

D.2 Principal Component Analysis

The principal component analysis on four survey items shows that the variations in the data can be explained by four components, indicated as in Components 1-4 in Table D.2. However, the first latent variable alone explains about 60% of the variation and only its eigenvalue exceeds 1, meaning that it is the only underlying latent variable worth exploring as others do not have significant covariance.

Table D.2: Components from PCA

Component	Eigenvalue	Difference	Proportion	Cumulative
Component 1	2.295	1.480	0.573	0.573
Component 2	0.814	0.327	0.204	0.777
Component 3	0.487	0.084	0.122	0.899
Component 4	0.403	0.000	0.1007	1.000

Notes: Number of observations = 1,694.

Table D.3 shows that the loadings of all four survey items are high on the first component. Therefore, there are sufficient variations that correlate to one another and can be interpreted as tapping into one latent variable.

Table D.3: Loadings

Variable	Component 1
Promises - Politicians	0.483
Promises - Civil servants	0.500
Compliance - Politicians	0.506
Compliance - Civil servants	0.510

E Distribution Centers

E.1 Observed Distribution Centers Data Collection

We analyzed post-earthquake social media posts in three phases. First, we searched Google Scholar for literature on the Mexico City government earthquake response and the role of social media. Second, we created a list of hashtags for Twitter searches. Third, we collected photos of distribution centers that provided aid in the aftermath of the earthquake.

As a first step, we found articles that examined the government response via—and in comparison to—civil society responses to the earthquake. These articles recount that members of civil society organizations in the hours after the September 19 earthquake assembled a large social network to exchange real-time information about building collapses, missing persons, and large-scale damage on WhatsApp (Campos Rivera, 2018; Mora et al., 2018). The information being transmitted via WhatsApp about building collapses and damage became a collaborative map called “Mapeo colaborativo RescateMX,” which civil society and governmental actors used to find survivors of the earthquake, assess where damage had occurred, and locate shelters and distribution centers.

After we conducted the Google Scholar searches, we created a list of potentially popular post-earthquake Twitter hashtags. Our goal in these searches was to find information about who ran distribution centers, where they were located, and how this information was disseminated. We found that individuals primarily communicated publicly via Twitter (following Mora et al. (2018)). We then used the first set of tweets to create a longer list of the most popular post-earthquake hashtags: #19S, #Verificado19S, #CentrodAcopio, #sismoCDMX, #19sAcopio, #19svoluntarios, #AyudaSismo, #AyudaCDMX, #reconstucciónCDMX, #6meses19S, #FuerzaMéxico, #AmplificaMexico, and #Edoméx19S. In addition, we searched for hashtags that mentioned the Mexican Army (SEDENA), Navy (SEMAR), and Plan DN-III-E—a post-disaster assistance plan, in which the military is deployed to assist in disaster recovery.

Third, we conducted Google searches for distribution center images. We downloaded 40 photos in which the image metadata associates the center with the September 19 earthquake. Most individuals in the photos are not wearing uniforms; however, in five photos, individuals are wearing a brightly colored vest (neon green or purple) or a sticker that says “CDMX.” In two of the photos, volunteers are wearing vests that clearly say “Cruz Roja” (Red Cross).

Distribution centers were staffed by individuals from diverse organizations, including civil

society organizations, universities, private citizens, citizen rescue squads, and government actors. In most cases, the centers were not provided by the government *or* a non-government actor; several disparate actors staffed the same centers, and they largely coordinated with each other (see Campos Rivera (2018)). When centers were provided by one actor, it is difficult to discern who was running the operation. Indeed, there were no systemic, markedly obvious characteristics of state-provided centers that differentiated them from privately provided centers. To that end, most of the distribution centers in the photos were not marked with signs, save for poster boards on some centers that read, “Centro de acopio.”

How did people evaluate the government’s provision of aid? According to Campos Rivera (2018), non-governmental organizations issued urgent communications in the weeks following the earthquake,⁵

E.2 Targeting of Distribution Centers

We examine whether distribution centers were well-targeted for victims of the earthquake. The survey included questions about the level of damage that people experienced after the earthquake. Table E.1 shows that the likelihood of reporting a distribution center is higher for those who experienced water service interruptions (38.42%) than those who did not (29.36%) and difficulty in finding food and other necessary items (47.37%) than others (31.99%). These answers indicate that people were aware of distribution centers in locations affected by the earthquake. However, the survey data also indicate that distribution centers were observed more frequently in neighborhoods of pre-earthquake PRD supporters (i.e., the party of the head of the Federal District/Mexico City at the time of the earthquake) than non-PRD supporters. The chi-squared tests show that there are significant differences in these three variables.

⁵See for example the following communication on Twitter by V19s, a digital platform that verified and organized information to make the citizen response more efficient after the earthquake of September 19:

Table E.1: Targetting Self-reported Distribution Center

Panel A				Panel B			
Water service Interruptions	Self-reported DC			Food and necessities Difficulties	Self-reported DC		
	No	Yes	Total		No	Yes	Total
No	498	207	705	No	740	348	1,088
	70.64%	29.36%	100%		68.01%	31.99%	100%
Yes	258	161	419	Yes	20	18	38
	61.58%	38.42%	100%		52.63%	47.37%	100%
Total	756	368	1,124	Total	760	366	1,126
	67.26%	32.74%	100%	67.50%	32.50%	100%	
Pearson chi2(1) = 9.80 Pr = .002				Pearson chi2(1) = 3.96 Pr = .047			
Panel C				Panel D			
Support PRI	Self-reported DC			Support PRD	Self-reported DC		
	No	Yes	Total		No	Yes	Total
Mean	0.149	0.148	0.148	Mean	0.122	0.140	0.128
Total	761	370	1,131	Total	761	370	1,131
Pearson chi2(16) = 22.774 Pr = 0.120				Pearson Chi2(12) = 24.983 Pr = 0.015			

Table E.2 presents the results using the actual distribution center locations in Mexico City, as opposed to relying on self-reported data. The findings based on the actual distribution center locations exhibit similarities with the self-reported data, but there are also some differences. Specifically, the probability of having a distribution center is higher for individuals who experienced water service interruptions (11.01%) compared to those who did not (8.58%) and for those who faced difficulties in finding food and other necessary items (12.50%) compared to others (9.27%). The data also reveal that distribution centers were more commonly observed in neighborhoods where there was a higher number of pre-earthquake PRD supporters, as opposed to non-PRD supporters. Conversely, distribution centers were less frequently observed in neighborhoods with pre-earthquake PRI supporters than in those with non-PRI supporters. The results of the chi-squared tests indicate that these four variables exhibit significant differences.

Table E.2: Targeting Observed Distribution

Panel A				Panel B			
Water service Interruptions	Self-reported DC			Food and necessities Difficulties	Self-reported DC		
	No	Yes	Total		No	Yes	Total
No	629	59	688	No	979	100	1,079
	91.42%	8.58%	100%		90.73%	9.27%	100%
Yes	380	47	427	Yes	35	5	40
	88.99%	11.01%	100%		87.50%	12.50%	100%
Total	1,009	106	1,115	Total	1,014	105	1,119
	90.49%	9.51%	100%		90.62%	9.38%	100%
Pearson chi2(1) = 1.81 Pr = 0.18				Pearson chi2(1) = 0.47 Pr = 0.49			
Panel C				Panel D			
Support PRI	Observed DC			Support PRD	Observed DC		
	No	Yes	Total		No	Yes	Total
Mean	0.154	0.099	0.149	Mean	0.127	0.135	0.127
Total	1,018	107	1,125	Total	1,018	107	1,125
Pearson chi2(16) = 252.56 Pr = 0.000				Pearson Chi2(12) = 191.287 Pr = 0.000			

F Robustness Check: General Political Trust on Earthquake

While the two cross-sectional data sets are useful for assessing the earthquake’s impact on trust, we want to make sure that there was no selection on the sample surveyed in the second wave.⁶ We use weighting, and different techniques of matching to account for the fact that people’s baseline conditions, like education, number of children, number of adults in the household, and region, might affect the probability of facing a harder situation after the earthquake, having a distribution center in the neighborhood, and experiencing lower levels of trust.⁷

To guarantee that the matching estimators consistently estimate the effects of interest, we assume that surveying a person in round one or two was independent of the outcomes, conditional on the covariates, and that the probability of being surveyed in the second wave is bounded away from zero and one. By using weighting and matching techniques, we confirm that the results are robust, and the two samples are comparable.

We show the results of the Average Treatment Effects in Table F.1. The dependent variable is a continuous variable whose values range from 0 (lowest trust) to 1 (highest trust). The variables used for matching vary across models. Model (1) matched on respondents’

⁶8% (93 individuals) of the post-quake sample reports that they were surveyed in both waves.

⁷Reweighting is competitive with the most effective matching estimators when the overlap is good (Busso et al., 2014), as in our case.

gender, age, last year of education completed, number of adults in the household, number of children in the household, and region fixed effects. Models (2) - (5) included political affiliation, wealth, risk patience, or social trust, respectively, in addition to the set of variables used for matching in Model (1). Model (6) matched on all the above-mentioned covariates in the model. These controls are the same as in Table 1.

The first column presents the results of the IPWRA estimator, which is doubly robust. It uses the inverse of the estimated treatment-probability weights to estimate missing-data-corrected regression coefficients that are subsequently used to compute the Potential Outcome Means (POMs). We use a linear model for the outcome on controls and a logistic model for the treatment on controls). Column (2) implements the nearest neighbor matching with a minimum of 4 neighbors with the same number of neighbors to calculate the robust standard errors reported in parentheses.⁸ We used exact matching for gender and region, allowing for ties and adjusted the difference within matches for the difference in their covariate values when using continuous variables such as age, years of education, number of adults, to name a few (Abadie et al., 2004; Abadie and Imbens, 2006, 2011). Column (3) implements a propensity-score matching (PSM) with 4 matches per observation and uses a logistic model for the treatment. The same number of neighbors is used to calculate the robust standard errors derived by Abadie and Imbens, 2016. Finally, Propensity Score Kernel Matching is used in column (4) with a logistic model for the treatment.⁹ The advantage of Kernel matching is that it maximizes precision (by retaining sample size) without worsening bias (by giving higher weight to better matches) (Garrido et al., 2011). In this last case, we perform 500 bootstrap replications to calculate the standard errors to take into account the fact that propensity scores are also estimated.

⁸Using four matches provides the advantage of not relying on too little information without adding observations that are not sufficiently similar (Abadie et al., 2004).

⁹We use the default options in Leuven and Sianesi (2003) (Epanechnikov kernel, and a bandwidth of 0.06).

Table F.1: Matching and Weighting

	(1) IPWRA	(2) NNM 4 Neighbors	(3) PSM 4 Neighbors	(4) PS Kernel Matching	N
zModel(1)	-0.030*** (0.010)	-0.029*** (0.011)	-0.031*** (0.011)	-0.029*** (0.010)	1,651
POmean - Control	0.262*** (0.008)				
Model(2)	-0.030*** (0.010)	-0.026** (0.011)	-0.032*** (0.011)	-0.029*** (0.010)	1,651
POmean - Control	0.262*** (0.008)				
Model(3)	-0.030*** (0.010)	-0.028** (0.011)	-0.031*** (0.011)	-0.029*** (0.010)	1,651
POmean - Control	0.262*** (0.008)				
Model(4)	-0.029*** (0.010)	-0.025** (0.011)	-0.029*** (0.011)	-0.029*** (0.010)	1,651
POmean - Control	0.261*** (0.008)				
Model(5)	-0.030*** (0.010)	-0.027** (0.011)	-0.027** (0.011)	-0.029*** (0.010)	1,651
POmean - Control	0.262*** (0.008)				
Model(6)	-0.030*** (0.010)	-0.029*** (0.011)	-0.032*** (0.011)	-0.030*** (0.008)	1,651
POmean - Control	0.261*** (0.008)				

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Clustered Standard errors are shown in parentheses. “POmeans” denotes Potential Outcome mean. Model (1) matched on respondents’ gender, age, last year of education completed, number of adults in the household, number of children in the household, and region fixed effects. Models (2) - (5) included political affiliation, wealth, risk patience, or social trust, respectively, in addition to the set of variables used for matching in Model (1). Model (6) matched on all the above-mentioned covariates in the model.

The results in [F.1](#) show that general political trust decreased significantly after the earthquake across models controlling for different control variables and matching methods.

G Placebo: General Political Trust on Distribution Centers

As we have shown in [Section 6](#), the actual distribution center variable may include some noise. To address this concern and ensure that the reported statistical significance is not merely coincidental, we conducted analyses with the same exact model on the pre-earthquake sample. The hypothesis was that respondents who resided in a neighborhood where distribution centers were later established after the earthquake would not exhibit significantly

higher or lower general political trust compared to others. The descriptive statistics below show that the closest distribution centers are within a walkable distance to pre-earthquake respondents' residences, just like they are to post-earthquake respondents' residences.

Table G.1: Summary Statistics for Time and Distance to the Closest Distribution Center with a *Similar* ZIP Code (Only households in Mexico City), Pre-quake Sample

	Mean	S.D.	Min	p25	Median	p75	Max
Time (minutes)	21.94	15.75	2.18	8.25	14.82	38.23	48.45
Distance (Km)	1.75	1.28	0.16	0.65	1.16	3.07	3.94

The result below substantiates this hypothesis, which attests to the reliability of the actual distribution center variable.

Table G.2: Marginal Effects of Observed Distribution Center on General Trust

	General political trust					
	(1)	(2)	(3)	(4)	(5)	(6)
Objective DC	-0.024 (0.022)	-0.017 (0.022)	-0.027 (0.021)	-0.024 (0.020)	-0.023 (0.022)	-0.030 (0.024)
Male	-0.018 (0.018)	-0.018 (0.018)	-0.017 (0.018)	-0.018 (0.018)	-0.018 (0.018)	-0.017 (0.019)
Age	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
Last year of education approved	-0.006* (0.003)	-0.006** (0.003)	-0.006** (0.003)	-0.006** (0.003)	-0.006** (0.003)	-0.006** (0.003)
Number of adults in the household	-0.013* (0.007)	-0.013* (0.007)	-0.013* (0.007)	-0.014* (0.007)	-0.013* (0.007)	-0.013* (0.007)
Number of children in the household	-0.004 (0.009)	-0.004 (0.009)	-0.004 (0.009)	-0.004 (0.009)	-0.004 (0.009)	-0.003 (0.009)
PRI:pre		0.256 (0.233)				-0.036 (0.288)
PRD:pre		-0.110 (0.151)				-0.098 (0.127)
Wealth: pre			0.387 (0.244)			0.568 (0.479)
Risk Aversion: pre				-0.012** (0.006)		-0.015** (0.006)
Patience: pre				0.001 (0.005)		0.002 (0.006)
Social Trust: pre					-0.052 (0.095)	0.108 (0.132)
Constant	0.407*** (0.051)	0.396*** (0.059)	0.195 (0.151)	0.739*** (0.196)	0.553** (0.259)	0.220 (0.540)
Observations	271	271	271	271	271	

Clustered standard errors are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

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