A satellite image of a hurricane, showing a large, swirling cloud system over a dark blue ocean. The hurricane's eye is visible as a lighter, circular area in the center. The surrounding clouds are white and grey, with some brownish patches visible on the left side, possibly indicating land or debris.

The Consequences of Hurricane Harvey on Resilience Related Attitudes and Behaviors

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Overarching project motivation

- Motivated by need to study local resiliency in TX:
 - Coastal communities along Gulf Coast are notable in diversity of populations, geography, culture, and economies.
 - While they face similar **potential hazards**, they do not experience the same level of **threat** or **exposure**.
 - Still, most gulf counties score “low” or “very low” on at least one dimension of resilience (Ross 2013).

Initial data collection

- Original data collection sponsored by Texas Sea Grant: four county study (Brazoria, Nueces, Galveston, and Cameron) focused on perceptions of community resilience.
- Individual households were selected using Address Based Sampling (ABS).
 - Contacted using an initial invitation letter describing the study and providing a link to take the survey online...
 - If / When that failed: then via follow-up phone calls and mailings.

Findings


- Community perceptions of resilience **do not neatly map** onto expert assessments of resilience.
- Residents expressed high levels of awareness about **disaster resources, higher levels of social trust** were more likely to believe **their community was better prepared for a disaster**.
- Perceptions regarding the ability of a community to recover from a disaster were associated with **perceived risks** and **preparation**.

LOCAL GOVERNMENT STUDIES
<https://doi.org/10.1080/03003930.2019.1571999>

 **Routledge**
Taylor & Francis Group

 Check for updates

Perceptions of disaster resilience in four Texas coastal communities

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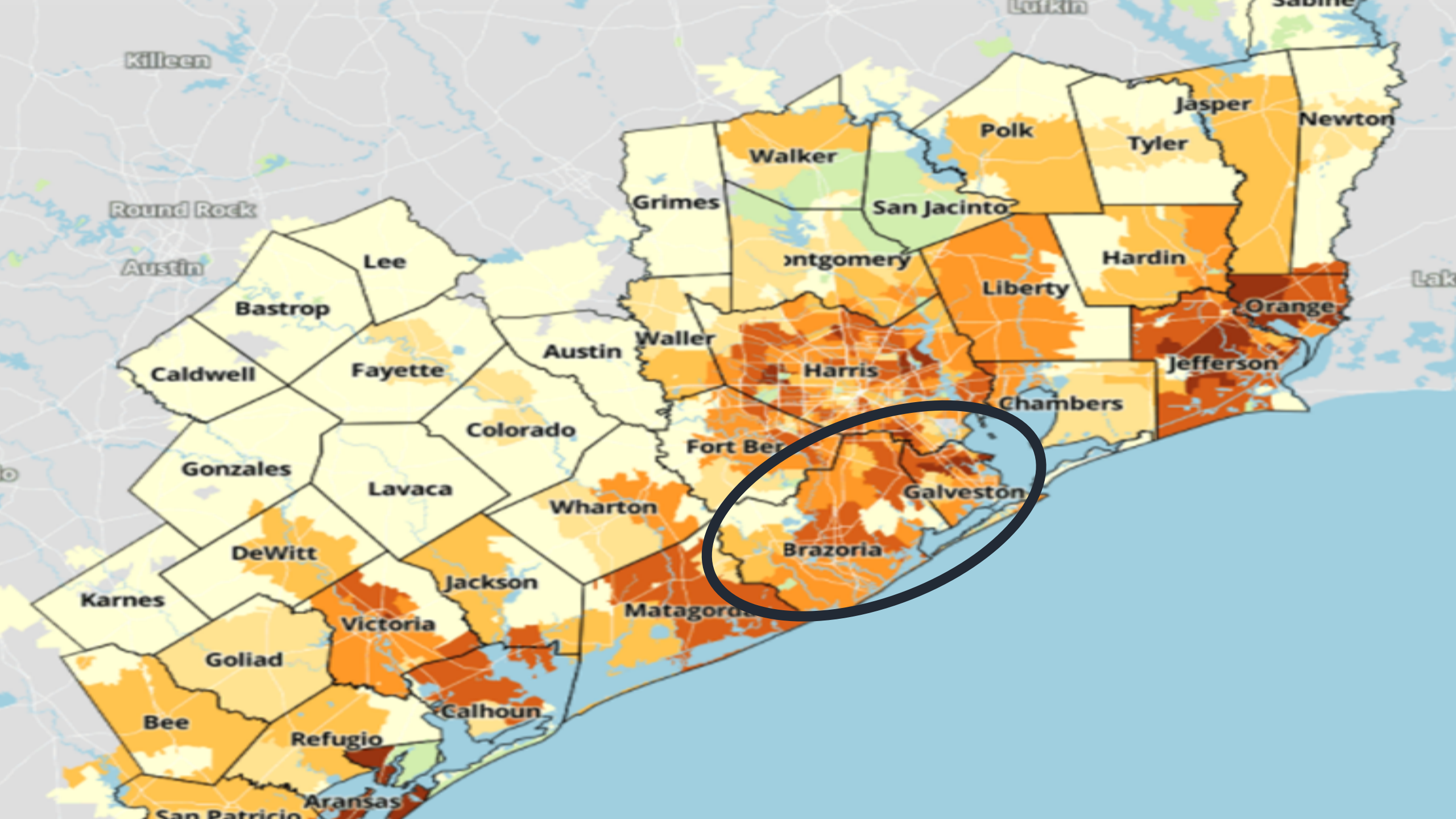
ABSTRACT

Scholars and practitioners have long noted the importance of community resilience to disaster recovery and environmental risk mitigation. Yet we know surprisingly little about how local residents perceive the resilience of their local communities, including how closely their perceptions align with objective measures of resilience or whether these perceptions affect community engagement and support for resilience building activities and policies. In this paper, we utilise the results of public opinion surveys of residents of four Texas coastal shoreline counties (Brazoria, Nueces, Galveston, and Cameron) to address this gap in the literature. The results reveal that perceptions of community preparedness largely reflect social trust and disaster awareness while perceptions of recovery reflect perceived risks and preparedness.

KEYWORDS Resilience; disaster; recovery; community preparedness; social trust

Motivation of current project

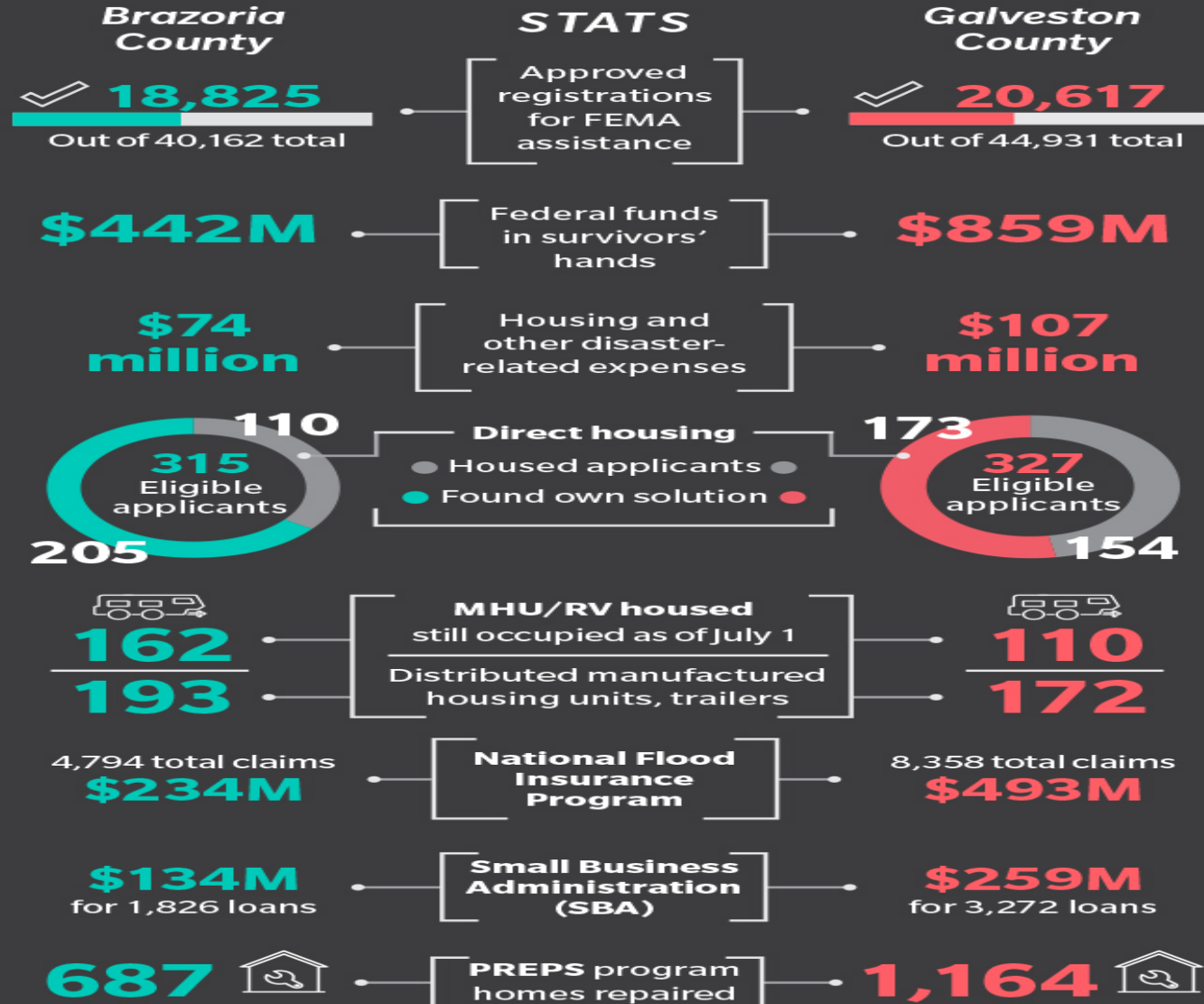
- Research on disaster planning, response, and recovery is well-developed.
- Missing from this research, however, is good **panel data** bracketing disasters.
- By chance, PPRI surveyed community resilience months (Brazoria) and just days prior to (Galveston) Hurricane Harvey's landfall on August 25th.
- Unique opportunity to go back into the field to collect data on post-Harvey attitudes
 - Brazoria County - September 9 to December 21, 2016
 - Galveston County - May 1 to July 31, 2017



The long road to RECOVERY

How counties are faring one year later

The majority of Pearland and Friendswood fall in Brazoria and Galveston counties, which received about \$1.3 billion in individual emergency federal aid, or about 10 percent of the statewide total.

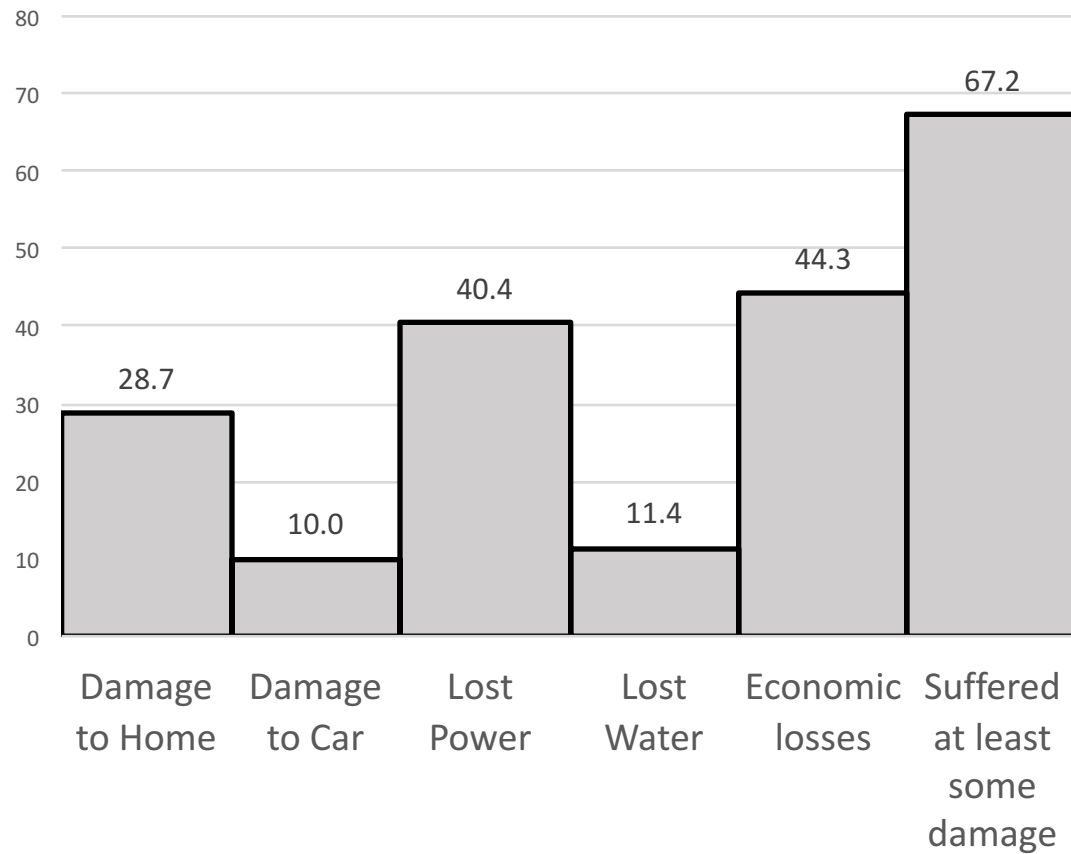


Design / Data

- Leverage Hurricane Harvey as “natural experiment”
- Panel study in which household to the our original surveys were re-contacted and asked similar or slightly different questions.
 - 308 respondents responded to the study.
 - 289 respondents could be matched back to a household in the original sample
 - 239 could be matched based on age and sex to the original respondents.
 - 150 of the respondents were from Brazoria while 139 were from Galveston.
 - Subsequent analyses are based on 289 respondents and examine attitude shifts before and after the storm.

Who responded?

Figure 1: Percentage of respondents reporting damage from Hurricane Harvey

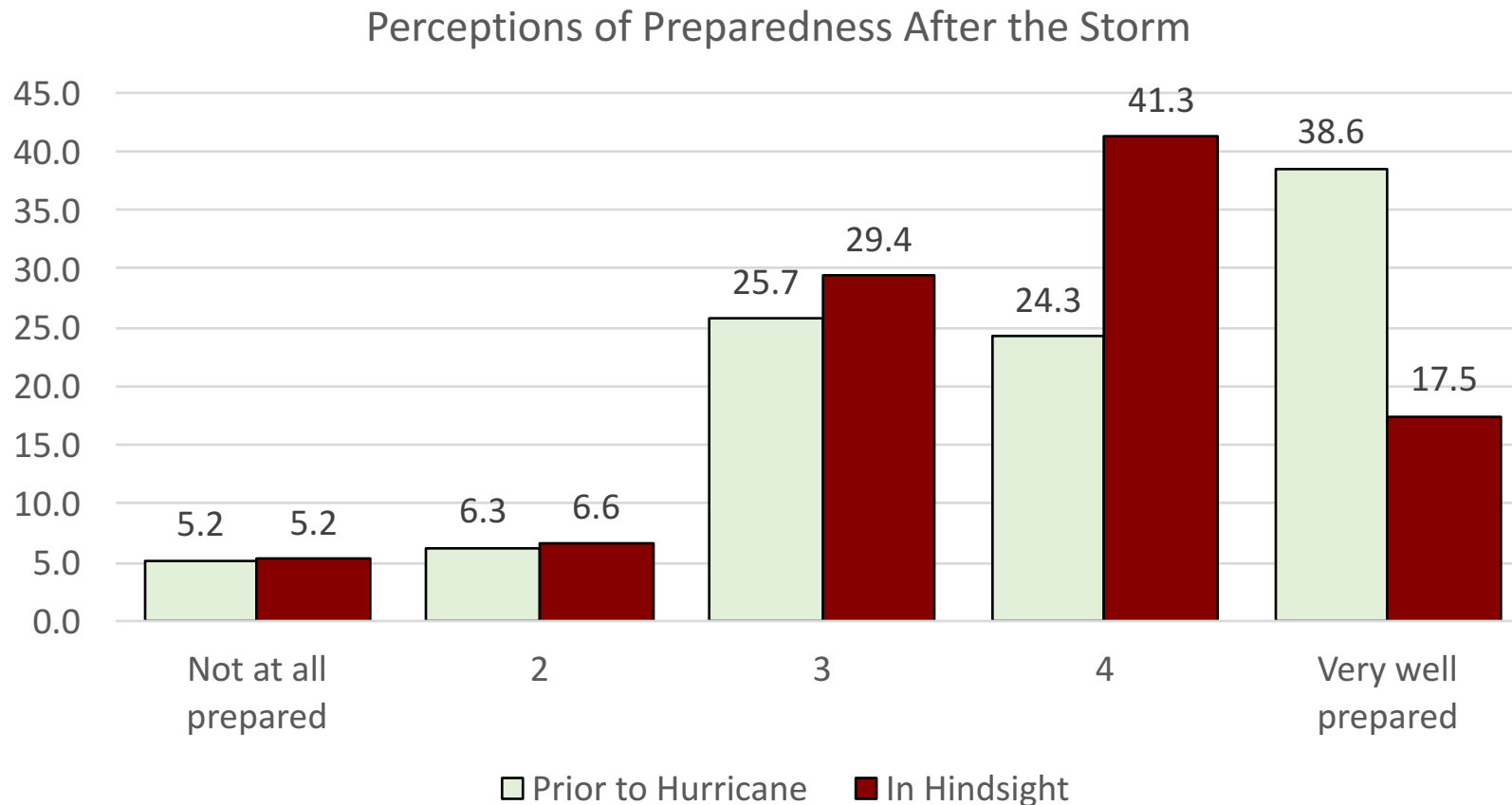


Characteristic	Unweighted Sample Estimate
Age (Mean)	57 years
Sex (% Female)	55.9
Race (% Nonwhite)	13.2
Hispanic (%)	8.3
Poverty (%)	3.1
Within 30 miles of coast	78.6

Design / Data

- For the purposes of this analysis, we ask how Hurricane Harvey affected:
 - Perceptions of disaster preparedness and disaster risk
 - Confidence in local government institutions
 - Support for resilience building policies
 - Social Trust

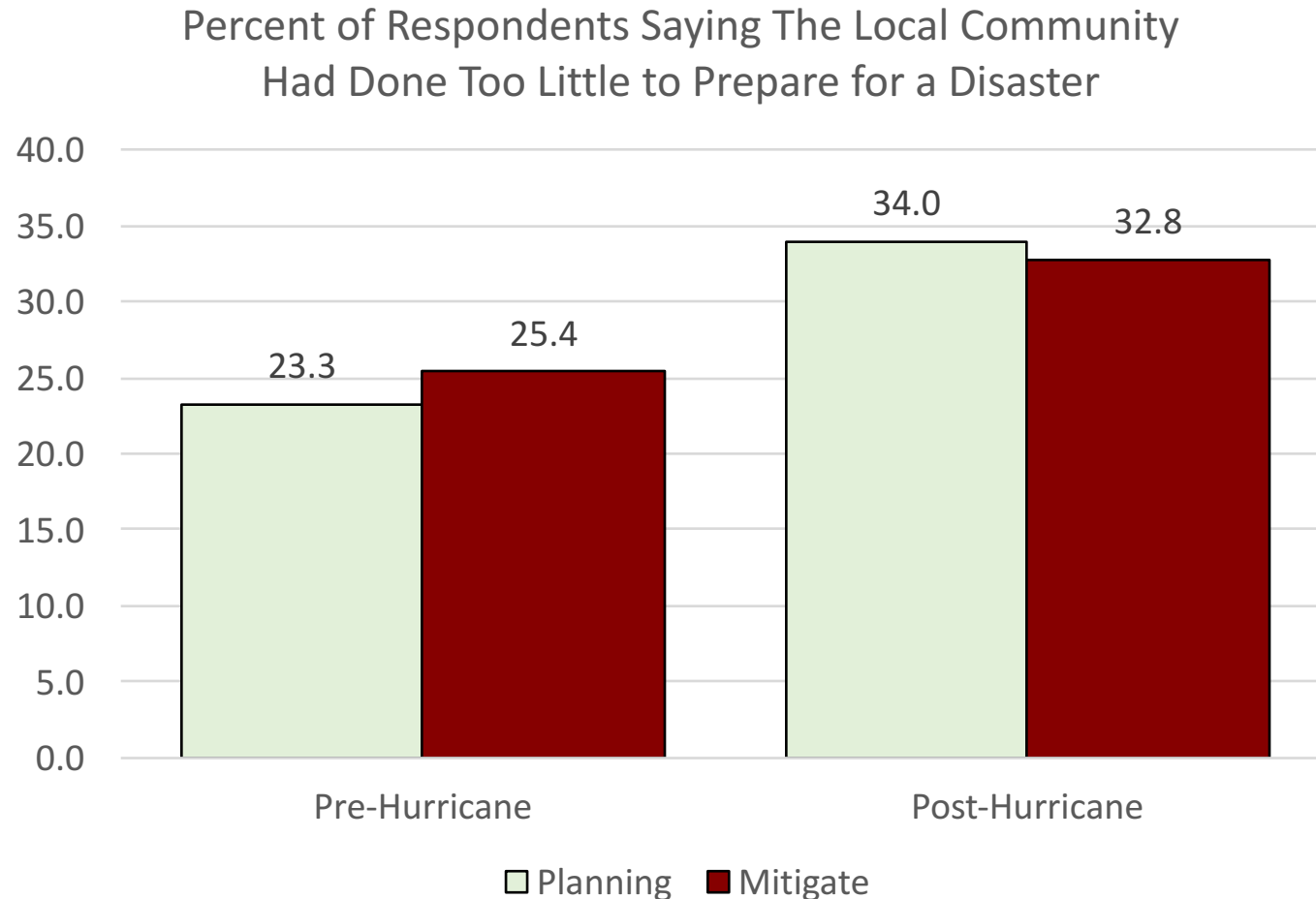
Perceived personal preparedness (post-hurricane)



People thought they were more prepared than they actually were.

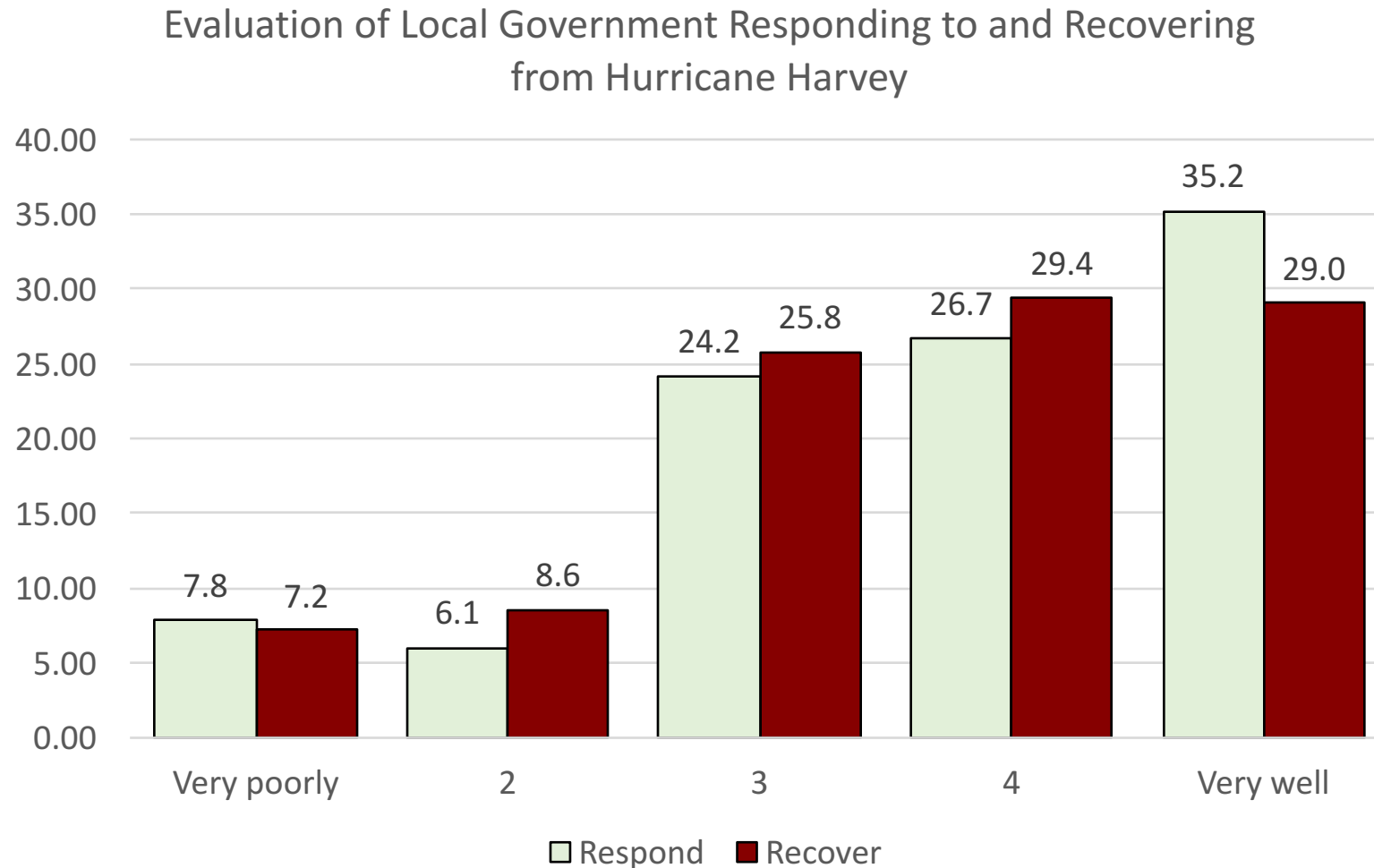
(Note: Both questions are asked after the storm).

Perceived personal preparedness (post-hurricane)



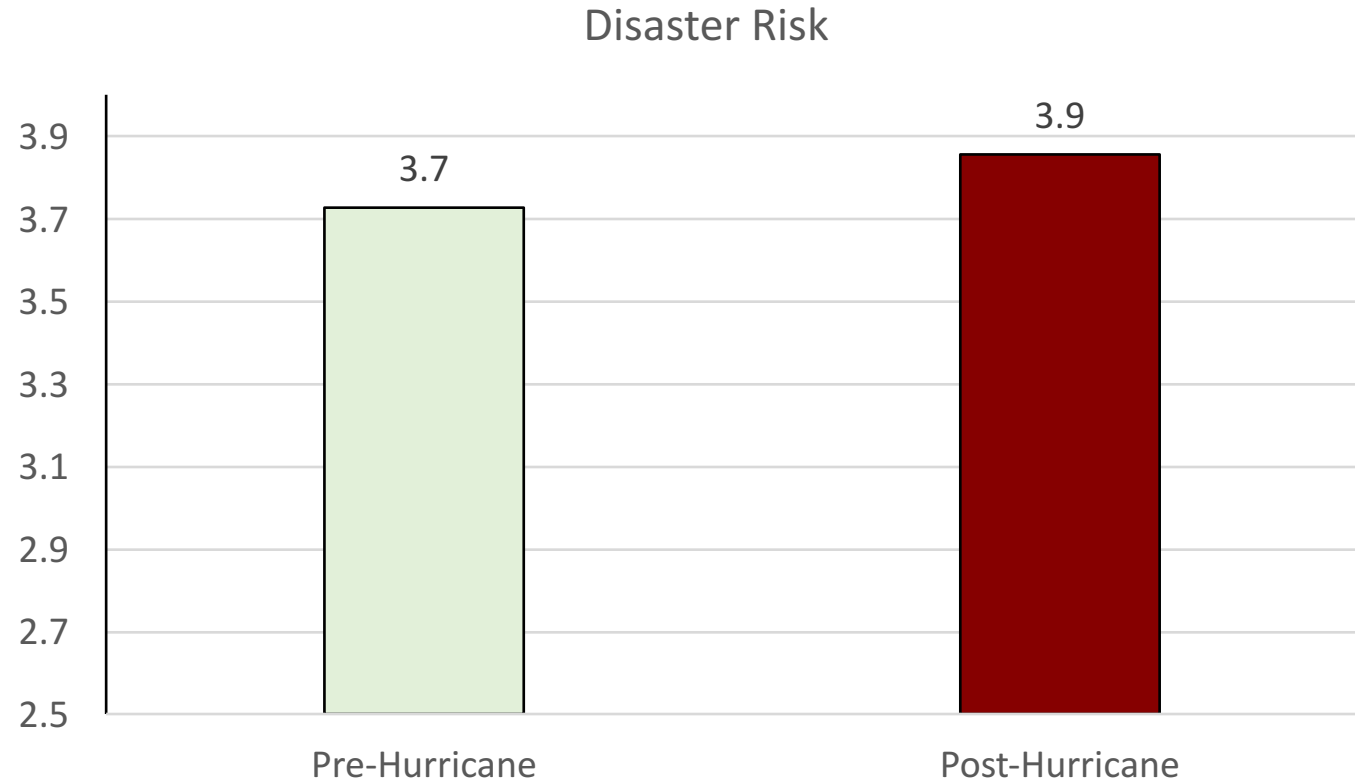
Post-hurricane, respondents were more likely to say local government was doing too little to plan for and mitigate against the effects of a disaster.

Evaluation of local government response / recovery



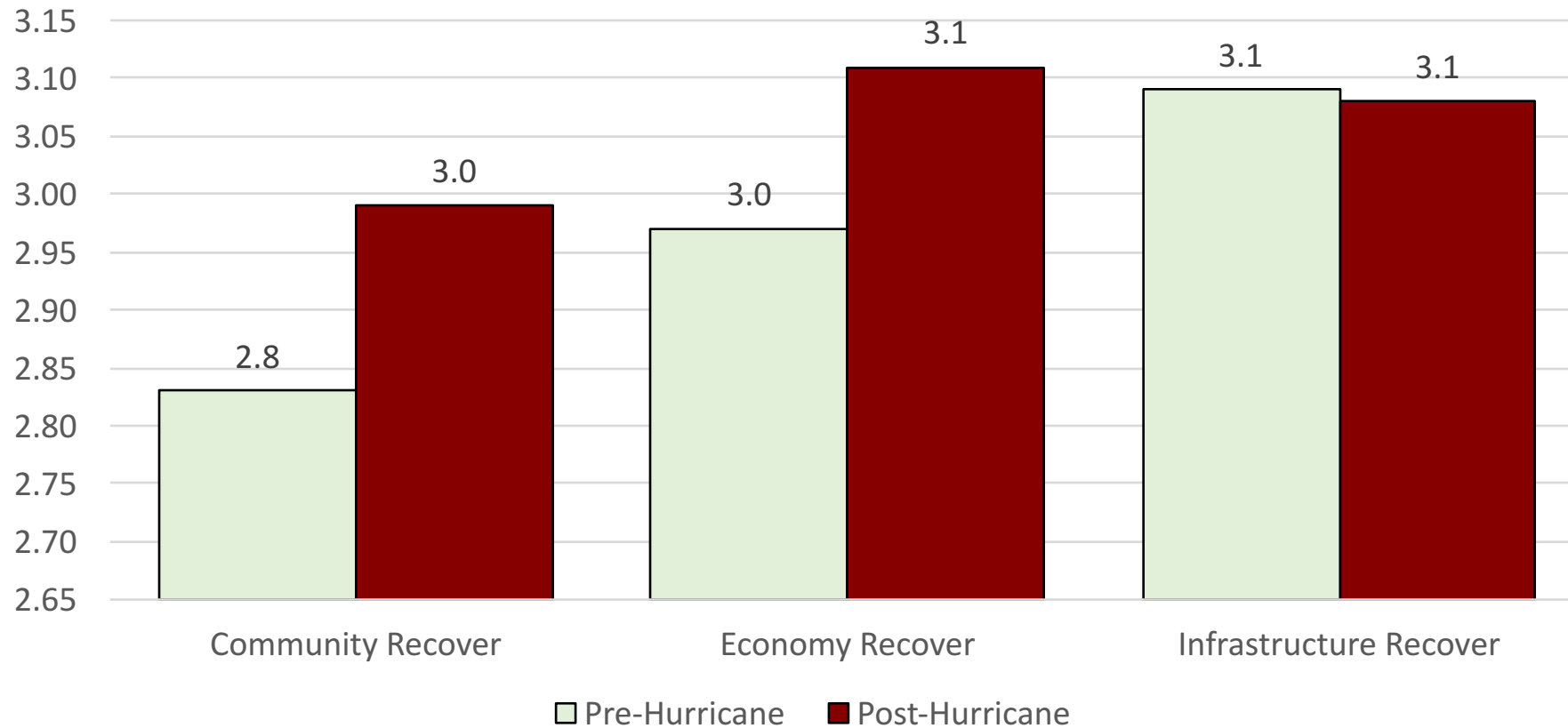
Respondents evaluate local government positively for their response to and recovery from Hurricane Harvey.

Likelihood of disaster in the next 5 years



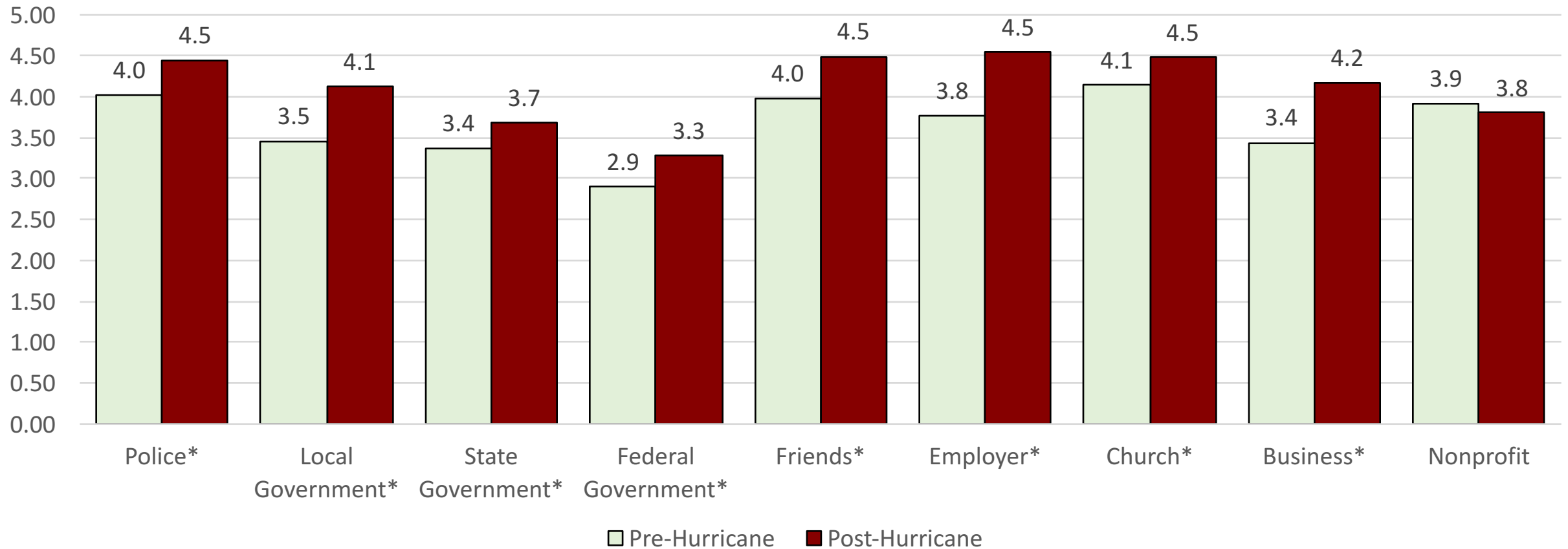
No significant effect on perceptions of disaster risk ($t=1.60$), though notably disaster risk pre/post hurricane is only moderately correlated ($r=.35$) so there are considerable shifts at the individual level.

Perceived recovery time from Hurricane Harvey



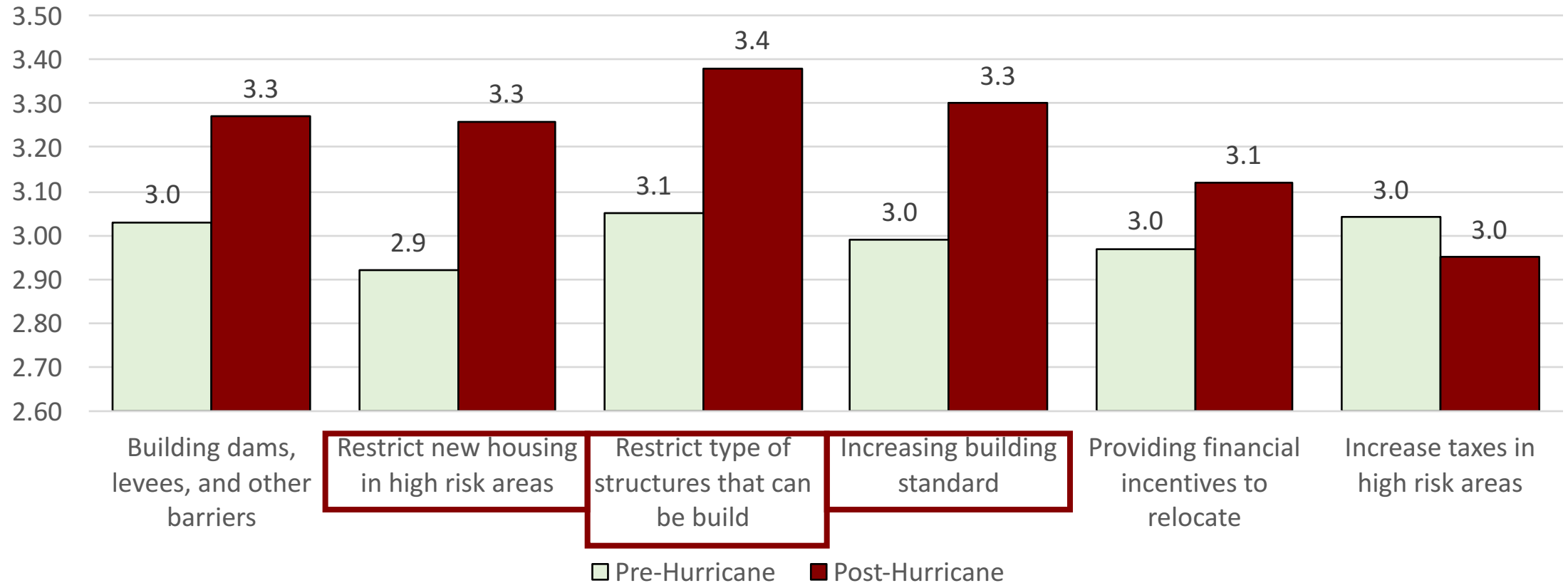
After the hurricane, respondents recognized recovery would take longer than expected. The differences for community ($t=2.02$) and economic recovery ($t=1.81$) are statistically significant. The effects for infrastructure are not ($t=0.04$).

Confidence in organizations



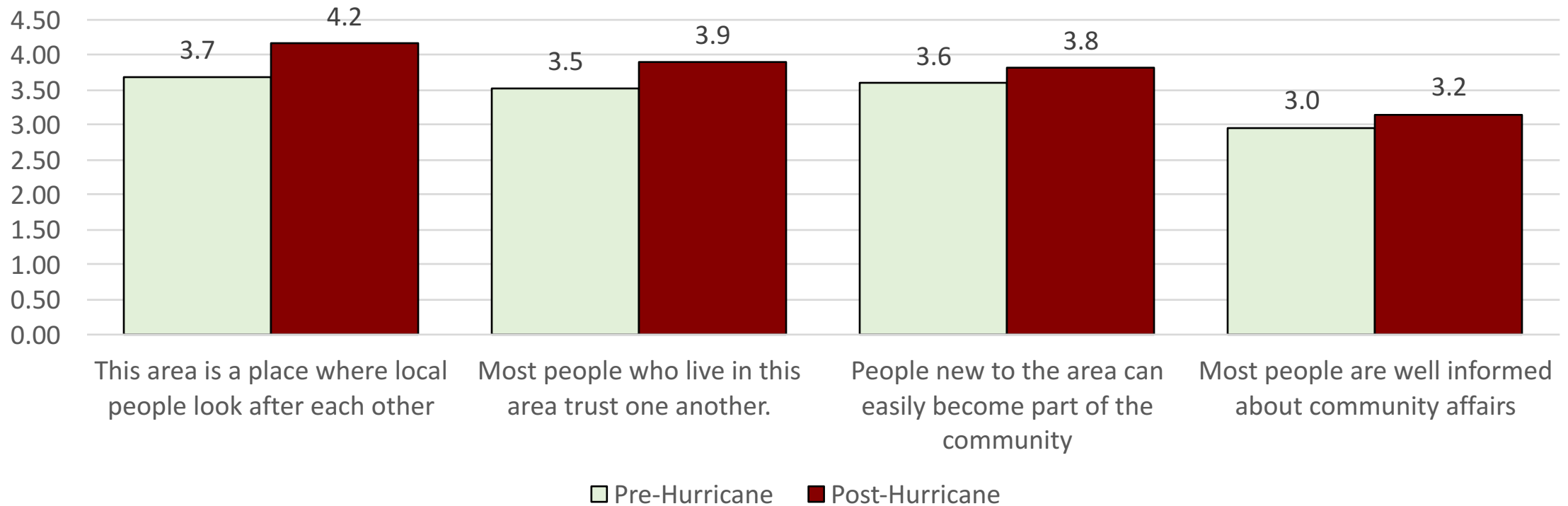
After the hurricane, confidence significantly increased for every type of organization EXCEPT nonprofits

Support for Resiliency-building policies



Mixed support for policy solutions

Social trust



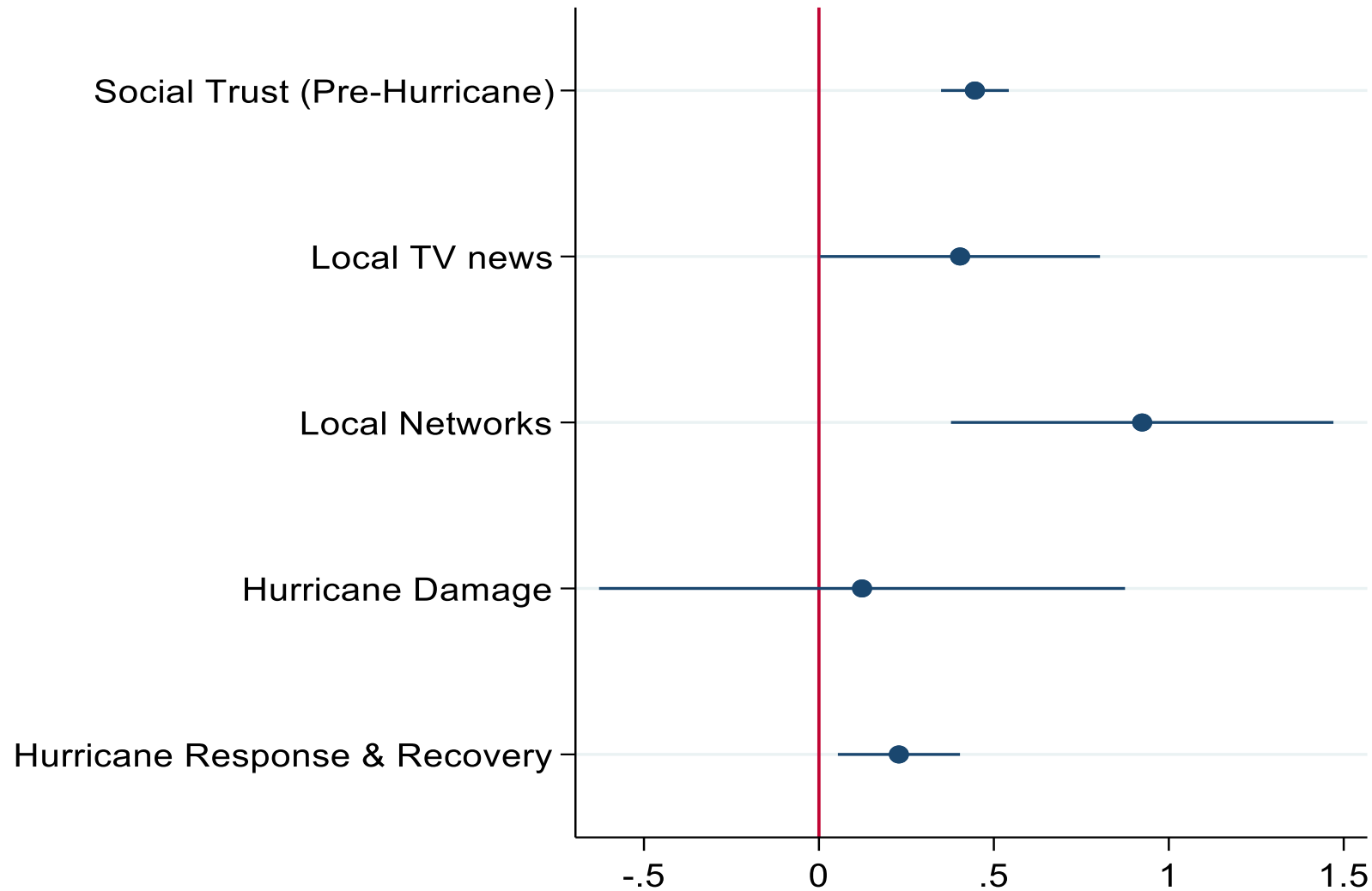
Social trust increases after the storm as people become more positive about their community and their neighbors.

Initial Conclusions

While respondents do not perceive the risk of a future hurricane differently, they do:

- Recognize they were personally less prepared and their community was less prepared after the storm.
 - Recognize recovery will take longer than expected.
 - Evaluate local organizations more positively.
 - Become more supportive of resilience building policies, including restricting new housing and the type of new structures in high risk areas.
 - However, classic “something-for-nothing” paradox.
 - Grow more trusting of the people in their community.
-
- Hurricane (and disaster-related) experiences may create more resilient communities?

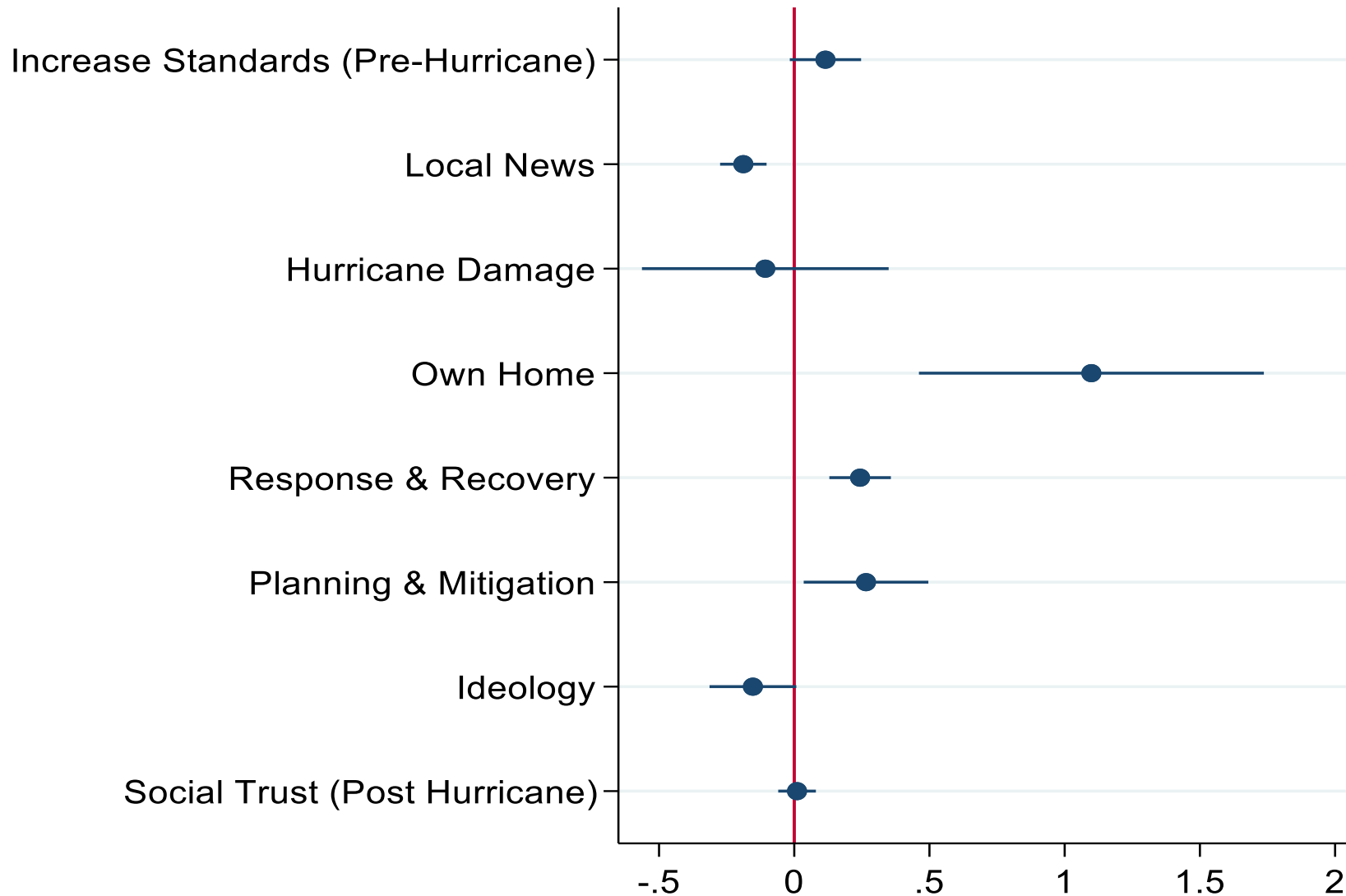
Explaining Shifts in Social Trust



The more individuals relied on local networks and the more positively they evaluated local response and recovery, the more trusting they became after the hurricane.

Explaining Shifts in Policy Support

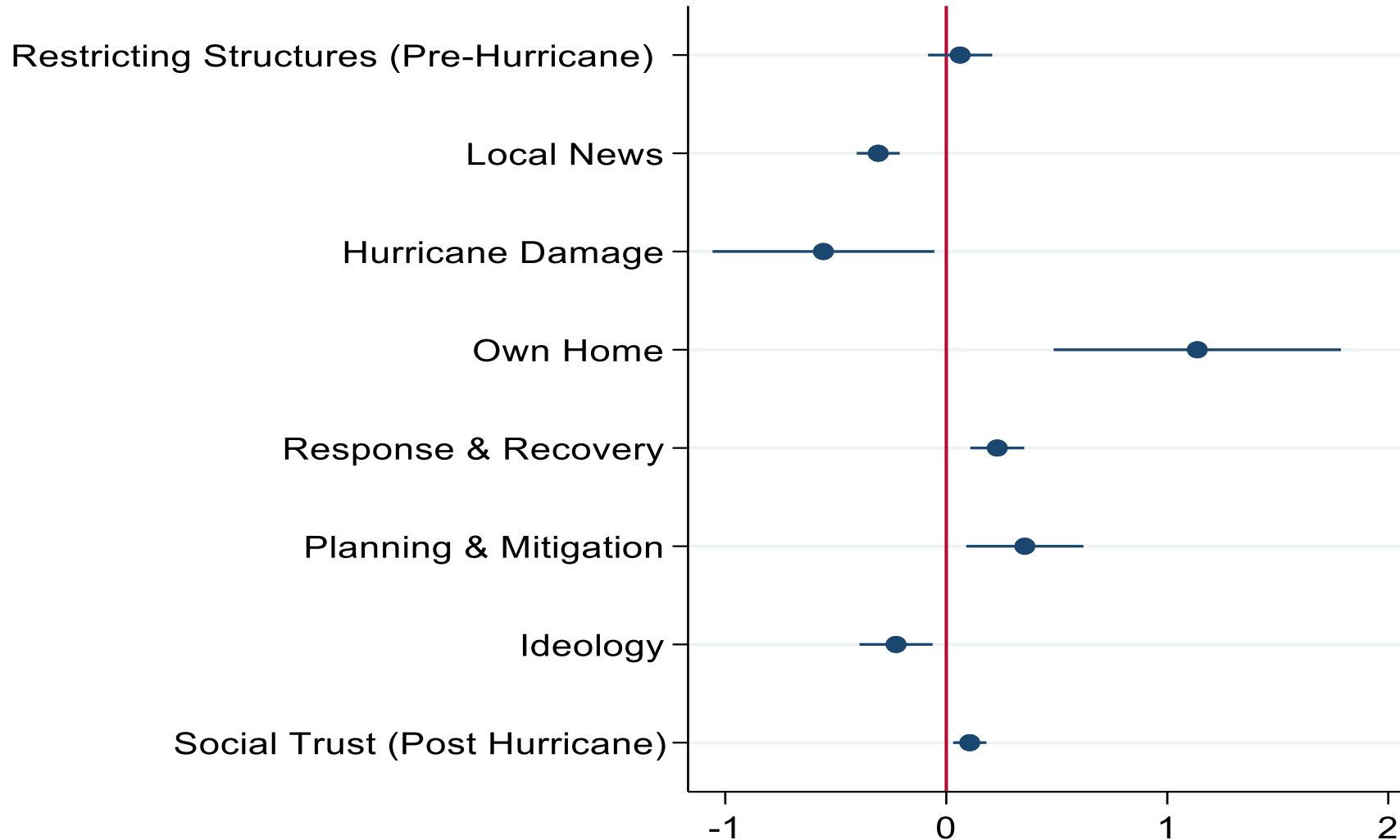
Increasing Building Standards



Owning your own home, believing government had done too little before the storm but had responded well increased support for building standards. Paying attention to local news and identifying as a conservative decreased support.

Explaining Shifts in Policy Support

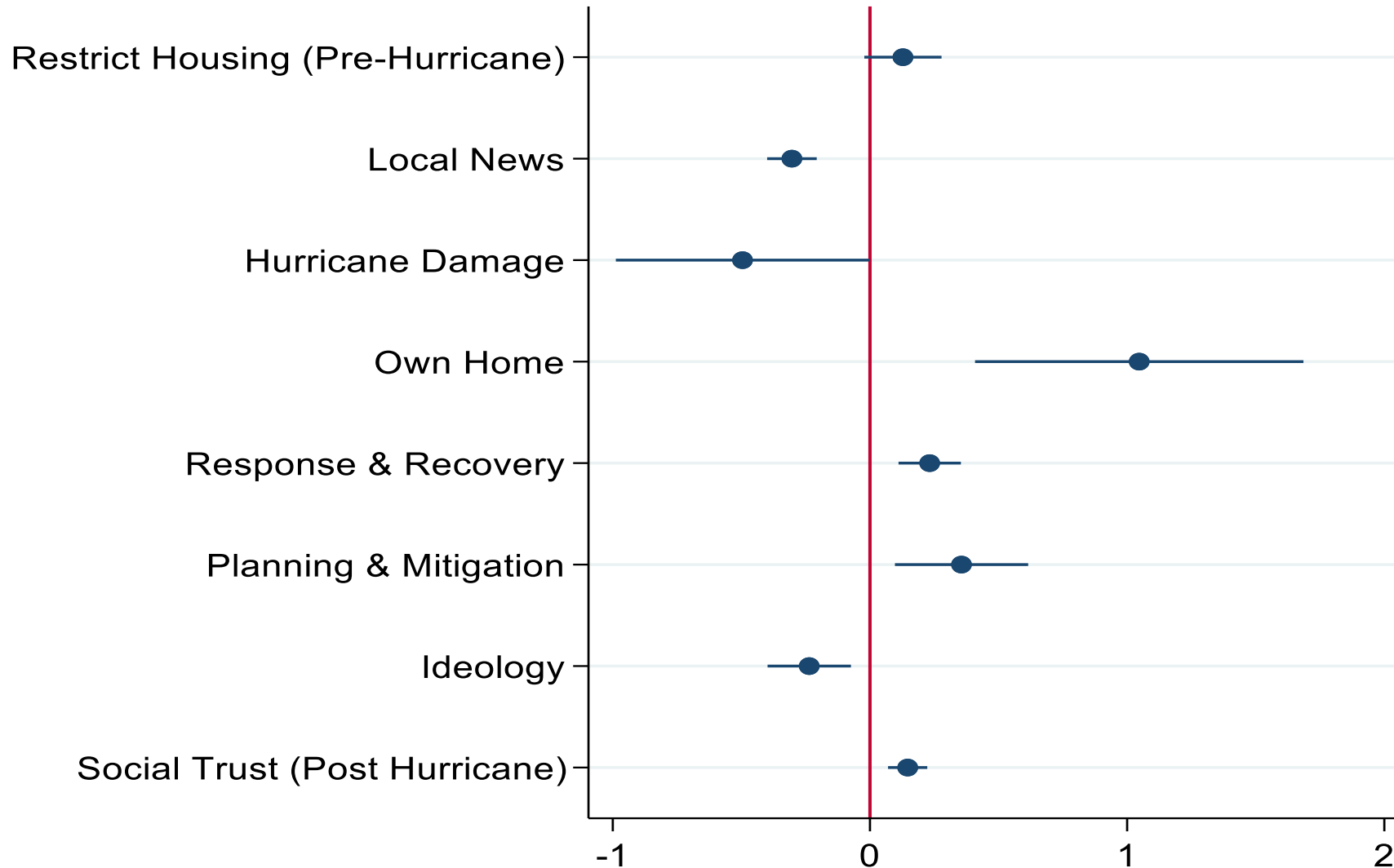
Restricting New Structures



Same pattern for restricting new structures in high risk areas with a few exceptions. Hurricane damage and social trust influence support for restricting new structures.

Explaining Shifts in Policy Support

Restricting New Housing



Similar pattern for restricting new housing.

Hurricanes & Resilience

