Social Vulnerability & Natural Disasters: 5 Years after Hurricane Harvey

HOBBY
SCHOOL OF PUBLIC AFFAIRS
UNIVERSITY of HOUSTON

Research Team

Principal Investigators

Maria P. Perez Argüelles, Research Associate, Hobby School of Public Affairs, University of Houston
Renée Cross, Senior Director and Researcher, Hobby School of Public Affairs, University of Houston
Burak Giray, Ph.D. Candidate, Department of Political Science, Research Assistant, Hobby School of Public Affairs, University of Houston
Jim Granato, Dean, Hobby School of Public Affairs, University of Houston
Samad Karimov, Ph.D. Candidate, Department of Political Science, Research Assistant, Hobby School of Public Affairs, University of Houston
Savannah L. Sipole, Research Associate, Hobby School of Public Affairs, University of Houston
Pablo M. Pinto, Director, Center for Public Policy and Professor, Hobby School of Public Affairs, University of Houston

Researchers

Karen E. Banda, MPP Student, Hobby School of Public Affairs, University of Houston
Gail J. Buttorff, Director, Survey Research Institute and Instructional Assistant Professor, Hobby School of Public Affairs, University of Houston
Mark P. Jones, Senior Research Fellow, Hobby School of Public Affairs; James A. Baker III Institute for Public Policy's Fellow in Political Science, Rice University
Richard Murray, Research Associate, Hobby School of Public Affairs and Professor Emeritus, Department of Political Science, University of Houston
Robert Stein, Lena Gohlman Fox Professor of Political Science, Rice University
Agustín Vallejo, Post-Doctoral Fellow, Hobby School of Public Affairs, University of Houston
M. C. Sunny Wong, Professor, Hobby School of Public Affairs, University of Houston

Acknowledgements

This project received financial support from the National Science Foundation Rapid Grant NSF 1760292, "Hurricane Harvey: Experiences, recovery and future policies."

Cover photo by Port Lavaca Police Department

Executive Summary

After the devastation that Hurricane Harvey caused in the Houston area and other parts of Texas in August 2017, the University of Houston's Hobby School of Public Affairs initiated a five-year survey to understand the long-term experiences of people impacted by Hurricane Harvey and other natural disasters. The goals of these surveys were to better comprehend Houstonians' preparedness for and experiences with natural disasters and to identify how individuals, community organizations, and government and private sector leaders tried to mitigate the consequences of current and future natural disasters and other types of severe weather events affecting Houston and its surrounding areas.

This report covered the fourth wave of the Hobby School Harvey Survey, which was fielded between December 22, 2021, and March 2, 2022. The survey included a representative sample of Texas residents with an over-sample of residents from the Greater Houston area. In total, 2,587 respondents aged 18 and older completed our survey about their experiences during natural disasters, including Hurricane Harvey.

We further asked respondents their opinions on current public policy issues affecting Texans. This report analyzed respondents' vulnerabilities to natural hazards and how those vulnerabilities related to their exposure and response to natural disasters. Lastly, we explored how Texans and Houstonians prepared and adapted to extreme weather events. We conceptualize our analysis using the Centers for Disease Control and Prevention Social Vulnerability Index. Our main goal is to identify geographic areas and social characteristics that made Texans more vulnerable to natural disasters.

These key findings emerged from the analysis:

- Texans and Houstonians have faced high levels of exposure to natural disasters:
  - The survey found that 74% of the surveyed Texans were affected by natural disasters in the past 20 years, while 26% were not affected by any of these natural disasters.
  - Compared to all Texas, the Houston area appeared to have a higher concentration of respondents that were affected by natural disasters in the past 20 years.
  - Extreme cold, such as Winter Storm Uri, which hit the region in February 2021, affected about 55% of respondents.
  - After the extreme cold, the three most hazardous natural disasters statewide were flooding (32%), extreme heat (20%), and tornadoes (12%).

  - Hurricane Harvey and Winter Storm Uri were two of the natural disasters that resulted in more damages or negative effects reported by respondents. However, compared to other disasters, respondents reported fewer assistance requests from federal and state agencies–such as FEMA– and higher recovery rates from the effects of these natural disasters. These findings may be related to the large impacts of these disasters and the fact that they were the most recent ones.

- The impact of natural disasters was more noticeable among vulnerable households:
  - Households that were likely to be vulnerable in terms of minority status, language, household composition, and disability status were affected the most by natural disasters in the past 20 years (see Figures 1.3 and 1.6).
  - The percentage of households affected by disasters in the past 20 years increased for households with one or more children under the age of 18, a single parent, an elderly person (65 years or older), and/or a household with a person who has a physical disability.
  - Being vulnerable matters in determining a higher likelihood of reporting damages by natural disasters.
  - More respondents, both vulnerable and non-vulnerable, suffered damages to their residence (42%) than any other type of damage. Conversely, less survey respondents reported losing their job due to natural disasters (9%).
  - While minorities reported more damages compared to whites, different ethno-racial groups were affected at different rates depending on the natural disaster to which they were exposed. Whites were mostly affected by extreme heat, Blacks by fires, Hispanics and Asians by flooding, and those that identified as other or two or more races reported having been mostly affected by tornadoes.
  - Hispanics did the most preparation for natural disasters but had the lowest percentage of insured respondents; they mostly prepared by learning the evacuation plan for their area, coordinating with others, and getting alternate power supplies. Whites, on the other hand, were the racial group that reported the highest percentage of no preparation. Asians had the highest rate of insured respondents.

- Texans developed strategies to prepare for natural disasters and cope with their consequences:
  - Nearly 69% of respondents reported having prepared for the 2021 hurricane season.
  - Most respondents prepared by stockpiling food and other supplies (45%) and by getting alternative power supplies (28%).
  - Vulnerable households prepared slightly more than those that were not vulnerable, especially those with Minority Status & Language Vulnerabilities (MSLV). This is explained by the fact that more white (43%) and Black or African American (39%) respondents reported not preparing for natural disasters compared to Asian or Pacific Islander (22%), and Hispanic (35%) respondents.

- We also identified important differences in respondents' adaptive capacity:
  - Those affected by natural disasters were more likely to have insurance. Respondents affected by fires, tornadoes, and flooding were more likely to have flood insurance.

- Most respondents reported having health, car, and homeowners insurance. However, vulnerable respondents are less likely to have insurance than those who are not vulnerable. We find that insured rates are positively related to higher income respondents, specially for homeowners and flood insurance. On the other hand, more low-income respondents reported having health and renter's insurance, than any other type of insurance.
- In the past 20 years, the highest percentage for requests for FEMA assistance were for the following natural disasters: Tax Day flood in 2016 (57%), Texas fires of 2018 (56%), Hurricane Laura in 2020 (56%), and Tropical Storm Imelda in 2019 (55%). Of those affected by Hurricane Harvey in 2017, 50% claimed that they requested FEMA assistance.
- In general, non-vulnerable respondents recovered faster than those who are vulnerable. Compared to vulnerable respondents, around 8% more non-vulnerable respondents have completely recovered after Winter Storm Uri and 10% for severe storms and flooding of 2018.
- When we looked at recovery by race and ethnicity, white and Hispanic where the two groups that showed higher rates of recovery after major disasters (near or above 50%). Blacks on the other hand, is the group with fewer respondents reporting to have completely recovered from major natural disasters (between 35% and 40%).

- The impact of Hurricane Harvey in the Greater Houston area is still prevalent nearly five years later:
  - Areas along the coastline of the Gulf Coast area in Texas, such as Galveston, were slower to fully recover post-Hurricane Harvey.
  - A larger proportion of respondents with Household Composition & Disability Vulnerabilities (HCDV) and MSLVs lived along the FEMA 100-year flood plain; over 50% of those with MSLVs were concentrated within the Harris County boundary lines.
  - More households with MSLVs were affected by Hurricane Harvey in the Greater Houston area (72%) compared to those in other parts of Texas (61%), particularly along the Gulf Coast.
  - Slightly more respondents in the Greater Houston area with HCDVs had flood insurance (26%) compared to respondents without those vulnerabilities (23%); however, we found that there was a larger difference among those with MSLVs (22%) and non-vulnerable respondents (34%) who had flood insurance.
  - Vulnerable and non-vulnerable respondents from the Greater Houston area completely recovered at higher rates compared to those living in the other parts of the state who were affected by Hurricane Harvey. However, a larger percentage of respondents who were among the non-vulnerable populations reported complete recovery.

Contents

List of Figures

List of Tables

Chapter 1: Introduction

In August 2017, Hurricane Harvey caused tremendous devastation along the Texas Gulf Coast. In the wake of this devastation, the University of Houston's Hobby School of Public Affairs initiated a multi-year panel survey to understand the long-term experiences of people impacted by Hurricane Harvey and other severe storms.[1] Texans were no strangers to natural disasters and extreme weather events such as Hurricane Harvey (August 2017) or Winter Storm Uri (February 2021). Nearly five years after Hurricane Harvey made landfall along the Texas Gulf Coast, Houstonians and other Texans were affected by some FEMA-declared disaster every year, from severe flooding to wildfires to other hurricanes.

Over the past decade, these and other devastating storms exposed the community's emergent needs, such as flood mitigation projects, survival basics, better evacuation routes, and essential deficits in public infrastructure, emergency response, and service provision. The state and local governments relied on FEMA disaster funds, and they also implemented policies and programs that helped mitigate some natural disasters' effects across Texas. For example, the City of Houston adopted the Chapter 19 Floodplain Ordinance in 2018, which required the construction of new buildings to be raised above the 500-year floodplain and they also utilized FEMA disaster funds.[2] However, such policies might not help lessen the impact of natural disasters on households and businesses in vulnerable communities across Texas. Understanding social vulnerabilities is critical for planning and enacting government emergency and mitigation strategies, and other public policy responses.

To better understand how natural disasters affected those with social vulnerabilities, the fourth wave of the survey, fielded between December 22, 2021, and March 2, 2022, was the focus of this report. The survey asked respondents about their experiences during natural disasters, including Hurricane Harvey, and for their opinions on current public policy issues affecting Texans.[3] In this report, we analyzed respondents' vulnerabilities to natural hazards, how those vulnerabilities related to their exposure to natural disasters, and how Texans and Houstonians prepared and adapted to extreme weather events.

This report was organized into five chapters. Following this section, we defined the CDC Social Vulnerability Index (SVI), explained the SVI measure in relation to Texas, and described how we utilized this index to decide on which vulnerabilities to focus for this report. Then, in Chapter 2, we discussed vulnerability hazards through exposure to natural disasters. In Chapter 3, we discussed the two most common vulnerabilities for Texans and how experiences during natural disasters and severe storms affected vulnerable and non-vulnerable respondents. Next, in Chapter 4, we explored the types of preparation that vulnerable and non-vulnerable respondents made during previous storms and how they prepared for the 2021 hurricane

[1] Because of attrition rates, new groups of respondents were used for the third and fourth waves of the survey.

[2] See the 2018 City of Houston Chapter 19 Floodplain Ordinance

[3] To read more about this survey, please see the Hobby School report, Hurricane Harvey: Three Years Later

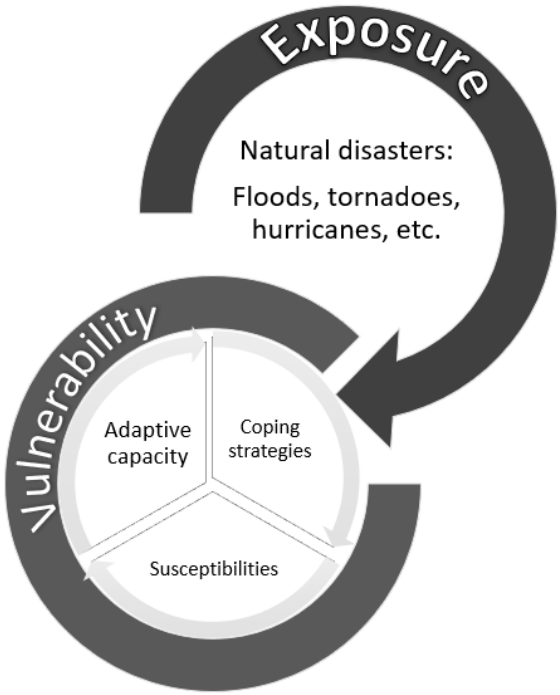
season. In Chapter 5, we focused on the adaptive capacity of respondents by analyzing their recovery status after each of the natural disasters they experienced, whether or not they had insurance coverage, and if they applied for aid, such as Federal Emergency Management Agency (FEMA) assistance, for their recovery process. Finally, in Chapter 6, we discussed how Hurricane Harvey continued to affect respondents who resided in the Greater Houston area nearly five years after it made landfall. In the same chapter, we discussed the exposure, adaptive capacity, and vulnerability of Houstonians and surrounding counties directly affected by Hurricane Harvey.

Our main goal was to identify geographic areas and social characteristics that made Texans more vulnerable to natural disasters. Our findings would help identify vulnerable geographic areas and populations, providing relevant information to local officials and policymakers in charge of designing and planning policies and procedures to prepare, respond, and recover from natural disasters.

1.1 Social vulnerability measures defined

Social vulnerability encompasses the susceptibility of a community and its capacity to prepare or develop coping strategies and to adapt and recover from the impacts of shocks (Figure 1.1). At the local level, social vulnerability determines, largely, how communities respond when they are exposed to natural hazards or external shocks (e.g., natural disasters, economic shocks, disease outbreaks, etc.). [4]

Figure 1.1: Vulnerability and hazards exposure



[4] See the Social Vulnerability Index Fact Sheet

This report explored the concept of social vulnerability for Texas residents when they faced natural disasters. Specifically, we analyzed Texans' exposure to hazards, susceptibilities or types of vulnerabilities, preparedness strategies, and their capacity to adapt after being affected by shocks. We used the Social Vulnerability Index (SVI), a social vulnerability concept that the Centers for Disease Control and Prevention (CDC)/Agency for Toxic Substances and Disease Registry (ATSDR) defined, to create binary measures in order to compare populations within our respondent pool. This pre-existing measure of social vulnerability was an index based on 15 variables from the U.S. Census American Community Survey (ACS) 5-year data. For these 15 variables, census tracts were ranked against each other at the state level. In this way, the CDC created an SVI that ranged from 0 (the least vulnerable) to 1 (the most vulnerable) to explain how socially vulnerable a community was when they faced a disaster or shock.[5]

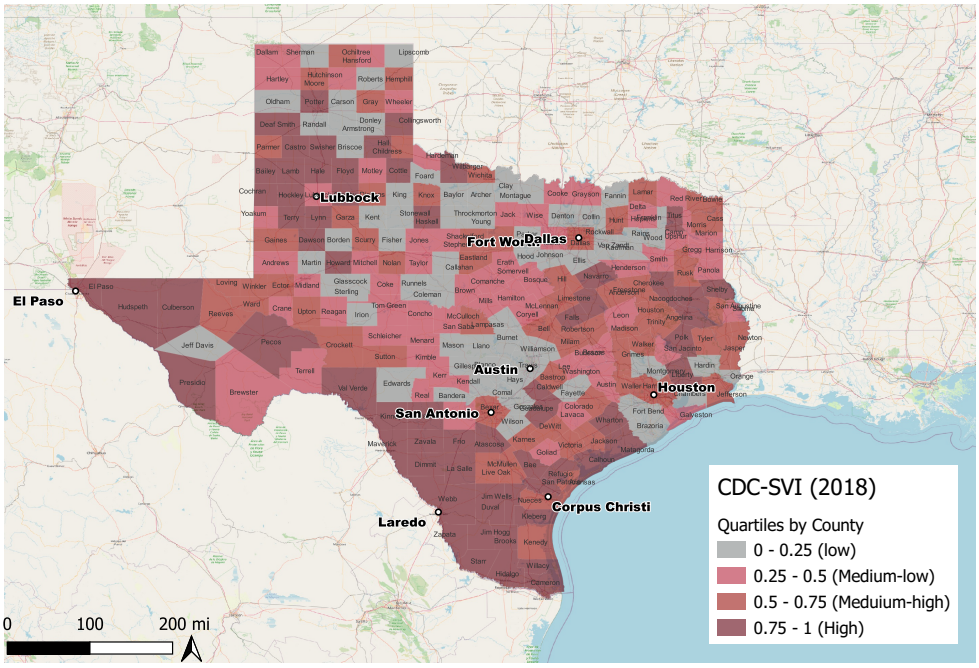
The SVI defined four dimensions of social vulnerability at the county and tract levels for all states. These dimensions included: 1) *Socioeconomic Status*, defined by poverty, unemployment, income, and education; 2) *Household Composition & Disability*, defined by elderly in the household, number of children, disability, and being a single parent; 3) *Minority Status & Language*, defined by race/ethnicity and language; and 4) *Housing Type & Transportation*, defined by persons per room, owned vehicles, mobile home, and multi-unit structure.[6] We analyzed our survey results in light of those four dimensions. While we did not intend to replicate the CDC-SVI for our sample, we looked at its components for the case of our surveyed population. We then used survey responses to generate binary measures for the four components of the SVI, which determined the vulnerability likelihood in terms of socioeconomic status, household composition, minority status, or housing type levels.[7]

1.2 Vulnerability in Texas

Figure 1.2 showed the levels of CDC-SVI in counties across Texas by quartiles. The first quartile (from 0% to 25%) indicated low vulnerability, the second (from 25% to 50%) indicated medium-low vulnerability, the third (from 50% to 75%) indicated medium-high vulnerability, and the last one (from 75% to 100%) indicated high vulnerability. The higher the vulnerability in the county, the higher the county ranked against the rest of Texas' counties. Similarly, if a county had a lower SVI–measured by the CDC's 15 social factors–, said county ranked lower, in terms of vulnerabilities, against other counties in Texas.[8] A higher vulnerability rank also meant that households were more likely to face hardships and need aid before, during, and after a disaster. We found that larger metropolitan areas like Houston, Dallas, and San Antonio had a medium-high level of SVI, while most of their surrounding suburban areas had lower SVI. On the other hand, Austin appeared to be the largest Texas city with a low SVI. In comparison, most of Texas' bordering counties had a high SVI.

[5] Centers for Disease Control and Prevention. See the Social Vulnerability Index.
[6] See Appendix A for further description of the measures used throughout the document
[7] See Appendix A and Section 1.2 for further explanation
[8] See Appendix A

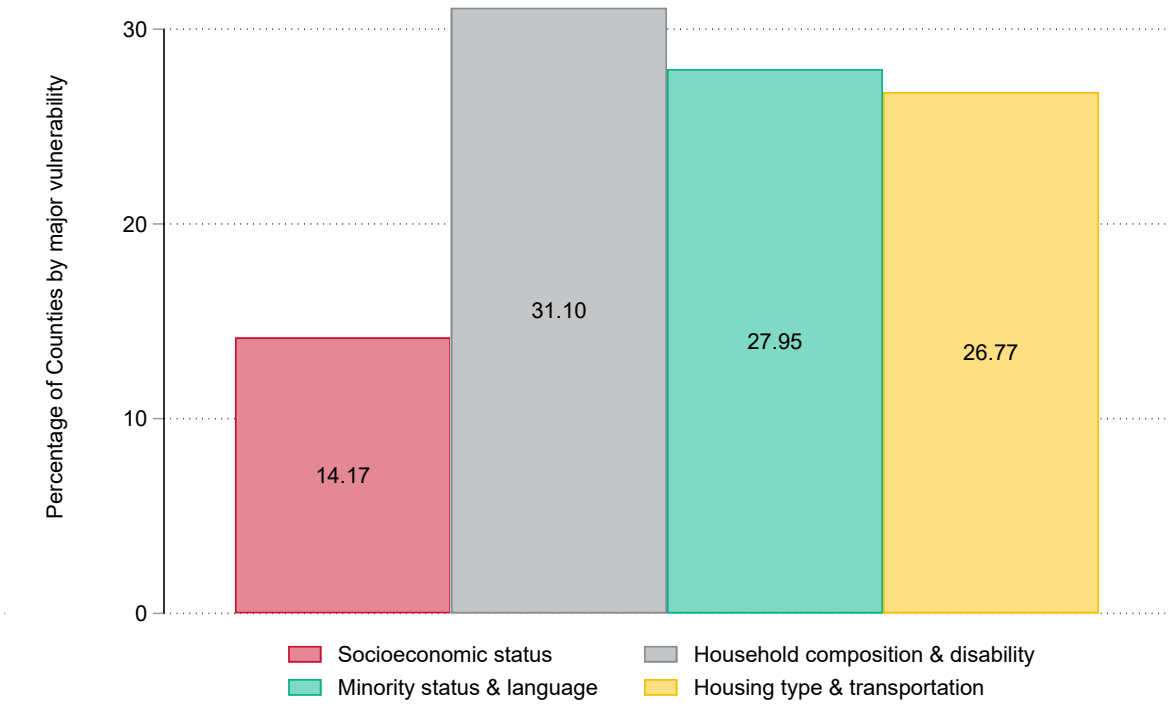
Figure 1.2: CDC-SVI level in quartiles by county



We further analyzed the CDC-SVI 2018 data to find the main vulnerability, out of the four dimensions, across each Texas county (Figure 1.3 and Figure 1.4). Figure 1.4 showed the percentages of Texas counties by types of vulnerabilities according to the 2018 CDC-SVI county-level data. The data showed that Household Composition & Disability (HCDV) (31.1%) and Minority Status & Language (MSLV) (28%) were the two major vulnerabilities present across Texas counties, followed by Housing Type & Transportation (HTTV) (26.8%). In comparison, only 14.2% of Texas counties were vulnerable in terms of Socioeconomic Status (SESV).[9]

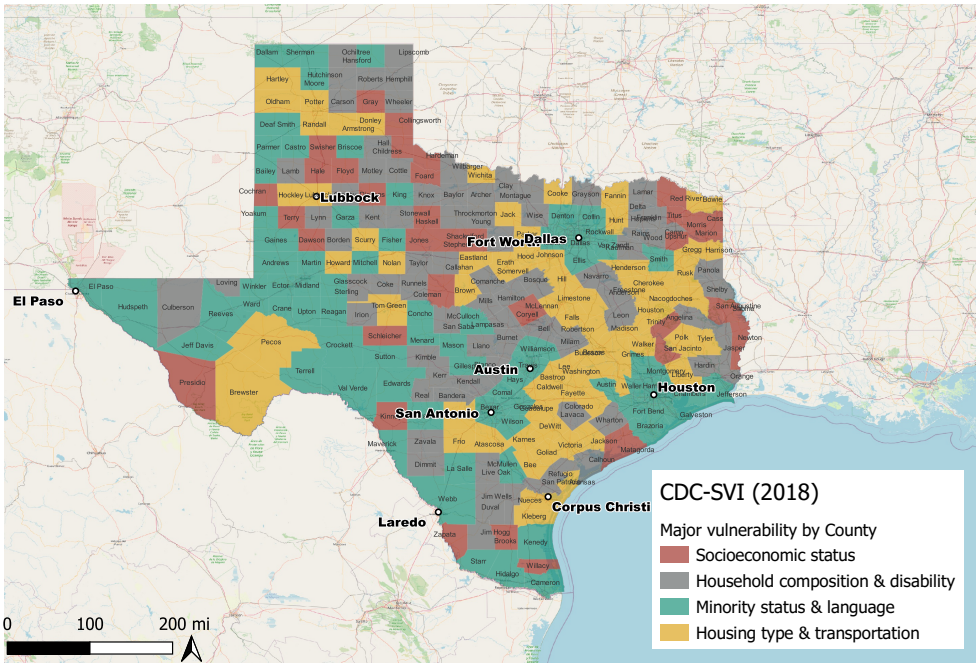
[9] Ibid. fn. 4

Figure 1.3: Texas counties by major type of vulnerability



We found that MSLV was the main vulnerability for bordering counties and counties with the largest cities in Texas–Houston, Austin, Dallas-Fort Worth, El Paso, and San Antonio. For counties further away from major cities, we found that the prevalent vulnerabilities were HCDV and HTTV. For example, in Pecos and Brewster Counties, located southeast of El Paso, or McLennan, Falls, and Limestone Counties between Austin and Dallas, HTTV was the predominant vulnerability, while in Lampasas, Burnet, and Llano Counties, located northwest of Austin, HCDV was the predominant vulnerability. Figure 1.4 also showed that predominantly SSV counties were not geographically clustered, but were instead observed around Jones County (to the west of Fort-Worth), in Matagorda and nearby counties, around Morris County (North-East of Texas), and Presidio, Kinney, and Zapata Counties along the border.

Figure 1.4: Texas counties by major types of vulnerability



Based on the findings from the CDC-SVI data (Figure 1.4), the rest of this report focused on the two major vulnerabilities affecting most counties in Texas: MSLV (31.1% of Texas' counties) and HCDV (27.9% of Texas' counties). The CDC-SVI measure, as well as the binary categorization created for survey respondents, were defined in Figure 1.5 for Texas.

Figure 1.5: SVI binary measures

	CDC-SVI*	Binary measure+
Socioeconomic Status	Below Poverty Unemployed Income No High School diploma	NA
Household Composition & Disability	Aged 65 or older	HCDV=1 if someone in the household 65 or older; HCDV=0 if no one
	Aged 17 or Younger	HCDV=1 if someone in the household 17 or younger; HCDV=0 if no one
	Civilian with a Disability	HCDV=1 if someone in the household with a disability; HCDV=0 if no one
	Single-Parent Household	HCDV=1 if single-parent household; HCDV=0 if not
Minority Status & Language	Minority	MSLV=0 if white; MSLV=1 if non-white
	Speaks English "Less than Well"	MSLV=1 if speaks Eglish "Less than well"; MSLV=0 if don't
Housing Type & Transportation	Multi-Unit Structures Mobile Homes Crowding No Vehicle Group Quarters	NA
Type of measure	Overall Vulnerability	Texas top Vulnerabilities
Unit of measurement/ geography	Census Tracts & Counties	Survey respondents in Texas

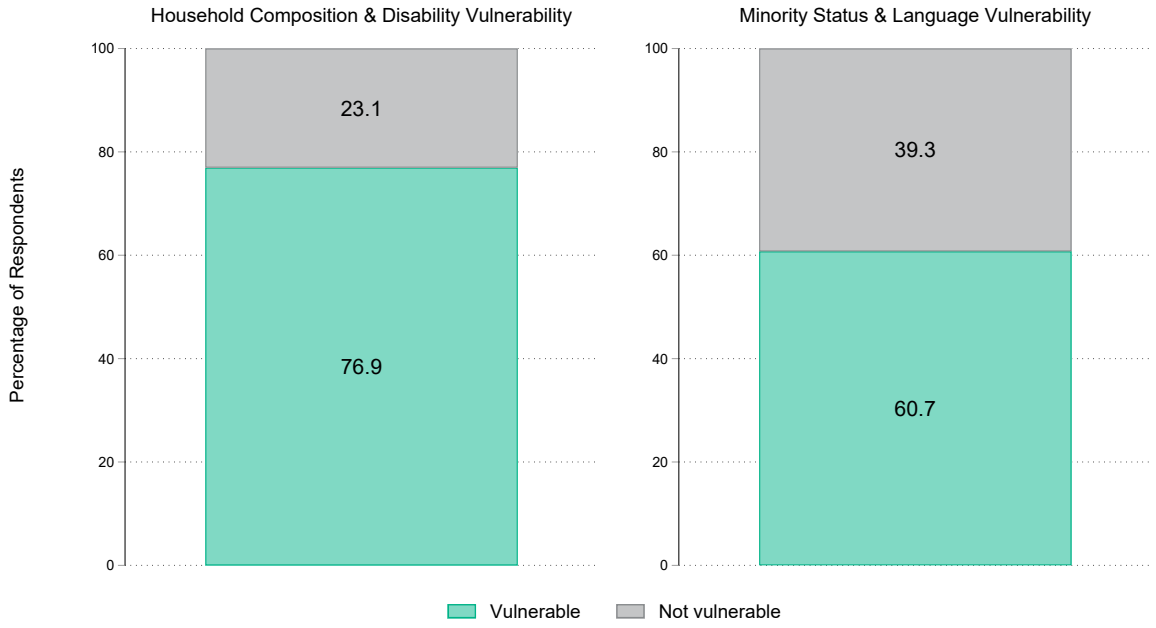
* See CDC-SVI documentation at https://www.atsdr.cdc.gov/placeandhealth/svi/index.html

\+ Meassure only applies to survey respondents

In the rest of the report, we focused on understanding the dimensions of social vulnerability in Texas using our survey responses. For this, we developed a binary measure based on the CDC variables of HCDV and MSLV (Figure 1.5). We used the binary variables (as seen in Figure **??**) by utilizing the characteristics within the HCDV and MSLV dimensions that made a respondent likely to belong to each type of vulnerability. The binary HCDV was measured based on households with children (1 if the household had someone below 18 and 0 if not), elders (1 if the household had someone over 65 and 0 if not), a single parent (1 if the household had a single parent and 0 if not), or disabled members (1 if the household had a disabled member and 0 if not). The MSLV binary was measured based on respondents' race or ethnicity, specifically whether or not they were white (1 if they were white and 0 if they were a race/ethnicity other than white) and had a low ability to speak English (takes the value of 1 if the person speaks English "less than well" or "not at all"

and 0 if not).[10] As shown by Figure 1.6 we found that 76.9% of the respondents fall into the HCDV binary vulnerability and 60% into the MSLV binary measure.[11]

Figure 1.6: Survey respondents by type of vulnerability



[10] See Appendix A

[11] When the four types of vulnerabilities were calculated for the respondents, the ones with the highest percentage of survey respondents were those with HCDV and MSLV.

Chapter 2: Exposure

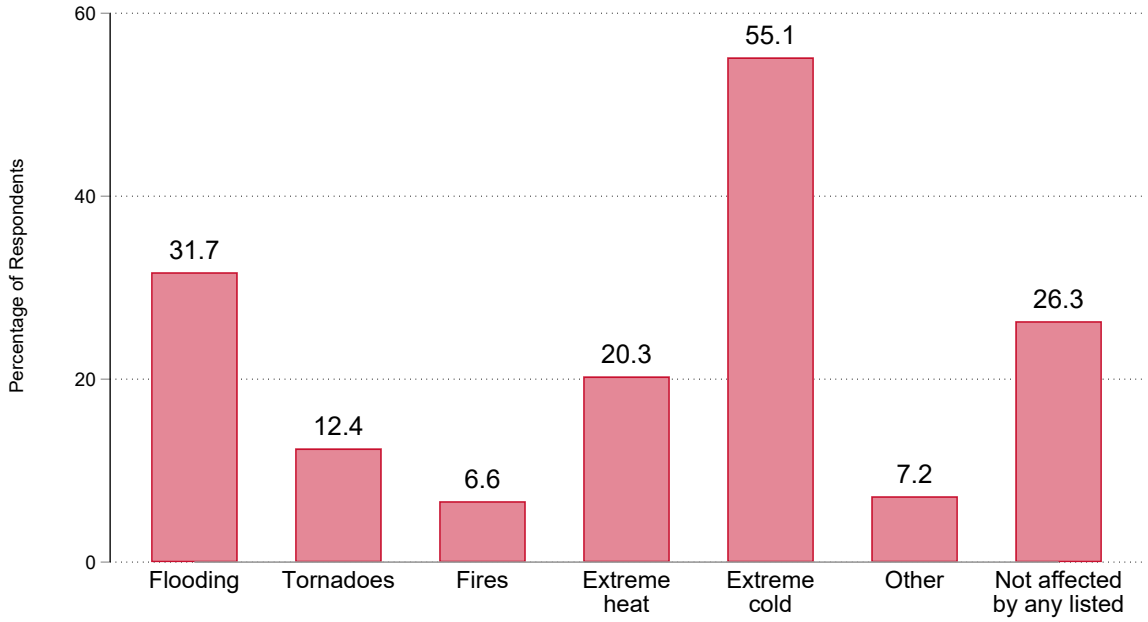
In this chapter, we showed the distribution of respondents' exposure to various types of natural disasters over the last 20 years.[12] Specifically, we looked at how individuals' housing situations and livelihoods, such as jobs, income, and other circumstances, were exposed to and affected by natural disasters. We looked at spatial hotspots of exposure and the types of damages survey respondents sustained from the various types of natural disasters that affected Texans over the past two decades.

2.1 Damages from natural disasters

The survey asked respondents whether any natural disaster had affected them or any household member. Then, we asked them to report the natural disasters they experienced from a list of recent FEMA-declared disasters in Texas. Slightly more than one-quarter (26.3%) of respondents were not affected by any listed natural disaster (Figure 2.1). Extreme cold weather affected more than half (55.1%) of respondents. After extreme cold, the three most hazardous natural disasters were flooding (31.7%), extreme heat (20.3%), and tornadoes (12.4%). Fires and other natural disasters affected only 6.6% and 7.2% of respondents, respectively.

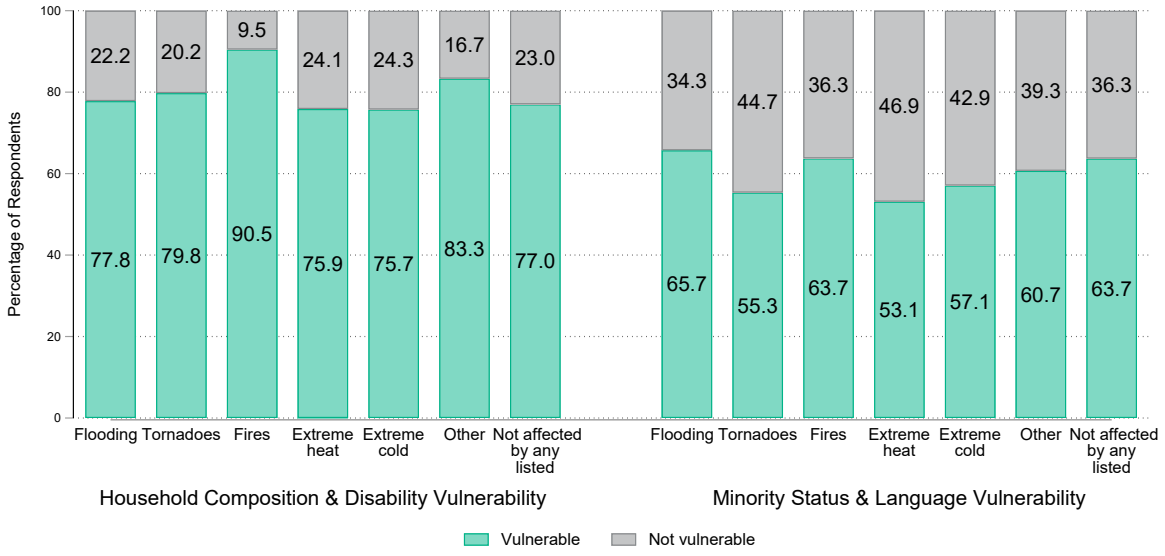
[12] Exposure referred to households that were affected by natural disasters.

Figure 2.1: During the last 20 years, have you or any member of your household been affected by any natural disaster?



Next, we explored the different ways in which these natural disasters affected vulnerable and non-vulnerable respondents who fell into the Household Composition & Disability Vulnerability (HCDV) or Minority Status & Language Vulnerability (MSLV) groups. Comparatively, over a majority of respondents affected by natural disasters over the past two decades were among the vulnerable populations for the HCDV and MSLV groups; however, there was a higher proportion of HCDV population affected by disasters than MSLV (Figure 2.2). Among the HCDV group, fires and other disasters had the highest percentages of vulnerable households (90.5% and 83.3%, respectively), and extreme heat (24.1%) and extreme cold (24.3%) had the highest proportion of non-vulnerable respondents. On the other hand, from the MSLV group, flooding (65.7%) and fires (63.7%) had the highest percentage of vulnerable respondents while extreme heat and tornadoes had the highest proportion of non-vulnerable respondents (46.9% and 44.7%, respectively).

Figure 2.2: Households affected by natural disasters by vulnerability status



We also looked at the percentage of respondents by zip code that were affected by natural disasters in the past 20 years. As shown in Figure 2.3, the percentage of respondents affected by natural disasters in the past 20 years was above 50% for many areas. However, the Houston area had a higher concentration of respondents who were affected by natural disasters. Similarly, Figure 2.4 showed the percentage of survey respondents affected by Hurricane Harvey and its wind swath, or the footprint of the hurricane's path. While the effects of Harvey were felt all over Texas, the Houston area and the Gulf Coast were disproportionately more affected. Most of the zip codes surveyed in the Houston area had over 50% of respondents affected by Hurricane Harvey, with few exceptions shown by the teal areas–specially in the greater Houston outskirts–in Figure 2.4.[13]

[13] Chapter 6 further documented Harvey's effects and the path to recovery for those affected in the Greater Houston Area.

Figure 2.3: During the last 20 years, have you or any member of your household been affected by any natural disaster?

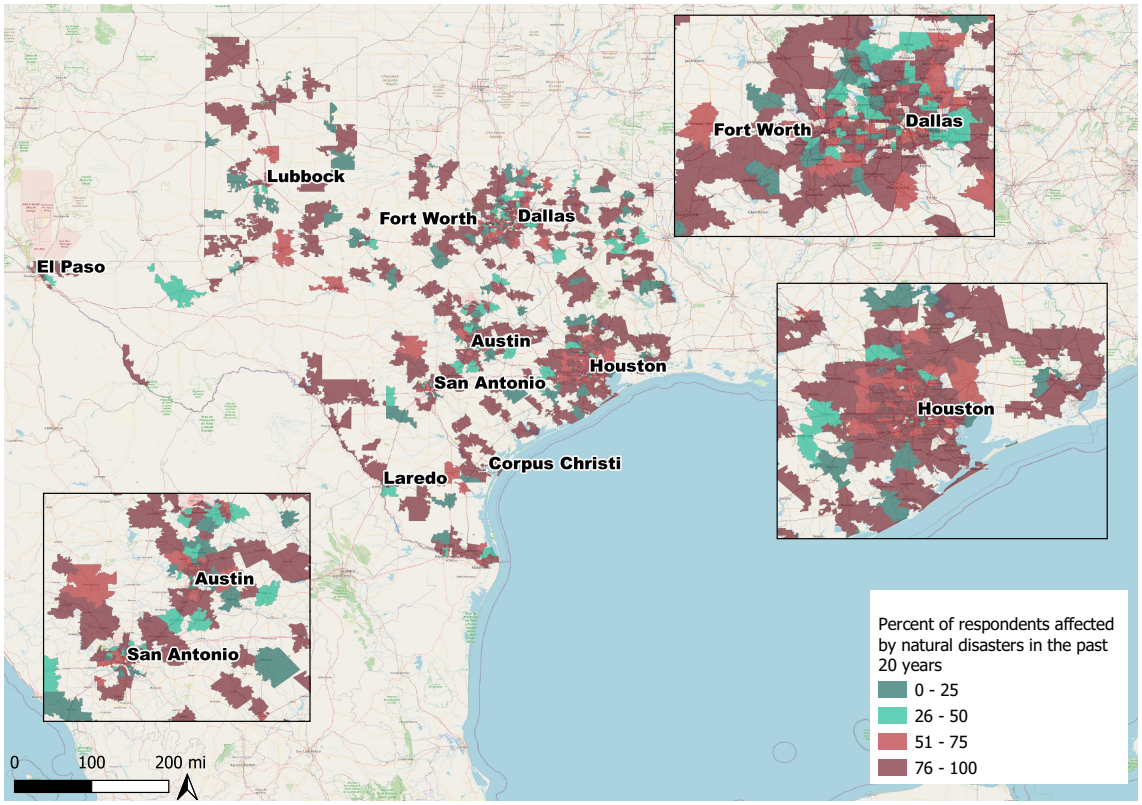
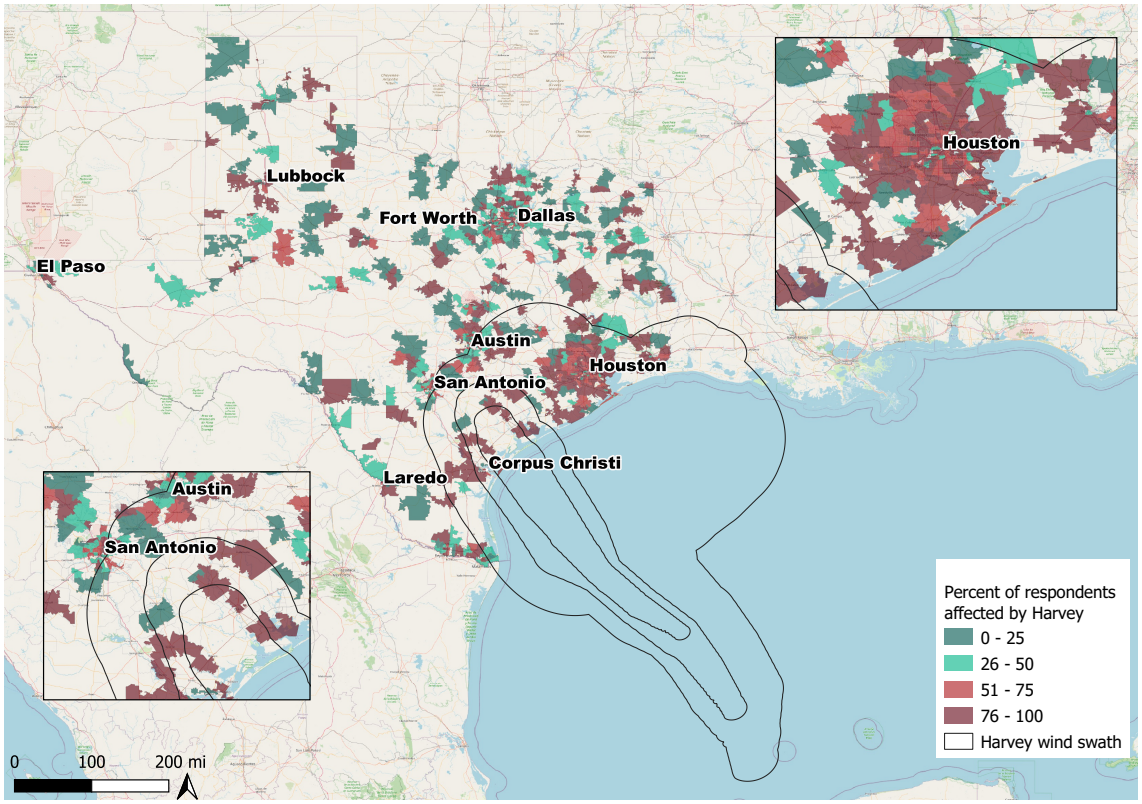


Figure 2.4: Were you affected by Hurricane Harvey?



To understand the extent of natural disasters' effects on respondents living in Texas, the survey asked them about the type of damage they experienced. We found that most disasters resulted in damages to property, damages to residences, and forced evacuation or relocation. Other types of negative effects, such as lost jobs, lost income, and health problems, were less prevalent, except in the case of Winter Storm Uri (Table 2.1). Similarly, Hurricane Harvey and Winter Storm Uri were the two natural disasters that resulted in more damages or negative effects for Texans.[14,15]

Across every type of damage sustained, Winter Storm Uri had the highest percentages of affected respondents. This was likely because of a couple of reasons. First, Winter Storm Uri was the most recent storm of memory. Second, more of the state was affected due to the Electric Reliability Council of Texas's (ERCOT) unprepared infrastructure and the crippled electric grid. Many Texas residents suffered from busted pipes and water damage to their property or residence (18.9% and 24.7%, respectively). Texans had to relocate because temperatures were too low to remain in their homes without heat (9.5%). Winter Storm Uri also caused a myriad of health issues (8.3%), especially among households with children under 18 and elders, and a loss of income (12.4%) from being out of a job during this time. The natural disaster with the second-highest percentage of damages was Hurricane Harvey. The costly destruction of Hurricane Harvey in the Houston

[14]See the Hobby School of Public Affairs' Impact of Hurricane Harvey Reports

[15]For more information about Winter Storm Uri, see the Hobby School of Public Affairs' Reliability and the Texas Power Grid in the Aftermath of Winter Storm Uri Report and the Winter Storm of 2021 Report.

area and along the Gulf Coast of Texas resulted in damage to property (12.6%) and residences (13.7%) due to flooding and wind, leaving some residents without a home (8.1%), wages (5.8%), a job (2.3%), and some who had not fully recovered (see Chapter 6 for further analysis on Hurricane Harvey recovery).

Regarding property damage, the severe storms and flooding in 2018 and 2019 ranked third and fourth, after Hurricane Harvey and Winter Storm Uri, as the natural disasters that caused the most damage to property (8.1% and 8.2%, respectively). Hurricanes Rita and Ike were also ranked third and fourth as sources of damage to residences (8.7% and 9.3%, respectively) after Winter Storm Uri and Hurricane Harvey. A small percentage of respondents indicated that they had sustained other damages for each of the listed FEMA-declared disasters over the past 20 years.

Table 2.1: Have you or any members of your household been affected by any of the following FEMA declared disasters?

	Damage to property	Damage to residence	Evacuated or relocated	Lost job	Lost wages or income	Health problems
Hurricane Rita (Sept. 2005)	6.8	8.7	6.8	1.8	3.6	1.7
Hurricane Ike (Sept. 2008)	7.9	9.3	6.2	1.8	3.7	1.1
Memorial Day flood (May 2015)	5.7	5.4	3.1	1.0	2.5	0.8
Tax Day flood (Apr. 2016)	4.7	4.4	2.8	1.3	2.4	0.9
Hurricane Harvey (Aug. 2017)	12.6	13.7	8.1	2.3	5.8	1.8
Texas fires 2018	2.8	2.7	2.4	1.0	1.6	1.3
Severe storms and flooding 2018	8.1	8.6	3.4	1.5	3.0	1.0
Severe storms and flooding 2019	8.2	7.1	3.2	1.3	2.8	1.2
Tropical Storm Imelda (Sept. 2019)	3.6	4.4	2.3	1.4	2.1	0.8
Hurricane Laura (Aug. 2020)	3.9	3.3	2.5	1.2	1.5	1.0
Winter Storm Uri (Feb. 2021)	18.9	24.7	9.5	2.5	12.4	8.3
Other disasters	3.8	4.5	2.0	1.5	2.0	2.2

Note: Percentages are of those who said they sustained each type of damage for each storm.
Percentages are weighted and rounded to the nearest tenth.

Chapter 3: Vulnerabilities

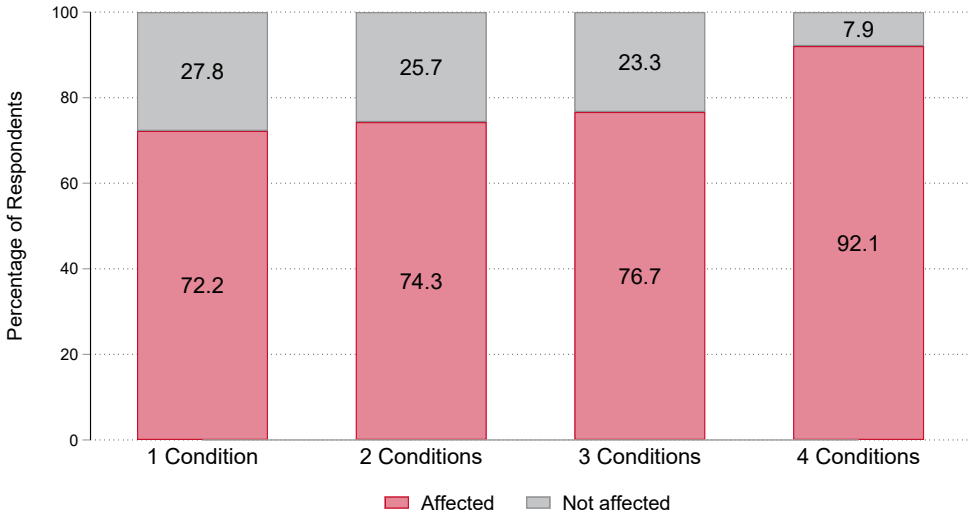
As reflected in Figure 1.4, most counties in Texas were rated high on two of the four vulnerability indices: Minority Status & Language Vulnerabilities (MSLV) and Household Composition & Disability Vulnerabilities (HCDV). Similarly, over 60% of survey respondents that were vulnerable fell into these two vulnerabilities. This chapter presents the components used to measure each of the two prevailing vulnerability types, and analyzes how natural disasters affected vulnerable and non-vulnerable households across Texas.

3.1 Household Composition & Disability Vulnerability in Texas

In this section, we focus on the Household Composition & Disability Vulnerabilities (HCDV) of respondents at the time of the survey. We explore experiences during natural disasters and severe storms based on whether respondents had 1) anyone in their household with a physical disability, 2) children, 3) an elderly person, or 4) whether or not the head of the household was a single parent. These conditions, as defined by the CDC, make a household more likely to be vulnerable. We used these four conditions to build a binary measure for vulnerability due to household composition status (as in Figure 1.5) and looked at its relation to being affected by natural disasters in the past 20 years (see Figure 1.6). The more conditions met to be classified as HCDV, the more likely to having been affected by natural disasters.

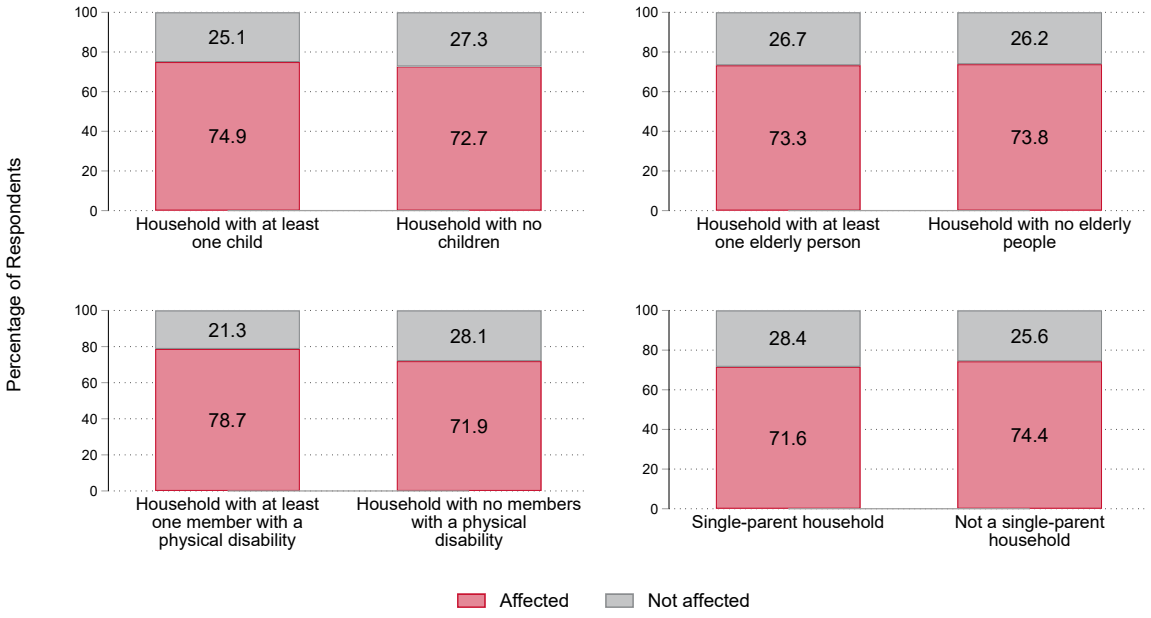
When looking at these four conditions, 43% of the surveyed households had at least one child and 27.6% at least one elderly person. Regarding disability status, 25.7% of the surveyed households had at least one person with a physical disability. We found that households that were likely to be vulnerable due to Household Composition & Disability status–because they met conditions 1, 2, 3, or 4 to be classified as vulnerable–were more likely to have been affected by natural disasters in the past 20 years (Figure 3.1). Additionally, the percentage of respondents that reported being affected by disasters increased as the number of conditions met increased. This finding was mostly attributed to households with one or more individuals with a physical disability (Figure 3.2).

Figure 3.1: Affected by natural disasters in the past 20 years by the number of Household Composition & Disability Vulnerability conditions



As discussed earlier in this report, an overwhelming majority of Texas households were impacted by one or more natural disasters over the past two decades. Our analysis further unveiled important differences across household types. Figure 3.2 showed that households without children (72.7%) were only marginally less affected than households with at least one child (74.9%). The same pattern was observed when comparing households with at least one elderly person (73.3%) to no elderly persons (73.8%) and single-parent households (71.6%) to no-single parent households (74.4%). However, a different pattern was observed when households with at least one member with a physical disability (78.7%) were compared to those without members with a physical disability (71.9%). We found that households with at least one member with a disability were seven percentage points more likely to have been affected by natural disasters than households without members with a physical disability.

Figure 3.2: Affected by any natural disaster in the past 20 years by Household Composition & Disability Vulnerabilities



In Figure 3.3, we look at different types of damages reported and show the percentages of respondents considered vulnerable based on Household Composition & Disability Vulnerability status. More respondents, both vulnerable (37.4%) and non-vulnerable (36.1%), suffered damages to their residence than any other type of damage. Respondents also reported damage to their property (excluding buildings) at slightly lower percentages than residence damage. On the other hand, fewer respondents across Texas reported losing their job due to natural disasters. We did find that vulnerability mattered: HCDV respondents were more likely to report that they suffered property damages than their non-vulnerable counterparts. Nearly a third (32.7%) of respondents with HCDV characteristics indicated damages to their property compared to 29.7% among those classified as non-vulnerable. Vulnerable households also reported higher job losses (7.6% among vulnerable households and 5.0% for non-vulnerable households), wage losses (17.9% and 16.1%), health problems (11.9% and 8.4%), and were more likely to have evacuated or relocated (20.3% and 16.4% respectively).

Figure 3.3: Types of damage by Household Composition & Disability Vulnerability

3.2 Minority Status & Language Vulnerability in Texas

In this section, we provide information about household vulnerability defined by minority status and language. As defined by the CDC-SVI, we measured Minority Status & Language Vulnerability (MSLV) by race or ethnicity other than white and English language fluency. The survey asked each respondent a battery of demographic questions, including their race and/or ethnicity. The race/ethnicity breakdown of respondents was the following: 40.5% white, 11.5% Black or African American (Black), 32.6% Hispanic or Latino/a (Hispanic), 5.3% Asian or Pacific Islander (Asian), and 10.1% fell into the Other or Two or more category (see Appendix A).[16]

We examined the MSLV of respondents depending on whether or not they were affected by natural disasters in the past 20 years (Figure 3.4) and on the number of conditions they met to be classified as MSLV (Figure 3.5). In Figure 3.4, we found that non-minorities fluent in English were slightly more affected by natural disasters (by around 3.3%) than minorities not fluent in English. Similarly, Figure 3.5 showed the affected and non-affected respondents by the number of MSLV conditions met (from 1 to 2) based on the binary measure of MSLV.[17] Of those respondents that were from an ethno-racial minority and that were not fluent in English (met 2 conditions), 69.7% were affected by natural disasters. On the other hand, from those

[16]Note: Each race/ethnicity category indicated that respondents selected that race/ethnicity option alone. If a respondent selected more than one race, they were classified as "Two or more."

[17]As shown in Figure 1.5, the MSLV binary measure was estimated based on two conditions: 1. race and ethnicity and 2. English language fluency. See Appendix A.

respondents that either were from a ethno-racial minority or were not fluent in English (met one condition), 72.6% were affected by natural disasters.

Figure 3.4: Minority Status & Language Vulnerability and affected by disaster in the past 20 years

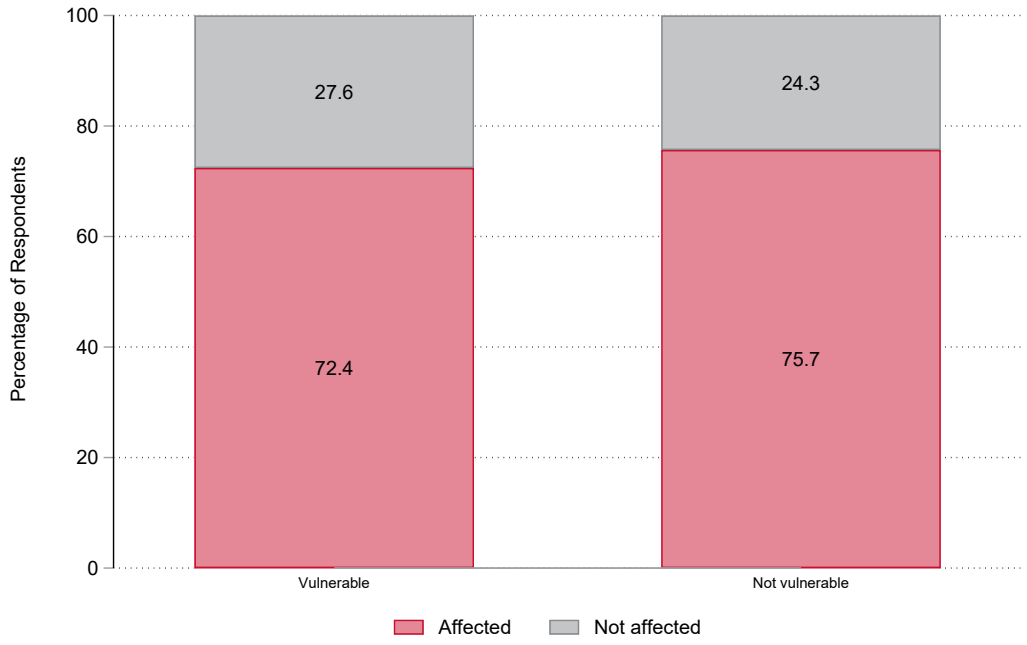
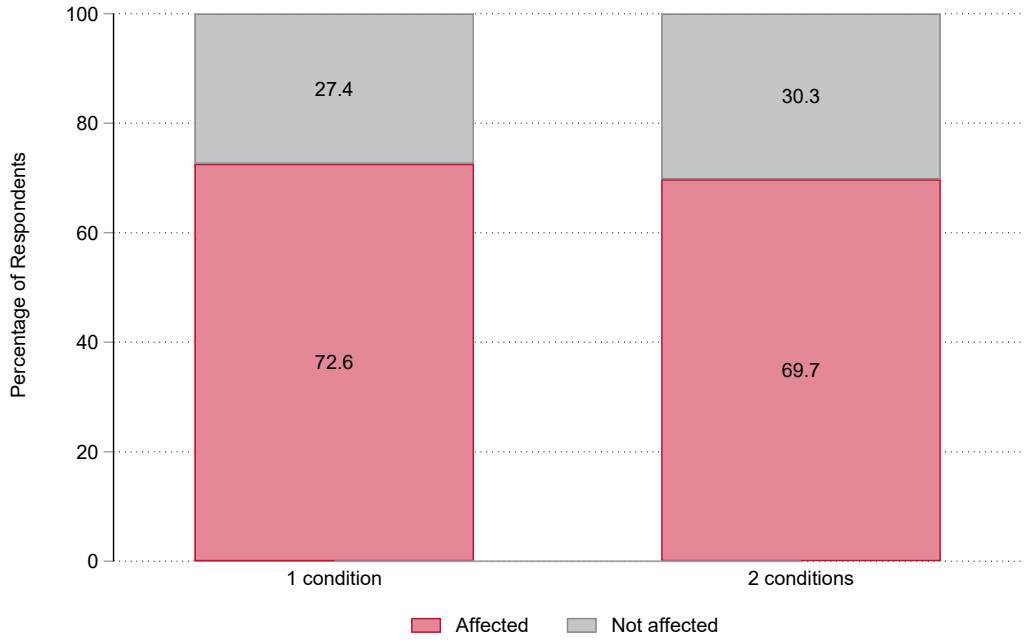


Figure 3.5: Affected by natural disasters in the past 20 years by the number of Minority Status & Language Vulnerability conditions



To understand how respondents were affected, we looked at the type of damage respondents reported following a natural disaster (Figure 3.6). Compared to non-vulnerable respondents, respondents with MSLV were generally more likely to suffer damages to residence, lost wages, job loss, and evacuation or relocation after a natural disaster. Survey respondents who were vulnerable to MSLV were 2.3% more likely to have residential damage than respondents who did not have this vulnerability. Generally, we found that, even though non-vulnerable respondents reported higher rates of exposure, vulnerable respondents were more likely to experience damages.

There was a slightly larger percentage gap between the vulnerable (18.5%) and non-vulnerable (15.8%) respondents when it came to lost wages, compared to the gap between those with HCDVs (1.8%). In contrast, we saw comparable results for those respondents with HCDVs with some slight differences (see Figure 3.3). First, about 2% more non-vulnerable respondents said they suffered from health problems due to natural disasters compared to the vulnerable population. Second, Texans who did not have MSLVs were slightly more likely to suffer damages to their property (excluding buildings) (34%) compared to vulnerable respondents (30.7%).

Figure 3.6: Affected by natural disasters in the past 20 years by the number of Minority Status & Language Vulnerability conditions

Chapter 4: Preparedness

In this chapter, we discuss the precautionary measures respondents used to mitigate the impact of severe storms or natural disasters. These measures included procuring and stockpiling supplies, and learning evacuation plans, among other types of preparations.

4.1 Types of preparation

Respondents were asked if they or someone in their household followed certain steps to prepare for the 2021 hurricane season: nearly one-third of the respondents (31.3%) reported that they did not prepare (Figure 4.1). Over two-fifths of respondents (44.8%) stockpiled food and other supplies, 28.3% used alternative power supplies, and 21.3% subscribed to local emergency notifications. While one-fifth (21.0%) of respondents gathered information about the evacuation plan for their areas, only 10.6% coordinated with their neighbors.

Figure 4.1: Did you or somebody in your household do any of the following in preparation for the 2021 Hurricane Season?

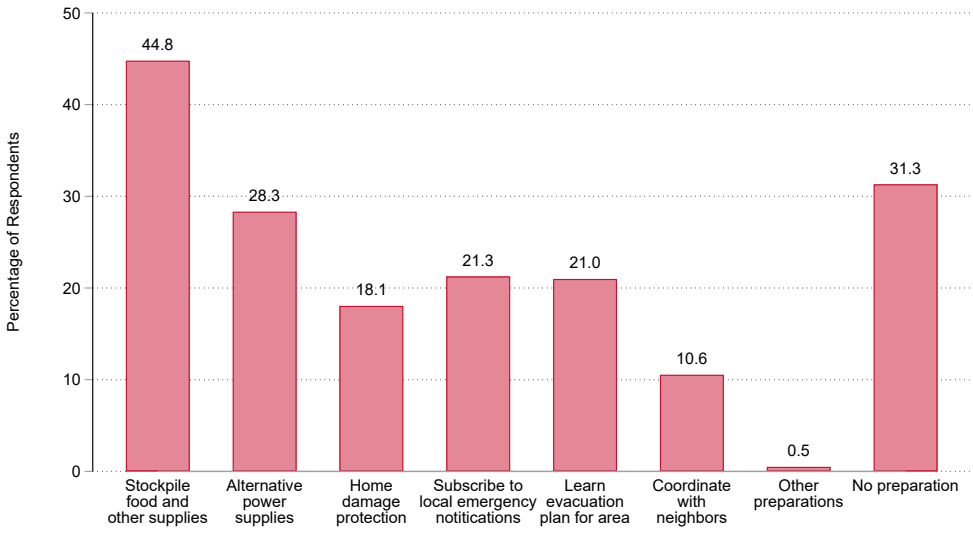
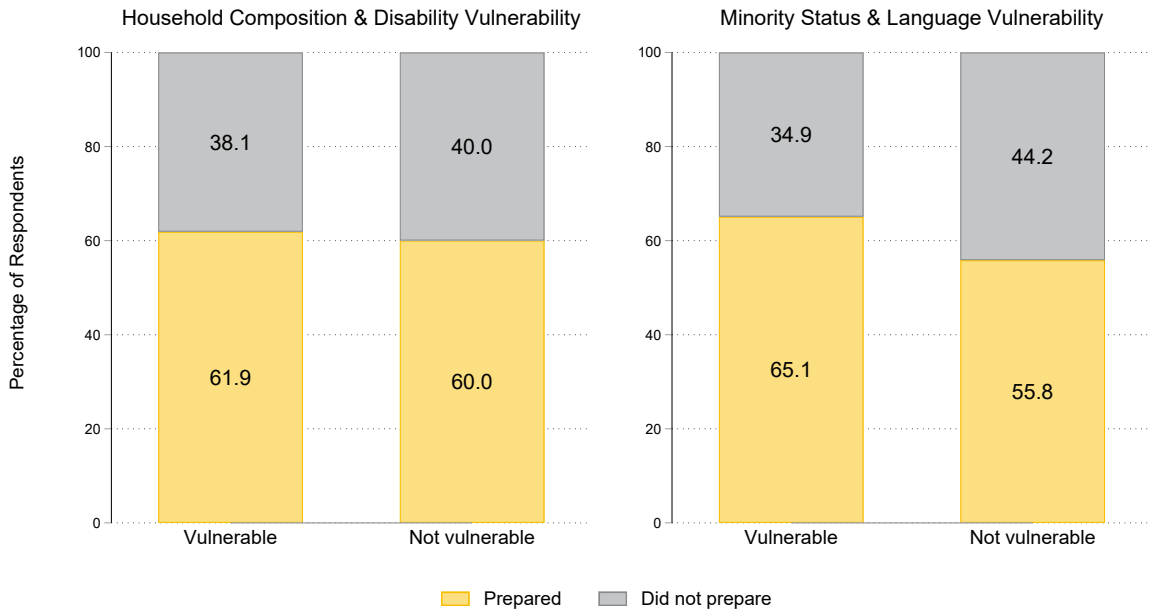


Figure 4.2 specifically looked at the Texas vulnerability status of respondents' preparedness for natural disasters. We found that, regardless of the Household Composition & Disability Vulnerability (HCDV),

respondents claimed to have similar preparation. In contrast, the percentage of respondents prepared for hurricane season was higher for those vulnerable in terms of Minority Status & Language Vulnerability (MSLV) than for those not vulnerable.

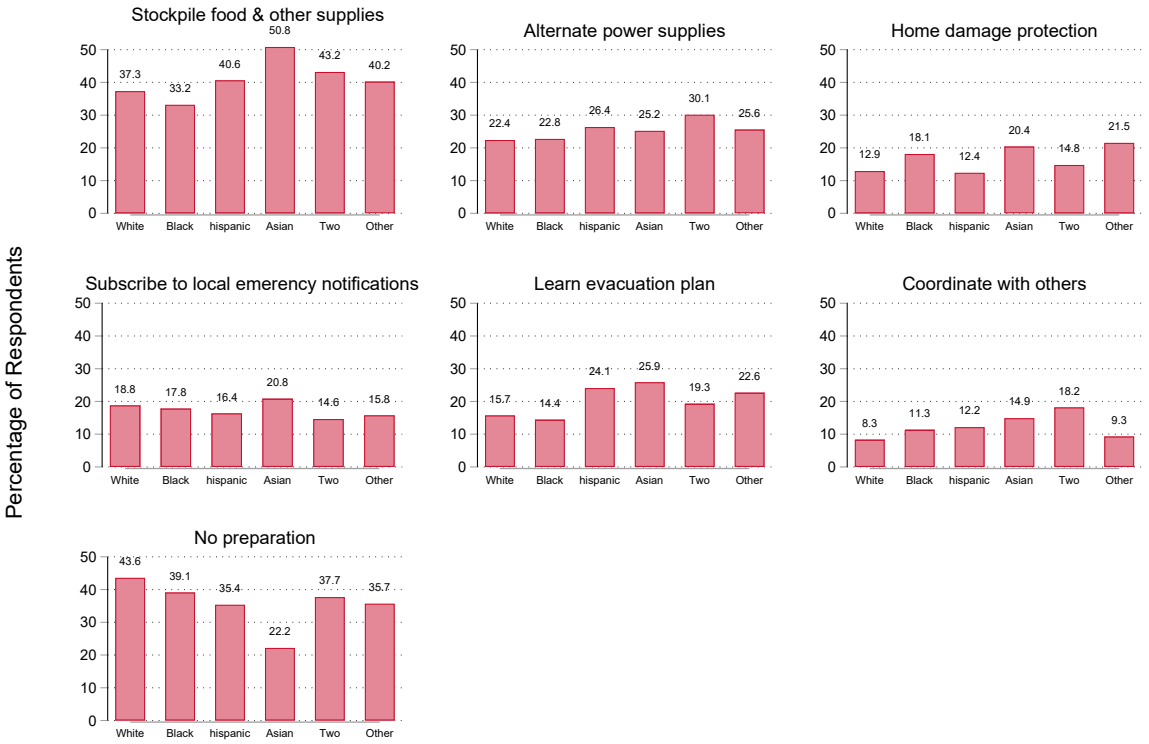
Figure 4.2: Did you or somebody in your household do any of the following in preparation for the 2021 hurricane season?



Next, we looked at differences in preparedness for the 2021 hurricane season across racial and ethnic groups.It is relevant to understand how those with MSLV prepare or lack preparation, because compare to those not vulnerable, more vulnerable to MSLV reported being more affected by natural disasters (See Chapter **??** (Figure 3.6). In terms of specific measures taken, Asians (50.8%), two or more races (43.2%), and Hispanics (40.6%) had the highest percentage of respondents who reported stockpiling food and other supplies compared to other races. Similarly, a high percentage of Hispanics (25.4%) and two or more races (30.1%) reported getting alternate power supplies (Figure 4.3).[18] White (43.6%) and Black (39.1%) respondents, on the other hand, were the racial groups that had the highest percentage of respondents who did not prepare. A high percentage of whites stated they had subscribed to local emergency notifications (18.8%). In terms of home damage protection, Other (21.5%), Asian (20.4%), and Black (18.2%) were the groups that prepared the most while Hispanic (12.4%) and white (12.9%) prepared the least.

[18]Values excluded the category "Other preparations" due to low response rates.

Figure 4.3: Did you or somebody in your household do any of the following in preparation for the 2021 Hurricane Season?



Chapter 5: Adaptive capacity

In this chapter, we examine the adaptive capacity of Texans in the aftermath of natural disasters. We define adaptive capacity as the extent to which households could generate coping strategies to recover from natural disasters and adjust in the long term.[19] We examine respondents' access to insurance, government aid, and other assistance that allowed households to cope with natural disasters and recover to pre-disaster conditions. Additionally, we compare vulnerable and non-vulnerable households regarding recovery and resiliency for severe storms, beginning with Hurricane Harvey (2017) to the most recent Winter Storm Uri (2021).

5.1 Access to insurance

Overall, 84.6% of survey respondents indicated that they carried some type of insurance. Figure 5.1 shows the type of insurance respondents indicated they purchased.[20] Two-thirds of respondents indicated that they possessed health insurance (66.1%). From the respondents who owned a home, 65.7% had homeowner's insurance; for respondents who rented, 28.3% reported having renter's insurance. Out of the car owners, 75.1% said they carried car insurance. In addition to these types of insurance, 14.3% of the respondents reported having flood insurance among all Texans in the survey; however, 25.6% of those living in the Greater Houston area reported having flood insurance.

[19]For further analysis on the adaptive capacity definition see: Cutter, Susan L., Lindsey Barnes, Melissa Berry, Christopher Burton, Elijah Evans, Eric Tate, and Jennifer Webb. 2008. "A place-based model for understanding community resilience to natural disasters." *Global Environmental Change*, 18(4), 598-606. https://www.sciencedirect.com/science/article/abs/pii/S0959378008000666

[20]Only respondents who indicated they rented their home or apartment were considered for renter's insurance. The same rule was applied to homeowners for homeowner's insurance and respondents who said they had at least one vehicle for car insurance.

Figure 5.1: What kind of insurance do you have?

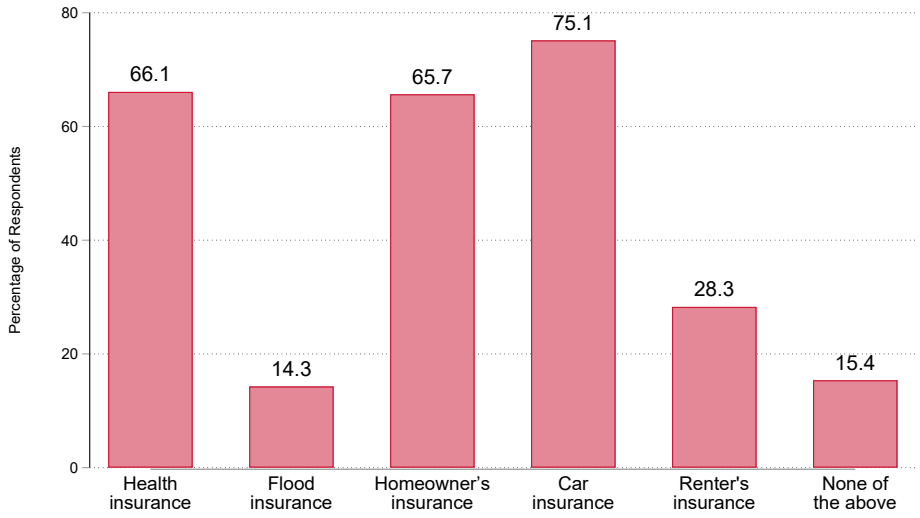


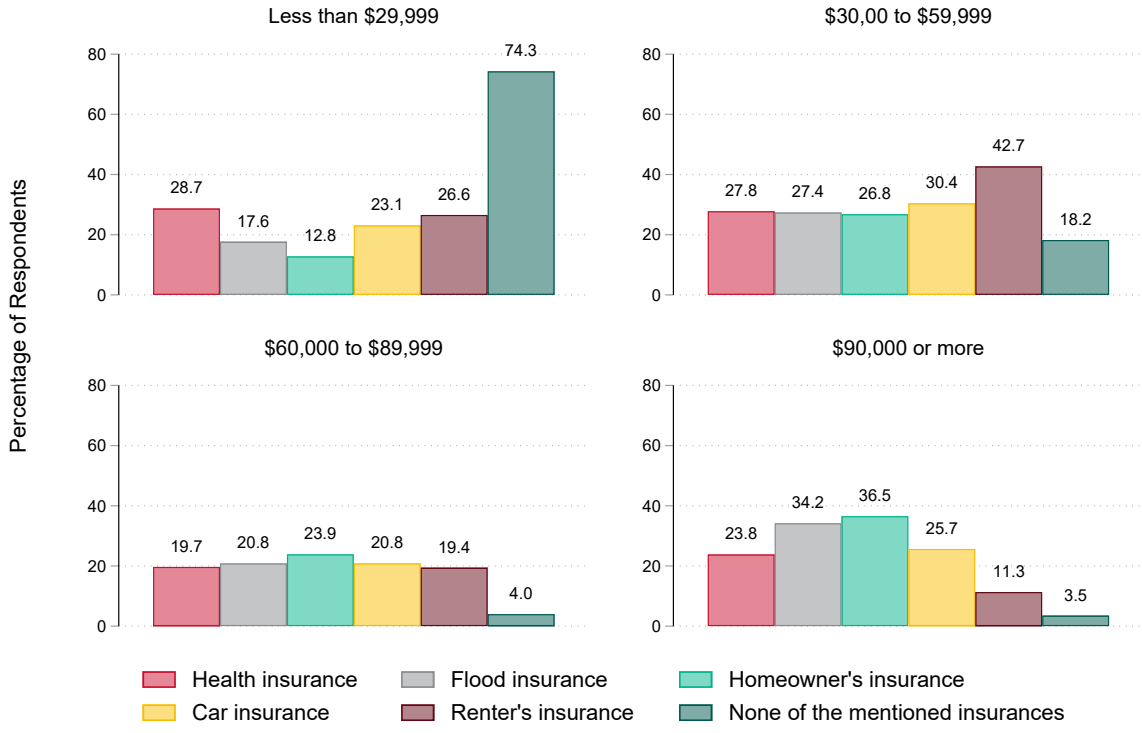
Figure 5.2 illustrated the vulnerability status of respondents with or without any type of insurance (excluding car insurance). In terms of Household Composition & Disability Vulnerability (HCDV), we found almost an even distribution of insurance attainment between that those that were vulnerable (82.5%) and those that were not vulnerable (82.7%). However, in terms of Minority Status & Language Vulnerability (MSLV), we found a larger difference between vulnerable and non-vulnerable respondents. Those who were vulnerable in terms of MSLVs were 12.3% less likely to be insured than those who were not vulnerable.

Figure 5.2: Insured and not insured by vulnerability type

To better understand the results shown in Figure 5.2, we explored how insurance ownership was related to income in Figure 5.3.[21] Of those respondents in the lower income bracket (earning less than $29,000), about 74.3% reported not having any of the listed insurances. Nearly a third of the respondents in this income group reported having health insurance (28.7%), while a very low percentage had flood (17.6%) and homeowner's insurance (12.8%). In contrast, the higher income group reported higher percentages of flood (34.2%) and homeowner's insurance (36.5%). Figure 5.3 also showed that, on average, as income increased, a smaller percentage of respondents reported not having any type of insurance, and having renter's, car, and health insurance. As income increased, more respondents also reported having homeowner's and flood insurance.

[21] Ibid. fn. 20

Figure 5.3: Income group by type of insurance

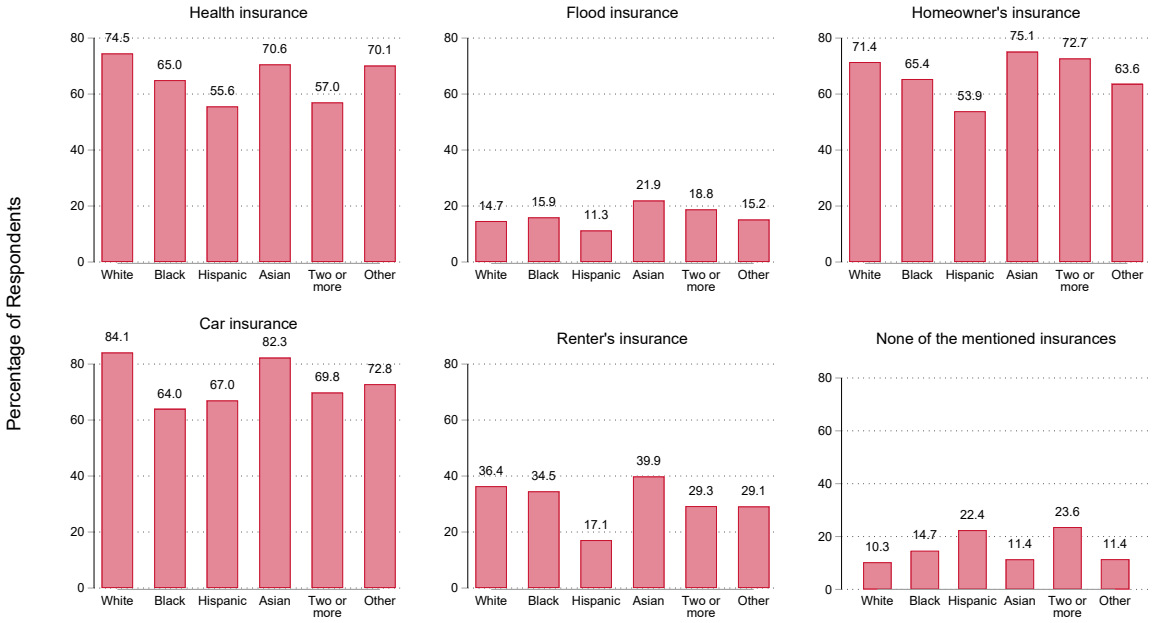


We also looked at the relationship between race and ethnicity and insurance attainment in Figure 5.4.[22] We found that the three types of insurance that a majority of respondents had were health, homeowner's, and car insurance. In comparison, we found that, on average, and flood insurance had the lowest percentages of insured respondents across all of the race/ethnicity groups. For example, white respondents had the largest percentage of respondents with health insurance (74.5%) and car insurance (84.1%). We also found that non-white respondents–especially biracial and other races (23.6%), Hispanics (22.4%), and Blacks (14.7%)–were more likely to not have any type of listed insurance than white respondents (10.3%).

Across the different types of property insurance listed–flood, homeowner, car, and renter–Asians had some of the highest percentages of insured respondents while Hispanics had some of the lowest percentages. For example, we found that three-quarters of Asian homeowners (75.1%) but slightly more than half of Hispanic homeowners (53.9%) reported having homeowner's insurance. Similarly, the percentage of Asian renters who had renter's insurance (39.9%) was more than twice the percentage of Hispanic renters that had renter's insurance (17.1%). Lastly, while slightly over one-tenth of Asian respondents (11.4%) reported not having any of the listed types of insurance, over two-fifths of Hispanic respondents reported not having any of the listed types of insurance.

[22] Ibid. fn. 20

Figure 5.4: Percentage of insured respondents by race and ethnicity for each type of insurance



5.2 Recovery

We asked respondents about their current recovery status after each disaster in which they sustained some type of damage. Table 5.1 shows respondents' household recovery status after being affected by each natural disaster in the past 20 years. Overall, the majority of respondents had either completely or mostly recovered. Still, the largest percentage of respondents who said they had not recovered were those affected by the Texas fires of 2018 (6.4%) and those who said they had been affected by other storms (6.7%). Although many of the respondents were affected by Winter Storm Uri and Hurricane Harvey, most had recovered compared to other disasters. Moreover, nearly five years after Hurricane Harvey made landfall, 46% of respondents affected by the storm had not completely recovered.

Table 5.1: Household recovery after natural disasters

	Completely recovered		Mostly recovered		Recovered about half-way		Recovered only a little		Not recovered at all	
	No.	%	No.	%	No.	%	No.	%	No.	%
Hurricane Rita (Sept. 2005)	397	59.6	138	20.7	75	11.2	41	6.1	16	2.4
Hurricane Ike (Sept. 2008)	426	60.0	160	22.6	63	8.9	49	6.9	11	1.6
Memorial Day flood (May 2015)	241	51.4	121	25.7	58	12.4	34	7.2	15	3.3
Tax Day flood (Apr. 2016)	200	46.6	105	24.4	79	18.4	36	8.3	10	2.3
Hurricane Harvey (Aug. 2017)	490	54.0	212	23.3	112	12.3	69	7.6	25	2.8
Texas fires of 2018	115	38.0	76	25.3	48	16.1	43	14.2	19	6.4
Severe storms and flooding 2018	325	52.7	153	24.7	93	15.0	35	5.6	12	1.9
Severe storms and flooding 2019	299	50.2	143	24.0	90	15.2	46	7.8	17	2.8
Tropical Storm Imelda (Sept. 2019)	163	41.8	99	25.4	68	17.4	47	12.1	13	3.3
Hurricane Laura (Aug. 2020)	142	39.9	90	25.3	71	20.0	36	10.2	16	4.6
Winter Storm Uri (Feb. 2021)	681	49.0	413	29.7	155	11.2	86	6.2	53	3.8
Other storms	140	38.2	90	24.5	80	21.8	32	8.8	25	6.7

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Figure 5.5 shows the path to recovery of respondents who were affected by major natural disasters in the past five years, depending on whether or not they had homeowner's or renter's insurance.[23] The graph broke down the five natural disasters for which more respondents reported being affected. We found that, among people with no insurance that were affected by disasters, the highest percentage that had not recovered at all come from Winter Storm Uri (9%) and Tropical Storm Imelda (7.5%) compared to the other natural disasters. The graph also showed the positive relationship between having insurance and having recovered, entirely or mostly, from most natural disasters. The slowest path to recovery of those respondents that were insured was observed for Winter Storm Uri (2.8% not recovered at all) and Hurricane Harvey (2.6% not recovered at all) compared to all the other disasters. These findings were reasonable, given that they were the most recent and major disasters.

[23]We chose homeowner's and renter's insurance because damage to property was the most prevalent.

Figure 5.5: Recovery status of respondents with or without Homeowner's or Renter's insurance that were affected by major natural disasters in past 5 years

In Figures 5.6 and 5.7, we looked at the differences among vulnerable and non-vulnerable respondents when it came to recovery after major natural disasters since 2017.[24,25] Of those respondents who said they had been affected by each type of natural disaster or severe storm, we asked them how far along they were in the recovery process from the damages sustained. When it came to complete recovery, overall, we found that the proportion of vulnerable populations in each vulnerability category lagged behind those respondents who were not vulnerable.

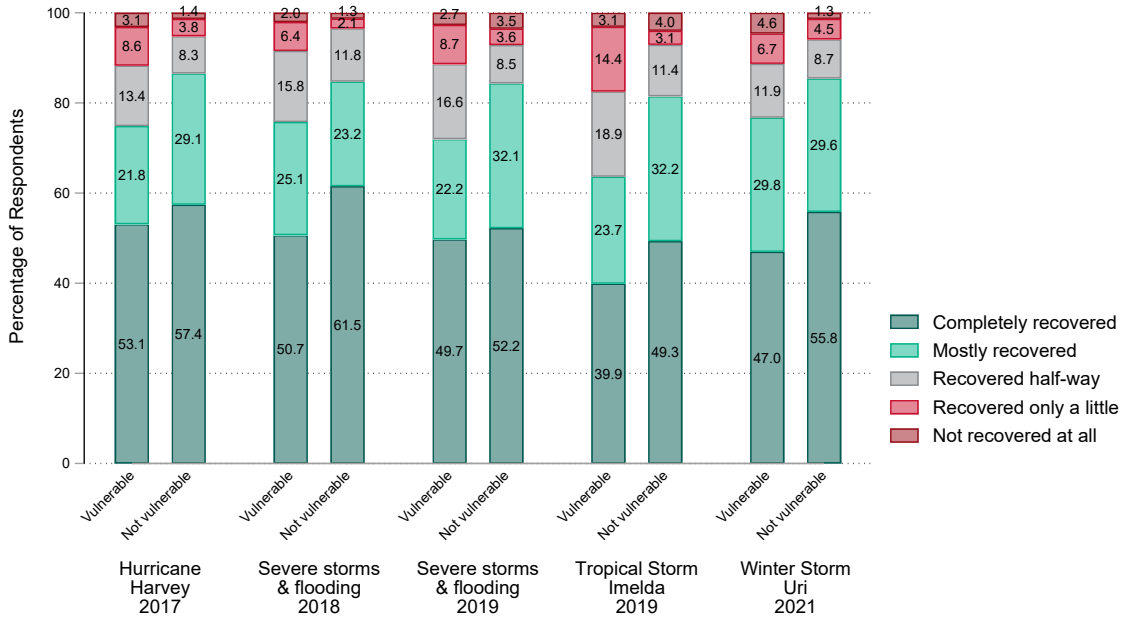
Figure 5.6 demonstrated the recovery status of respondents with or without HCDV. Across all five major natural disasters, the percentage of completely recovered was higher in respondents without HCDV. The percentage of completely recovered, non-vulnerable respondents was highest after the severe storms & flooding in 2018 (61.5%). A majority of non-vulnerable respondents affected by Hurricane Harvey (57.4%), severe storms & flooding in 2019 (52.2%), and Winter Storm Uri (55.8%) had completely recovered. Conversely, respondents affected by Tropical Storm Imelda had the slowest recovery: 7.1% of non-vulnerable respondents and 17.5% of vulnerable respondents had recovered only a little or not at all. The percentage of completely recovered, vulnerable respondents, on the other hand, was highest after Hurricane Harvey in

[24]We looked at the top five storms beginning with Hurricane Harvey, based on the highest percentage of respondents who said they were affected by each of those storms. For reference see Tables A16, A17, A18, A19, A20, A21, and A22 in Appendix B.

[25]For the number of respondents in each category, please see Tables A39 through A87 in Appendix B.

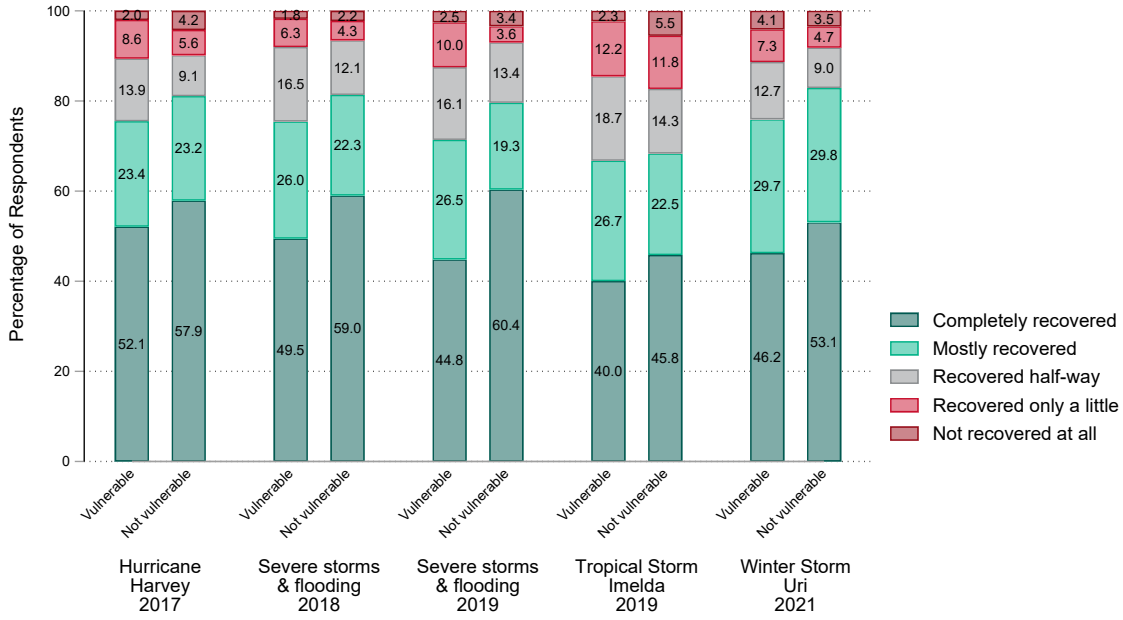
2017 (53.1%), followed by severe storms & flooding in 2018 (50.7%). Vulnerable respondents affected by Winter Storm Uri were the slowest to recover (4.6% had not recovered at all).

Figure 5.6: Recovery by Household Composition & Disability Vulnerability



Finally, the recovery status of respondents with or without Minority Status & Language Vulnerability (MSLV) was given in Figure 5.7. Once again, the percentage of respondents that had completely recovered was the highest among those who were not classified as MSLV. The percentage of completely recovered, non-vulnerable respondents was highest after severe storms & flooding in 2019 (60.4%), followed by severe storms & flooding in 2018 (59%), and Hurricane Harvey in 2017 (57.9%). The percentage of completely recovered, vulnerable respondents, on the other hand, was highest after Hurricane Harvey in 2017 (52.1%), followed by severe storms & flooding in 2018 (49.5%), and Winter Storm Uri in 2021 (46.2%). Among the slowest to recover were the non-vulnerable and vulnerable respondents affected by Tropical Storm Imelda, who had recovered only a little or not at all (17.3% and 14.5%, respectively).

Figure 5.7: Recovery by Minority Status & Language Vulnerability



We further examined the minority component of the MSLV by looking at the breakdown of race and ethnicity by recent storm recovery (Figure 5.8). Generally, compared to other minority groups, Black respondents had lower percentages of recovery for each of the five recent storms and were also one of the least likely groups to prepare for the 2021 Hurricane Season (Figure 4.3) and obtain insurance (Figure 5.4). Conversely, Asian respondents had much lower percentages of preparation–via hurricane preparation and obtaining insurance. Still, they had highest percentages of complete recovery compared to other minority groups for Hurricane Harvey (64.9%) and the severe storms & flooding in 2018 (67.6%) and 2019 (53.1%) (Figure 5.8).[26]

While over 50% of Hispanics reported having health, car, and homeowner's insurance, very low rates of Hispanic respondents reported having flood and renter's insurance (Figure 5.4), which in most cases helped mitigate the effects of natural hazards. Hispanic respondents prepared mostly by learning evacuation plans, coordinating with others, and having alternate power supplies on hand (Figure 4.3). Despite Hispanics having low percentages of preparation measures, Hispanic respondents had great adaptive capacity after being affected by these disasters. Overall, our Hispanic respondents had higher percentages of completely, mostly, or half-way recovered compared to the other minority groups, as seen in Figure 5.8.[27]

[26]While the Asian group had higher percentages of recovery, the total number of Asian respondents affected by these storms was 110.

[27]Ibid. fn. 26

Figure 5.8: Recovery by race and ethnicity

Furthermore, we also saw that vulnerable minorities 5.8 were more likely to rent (48.1%) than to own (45.5%) their current residences (Figure 5.9). On the other hand, white respondents who speak English fluently were more likely to be homeowners (65.4%). This outcome was relevant to explaining the different patterns in preparation for natural disasters and damage to their residences for those with MSLVs compared to those who were not vulnerable. Similarly, we also found that, while damage to property and residence were among the most prevalent compared to other types of damages, most respondents had homeowner's insurance but not renter's insurance, which in many cases covered damages by natural disasters.

Figure 5.9: Tenancy by Minority Status & Language Vulnerability

5.3 Federal and state government assistance

After a federal declaration of disaster, the Federal Emergency Management Agency (FEMA) could offer various assistance programs to individuals and families, government, and non-profits. These grants would provide resources for emergency clean-up, restoration and mitigation, protect individuals and other entities from future natural disasters, and other forms of assistance.[28] Additionally, the Texas General Land Office (GLO) was charged with creating the State Community Development Block Grant Disaster Recovery Program (CDBG-DR) Action Plan in accordance with U.S. Department of Housing and Urban Development (HUD) guidelines.[29] Furthermore, the Texas GLO could administer congressional funds from the HUD for housing and infrastructure via local and state programs after disasters such as Hurricane Harvey.[30] In this section, we explored how vulnerability status of respondents shaped their access to these types of assistance. We focused on FEMA and GLO requests after major disasters in the past 5 years.

FEMA assistance

FEMA's individual and household assistance program could help households and individuals who were affected by a natural disaster take care of expenses and serious needs that were not covered by insurance

[28] See the FEMA Assistance after Disasters website and FEMA Assistance after Disaster Fact Sheet
[29] See the Texas GLO Action Plan
[30] See the GLO Hurricane Harvey Recovery

or other forms of assistance.[31] Part of this type of assistance included housing assistance, which covered rental assistance, home repair, and home replacement, among other forms of aid.[32] In the survey, we asked respondents whether they or a member of their household requested FEMA assistance to rebuild, repair, or modify their affected property. Figure 5.10 displayed the distribution of respondents who requested FEMA assistance by various natural disasters.

The highest percentages of FEMA assistance requests belonged to the Tax Day Flood in 2016 (56.9%), Texas fires in 2018 (56%), Hurricane Laura in 2020 (55.6%), and Tropical Storm Imelda in 2019 (54.8%). As for the damage resulting from Hurricane Harvey in 2017, half of the respondents requested FEMA assistance. The percentages of FEMA assistance requests were slightly lower for the Memorial Day flood in 2015 (46.5%), Hurricane Rita in 2005 (43.4%), and Hurricane Ike in 2008 (42.4%). Finally, less than one-third of the respondents (28.1%) requested FEMA assistance after Winter Storm Uri in 2021.

Figure 5.10: To rebuild, repair, or modify your property after the natural disaster, did you or a member of your household request FEMA assistance?

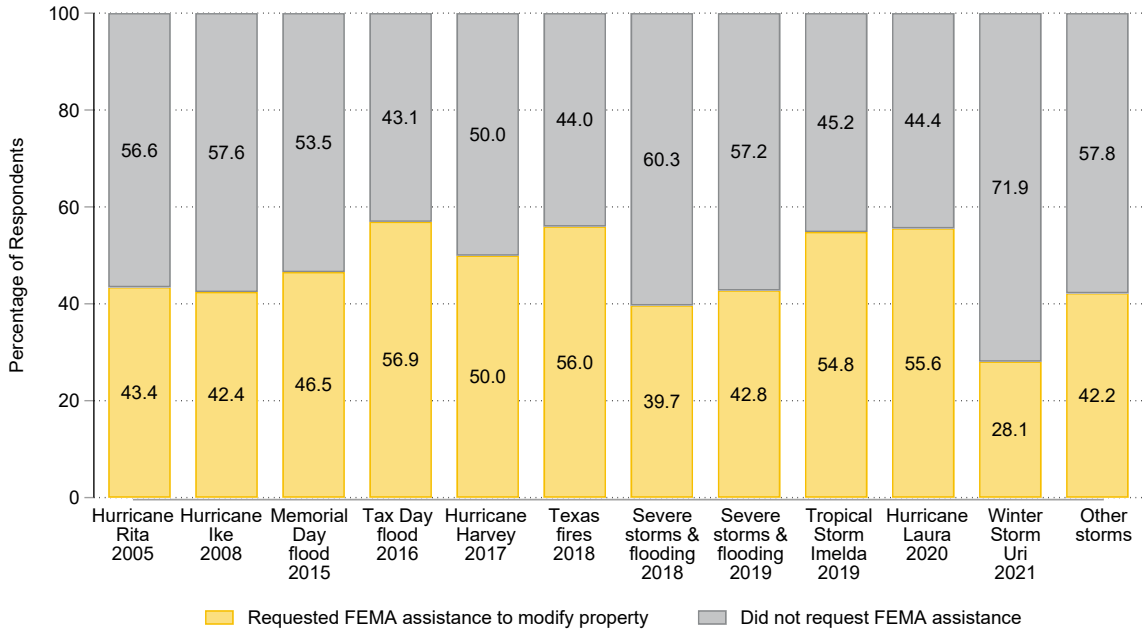


Figure 5.11 showed the percentages of FEMA assistance requests by the respondents' vulnerability types for the most recent storms that affected respondents beginning with Hurricane Harvey (2017).[33] We again looked at the two vulnerabilities that had most affected Texas: Household Composition & Disability Vulnerability (HCDV) and Minority Status & Language Vulnerability (MSLV). Generally, the survey showed that, when it came to HCDV, respondents in the vulnerable group asked for FEMA assistance for property

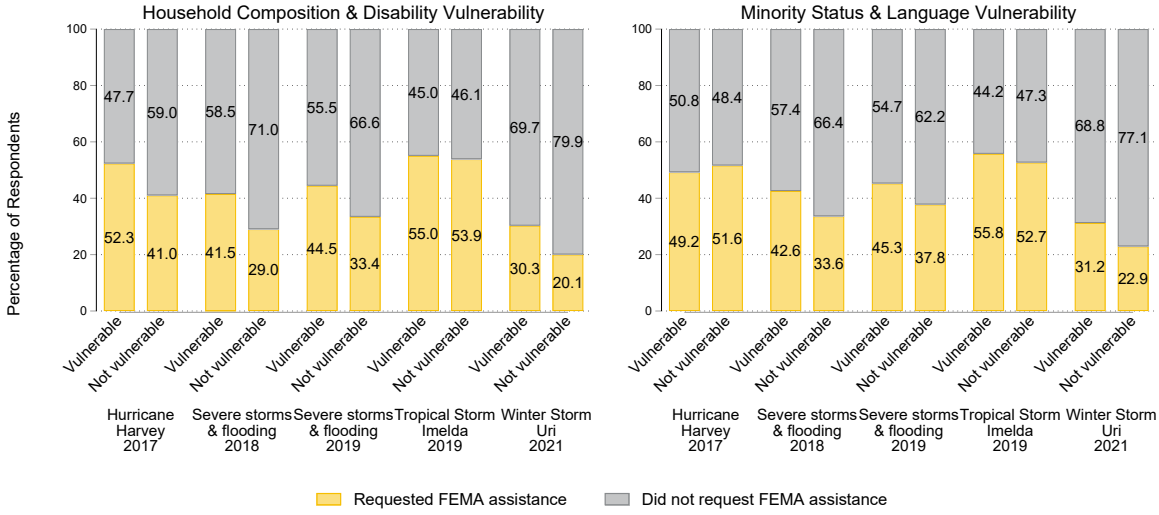
[31] For more information on the types of needs and assistance FEMA provides, see FEMA's Help after a Disaster brochure.

[32] Ibid. fn. 31

[33] Ibid. fn. 24

repairs in slightly higher proportions than those who were not vulnerable. Of those respondents who had HCDV, a majority of those affected by Hurricane Harvey and Tropical Storm Imelda requested FEMA assistance the most (52.3% and 55%, respectively) and Winter Storm Uri the least (30.3%). Similarly, among those who did not have HCDV, those who were affected by Tropical Storm Imelda (53.9%) asked for FEMA assistance the most, and those who were affected by Winter Storm Uri (20.1%) asked for FEMA assistance the least for property repairs.

Figure 5.11: Requested FEMA assistance to modify property by recent natural disasters and vulnerability



Regarding MSLV, we saw similar patterns of FEMA requests for property repairs for the most recent natural disasters affecting Texans (Figure 5.11). Over half of respondents affected by Tropical Storm Imelda requested FEMA assistance for property repairs (55.8% who were vulnerable and 52.7% of those who were not vulnerable). Like those in the HCDV, respondents who were affected by Winter Storm Uri and had MSLV asked for FEMA assistance the least (31.2%). Overall, when it came to the MSLV group, there was a larger proportion of vulnerable respondents who requested FEMA assistance compared to those who were not vulnerable. However, slightly more than half of the respondents affected by Hurricane Harvey and did not have MSLV asked for FEMA assistance (51.6%). In comparison, out of those affected by Hurricane Harvey who did have an MSLV, 49.2% requested FEMA assistance.

GLO assistance

The Texas General Land Office (GLO) also administered funds to help Texans recover from natural disasters. We asked the respondents whether they or a household member requested GLO assistance. As can be seen in Figure 5.12, the highest percentages of GLO assistance requests belonged to those who were affected by Texas fires in 2018 (56.1%), Hurricane Laura in 2020 (47.7%), the Tax Day flood in 2016 (43.9%), and Tropical Storm Imelda in 2019 (43.5%). The percentages of GLO assistance requests were much lower for the

Memorial Day flood in 2015 (34%), severe storms & flooding in 2019 (32.4%) and 2018 (28.6%), Hurricane Rita in 2005 (29%), Hurricane Harvey in 2017 (27.8%), and Hurricane Ike in 2008 (26.3%). Finally, less than 20% of the respondents requested GLO assistance after Winter Storm Uri in 2021 (16.1%).

Figure 5.12: To rebuild, repair, or modify your property after a natural disaster, did you or a member of your household request Texas General Land Office (GLO) assistance?

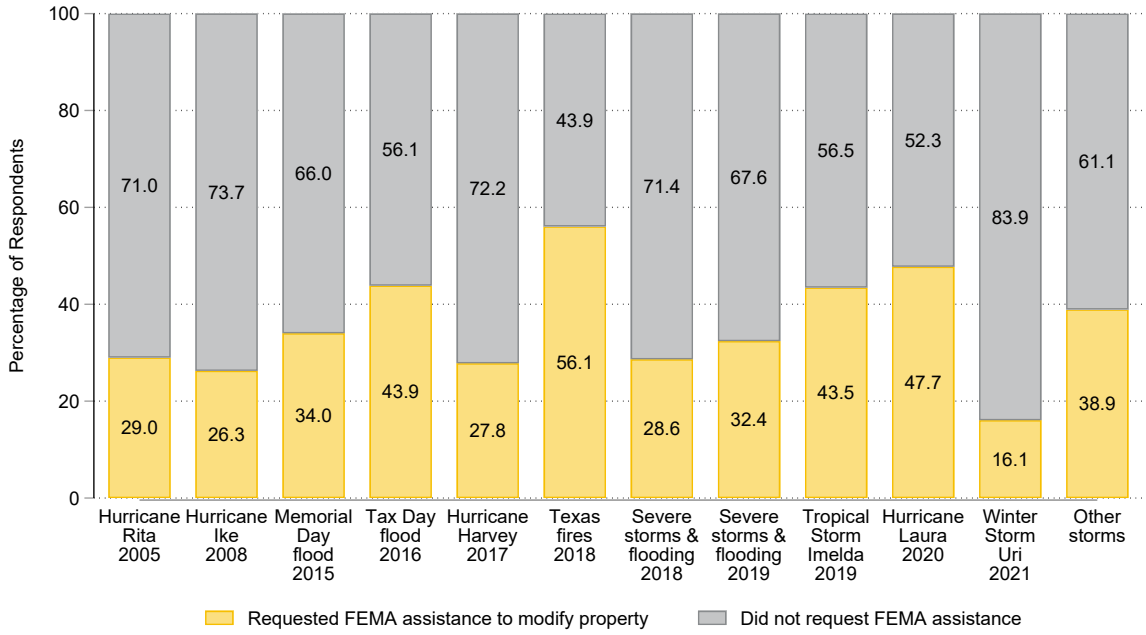
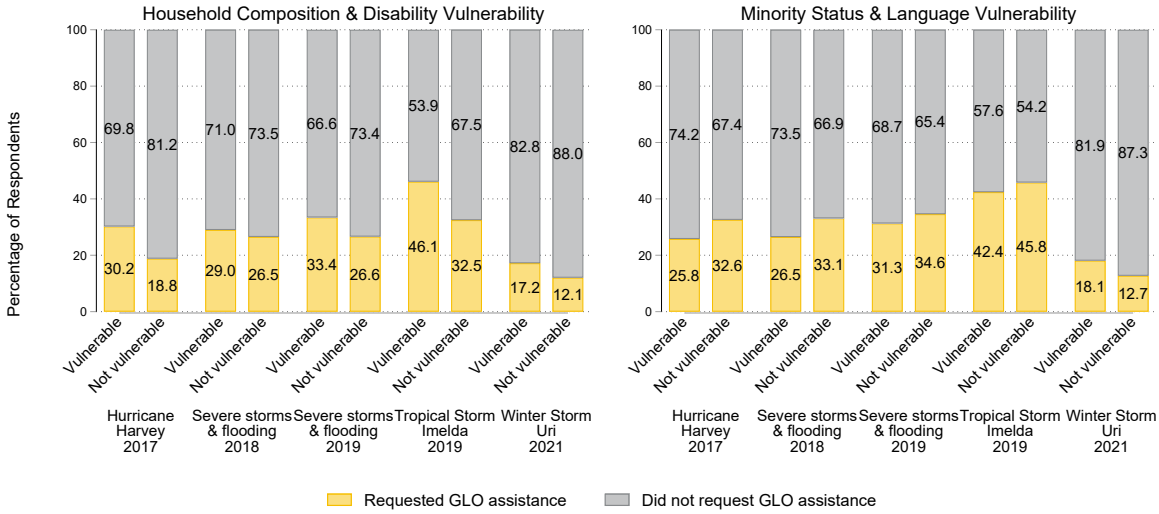


Figure 5.13 displayed the percentages of GLO assistance requested by the respondents' vulnerability types for the most recent natural disasters. We first looked at respondents with HCDVs. Vulnerable populations had higher percentages of assistance requests than non-vulnerable respondents, though the percentages of requests were relatively low across disasters and FEMA requests. The highest percentage of GLO requests from vulnerable and non-vulnerable respondents followed Tropical Storm Imelda (46.1% and 32.5%, respectively). Only about a third (33.4%) of vulnerable respondents affected by the severe storms & flooding in 2019 requested GLO assistance, while less than a third of the vulnerable population affected by Hurricane Harvey (30.2%), severe storms & flooding in 2018 (29%), and Winter Storm Uri (17.2%) requested GLO assistance. The non-vulnerable respondents had much lower percentages of GLO requests ranging from the 32.5% (Tropical Storm Imelda) to 12.1% (Winter Storm Uri).

Figure 5.13: Requested GLO assistance to modify property by recent natural disasters and vulnerability



Next, we looked at GLO assistance requests by MSLV (Figure 5.13). Contrary to the HCDV group, the survey found that non-vulnerable respondents had higher percentages of requests compared to vulnerable respondents for most disasters. Vulnerable (42.4%) and non-vulnerable (45.8%) respondents affected by Tropical Storm Imelda had the highest percentages of GLO requests compared to the other disasters. Slightly more than a quarter of vulnerable respondents affected by Hurricane Harvey (25.8%) and severe storms & flooding in 2018 (26.5%) asked for assistance compared to nearly a third of the non-vulnerable respondents for those disasters (32.6% and 33.1%, respectively). Like Figure 5.11, respondents affected by Winter Storm Uri had the lowest percentages among vulnerable (18.1%) and non-vulnerable (12.7%) respondents.

Chapter 6: Harvey recovery in the Greater Houston area: Five years later

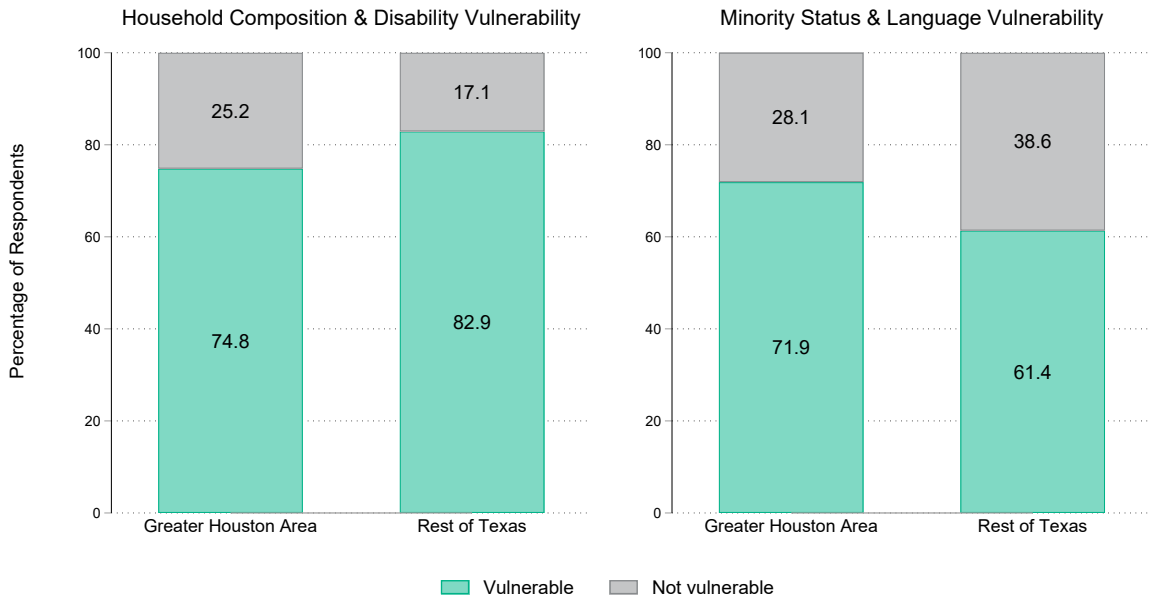
This final chapter explores the post-Hurricane Harvey recovery nearly five years after it made landfall along the Texas Gulf Coast. We discuss the recovery stages and vulnerability of residents of the Greater Houston area compared to those in the rest of the state.[34]

6.1 Exposure to floods and vulnerability in the Greater Houston area

Figure 6.1 showed the percentages of vulnerable and not vulnerable–in terms of Household Composition & Disability Vulnerability (HCDV) or Minority Status & Language Vulnerability (MSLV)–respondents that were affected by Hurricane Harvey, comparing the respondents in the Greater Houston Area with those in the rest of Texas. As seen in the figure below, Houstonians with HCDVs were only marginally (by about 3%) more affected by Hurricane Harvey than those with MSLVs. However, the difference was larger when respondents from other regions of Texas with HCDVs were compared to those with MSLVs. It seemed that, in the rest of Texas, Hurricane Harvey affected the respondents with HCDVs 21.5% more than those with MSLVs. Looking from another perspective, Houstonians with HCDVs were around 10 percent less affected by Hurricane Harvey than the rest of Texas. In comparison, Houstonians with MSLVs were affected 10% more than the respondents with MSLVs living in other regions of Texas.

[34]We look at zip codes for respondents from the Houston MSA, which included the counties of Austin, Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller. As a note, the survey did not have any respondents from Austin or Chambers Counties.

Figure 6.1: Affected by Hurricane Harvey by type of vulnerability



As shown in Figure 2.4, Hurricane Harvey affected a large proportion of Texans in every region, especially the coastline. Houston, whose flood areas extended all over the city (see Figure 6.2), was hit hard by this unprecedented hurricane. In Figures 6.2 and 6.3, we looked at the areas in Houston where most respondents were vulnerable because of Minority Status & Language Vulnerability (MSLV) or Household Composition & Disability Vulnerability (HCDV). Regarding MSLV, we observed that a high percentage (over 50%) of vulnerable respondents were concentrated within the Harris County boundary and the southeast area of Greater Houston (Figure 6.2). On the other hand, regarding HCDV, we saw the highest percentage of respondents not only in overlapping areas that were also highly vulnerable to MSLV, but also surrounding the Harris County limits, as seen in Figure 6.3.

Figure 6.2: Minority Status & Language Vulnerability by ZIP code

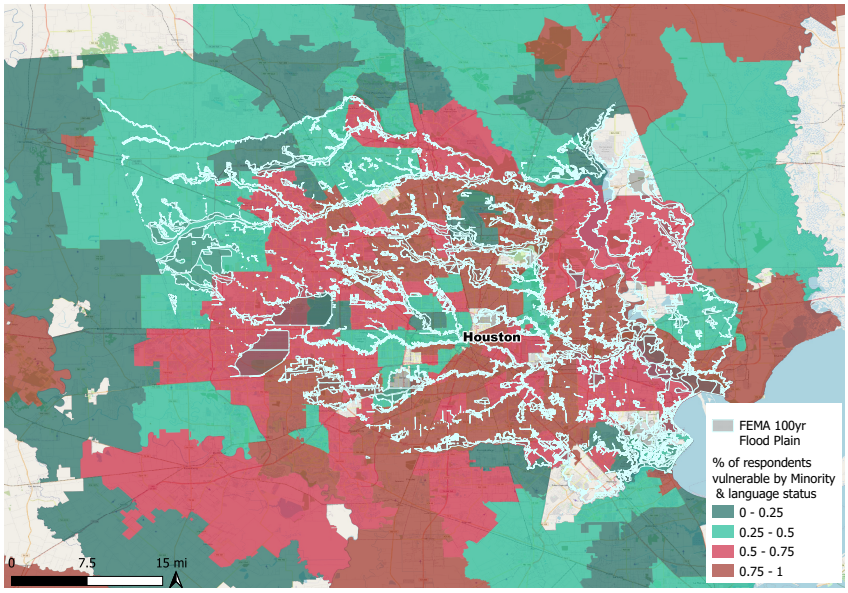
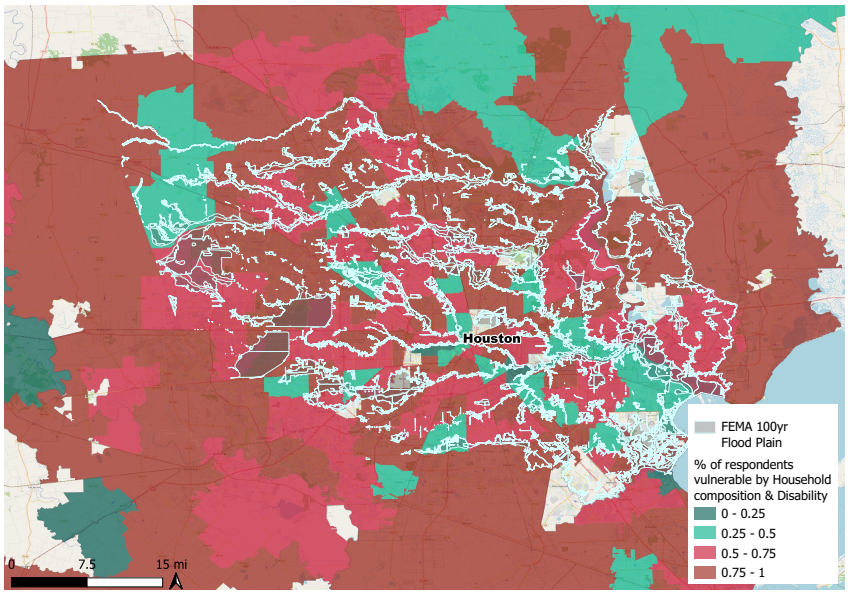


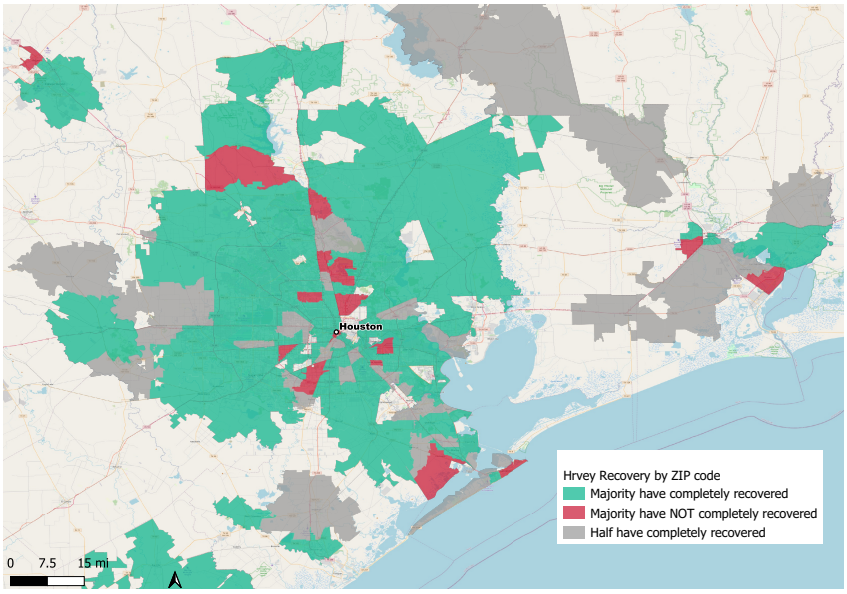
Figure 6.3: Household Composition & Disability Vulnerability by ZIP code



6.2 Adaptive capacity after Hurricane Harvey in the Greater Houston area

As shown in Figure 6.4, the majority of respondents in several areas of the Greater Houston area had completely recovered from Hurricane Harvey (teal areas). Few areas remained not fully recovered (red and gray areas), such as those near the coastline and Galveston, where the majority had not completely recovered. In this section, we explored how respondents adapted to life after being affected by Hurricane Harvey. We specifically looked into insurance tenancy as a mechanism to cope with damages.

Figure 6.4: Recovery after Hurricane Harvey by ZIP code



From the public and private point of view, insurance played a key role in the prevention of losses and the recovery process of disasters. As shown in the previous section, we found that 12% of the respondents did not have any type of insurance. However, when we looked at those respondents who were specifically affected by Hurricane Harvey in the Greater Houston area, fewer respondents (10.4%) said they did not have any listed insurance in this wave of the survey (Figure 6.5) compared to all Texans in the survey.[35]

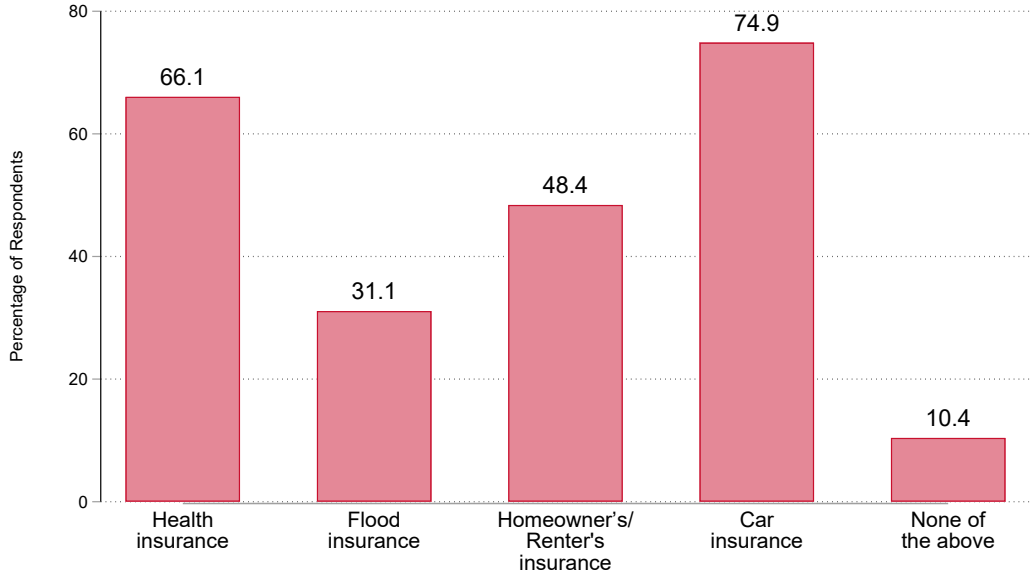
On the other hand, Figure 6.5 shows a majority of respondents in the Greater Houston area affected by Hurricane Harvey said they did have health insurance (66.1%), car insurance (74.9%), and homeowner's or renter's insurance (48.4%).[36] An interesting point to note is that a smaller percentage of respondents that lived in counties in the Greater Houston area said they had homeowner's or renter's insurance (48.4%) and flood insurance (31.1%) in 2022 than they did in 2020 (58% homeowner/renter's insurance and 46.7% flood

[35] In this figure, we combined homeowner's and renter's insurance to compare with the previous wave of the Hurricane Harvey study.

[36] Ibid. fn. 20

insurance).[37] This could be attributed to a few reasons. First, risk perceptions tend to decrease overtime.[38] Second, individuals affected by Hurricane Harvey could have moved from areas that were more flood prone or were opted in for a government buyout and felt like they no longer needed to purchase this type of insurance for their new home. Finally, individuals who were affected by Hurricane Harvey could have rebuilt homes that were higher off of the ground and felt like they no longer needed flood insurance.[39]

Figure 6.5: Insurance attainment of those affected by Hurricane Harvey in the Greater Houston area



Hurricane Harvey directly or indirectly impacted nearly everyone living in Harris County, either because of the flooding or the receding flood waters.[40] Overall, there were more than 47,000 FEMA assistance flood insurance claims totaling close to $3 billion–over $125 billion in total damages–and an estimated 300,000 flooded vehicles.[41] In Figure 6.6, we looked at the relationship between having flood insurance in the Greater Houston area and the two types of vulnerabilities. The survey results indicated that a high percentage of respondents with either type of vulnerability did not have flood insurance. Of the respondents with HCDVs, only slightly more than a quarter (26.3%) said they had flood insurance, and of the respondents with MSLVs, only 21.7% said they had flood insurance. In comparison, a smaller percentage of respondents without HCDVs (23.2%) said that they did not have flood insurance while 34% of those without MSLV had flood insurance.

[37] Ibid. fn. 3, p.11

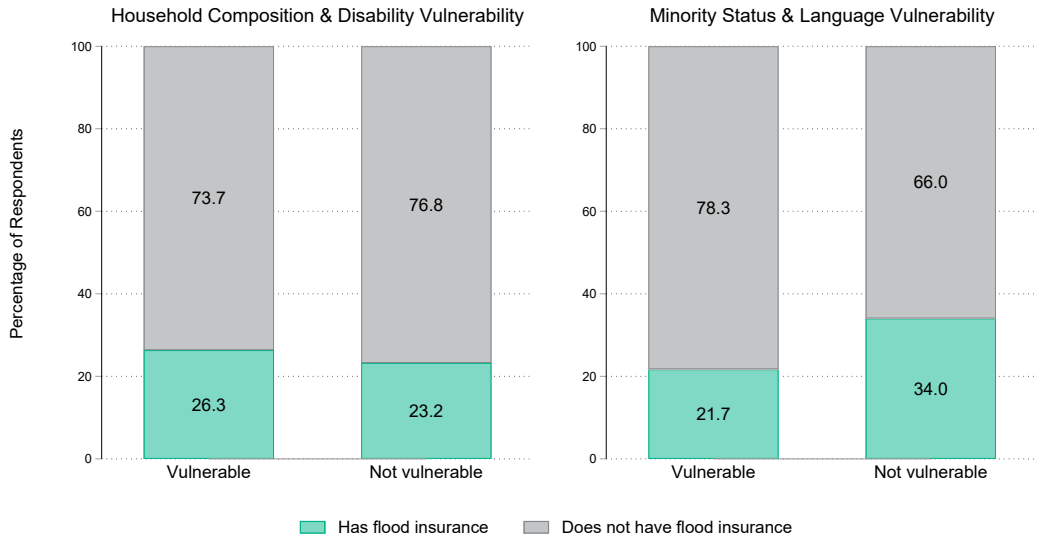
[38] Wachinger, Gisela, Ortwin Renn, Chloe Begg, and Christian Kuhlicke. 2013. "The risk perception paradox—implications for governance and communication of natural hazards." *Risk Analysis*, 33(6): 1049-1065.

[39] Ibid. fn. 2

[40] See the Harris County Flood District's Hurricane Harvey - Storm and Flood Information Report

[41] Ibid. fn. 40

Figure 6.6: Having flood insurance in Greater Houston by type of vulnerability



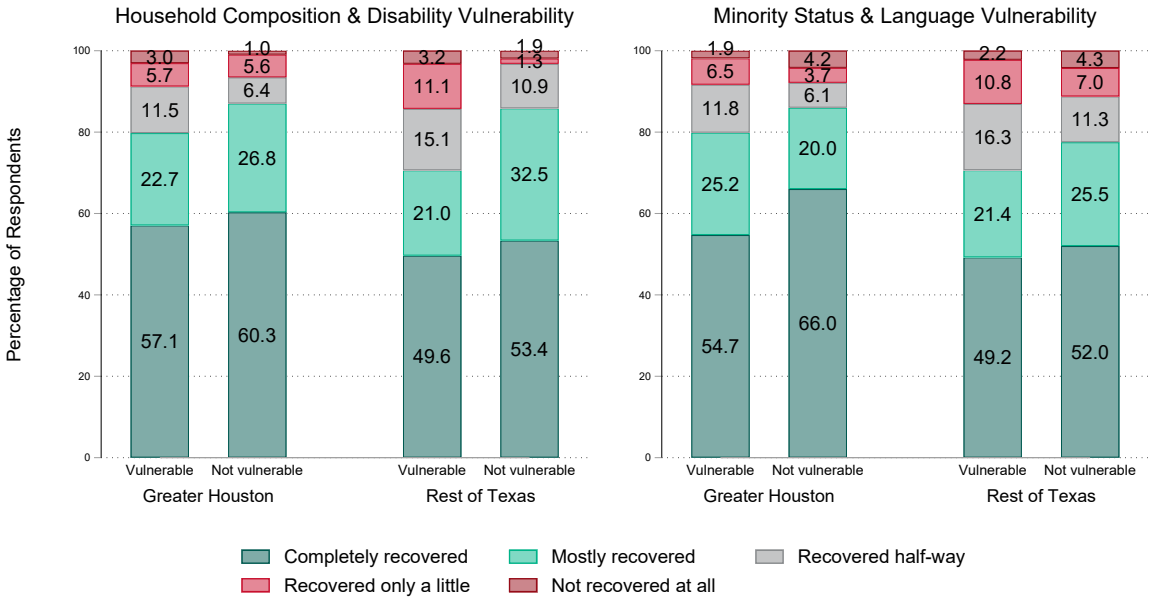
6.3 Hurricane Harvey and recovery in the Greater Houston area

In this section, we explore how respondents across Greater Houston have recovered almost five years after Hurricane Harvey initially made landfall in 2017. First, we look at the recovery statuses of those living in Greater Houston compared to respondents that were affected by Hurricane Harvey in other parts of the state. Then, we look at the differences in the two vulnerabilities among those in Greater Houston affected by Hurricane Harvey by recovery status post-devastation.

Figure 6.7 explored the recovery status from Hurricane Harvey of respondents in Greater Houston and respondents from other parts of Texas. The main takeaway was that vulnerable populations within Greater Houston and the rest of Texas lagged behind non-vulnerable populations for complete recovery. However, for both HCDV and MSLV, respondents in the Greater Houston area had higher percentages of complete recovery among vulnerable populations (57.1% HCDV and 54.7% MSLV) compared to the vulnerable population of respondents who were affected by Hurricane Harvey and lived in other parts of Texas (49.6% HCDV and 49.2% MSLV).[42] About 2% more vulnerable respondents living in Greater Houston with HCDVs recovered only a little or not at all compared to non-vulnerable respondents. Similarly, more vulnerable respondents compared to non-vulnerable respondents with MSLV characteristics recovered only a little or not at all (0.5%). On the other hand, there was a much larger percentage difference (11.1%) between the vulnerable and non-vulnerable respondents who said they recovered only a little or not at all among Texans living outside of the Greater Houston area with HCDVs.

[42] For total observations, see Tables A75 and A88 in the Appendix.

Figure 6.7: Recovery status from Hurricane Harvey by Greater Houston and the rest of Texas



Conclusion

For the last two decades, major natural disasters affected many Texans across the state. While some sectors of the population were able to recover at higher rates after some of the most catastrophic natural disasters, other sectors did not recover at similar rates. Furthermore, even though local officials and policymakers enacted policies and programs to mitigate the effects of natural disasters, vulnerable populations continued to be affected by natural disasters at disproportionate numbers. Enacting policies that mitigated the effects of natural disasters city- or state-wide was an important step to prepare for the future. However, additional policies and procedures that would help mitigate the effects for vulnerable populations and that would assist in the recovery process of vulnerable households need to be implemented to ensure that vulnerable populations could fully recover in the future. With this report, we aimed to identify the differences between vulnerable and non-vulnerable populations—in terms of exposure, preparedness, and adaptive capacities—and provide information to local officials and policymakers that design and plan policies and procedures related to mitigating the effects of natural disasters as well as recovery.

We relied on the CDC's 2018 Social Vulnerability Index (SVI) to frame our analysis of vulnerable populations and the impact of natural disasters. When looking at the major vulnerability in each county in Texas, we found that counties with large cities like Houston, Dallas, and San Antonio had a medium-high vulnerability while their suburban areas had a lower SVI. Out of the four vulnerability dimensions included in the SVI, two dimensions—Household Composition & Disability (HCDV) and Minority Status & Language vulnerabilities (MSLV)—were the major vulnerabilities in counties across Texas, which led us to focus on those populations to frame our analysis.

While the CDC-SVI is widely used for policy making decisions at the local level (e.g COVID vaccines distribution or food banks location), it is a broad measure that does not include specific characteristics of each community. To this extent, this report demonstrates that it is important to analyze vulnerability with caution and to incorporate specific elements within communities that may lead to different levels of vulnerability. For example, we find that for the case of Texas, the ethnoracial group is what determines disaster preparation and not the global minority categorization. This suggest a global categorization of vulnerability based on minority status could be misleading when used to make policies and allocate resources.

Overall, this report provides important findings that could help policymakers make informed decisions to provide the appropriate assistance needed for these communities, especially vulnerable populations, prepare and recover from major natural disasters. We found that even when vulnerable populations prepare for natural disasters, they take longer to fully recover than non-vulnerable populations. Policies that aim to mitigate the effects of natural disasters are not one-size-fits-all; one type of policy will not necessarily have a positive impact on everyone since needs differ across the state. By knowing the major vulnerability and

how these different vulnerabilities can affect people's preparedness, exposure, and recovery, more informed decisions could be made in the future to ensure that vulnerable populations can recover.

One important finding was that the major vulnerability in different counties and regions across Texas differed. We found that the major vulnerability in the counties with the largest cities in Texas — Houston, San Antonio, Dallas, Austin, and El Paso — and most bordering counties was Minority Status & Language Vulnerability. Next, in the counties and areas further away from large cities, we found Household Composition & Disability Vulnerability, as well as Housing Type and Transportation Vulnerability, to be the most prevalent vulnerability.

Next, we looked at the percentages of respondents that were affected by a natural disaster in the last two decades and compared the differences between vulnerable and non-vulnerable populations. Winter Storm Uri and Hurricane Harvey were the two disasters that caused the greatest damage and negative consequences across Texas, and a majority of the respondents that lived in the Houston area were affected by a natural disaster. Among all respondents that were affected by any natural disaster in the last two decades, however, over a majority were vulnerable populations. Specifically, we found that over three-quarters of respondents that were affected by natural disasters were vulnerable because of HCDV. Additionally, over half of respondents that were affected were vulnerable because of MSLV.

In addition to the above findings, we also studied the differences in exposure, preparedness, and adaptive capacity for vulnerable—both HCDV and MSLV—and non-vulnerable populations. A general, yet important, finding was that the effects of vulnerability were not the same for everyone and the type of vulnerability did make a difference in certain areas.

First, we found that respondents with HCDVs and MSLVs did not have similar patterns of exposure to natural disasters. Households with HCDVs were more likely to be affected or exposed to natural disasters than non-vulnerable households, and they also had higher rates of damages than non-vulnerable households. In addition, an increasing number of conditions met under HCDV led to a higher percentage of respondents that were affected by natural disasters. This meant that, as households met more and more conditions under HCDV, they were more likely to have been affected by a natural disaster. In contrast, we found that vulnerable populations based on MSLV were less likely than non-vulnerable to be affected by a disaster in the past 20 years; a higher percentage of non-vulnerable respondents were affected by a natural disaster. MSLV respondents that only met one of the conditions had a higher percentage of respondents that were affected by a natural disaster than those respondents that met all two conditions.

Similarly, respondents with HCDVs and MSLVs did not have similar patterns of preparedness and insurance attainment. First, we found that respondents with HCDVs and those who were non-vulnerable had similar rates of preparedness for the hurricane season. In comparison, respondents with MSLVs were more likely than non-vulnerable populations to prepare for the hurricane season. However, the type of preparedness did depend on race and ethnicity since not all races or ethnicities prepared for the hurricane season in the same manners. In this direction, we found that Hispanics prepared the most in terms of evacuation plans, while Blacks prepared the most in terms of home damage protection. Whites, on the other hand, had highest percentage of respondents that did not prepare for disasters while Asians had the smallest percentage of respondents that did not prepare. Likewise, respondents with HCDVs had insurance at similar rates than those who were not vulnerable. However, income played a large role in insurance attainment. We found that households with income that equaled less than $29,999 were much more likely to not have any type of

insurance. In fact, almost three-quarters of respondents without any type of insurance were those with the lowest incomes while only 3.5% of those without insurance were households in the highest income group. In contrast, out of all respondents who said they had flood insurance, the highest percentage was found in the highest income group while the lowest percentage was found in the lowest income group. Nonetheless, those who had MSLVs were a lot less likely to have insurance than those who were not vulnerable. Looking at insurance attainment by race, we found that race and ethnicity matter. Asians had some of the highest percentages of insured respondents while Hispanics had some of the lowest percentages. Similarly, Hispanics and those who identified as multiracial had the highest percentages of uninsured respondents.

Insurance attainment mattered for full recovery after a natural disaster. Our study found that respondents with homeowner's or renter's insurance were more likely to have completely or mostly recovered from the major natural disasters that hit Texas since Hurricane Harvey. In addition, uninsured respondents were more likely to have recovered only a little or not at all. Specifically, the percentages of uninsured respondents who had recovered only a little or not at all were around more than double that of insured respondents in all five major natural disasters from the last five years.

For types of damages and recovery status, both vulnerability dimensions had similar effects when compared to non-vulnerable populations. In terms of types of damages, vulnerability was important. Those with HCDVs were more likely than those who were not vulnerable to suffer property and residence damages, needed to evacuate or relocate, suffered health problems, and lost jobs and wages. In addition, MSLV respondents were more likely to suffer from residence damage, needed to evacuate or relocate, and lost jobs and wages. So, even though respondents with MSLVs were less likely than non-vulnerable respondents to have been exposed to natural disasters, they were more likely to report having suffer certain damages than non-vulnerable populations. In terms of recovery status, respondents with HCDVs and respondents with MSLVs had lower percentages than non-vulnerable respondents to have had completely and mostly recovered from the last five major disasters. Additionally, vulnerable respondents with HCDVs were more likely than non-vulnerable respondents to have had recovered only a little or not at all from all five disasters. Similarly, vulnerable respondents with MSLVs had higher percentages than non-vulnerable respondents to have recovered only a little or not at all from four out of five disasters. When analyzed further, race mattered for recovery status. In four out of five storms from the last five years, Blacks had the lowest percentages of respondents who had completely recovered. On the other hand, Hispanics showed great adaptive capacity after being affected by these disasters.

A particularly interesting finding was related to FEMA and GLO assistance requests. Both respondents with HCDVs and MSLVs requested FEMA assistance at higher rates than non-vulnerable populations for four of the five major disasters from the last five years. However, we did see that those with HCDVs requested FEMA assistance at only a slightly higher rate for Tropical Storm Imelda than the non-vulnerable population. Plus, those with MSLVs actually had a smaller percentage of respondents that requested FEMA assistance compared to non-vulnerable population. For GLO assistance, higher percentages of respondents with HCDVs requested GLO assistance compared to non-vulnerable respondents. However, for GLO assistance, we found that non-vulnerable respondents requested assistance at higher rates than vulnerable respondents with MSLV for four out of the five disasters. Winter Storm Uri was the only disaster for which a larger percentage of MSLV respondents requested GLO assistance.

When we compared respondents affected by Hurricane Harvey who lived in the Greater Houston area with those in the rest of Texas, a smaller percentage of affected respondents had HCDVs in the nine-county

Greater Houston area than in Texas. However, a much larger percentage of affected Houstonians had MSLVs compared to the rest of Texas. Interestingly, a slightly larger percentage of respondents with HCDVs in the Greater Houston area had flood insurance than non-vulnerable Houstonians. In comparison, respondents in Greater Houston who were vulnerable because of MSLVs were less likely to have flood insurance than non-vulnerable respondents.

Houstonians with HCDVs had smaller percentages of respondents that were completely or mostly recovered than non-vulnerable Houstonians. Similarly, respondents in the Greater Houston area with HCDVs had a slightly larger percentages that had recovered only a little or not at all. In the rest of Texas, however, even fewer vulnerable respondents had completely or mostly recovered when compared to both vulnerable Houstonians and non-vulnerable Texans outside of the Houston area. Houstonians with MSLVs also had smaller percentages of respondents who had completely or mostly recovered than non-vulnerable Houstonians. Similarly, Houstonians with MSLVs had slightly larger percentages of respondents that recovered only a little or not at all. In the rest of Texas, however, even fewer vulnerable respondents had completely or mostly recovered when compared to both vulnerable Houstonians and non-vulnerable Texans outside of the Houston area.

Appendix A: Vulnerability Measures

	CDC-SVI*	Binary measure+
Socioeconomic Status	Below Poverty Unemployed Income No High School diploma	NA
Household Composition & Disability	Aged 65 or older	HCDV=1 if someone in the household 65 or older; HCDV=0 if no one
	Aged 17 or Younger	HCDV=1 if someone in the household 17 or younger; HCDV=0 if no one
	Civilian with a Disability	HCDV=1 if someone in the household with a disability; HCDV=0 if no one
	Single-Parent Household	HCDV=1 if single-parent household; HCDV=0 if not
Minority Status & Language	Minority	MSLV=0 if white; MSLV=1 if non-white
	Speaks English "Less than Well"	MSLV=1 if speaks Eglish "Less than well"; MSLV=0 if don't
Housing Type & Transportation	Multi-Unit Structures Mobile Homes Crowding No Vehicle Group Quarters	NA
Type of measure	Overall Vulnerability	Texas top Vulnerabilities
Unit of measurement/ geography	Census Tracts & Counties	Survey respondents in Texas

* See CDC-SVI documentation at https://www.atsdr.cdc.gov/placeandhealth/svi/index.html
\+ Measure only applies to survey respondents

Socioeconomic Status Vulnerability

Table A1: Income group

	No.	%
Less than $30,000	1,007	38.9
$30,000 or more	1,580	61.1
Total	2,587	100.0

Table A2: Educational attainment

	No.	%
Less than high school degree	416	16.1
High school degree or higher	2,171	83.9
Total	2,587	100.0

Table A3: Employment status

	No.	%
Not employed and not looking for a job	495	19.2
Employed or looking for a job	2,092	80.8
Total	2,587	100.0

Table A4: Overall Socioeconomic Status Vulnerability

	No.	%
Not vulnerable	1,288	49.8
Vulnerable	1,299	50.2
Total	2,587	100.0

Household Composition & Disability Vulnerability

Table A5: Elderly (65 years and older) vulnerability

	No.	%
Household with no elderly person	1,873	72.4
Household with at least one elderly person	714	27.6
Total	2,587	100.0

Table A6: Physical disability

	No.	%
Household with no member with physical disability	1,922	74.3
Household with at least one member with physical disability	665	25.7
Total	2,587	100.0

Table A7: Children (17 years or younger) vulnerability

	No.	%
Household with no children	1,474	57.0
Household with at least one child	1,113	43.0
Total	2,587	100.0

Table A8: Single-parent household

	No.	%
Not single-parent household	1,955	75.6
Single-parent household	632	24.4
Total	2,587	100.0

Table A9: Overall Household Composition & Disability Vulnerability

	No.	%
Not vulnerable	596	23.1
Vulnerable	1,991	76.9
Total	2,587	100.0

Housing Type & Transportation Vulnerability

Table A10: Crowding

	No.	%
Ratio of people per room less than 1	1,716	66.3
Ratio of people per room between 1.1 & 1.5	424	16.4
Ratio of people per room greater than 1.51	447	17.3
Total	2,587	100.0

Table A11: Number of vehicles owned

	No.	%
1 car	1,034	40.0
2 cars	841	32.5
3 or more cars	365	14.1
Do not own a car	347	13.4
Total	2,587	100.0

Table A12: Overall Housing Type & Transportation Vulnerability

	No.	%
Not vulnerable	1,852	71.6
Vulnerable	735	28.4
Total	2,587	100.0

Minority Status & Language Vulnerability

Table A13: Minority status

	No.	%
White	1,048	40.5
Ethnoracial minority	1,539	59.5
Total	2,587	100.0

Table A14: Language/ English fluency

	No.	%
English fluent	2,457	95.0
Not English fluent	130	5.0
Total	2,587	100.0

Table A15: Overall Minority Status & Language Vulnerability

	No.	%
Not vulnerable	1,016	39.3
Vulnerable	1,571	60.7
Total	2,587	100.0

Appendix B: Summary Tables

Demographics

Table A1: Gender identity

	No.	%
Male	1,241	48.0
Female	1,287	49.7
Prefer to self-describe	10	0.4
Prefer not to say	49	1.9
Total	2,587	100.0

Table A2: Age categories

	No.	%
18-29	605	23.4
30-44	726	28.1
45-64	827	32.0
65 or older	428	16.5
Total	2,587	100.0

Table A3: Race and Ethnicity

	No.	%
White	1,048	40.5
Black or African American	296	11.4
Hispanic or Latino/a	844	32.6
Asian or Pacific Islander	137	5.3
Other	96	3.7
Two or more	166	6.4
Total	2,587	100.0

Table A4: Hispanic origin

	No.	%
Not selected	1,609	62.2
Selected	978	37.8
Total	2,587	100.0

Table A5: What is the highest level of school you have completed or the highest degree you have received?

	No.	%
Less than high school diploma	416	16.1
High school diploma or GED	674	26.0
Some college, no degree	534	20.6
Associate's degree	262	10.1
Bachelor's degree	413	16.0
Master's degree	222	8.6
Doctoral degree	34	1.3
Professional degree (JD, MD)	31	1.2
Total	2,587	100.0

Table A6: Employment status:
Last week, did you work for pay at a job (or at a business)?

	No.	%
Yes	1,156	44.7
No, but I am looking for a job now	495	19.2
No, but I am not looking for a job	935	36.2
Total	2,587	100.0

Table A7: What are the main reasons why you were not working?

	Selected		**Not selected**		**Total**	
	No.	%	No.	%	No.	%
You are a full time student	150	5.8	2,437	94.2	2,587	100.0
You are a full time occupied in a non-paid duty	98	3.8	2,489	96.2	2,587	100.0
I am retired	451	17.4	2,136	82.6	2,587	100.0
You lost your previous job due to the COVID-19 pandemic	203	7.8	2,384	92.2	2,587	100.0
You quit your prior job for personal reasons	134	5.2	2,453	94.8	2,587	100.0
Health related reasons	293	11.3	2,294	88.7	2,587	100.0
You had to move to different area	67	2.6	2,520	97.4	2,587	100.0
Other	190	7.3	2,397	92.7	2,587	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A8: Sector of current (or last) employment?

	No.	%
Agriculture, forestry, and fishing	50	1.9
Mining	49	1.9
Construction	251	9.7
Manufacturing	152	5.9
Transportation	143	5.5
Communications	103	4.0
Electric, gas, and sanitary service	52	2.0
Wholesale trade	44	1.7
Retail trade	270	10.4
Finance, insurance, and real estate	132	5.1
Other services	1,230	47.5
Public administration	112	4.3
Total	2,587	100.0

Table A9: What is your occupation?

	No.	%
Management	241	9.3
Business and Financial Operations	151	5.8
Computer and Mathematical	154	6.0
Architecture and Engineering	68	2.6
Life, Physical, and Social Science	73	2.8
Community and Social Services	47	1.8
Legal	58	2.3
Education, Training, and Library	148	5.7
Arts, Design, Entertainment, Sports, and Media	146	5.6
Healthcare Practitioners and Technical	106	4.1
Healthcare Support	150	5.8
Protective Service	16	0.6
Food Preparation and Serving Related	225	8.7
Building and Grounds Cleaning and Maintenance	58	2.2
Personal Care and Service	130	5.0
Sales and Related	273	10.6
Office and Administrative Support	185	7.2
Farming, Fishing, and Forestry	27	1.1
Construction and Extraction	105	4.1
Installation, Maintenance, and Repair	67	2.6
Transportation and Material Moving	108	4.2
Military Specific	50	1.9
Total	2,587	100.0

Table A10: How many of the people living in your household correspond to the following groups?

	Under 18		**Between 18 and 65**		**Over 65**	
	No.	%	No.	%	No.	%
0	1,474	57.0	430	16.6	1,873	72.4
1	543	21.0	569	22.0	432	16.7
2	322	12.4	968	37.4	242	9.3
3	148	5.7	343	13.3	16	0.6
4	44	1.7	168	6.5	0	0.0
5	23	0.9	53	2.1	2	0.1
6	8	0.3	17	0.6	4	0.1
More than 6	25	1.0	39	1.5	20	0.8
Total	2,587	100.0	2,587	100.0	2,587	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A11: Are you the head of your household?

	No.	%
No	754	29.1
Yes	1,833	70.9
Total	2,587	100.0

Social Vulnerability Index measures

Natural disasters: Exposure, vulnerability, and recovery variables

Table A12: Have you or any member of your household been affected by any of following FEMA declared natural disasters? **Hurricane Rita (September 2005)**

	Selected		**Not selected**		**Total**	
	No.	%	No.	%	No.	%
Not living in Texas	309	11.9	2,278	88.1	2,587	100.0
Not affected	1,065	41.2	1,522	58.8	2,587	100.0
Damage to property (excluding buildings)	177	6.8	2,410	93.2	2,587	100.0
Damage to residence	224	8.7	2,363	91.3	2,587	100.0
Evacuated or relocated	177	6.8	2,410	93.2	2,587	100.0
Lost job	48	1.8	2,539	98.2	2,587	100.0
Lost income or wages	93	3.6	2,494	96.4	2,587	100.0
Health problems	43	1.6	2,544	98.4	2,587	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A13: Have you or any member of your household been affected by any of following FEMA declared natural disasters? **Hurricane Ike (September 2008)**

	Selected		**Not selected**		**Total**	
	No.	%	No.	%	No.	%
Not living in Texas	281	10.9	2,306	89.1	2,587	100.0
Not affected	1,101	42.5	1,486	57.5	2,587	100.0
Damage to property (excluding buildings)	205	7.9	2,382	92.1	2,587	100.0
Damage to residence	241	9.3	2,346	90.7	2,587	100.0
Evacuated or relocated	160	6.2	2,427	93.8	2,587	100.0
Lost job	46	1.8	2,541	98.2	2,587	100.0
Lost income or wages	97	3.7	2,490	96.3	2,587	100.0
Health problems	29	1.1	2,558	98.9	2,587	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A14: Have you or any member of your household been affected by any of following FEMA declared natural disasters? **Memorial Day flood (May 2015)**

	Selected		Not selected		Total	
	No.	%	No.	%	No.	%
Not living in Texas	232	9.0	2,355	91.0	2,587	100.0
Not affected	1,289	49.8	1,298	50.2	2,587	100.0
Damage to property (excluding buildings)	146	5.6	2,441	94.4	2,587	100.0
Damage to residence	140	5.4	2,447	94.6	2,587	100.0
Evacuated or relocated	79	3.1	2,508	96.9	2,587	100.0
Lost job	26	1.0	2,561	99.0	2,587	100.0
Lost income or wages	64	2.5	2,523	97.5	2,587	100.0
Health problems	20	0.8	2,567	99.2	2,587	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A15: Have you or any member of your household been affected by any of following FEMA declared natural disasters? **Tax Day flood (April 2016)**

	Selected		Not selected		Total	
	No.	%	No.	%	No.	%
Not living in Texas	218	8.4	2,369	91.6	2,587	100.0
Not affected	1,343	51.9	1,244	48.1	2,587	100.0
Damage to property (excluding buildings)	122	4.7	2,465	95.3	2,587	100.0
Damage to residence	115	4.4	2,472	95.6	2,587	100.0
Evacuated or relocated	72	2.8	2,515	97.2	2,587	100.0
Lost job	34	1.3	2,553	98.7	2,587	100.0
Lost income or wages	61	2.4	2,526	97.6	2,587	100.0
Health problems	22	0.9	2,565	99.1	2,587	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A16: Have you or any member of your household been affected by any of following FEMA declared natural disasters? **Hurricane Harvey (August 2017)**

	Selected		Not selected		Total	
	No.	%	No.	%	No.	%
Not living in Texas	159	6.2	2,428	93.8	2,587	100.0
Not affected	1,031	39.9	1,556	60.1	2,587	100.0
Damage to property (excluding buildings)	325	12.6	2,262	87.4	2,587	100.0
Damage to residence	353	13.6	2,234	86.4	2,587	100.0
Evacuated or relocated	211	8.1	2,376	91.9	2,587	100.0
Lost job	60	2.3	2,527	97.7	2,587	100.0
Lost income or wages	151	5.8	2,436	94.2	2,587	100.0
Health problems	46	1.8	2,541	98.2	2,587	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A17: Have you or any member of your household been affected by any of following FEMA declared natural disasters? **Texas fires of 2018**

	Selected		Not selected		Total	
	No.	%	No.	%	No.	%
Not living in Texas	187	7.2	2,400	92.8	2,587	100.0
Not affected	1,472	56.9	1,115	43.1	2,587	100.0
Damage to property (excluding buildings)	73	2.8	2,514	97.2	2,587	100.0
Damage to residence	670	2.7	2,517	97.3	2,587	100.0
Evacuated or relocated	63	2.4	2,524	97.6	2,587	100.0
Lost job	27	1.0	2,560	99.0	2,587	100.0
Lost income or wages	41	1.6	2,546	98.4	2,587	100.0
Health problems	34	1.3	2,553	98.7	2,587	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A18: Have you or any member of your household been affected by any of following FEMA declared natural disasters? **Severe storms & flooding 2018**

	Selected		Not selected		Total	
	No.	%	No.	%	No.	%
Not living in Texas	163	6.3	2,424	93.7	2,587	100.0
Not affected	1,218	47.1	1,369	52.9	2,587	100.0
Damage to property (excluding buildings)	209	8.1	2,378	91.9	2,587	100.0
Damage to residence	222	8.6	2,365	91.4	2,587	100.0
Evacuated or relocated	87	3.3	2,500	96.7	2,587	100.0
Lost job	38	1.5	2,549	98.5	2,587	100.0
Lost income or wages	77	3.0	2,510	97.0	2,587	100.0
Health problems	27	1.0	2,560	99.0	2,587	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A19: Have you or any member of your household been affected by any of following FEMA declared natural disasters? **Severe storms & flooding 2019**

	Selected		Not selected		Total	
	No.	%	No.	%	No.	%
Not living in Texas	152	5.9	2,435	94.1	2,587	100.0
Not affected	1,255	48.5	1,332	51.5	2,587	100.0
Damage to property (excluding buildings)	212	8.2	2,375	91.8	2,587	100.0
Damage to residence	183	7.1	2,404	92.9	2,587	100.0
Evacuated or relocated	83	3.2	2,504	96.8	2,587	100.0
Lost job	34	1.3	2,553	98.7	2,587	100.0
Lost income or wages	71	2.8	2,516	97.2	2,587	100.0
Health problems	30	1.2	2,557	98.8	2,587	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A20: Have you or any member of your household been affected by any of following FEMA declared natural disasters? **Tropical Storm Imelda (September 2019)**

	Selected		Not selected		Total	
	No.	%	No.	%	No.	%
Not living in Texas	166	6.4	2,421	93.6	2,587	100.0
Not affected	1,439	55.6	1,148	44.4	2,587	100.0
Damage to property (excluding buildings)	94	3.6	2,493	96.4	2,587	100.0
Damage to residence	114	4.4	2,473	95.6	2,587	100.0
Evacuated or relocated	60	2.3	2,527	97.7	2,587	100.0
Lost job	35	1.4	2,552	98.6	2,587	100.0
Lost income or wages	55	2.1	2,532	97.9	2,587	100.0
Health problems	22	0.8	2,565	99.2	2,587	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A21: Have you or any member of your household been affected by any of following FEMA declared natural disasters? **Hurricane Laura (August 2020)**

	Selected		Not selected		Total	
	No.	%	No.	%	No.	%
Not living in Texas	168	6.5	2,419	93.5	2,587	100.0
Not affected	1,458	56.3	1,129	43.7	2,587	100.0
Damage to property (excluding buildings)	101	3.9	2,486	96.1	2,587	100.0
Damage to residence	86	3.3	2,501	96.7	2,587	100.0
Evacuated or relocated	65	2.5	2,522	97.5	2,587	100.0
Lost job	30	1.1	2,557	98.9	2,587	100.0
Lost income or wages	39	1.5	2,548	98.5	2,587	100.0
Health problems	26	1.0	2,561	99.0	2,587	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A22: Have you or any member of your household been affected by any of following FEMA declared natural disasters? **Winter Storm Uri (February 2021)**

	Selected		Not selected		Total	
	No.	%	No.	%	No.	%
Not living in Texas	75	2.9	2,512	97.1	2,587	100.0
Not affected	539	20.9	2,048	79.1	2,587	100.0
Damage to property (excluding buildings)	490	18.9	2,097	81.1	2,587	100.0
Damage to residence	639	24.7	1,948	75.3	2,587	100.0
Evacuated or relocated	245	9.5	2,342	90.5	2,587	100.0
Lost job	63	2.5	2,524	97.5	2,587	100.0
Lost income or wages	321	12.4	2,266	87.6	2,587	100.0
Health problems	214	8.3	2,373	91.7	2,587	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A23: Have you or any member of your household been affected by any of following FEMA declared natural disasters? **Other storms**

	Selected		Not selected		Total	
	No.	%	No.	%	No.	%
Not living in Texas	299	11.6	2,288	88.4	2,587	100.0
Not affected	1,282	49.5	1,305	50.5	2,587	100.0
Damage to property (excluding buildings)	99	3.8	2,488	96.2	2,587	100.0
Damage to residence	117	4.5	2,470	95.5	2,587	100.0
Evacuated or relocated	52	2.0	2,535	98.0	2,587	100.0
Lost job	38	1.5	2,549	98.5	2,587	100.0
Lost income or wages	51	2.0	2,536	98.0	2,587	100.0
Health problems	56	2.2	2,531	97.8	2,587	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A24: Considering the impact of the following natural disasters that affected you, would you say you and your household have: **Hurricane Rita (September 2005)**

	No.	%
Completely recovered	397	59.6
Mostly recovered	138	20.7
Recovered about half-way	75	11.2
Recovered only a little	41	6.1
Not recovered at all	16	2.4
Total	666	100.0

Table A25: Considering the impact of the following natural disasters that affected you, would you say you and your household have: **Hurricane Ike (September 2008)**

	No.	%
Completely recovered	426	60.0
Mostly recovered	160	22.6
Recovered about half-way	63	8.9
Recovered only a little	49	6.9
Not recovered at all	11	1.6
Total	710	100.0

Table A26: Considering the impact of the following natural disasters that affected you, would you say you and your household have: **Memorial Day flood (May 2015)**

	No.	%
Completely recovered	241	51.4
Mostly recovered	121	25.7
Recovered about half-way	58	12.4
Recovered only a little	34	7.2
Not recovered at all	15	3.3
Total	469	100.0

Table A27: Considering the impact of the following natural disasters that affected you, would you say you and your household have: **Tax Day flood (April 2016)**

	No.	%
Completely recovered	200	46.6
Mostly recovered	105	24.4
Recovered about half-way	79	18.4
Recovered only a little	36	8.3
Not recovered at all	10	2.3
Total	429	100.0

Table A28: Considering the impact of the following natural disasters that affected you, would you say you and your household have: **Hurricane Harvey (August 2017)**

	No.	%
Completely recovered	490	54.0
Mostly recovered	212	23.3
Recovered about half-way	112	12.3
Recovered only a little	69	7.6
Not recovered at all	25	2.8
Total	908	100.0

Table A29: Considering the impact of the following natural disasters that affected you, would you say you and your household have: **Texas fires of 2018**

	No.	%
Completely recovered	115	38.0
Mostly recovered	76	25.3
Recovered about half-way	48	16.1
Recovered only a little	43	14.2
Not recovered at all	19	6.4
Total	301	100.0

Table A30: Considering the impact of the following natural disasters that affected you, would you say you and your household have: **Severe storms & flooding 2018**

	No.	%
Completely recovered	325	52.7
Mostly recovered	153	24.7
Recovered about half-way	93	15.0
Recovered only a little	35	5.6
Not recovered at all	12	1.9
Total	617	100.0

Table A31: Considering the impact of the following natural disasters that affected you, would you say you and your household have: **Severe storms & flooding 2019**

	No.	%
Completely recovered	299	50.2
Mostly recovered	143	24.0
Recovered about half-way	90	15.2
Recovered only a little	46	7.8
Not recovered at all	17	2.8
Total	595	100.0

Table A32: Considering the impact of the following natural disasters that affected you, would you say you and your household have: **Tropical Storm Imelda (September 2019)**

	No.	%
Completely recovered	163	41.8
Mostly recovered	99	25.4
Recovered about half-way	68	17.4
Recovered only a little	47	12.1
Not recovered at all	13	3.3
Total	391	100.0

Table A33: Considering the impact of the following natural disasters that affected you, would you say you and your household have: **Hurricane Laura (August 2020)**

	No.	%
Completely recovered	142	39.9
Mostly recovered	90	25.3
Recovered about half-way	71	20.0
Recovered only a little	36	10.2
Not recovered at all	16	4.6
Total	356	100.0

Table A34: Considering the impact of the following natural disasters that affected you, would you say you and your household have: **Winter Storm Uri (February 2021)**

	No.	%
Completely recovered	681	49.0
Mostly recovered	413	29.7
Recovered about half-way	155	11.2
Recovered only a little	86	6.2
Not recovered at all	53	3.8
Total	1,389	100.0

Table A35: Considering the impact of the following natural disasters that affected you, would you say you and your household have: **Other storms**

	No.	%
Completely recovered	140	38.2
Mostly recovered	90	24.5
Recovered about half-way	80	21.8
Recovered only a little	32	8.8
Not recovered at all	25	6.7
Total	368	100.0

Table A36: To rebuild, repair, or modify your property after the natural disaster, did you or a member of your household request FEMA assistance?

	Yes		**No**		**Total**	
	No.	%	No.	%	No.	%
Hurricane Rita (September 2005)	172	43.4	223	56.6	395	100.0
Hurricane Ike (September 2008)	190	42.4	258	57.6	448	100.0
Memorial Day flood (May 2015)	129	46.6	148	53.4	277	100.0
Tax Day flood (April 2016)	138	56.9	105	43.1	243	100.0
Hurricane Harvey (August 2017)	291	50.0	291	50.0	582	100.0
Texas fires of 2018	104	56.0	81	44.0	185	100.0
Severe storms and flooding 2018	136	39.7	208	60.3	344	100.0
Severe storms and flooding 2019	135	42.8	181	57.2	316	100.0
Tropical Storm Imelda (September 2019)	121	54.8	100	45.2	221	100.0
Hurricane Laura (August 2020)	115	55.6	91	44.4	206	100.0
Winter Storm Uri (February 2021)	229	28.1	585	71.9	814	100.0
Other storms	83	42.2	113	57.8	196	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A37: To rebuild, repair, or modify your property after the natural disaster, did you or a member of your household request Texas General Land Office (GLO) assistance?

	Yes		No		Total	
	No.	%	No.	%	No.	%
Hurricane Rita (September 2005)	115	29.0	280	71.0	395	100.0
Hurricane Ike (September 2008)	118	26.3	330	73.7	448	100.0
Memorial Day flood (May 2015)	94	34.0	183	66.0	277	100.0
Tax Day flood (April 2016)	107	43.8	136	56.2	243	100.0
Hurricane Harvey (August 2017)	162	27.8	420	72.2	582	100.0
Texas fires of 2018	104	56.1	81	43.9	185	100.0
Severe storms and flooding 2018	98	28.6	246	71.4	344	100.0
Severe storms and flooding 2019	102	32.4	214	67.6	316	100.0
Tropical Storm Imelda (September 2019)	96	43.4	125	56.6	221	100.0
Hurricane Laura (August 2020)	98	47.7	108	52.3	206	100.0
Winter Storm Uri (February 2021)	131	16.1	683	83.9	814	100.0
Other storms	76	38.9	120	61.1	196	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A38: Did you or somebody in your household do any of the following in preparation for the 2021 Hurricane Season?

	Selected		Not selected		Total	
	No.	%	No.	%	No.	%
Stockpile water and non-perishables, first-aid supplies, prescriptions, pet supplies, gas, propane, and/or flashlights and batteries	1,010	39.1	1,577	60.9	2,587	100.0
Get an alternative power supply (generator, solar panels, batteries, etc.)	631	24.4	1,956	75.6	2,587	100.0
Get home damage protection (surge protection, AC protection, sandbags, etc.)	372	14.4	2,215	85.6	2,587	100.0
Subscribe to local emergency notifications	456	17.6	2,131	82.4	2,587	100.0
Learn about evacuation plan for the area	502	19.4	2,085	80.6	2,587	100.0
Coordinate with neighbors an emergency plan	276	10.7	2,311	89.3	2,587	100.0
Other preparations	13	0.5	2,574	99.5	2,587	100.0
No preparation	997	38.5	1,590	61.5	2,587	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Vulnerability and storm recovery

Table A39: Socioeconomic Status Vulnerability by storm recovery: **Hurricane Rita (September 2005)**

	Vulnerable		Not vulnerable	
	No.	%	No.	%
Completely recovered	129	51.7	271	65.2
Mostly recovered	58	23.0	79	19.1
Recovered about half-way	28	11.3	47	11.2
Recovered only a little	23	9.2	16	3.9
Not recovered at all	12	4.9	2	0.6
Total	250	100.0	416	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A40: Socioeconomic Status Vulnerability by storm recovery: **Hurricane Ike (September 2008)**

	Vulnerable		Not vulnerable	
	No.	%	No.	%
Completely recovered	141	53.9	288	64.0
Mostly recovered	67	25.5	288	64.0
Recovered about half-way	24	9.3	39	8.7
Recovered only a little	22	8.5	26	5.9
Not recovered at all	7	2.7	4	0.8
Total	261	100.0	449	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A41: Socioeconomic Status Vulnerability by storm recovery: **Memorial Day flood (May 2015)**

	Vulnerable		Not vulnerable	
	No.	%	No.	%
Completely recovered	81	47.4	161	54.2
Mostly recovered	43	25.2	78	26.1
Recovered about half-way	19	11.0	40	13.4
Recovered only a little	18	10.6	14	4.7
Not recovered at all	10	5.8	4	1.5
Total	172	100.0	297	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A42: Socioeconomic Status Vulnerability by storm recovery: **Tax Day flood (April 2016)**

	Vulnerable		**Not vulnerable**	
	No.	%	No.	%
Completely recovered	66	41.0	135	50.6
Mostly recovered	35	21.5	135	50.6
Recovered about half-way	37	23.1	40	15.1
Recovered only a little	17	10.2	18	6.9
Not recovered at all	7	4.1	2	0.9
Total	162	100.0	267	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A43: Socioeconomic Status Vulnerability by storm recovery: **Hurricane Harvey (August 2017)**

	Vulnerable		**Not vulnerable**	
	No.	%	No.	%
Completely recovered	176	50.3	318	56.9
Mostly recovered	76	21.8	137	24.5
Recovered about half-way	47	13.6	63	11.4
Recovered only a little	35	10.2	31	5.6
Not recovered at all	14	4.1	10	1.7
Total	349	100.0	559	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A44: Socioeconomic Status Vulnerability by storm recovery: **Texas fires of 2018**

	Vulnerable		**Not vulnerable**	
	No.	%	No.	%
Completely recovered	36	33.9	79	40.8
Mostly recovered	17	15.4	62	31.7
Recovered about half-way	20	19.0	27	14.2
Recovered only a little	20	18.8	22	11.2
Not recovered at all	14	12.8	4	2.2
Total	107	100.0	194	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A45: Socioeconomic Status Vulnerability by storm recovery: **Severe storms & flooding 2018**

	Vulnerable		Not vulnerable	
	No.	%	No.	%
Completely recovered	115	47.3	214	57.1
Mostly recovered	62	25.5	90	24.1
Recovered about half-way	41	16.8	51	13.6
Recovered only a little	18	7.5	15	4.1
Not recovered at all	7	3.0	4	1.0
Total	243	100.0	374	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A46: Socioeconomic Status Vulnerability by storm recovery: **Severe storms & flooding 2019**

	Vulnerable		Not vulnerable	
	No.	%	No.	%
Completely recovered	112	48.1	187	51.8
Mostly recovered	51	21.7	93	25.8
Recovered about half-way	32	13.8	59	16.2
Recovered only a little	28	12.1	16	4.5
Not recovered at all	10	4.3	6	1.7
Total	233	100.0	362	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A47: Socioeconomic Status Vulnerability by storm recovery: **Tropical Storm Imelda (September 2019)**

	Vulnerable		Not vulnerable	
	No.	%	No.	%
Completely recovered	58	39.3	106	43.6
Mostly recovered	30	20.7	70	28.9
Recovered about half-way	31	21.1	36	14.7
Recovered only a little	21	14.4	25	10.4
Not recovered at all	7	4.5	6	2.4
Total	147	100.0	244	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A48: Socioeconomic Status Vulnerability by storm recovery: **Hurricane Laura (August 2020)**

	Vulnerable		**Not vulnerable**	
	No.	%	No.	%
Completely recovered	52	40.1	90	39.7
Mostly recovered	22	17.0	69	30.7
Recovered about half-way	30	23.3	40	17.9
Recovered only a little	18	14.1	17	7.6
Not recovered at all	7	5.5	9	4.1
Total	130	100.0	226	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A49: Socioeconomic Status Vulnerability by storm recovery: **Winter Storm Uri (February 2021)**

Winter Storm Uri (February 2021)	**Vulnerable**		**Not vulnerable**	
	No.	%	No.	%
Completely recovered	253	46.7	432	51.0
Mostly recovered	144	26.6	273	32.3
Recovered about half-way	63	11.6	92	10.8
Recovered only a little	46	8.5	37	4.3
Not recovered at all	36	6.6	14	1.6
Total	542	100.0	847	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A50: Socioeconomic Status Vulnerability by storm recovery: **Other storms**

	Vulnerable		**Not vulnerable**	
	No.	%	No.	%
Completely recovered	49	31.9	94	43.7
Mostly recovered	37	24.2	53	24.8
Recovered about half-way	38	24.7	41	19.2
Recovered only a little	14	9.1	18	8.6
Not recovered at all	15	10.1	8	3.7
Total	153	100.0	215	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A51: Housing Type & Transportation Vulnerability by storm recovery: **Hurricane Rita (September 2005)**

	Vulnerable		Not vulnerable	
	No.	%	No.	%
Completely recovered	62	43.7	335	64.1
Mostly recovered	34	23.8	104	19.8
Recovered about half-way	19	13.4	56	10.6
Recovered only a little	19	13.6	21	4.0
Not recovered at all	8	5.5	8	1.5
Total	143	100.0	523	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A52: Housing Type & Transportation Vulnerability by storm recovery: **Hurricane Ike (September 2008)**

	Vulnerable		Not vulnerable	
	No.	%	No.	%
Completely recovered	81	53.1	345	62.0
Mostly recovered	34	22.2	126	22.7
Recovered about half-way	12	7.7	52	9.3
Recovered only a little	17	11.2	32	5.7
Not recovered at all	9	5.8	2	0.4
Total	153	100.0	557	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A53: Housing Type & Transportation Vulnerability by storm recovery: **Memorial Day flood (May 2015)**

	Vulnerable		Not vulnerable	
	No.	%	No.	%
Completely recovered	51	46.9	190	52.9
Mostly recovered	24	22.3	97	26.9
Recovered about half-way	13	11.9	45	12.6
Recovered only a little	13	11.6	20	5.7
Not recovered at all	8	7.3	7	1.9
Total	109	100.0	360	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A54: Housing Type & Transportation Vulnerability by storm recovery: **Tax Day flood (April 2016)**

	Vulnerable		**Not vulnerable**	
	No.	%	No.	%
Completely recovered	36	37.2	171	49.9
Mostly recovered	26	26.6	81	23.7
Recovered about half-way	22	22.8	57	16.7
Recovered only a little	8	7.9	29	8.4
Not recovered at all	5	5.5	4	1.2
Total	96	100.0	342	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A55: Housing Type & Transportation Vulnerability by storm recovery: **Hurricane Harvey (August 2017)**

	Vulnerable		**Not vulnerable**	
	No.	%	No.	%
Completely recovered	98	50.6	393	55.1
Mostly recovered	41	21.4	171	23.9
Recovered about half-way	19	9.9	93	13.1
Recovered only a little	25	12.7	43	6.0
Not recovered at all	11	5.4	14	1.9
Total	194	100.0	714	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A56: Housing Type & Transportation Vulnerability by storm recovery: **Texas fires of 2018**

	Vulnerable		**Not vulnerable**	
	No.	%	No.	%
Completely recovered	27	40.6	88	37.4
Mostly recovered	12	18.0	64	27.2
Recovered about half-way	11	17.1	37	15.8
Recovered only a little	12	18.1	31	13.2
Not recovered at all	4	6.2	15	6.4
Total	66	100.0	235	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A57: Housing Type & Transportation Vulnerability by storm recovery: **Severe storms & flooding 2018**

	Vulnerable		**Not vulnerable**	
	No.	%	No.	%
Completely recovered	56	43.3	270	55.4
Mostly recovered	30	23.0	123	25.2
Recovered about half-way	29	22.6	63	12.8
Recovered only a little	8	6.2	27	5.5
Not recovered at all	6	4.9	5	1.1
Total	129	100.0	488	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A58: Housing Type & Transportation Vulnerability by storm recovery: **Severe storms & flooding 2019**

	Vulnerable		**Not vulnerable**	
	No.	%	No.	%
Completely recovered	53	43.3	247	52.3
Mostly recovered	27	21.7	117	24.7
Recovered about half-way	14	11.8	77	16.2
Recovered only a little	19	15.8	25	5.3
Not recovered at all	9	7.4	7	1.4
Total	122	100.0	473	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A59: Housing Type & Transportation Vulnerability by storm recovery: **Tropical Storm Imelda (September 2019)**

	Vulnerable		**Not vulnerable**	
	No.	%	No.	%
Completely recovered	28	30.3	137	45.9
Mostly recovered	24	26.4	75	25.1
Recovered about half-way	15	15.9	54	17.9
Recovered only a little	19	20.7	27	9.0
Not recovered at all	6	6.8	6	2.0
Total	92	100.0	299	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A60: Housing Type & Transportation Vulnerability by storm recovery: **Hurricane Laura (August 2020)**

	Vulnerable		**Not vulnerable**	
	No.	%	No.	%
Completely recovered	27	31.0	115	42.9
Mostly recovered	25	28.9	65	24.1
Recovered about half-way	16	18.7	55	20.4
Recovered only a little	10	11.3	26	9.8
Not recovered at all	9	10.2	7	2.7
Total	88	100.0	268	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A61: Housing Type & Transportation Vulnerability by storm recovery: **Winter Storm Uri (February 2021)**

	Vulnerable		**Not vulnerable**	
	No.	%	No.	%
Completely recovered	153	48.1	528	49.3
Mostly recovered	91	28.5	323	30.1
Recovered about half-way	29	9.3	126	11.8
Recovered only a little	23	7.2	64	6.0
Not recovered at all	22	6.9	29	2.7
Total	318	100.0	1,071	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A62: Housing Type & Transportation Vulnerability by storm recovery: **Other storms**

	Vulnerable		**Not vulnerable**	
	No.	%	No.	%
Completely recovered	37	40.2	104	37.5
Mostly recovered	15	16.6	76	27.3
Recovered about half-way	19	21.0	61	22.0
Recovered only a little	11	12.4	21	7.6
Not recovered at all	9	9.8	16	5.6
Total	91	100.0	277	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A63: Household Composition & Disability Vulnerability by storm recovery: **Hurricane Rita (September 2005)**

	Vulnerable		Not vulnerable	
	No.	%	No.	%
Completely recovered	300	57.9	97	66.2
Mostly recovered	104	20.0	34	23.4
Recovered about half-way	64	12.4	10	6.6
Recovered only a little	38	7.3	2	1.5
Not recovered at all	12	2.4	3	2.3
Total	519	100.0	147	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A64: Household Composition & Disability Vulnerability by storm recovery: **Hurricane Ike (September 2008)**

	Vulnerable		Not vulnerable	
	No.	%	No.	%
Completely recovered	325	58.4	102	67.0
Mostly recovered	124	22.2	37	23.9
Recovered about half-way	55	9.8	8	5.0
Recovered only a little	45	8.1	3	2.1
Not recovered at all	8	1.5	3	1.9
Total	557	100.0	153	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A65: Household Composition & Disability Vulnerability by storm recovery: **Memorial Day flood (May 2015)**

	Vulnerable		Not vulnerable	
	No.	%	No.	%
Completely recovered	190	50.2	52	56.9
Mostly recovered	97	25.6	52	56.9
Recovered about half-way	50	13.2	8	8.9
Recovered only a little	28	7.4	5	5.9
Not recovered at all	14	3.6	2	1.9
Total	14	3.6	91	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A66: Household Composition & Disability Vulnerability by storm recovery: **Tax Day flood (April 2016)**

	Vulnerable		Not vulnerable	
	No.	%	No.	%
Completely recovered	154	44.5	47	56.4
Mostly recovered	82	23.8	23	27.1
Recovered about half-way	74	21.3	8	9.1
Recovered only a little	28	8.1	5	5.4
Not recovered at all	8	2.3	2	1.9
Total	346	100.0	83	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A67: Household Composition & Disability Vulnerability by storm recovery: **Hurricane Harvey (August 2017)**

	Vulnerable		Not vulnerable	
	No.	%	No.	%
Completely recovered	368	53.1	123	57.4
Mostly recovered	151	21.8	63	29.1
Recovered about half-way	93	13.4	18	8.3
Recovered only a little	59	8.6	18	8.3
Not recovered at all	22	3.1	3	1.4
Total	693	100.0	215	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A68: Household Composition & Disability Vulnerability by storm recovery: **Texas fires of 2018**

	Vulnerable		Not vulnerable	
	No.	%	No.	%
Completely recovered	96	37.7	18	40.4
Mostly recovered	61	23.8	16	35.0
Recovered about half-way	41	16.2	7	15.6
Recovered only a little	40	15.5	2	5.4
Not recovered at all	17	6.8	2	3.6
Total	256	100.0	45	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A69: Household Composition & Disability Vulnerability by storm recovery: **Severe storms & flooding 2018**

	Vulnerable		Not vulnerable	
	No.	%	No.	%
Completely recovered	245	50.7	82	61.5
Mostly recovered	121	25.1	31	23.2
Recovered about half-way	76	15.8	16	11.8
Recovered only a little	31	6.4	3	2.1
Not recovered at all	10	2.1	2	1.3
Total	483	100.0	134	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A70: Household Composition & Disability Vulnerability by storm recovery: **Severe storms & flooding 2019**

	Vulnerable		Not vulnerable	
	No.	%	No.	%
Completely recovered	237	49.7	62	52.2
Mostly recovered	106	22.2	38	32.1
Recovered about half-way	79	16.6	10	8.5
Recovered only a little	41	8.7	4	3.6
Not recovered at all	13	2.7	4	3.5
Total	476	100.0	119	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A71: Household Composition & Disability Vulnerability by storm recovery: **Tropical Storm Imelda (September 2019)**

	Vulnerable		Not vulnerable	
	No.	%	No.	%
Completely recovered	126	39.9	37	49.3
Mostly recovered	75	23.7	24	32.2
Recovered about half-way	60	18.9	9	11.4
Recovered only a little	45	14.4	3	4.0
Not recovered at all	10	3.1	2	3.1
Total	315	100.0	76	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A72: Household Composition & Disability Vulnerability by storm recovery: **Hurricane Laura (August 2020)**

	Vulnerable		Not vulnerable	
	No.	%	No.	%
Completely recovered	108	37.8	34	48.6
Mostly recovered	66	23.2	24	34.1
Recovered about half-way	64	22.2	8	10.9
Recovered only a little	33	11.6	3	4.3
Not recovered at all	15	5.2	1	2.1
Total	286	100.0	70	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A73: Household Composition & Disability Vulnerability by storm recovery: **Winter Storm Uri (February 2021)**

	Vulnerable		Not vulnerable	
	No.	%	No.	%
Completely recovered	488	47.0	195	55.8
Mostly recovered	309	29.8	104	29.6
Recovered about half-way	124	11.9	30	8.7
Recovered only a little	70	6.7	16	4.5
Not recovered at all	48	4.6	5	1.3
Total	1,039	100.0	350	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A74: Household Composition & Disability Vulnerability by storm recovery: **Other storms**

	Vulnerable		Not vulnerable	
	No.	%	No.	%
Completely recovered	113	36.6	27	47.0
Mostly recovered	75	24.2	15	26.2
Recovered about half-way	69	22.2	11	19.3
Recovered only a little	29	9.5	3	5.0
Not recovered at all	23	7.5	1	2.4
Total	310	100.0	58	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A75: Hurricane Harvey recovery by Household Composition & Disability Vulnerability by area

Not vulnerable	*Greater Houston*				*Rest of Texas*				Vulnerable
					Vulnerable		**Not vulnerable**		
	.	%	No.	%	No.	%	No.	%	
Completely recovered	253	57.1	98	60.3	124	49.6	28	53.4	
Mostly recovered	100	22.7	43	26.7	52	21.0	17	32.5	
Recovered about half-way	51	11.5	10	6.4	38	15.1	6	10.9	
Recovered only a little	25	5.7	9	5.6	28	11.1	1	1.9	
Not recovered at all	14	3.0	2	1.0	8	3.2	1	1.3	
Total	443	100.0	162	100.0	250	100.0	53	100.0	

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A76: Minority Status & Language Vulnerability by storm recovery: **Hurricane Rita (September 2005**

	Vulnerable		**Not vulnerable**	
	No.	%	No.	%
Completely recovered	216	55.7	184	66.0
Mostly recovered	81	21.0	56	20.2
Recovered about half-way	57	14.8	15	5.4
Recovered only a little	27	6.9	14	4.8
Not recovered at all	6	1.6	10	3.6
Total	387	100.0	279	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A77: Minority Status & Language Vulnerability by storm recovery: **Hurricane Ike (September 2008**

	Vulnerable		**Not vulnerable**	
	No.	%	No.	%
Completely recovered	234	58.1	194	63.0
Mostly recovered	85	21.3	76	24.6
Recovered about half-way	47	11.7	14	4.5
Recovered only a little	30	7.6	18	5.9
Not recovered at all	5	1.4	6	1.9
Total	402	100.0	308	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A78: Minority Status & Language Vulnerability by storm recovery: **Memorial Day flood (May 2015)**

	Vulnerable		Not vulnerable	
	No.	%	No.	%
Completely recovered	147	50.8	94	52.6
Mostly recovered	67	23.2	56	31.0
Recovered about half-way	39	13.5	18	10.2
Recovered only a little	24	8.4	8	4.5
Not recovered at all	12	4.1	3	1.6
Total	12	4.1	179	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A79: Minority Status & Language Vulnerability by storm recovery: **Tax Day flood (April 2016)**

	Vulnerable		Not vulnerable	
	No.	%	No.	%
Completely recovered	108	41.7	95	55.9
Mostly recovered	63	24.5	41	24.3
Recovered about half-way	58	22.5	18	10.7
Recovered only a little	24	9.4	11	6.2
Not recovered at all	5	1.9	5	2.9
Total	259	100.0	170	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A80: Minority Status & Language Vulnerability by storm recovery: **Hurricane Harvey (August 2017)**

	Vulnerable		Not vulnerable	
	No.	%	No.	%
Completely recovered	292	52.1	201	57.9
Mostly recovered	131	23.4	81	23.2
Recovered about half-way	78	13.9	32	9.1
Recovered only a little	48	8.6	19	5.6
Not recovered at all	11	2.0	15	4.2
Total	560	100.0	348	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A81: Minority Status & Language Vulnerability by storm recovery: **Texas fires of 2018**

	Vulnerable		**Not vulnerable**	
	No.	%	No.	%
Completely recovered	59	33.8	57	44.6
Mostly recovered	36	20.8	41	32.2
Recovered about half-way	35	20.3	12	9.6
Recovered only a little	33	18.9	9	6.9
Not recovered at all	11	6.2	9	6.7
Total	173	100.0	128	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A82: Minority Status & Language Vulnerability by storm recovery: **Severe storms & flooding 2018**

	Vulnerable		**Not vulnerable**	
	No.	%	No.	%
Completely recovered	189	49.5	139	59.0
Mostly recovered	99	26.0	52	22.3
Recovered about half-way	63	16.5	28	12.1
Recovered only a little	24	6.3	10	4.3
Not recovered at all	7	1.7	5	2.2
Total	382	100.0	235	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A83: Minority Status & Language Vulnerability by storm recovery: **Severe storms & flooding 2019**

	Vulnerable		**Not vulnerable**	
	No.	%	No.	%
Completely recovered	163	44.8	139	60.4
Mostly recovered	97	26.5	44	19.3
Recovered about half-way	59	16.1	31	13.4
Recovered only a little	36	10.0	8	3.6
Not recovered at all	9	2.5	8	3.4
Total	364	100.0	231	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A84: Minority Status & Language Vulnerability by storm recovery: **Tropical Storm Imelda (September 2019)**

	Vulnerable		**Not vulnerable**	
	No.	%	No.	%
Completely recovered	100	40.0	65	45.8
Mostly recovered	67	26.7	32	22.5
Recovered about half-way	47	18.7	20	14.3
Recovered only a little	31	12.2	17	11.8
Not recovered at all	6	2.3	8	5.5
Total	250	100.0	141	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A85: Minority Status & Language Vulnerability by storm recovery: **Hurricane Laura (August 2020)**

	Vulnerable		**Not vulnerable**	
	No.	%	No.	%
Completely recovered	90	40.3	52	38.9
Mostly recovered	50	22.4	42	31.3
Recovered about half-way	50	22.3	20	15.3
Recovered only a little	23	10.3	13	9.9
Not recovered at all	10	4.7	6	4.6
Total	223	100.0	133	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A86: Minority Status & Language Vulnerability by storm recovery: **Winter Storm Uri (February 2021)**

Winter Storm Uri (February 2021)	**Vulnerable**		**Not vulnerable**	
	No.	%	No.	%
Completely recovered	355	46.2	330	53.1
Mostly recovered	228	29.7	185	29.8
Recovered about half-way	98	12.7	56	9.0
Recovered only a little	56	7.3	29	4.7
Not recovered at all	32	4.1	21	3.5
Total	768	100.0	621	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A87: Minority Status & Language Vulnerability by storm recovery: **Other storms**

	Vulnerable		**Not vulnerable**	
	No.	%	No.	%
Completely recovered	76	36.7	65	40.3
Mostly recovered	40	19.5	51	31.9
Recovered about half-way	55	26.4	24	14.9
Recovered only a little	20	9.7	12	7.5
Not recovered at all	16	7.6	9	5.4
Total	207	100.0	161	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.

Table A88: Hurricane Harvey recovery by Minority Status & Language Vulnerability by area

	Greater Houston				***Rest of Texas***			
	Vulnerable		**Not vulnerable**		**Vulnerable**		**Not vulnerable**	
	No.	%	No.	%	No.	%	No.	%
Completely recovered	213	54.7	142	66.0	84	49.2	69	52.0
Mostly recovered	98	25.2	43	20.0	36	21.4	34	25.5
Recovered about half-way	46	11.8	13	6.1	28	16.3	15	11.3
Recovered only a little	25	6.5	9	4.2	18	10.8	9	7.0
Not recovered at all	7	1.9	8	3.7	4	2.2	6	4.2
Total	390	100.0	215	100.0	170	100.0	133	100.0

Note: Numbers and percentages are weighted and rounded to the nearest tenth.