Impact of climate-related weather events on public support for action against climate change in the United States

Introduction

Climate change is a global issue, and large emitters like the U.S. play a critical role in addressing it. However, political division complicates action, as major parties have opposing views on climate change. The median voter's stance varies significantly, especially in economically depressing times the priorities of the public seem to shift, and many people seem to deprioritize climate change action. On the other hand, while climate change and weather are two different concepts, climate change influences frequency and intensity of certain weather events. Hence, weather events and their consequences (e.g. damage) show temporary peaks of public interest in action against clime change. Therefore what factors promote interest in action against climate change is not yet fully clear. This project aims to explore whether individuals living in areas that are more affected by said consequences and casualties of climate-related events (e.g., tornadoes, storms, floods; and weather / storm events which are increased in their frequency by climate change) are more likely to prioritize climate change as a personal and political concern.

This project analyzes the relationship between the casualties caused directly and indirectly by weather events (e.g. storms) and the respective public opinion about the importance of climate change as a political topic per U.S state.

Therefore, the research question is: Are people living in states with more casualties caused by climate-related events more likely to support countermeasures against climate change?

Used Data

Two datasets were used to analyze whether people in states with higher casualties from weather events are more likely to support climate countermeasures. The datasets are:

1. Storm Events Database 2020: Published by the National Centers for Environmental Information (NOAA), this dataset provides structured statistics on injuries, fatalities, and financial damages caused by weather events in 2020, categorized by U.S. state. The data is publicly available under U.S. government open data policies (CC0, see data report for further explanation for the source of this claim).
2. Yale Climate Change Opinion Map 2020: This dataset, published by Yale University, summarizes public opinion on climate change-related topics, including support for countermeasures, awareness, and perceived importance, aggregated by state and county. It is well-structured and freely usable under an MIT license.

Both datasets are high-quality, well-documented, and suitable for comprehensive analysis. The data was prepared for analysis with Jayvee and is provided as two sqlite databases (political_opinion.sqlite, weather_event_damages.sqlite). The following describes the data itself which was used for the analysis, highlights the relevant data and outlines the data that was kept in the analysis for technical reasons.

Database	Column name	Description
political_opinion.sqlite	GeoName	Name of the U.S. State
	AverageOpinionTrend	Average percentage of the public to be in favor of action against climate change per state (averaged over multiple different items)
weather_event_damages.sqlite	STATE	Name of the U.S. State
	TOTAL_CASUALITIES	The total number of deaths and injuries caused indirectly and directly by weather events per state

The following columns are present in the output files but not relevant for the analysis. They are present due to the capabilities of Jayvee (no deletion of columns possible after Transformation and TableInterpreter Stages). Nonetheless, all these columns were necessary for summarizing / averaging the resulting variables or to filter the data.

Database	Column name	Description
political_opinion.sqlite	GeoType	Type of data entry (State, county, etc.). Necessary for filtering data (only state level).
	CO2limits, CO2limitsOppose, drilloffshore, … (all others)	Average percentage of the public to be in favor of a specific action against climate change per state. Oppose is the item in reversed.
weather_event_damages.sqlite	INJURIES_DIRECT	Injuries directly caused by weather events
	INJURIES_INDIRECT	Injuries indirectly caused by weather events
	DEATHS_DIRECT	Deaths directly caused by weather events
	DEATHS_INDIRECT	Deaths indirectly caused by weather events

Analysis