

Effects of Natural Hazards on Spatio-Temporal Patterns of Crime in the United States

Authors: Cody Delos Santos, Esther Boyle, Petar Jevtic, Melanie Gall



OVERVIEW

Past research on the connection between natural hazards and crime rates has focused on singular disasters. This produced conflicting evidence, with some research indicating an increase in crime rates post-disaster and other a reduction. To bridge this gap, this research investigated crime rates across the entire spectrum of natural hazards that occurred between 1991 and 2018 and that caused damage ranging from \$1,000 to catastrophic impacts. The findings indicated a nuanced and intricate relationship between natural hazards and crime.

NATURAL HAZARDS & CRIME

Research on the relationship between crime and disasters is mixed. Studies related to the COVID-19 pandemic and large-scale disasters such as Hurricanes Katrina and Hugo documented an increase in violent crimes. In contrast, other studies highlighted pro-social behavior and decreased crime after disasters. This research utilized extensive data sets capturing the entire range of hazards and hazard impacts and nationwide crime data to look broadly beyond a singular event or crime type. Data for this research originated from the Spatial Hazard Events and Losses Database (SHELDUS) and the National Incident-Based Reporting System (NIBRS). The analysis was based on a regression discontinuity approach to investigating crime rates before and after an event.

RECOMMENDATIONS

- Local Surge Capacity
 - Establish procedures for swift deployment of law enforcement from neighboring jurisdictions or local government presence.
 - Activate surge capacity swiftly after natural hazard events, particularly severe storms, not just for catastrophic events.
- Coordination with Federal Agencies
 - Collaborate with federal agencies like DHS Surge Capacity Force for effective post-disaster deployment.
- Legislation and Agreements
 - Explore legislative measures and agreements for the immediate empowerment of law enforcement personnel arriving from other states.

KEY FINDINGS

While there is no consistent trend across all hazard types or crime types, some patterns emerged:

- Winter Weather is associated with a decrease in crime rates.
 - A strong correlation with an immediate decrease in crime rates is evident.
 - A drop in the trend of crime rates over time was present.
- Severe storms and thunderstorms are associated with an increase in crime.
 - An immediate increase in crime with the uptick persisting on the weekly, biweekly, monthly, and quarterly time scales was observed.
- Hazards causing significant but not catastrophic damage bring an increase in crime.
 - Hazards causing direct property damage between \$15 to \$55 million are associated with an increase in crime.
- Michigan and South Carolina post-hazard show lower crime rates.
 - After a natural hazard event, both saw an immediate decrease in crime and a decline in the trend of crime.

EFFECTIVE RESOURCE DEPLOYMENT

This research did not find ubiquitous increases in violent or property crime after natural hazards. This refutes the commonly held perception that crime inevitably goes up after a disaster. Residents should evacuate rather than stay behind to protect their property when catastrophic and life-threatening impacts are forecast.

Some hazard types (severe storms) tend to call for a greater presence of law enforcement, while others (winter weather) allow for a reduction. Winter weather seems to immobilize potential perpetrators. Severe storms, on the other hand, appears to create a “window of opportunity” for crime.

Medium-sized disasters tend to also require a higher law enforcement presence, however, this largely depends on the type of hazard and the size of the jurisdiction.

For further information visit: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4622495

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