

# Oversight of U.S. Disaster Policy 2016-2020

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# Research Motivation

- Problem:
  - Disasters are costly: damage from climate change and weather events have cost the United States more than \$1.6 trillion since 1980, and estimates the total cost of disasters between 2016 and 2018 exceeds \$450 billion (NOAA)
- Objective:
  - To better understand how oversight represents a means to assess the influence of policy attention to disaster policy generally and disaster mitigation policy specifically

# Research Questions

- What is the focus of oversight of federal disaster policies and programs?
- Do different oversight mechanisms lead to variation in the types of programs that are the topics of inquiry?
- What is the potential effect of oversight on future disaster damage?

# Literature

- Oversight

- Issue attention in Congress

- Policy demand
    - Constituents
    - Interest group activity

- Oversight Mechanisms

- Fire alarms – Congressional oversight
    - Police patrols – Agency oversight

- Hazards and Disasters

- Historically congressional attention has focused on response and short-term recovery
  - Agency oversight has become increasingly important as services have been contracted out over time

# Data

- Study period 2016-2020
- Focus on natural disasters
- U.S. Department of Homeland Security, Office of Inspector General
  - Reports and investigations conducted by the OIG of FEMA (n = 183)
  - Source: DHS OIG website
- U.S. Congress Oversight
  - Oversight hearings conducted in the House and Senate (n = 50)
  - Source: Lugar Center Oversight Database, Wayback Machine, committee websites

# Methodology: Machine Learning

- Topic Modeling
  - + Software looks for clusters and patterns of words that occur in a set of documents
  - + Allows researchers to analyze large amounts of text data systematically
  - Not all documents and texts are created equal
  - Interpreting the results of machine learning is both art and science
- Process
  - Step 1: Unsupervised topic modeling
  - Step 2: Build a categorization dictionary and supervised topic modeling
  - Step 3: Analysis: Frequency and proximity

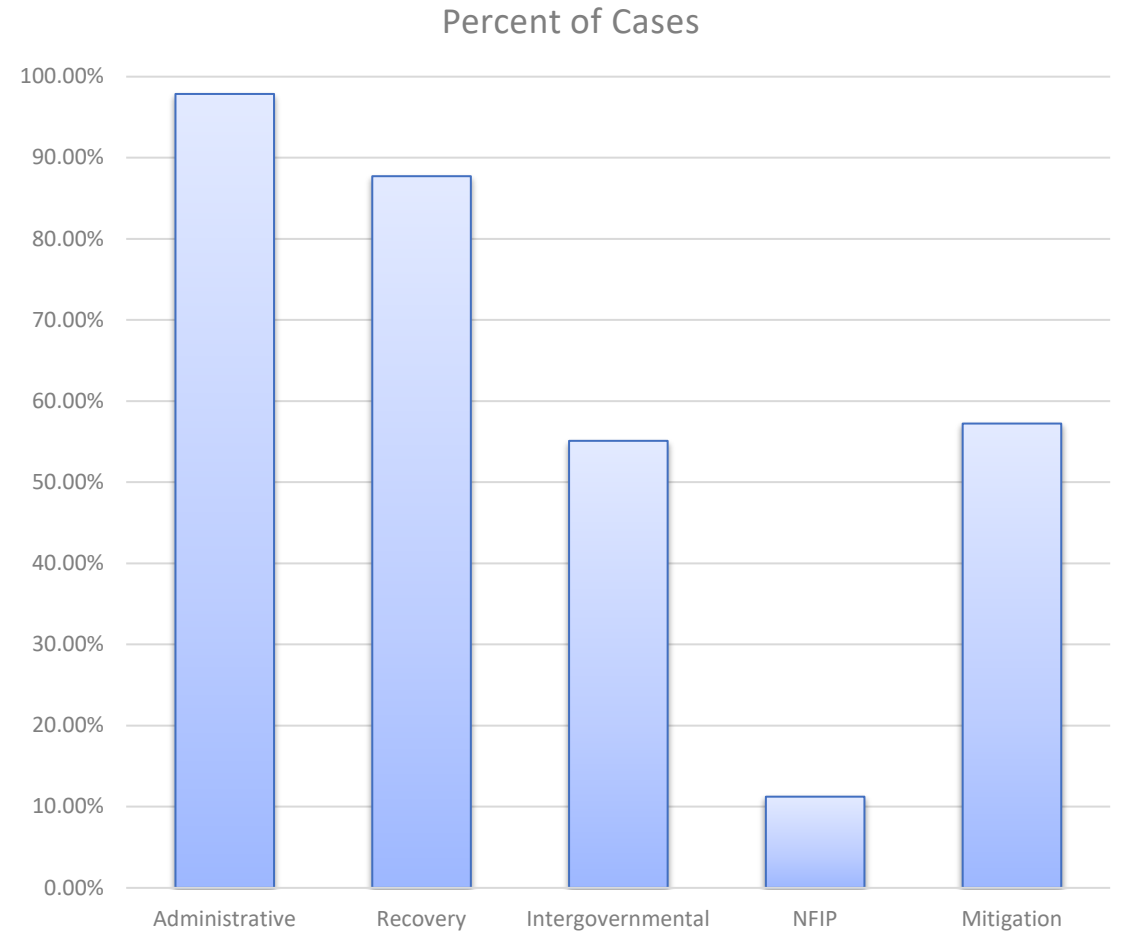
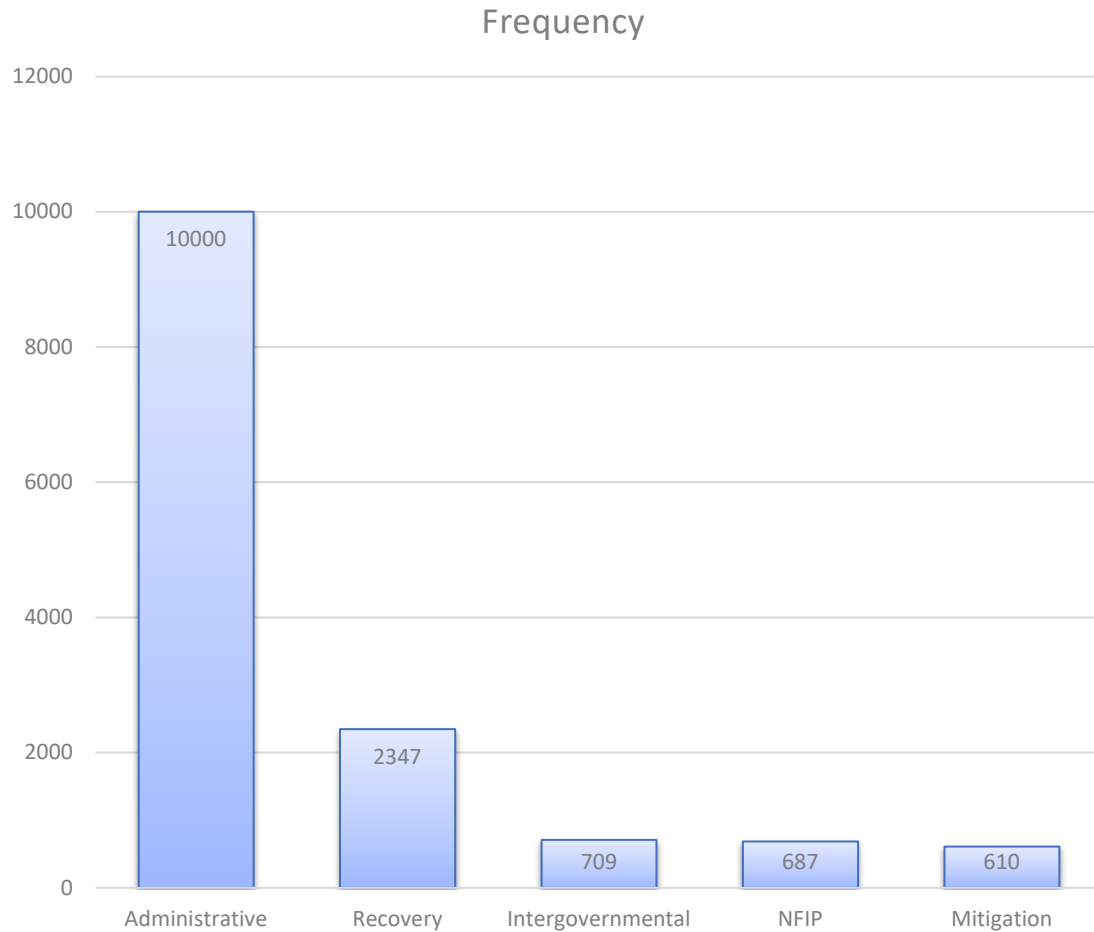
# Step 1: Unsupervised Topic Modeling

Topic	Key Words
Grant Funds Business Practices	PRACTICES; GRANT; VITEMA; PA; FUNDS; ENSURE; MONITORING; ACCOUNT; SUBRECIPIENTS; RECIPIENT; GRANT FUNDS; BUSINESS PRACTICES; ENSURE COMPLIANCE; ACCOUNT FOR AND EXPEND; TECHNICAL ASSISTANCE; FEDERAL REGULATIONS AND FEMA GUIDELINES; FEDERAL REGULATIONS; FEMA GRANT; ADDITIONAL TECHNICAL ASSISTANCE; FEMA GUIDELINES; PA GRANT; FEDERAL GRANT; FEMA GRANT FUNDS; GRANT RECIPIENTS; MONITORING TO ENSURE COMPLIANCE; IDENTIFY AREAS; PROCESS TO IDENTIFY AREAS; COMPLIANCE WITH FEDERAL; GRANT REQUIREMENTS; PA GRANT FUNDS; AUDIT EARLY; GRANT MANAGEMENT; FEDERAL FUNDS; PUBLIC ASSISTANCE GRANT FUNDS; AUDIT EARLY IN THE GRANT; ACCOUNT FOR AND EXPEND FEMA; GRANT FUNDS AWARDED; GRANT FUNDING; FEDERAL GRANT FUNDS; BUSINESS PRACTICES ARE ADEQUATE; APPLICABLE FEDERAL;

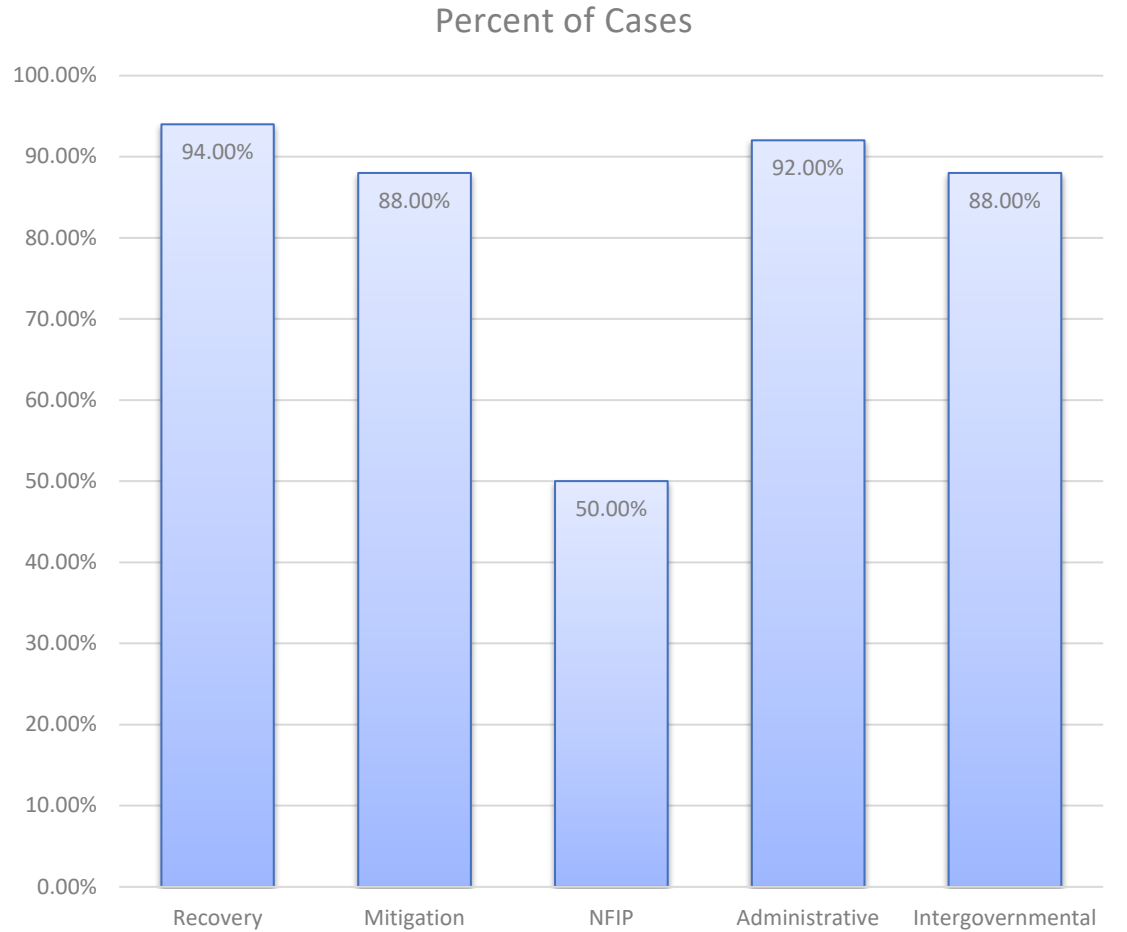
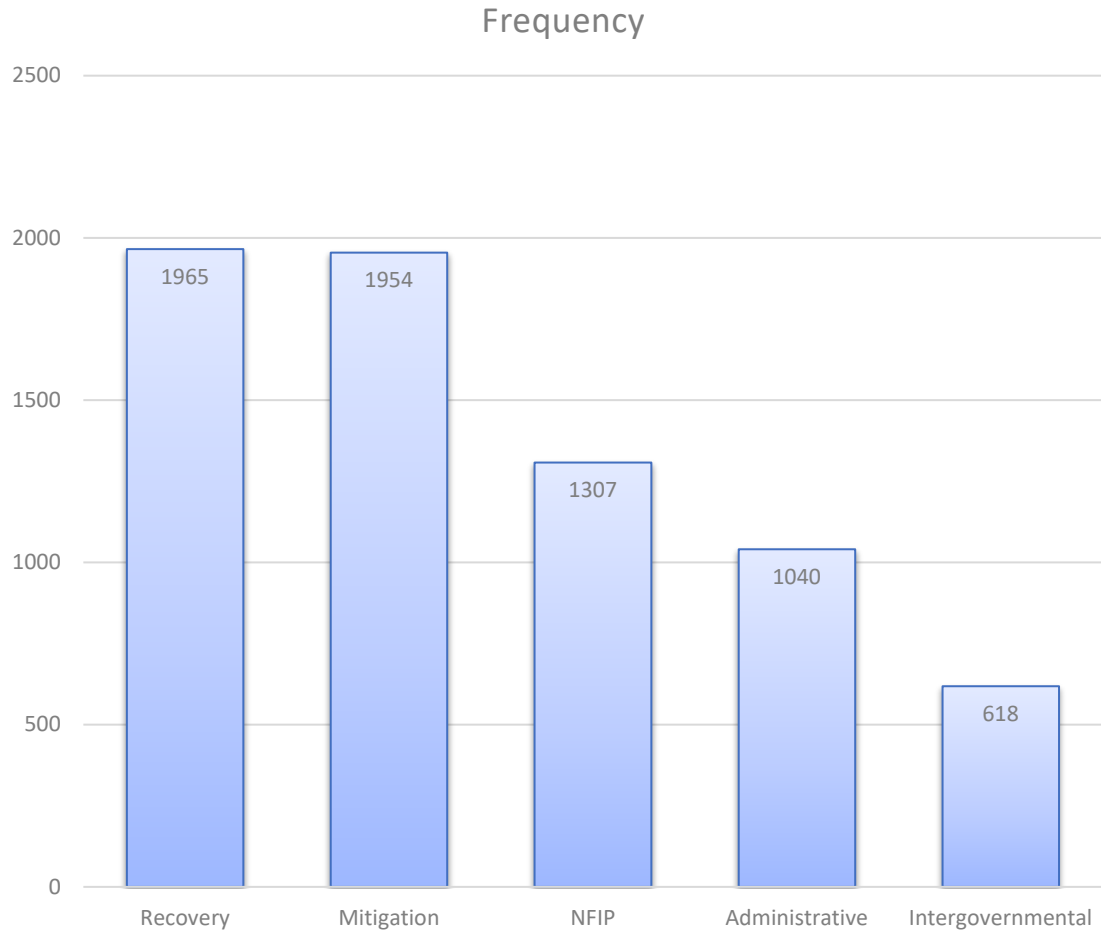
# Step 2: Build a Categorization Dictionary

Categorization Dictionary	
Topic	Categories
<b>Administrative</b>	
	Premium Pay and Cap
	Grant Funds
	Minority and women owned businesses
	Fraud Prevention
<b>Disaster Recovery</b>	
	Debris removal
	Housing repair
	Other (disaster relief, food, shelter)
<b>Mitigation</b>	
	Hazard mitigation and Severe Repetitive Loss
<b>National Flood Insurance Program</b>	No subcategories identified
<b>Intergovernmental Relations</b>	No subcategories identified





## Step 3: Frequency Analysis of OIG Documents



## Step 3: Frequency Analysis of Congressional Oversight Hearing Documents

# Step 3: Proximity Analysis of OIG Reports

Target Word	Keyword	# of times it Co-Occurs	# of Times it does not Co-Occur	# of Times the Word is Absent	Association
Mitigation	Hazard	58	9	14	0.697
Mitigation	Program	70	98	2	0.405
Mitigation	Disasters	57	55	15	0.403
Mitigation	Improve	50	38	22	0.395
Mitigation	Cost	66	87	6	0.395
Mitigation	Ensure	67	94	5	0.387
Mitigation	Reported	45	29	27	0.380
Mitigation	Process	63	83	9	0.378
Mitigation	Funds	67	101	5	0.371
Mitigation	Grant	65	94	7	0.369

# Step 3: Proximity Analysis of Congressional Oversight Hearing Documents

Target Word	Keyword	# of times it Co-occurs	# of times it does not Co-occur	# of times the Word is Absent	Association
Mitigation	Hazard	119	187	495	0.075
Mitigation	Risk	122	969	492	0.022
Mitigation	Flood	136	1282	478	0.021
Mitigation	Disaster	158	1906	456	0.020
Mitigation	Property	62	280	552	0.018
Mitigation	Program	127	1344	487	0.018
Mitigation	Projects	76	556	538	0.015
Mitigation	Insurance	83	771	531	0.013
Mitigation	NFIP	50	366	564	0.010
Mitigation	Resilience	45	290	569	0.010

# Comparative Analysis

	Congressional Oversight Documents	OIG Documents
Public Health	52%	0%
Disaster Recovery	68%	26%
Hazard Mitigation	42%	29%
Federal Regulations for Grants and Programs	0%	88%
Grant Funds	20%	76%
Costs	0%	46%

# Results

- Do different oversight mechanisms lead to variation in the types of programs that are the topics of inquiry?
  - Yes!
- What is the focus of oversight of federal disaster policies and programs?
  - OIG oversight is focused on the administration of grant programs, premium and overtime pay caps, the extent to which programs comply with minority and women owned business contracting requirements, and fraud prevention
  - Congressional oversight has focused heavily on recovery and mitigation, focusing on the impact hazards have on people and infrastructure. From a mitigation perspective, congressional oversight has examined base flood elevations, building codes, flood mapping, hazard mapping, severe receptive loss, and reducing future costs.

# Results

- What is the potential effect of oversight on future disaster damage?
  - Congressional oversight is focused on the short-term tools and techniques that are used to mitigate the effects of disasters facing citizens in their districts, while also signaling a focus on the longer-term challenges of the repeated effects of disasters and loss of property caused by recurring disasters.
    - Efficacy of existing policies to mitigate
    - Severe repetitive loss

# Implications

- The pattern of oversight activities is more robust than anticipated
- For future disaster policy oversight, Congress and the OIG should consider
  - The need to focus on federalism, intergovernmental relations and interagency cooperation on hazard mitigation programs
    - Substantive and procedural areas of interest for Congress and OIG oversight activities
  - The need to increase focus on hazard vulnerability and socially vulnerable groups



# Conclusions

- Findings did not exactly square with the literature
  - Encouraging for risk reduction, good governance, and disaster resilience, and government oversight
  - Suggest that experience with disasters has changed over time
- Future research is needed to understand how oversight of disaster policy has changed over time

Thank you.

Comments, questions, and feedback  
are welcome.

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