Uneven Paths: Recovery in Louisiana Parishes after Hurricane Katrina

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Image source:
Problem Statement

Following the events of Hurricane Katrina, each parish of Louisiana employed specific recovery strategies that resulted in various levels of success. The disaster zone consisted of twenty-one parishes, all of which took unique approaches to recovery. The goal of this research was to:

1) Create a typology of policy toolkits used in parish recovery.

2) Evaluate which policy toolkits lead to the best recovery outcomes.
Disaster Zone
Parishes

<table>
<thead>
<tr>
<th>Acadia</th>
<th>St. Bernard</th>
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<tbody>
<tr>
<td>Allen</td>
<td>St. Charles</td>
</tr>
<tr>
<td>Beauregard</td>
<td>St. James</td>
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<tr>
<td>Calcasieu</td>
<td>St. Mary</td>
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<tr>
<td>Cameron</td>
<td>St. Tammany</td>
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<tr>
<td>Iberia</td>
<td>Tangipahoa</td>
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<tr>
<td>Jefferson</td>
<td>Terrebonne</td>
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<td>Jefferson Davis</td>
<td>Vermilion</td>
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<tr>
<td>Lafourche</td>
<td>Vernon</td>
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<tr>
<td>Orleans</td>
<td>Washington</td>
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<tr>
<td>Plaquemines</td>
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Defining a Typology for Recovery Policies
Literature Review

- **Damage Theory**
  - How severely an area is hit will determine the recovery outcome
  - Null hypothesis

- **Vulnerability**
  - Recovery can be predicted by pre-existing vulnerability
  - Ex: Geography, poverty, etc.

- **Social Capital**
  - Dr. Aldrich’s specialty
  - Communities with stronger social ties will recover better

- **Policy Toolkits**
  - Recovery can be determined by policy, not just pre-existing factors
Defining a Typology for Recovery Policies: Hard Policy

Hard policy can be defined as considerable investment in physical recovery.

Examples of hard policy can be witnessed in the recovery approach of St. Bernard Parish where community leaders prioritized investments for:

1. Consolidation of damaged schools into new facilities
2. Renovation of New Orleans levee system.
Defining a Typology for Recovery Policies: Soft Policy

Some communities adopt soft policy toolkits, deliberately investing in social capital after disaster. This approach focuses on people, not structures.

For example, in Jefferson Davis Parish demonstrated a soft policy toolkit by establishing a task force and heeding their recommendations. The result was the prioritization of community-oriented policy such as workforce development, health care, and other human services.
Defining a Typology for Recovery Policies: Local Policy

Some communities might recover better if their local officials directly draft their own policy. In the case of Louisiana, every parish received funding from FEMA, the LRA, and typically HUD or other entities as well, but some recovery strategies were led more by parish leaders and community members than others.

For example, in Washington parish, parish officials created the Washington Parish Long Term Recovery Task Force to survey residents and oversee implementation.
Defining a Typology for Recovery Policies: State Policy

State policy can be defined as recovery policy largely dictated and executed by state or national government agencies. These top-down policies tend to not take into account varying local context and are often subject to implementation problems (Pressman & Wildavsky 1973).

For example, in St. James parish, many of the top priority projects involved Lake Pontchartrain and protecting Greater New Orleans. Thus the implementation and design of the plan fell into the jurisdiction of the state and federal government.
Evaluation of Recovery Outcomes
Evaluation

1. Descriptive Analysis
2. Synthetic Control Experiment
3. Case Studies
Descriptive Analysis

76% of parishes incorporated a **hard policy** in their recovery approach.

52% of parishes incorporated a **soft policy** in their recovery approach.

86% of parishes incorporated a **local policy** in their recovery approach.

19% of parishes incorporated a **state policy** in their recovery approach.
Descriptive Analysis

Of the single-policy toolkits, **local** and **hard** policies were adopted most frequently.

**Hard and local** along with **soft and local** were used most frequently of the paired policy toolkits.
Synthetic Control Experiment

A synthetic control experiment is an attempt to model the difference in an outcome variable for a treated group and an untreated group.

Using predictive variables, we are able to create models that depict the difference in outcome variables for a treated group (average value of parishes adopting a certain policy) and the untreated group (average value for parishes had they not adopted a certain policy).

Our outcome variables were net out-migration and net outflow of income.
Synthetic Control Experiment: Single Policy Toolkits

<table>
<thead>
<tr>
<th>Net Out-Migration</th>
<th>Net Outflow of Income</th>
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<tbody>
<tr>
<td>Soft and local policy toolkits on their own did not make statistically significant effects on net migration. Hard and state policies each had meager effects, reducing net out-migration by about 1.1 and 3.6 migrants per 1000 persons.</td>
<td>Soft, hard, and state policy had significant effects on reducing the outflow of income from parishes. State policies reduced this the most, followed by hard and soft toolkits.</td>
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Synthetic Control Experiment: Paired Policy Toolkits

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<tr>
<th>Net Out-Migration</th>
<th>Net Outflow of Income</th>
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<tr>
<td>Hard and local policies had a slight negative effect,</td>
<td>Parishes which adopted soft and local policies</td>
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<tr>
<td>hard and state policies had a larger effect, and soft</td>
<td>reduced income outflow by 11.7 dollars per 1000 persons, a smaller effect than the</td>
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<td>and state policies had the largest mitigating effect.</td>
<td>25 dollar difference made by hard and state policies.</td>
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<td>However, the same parishes which adopted soft and</td>
<td>However, soft and state policies also adopted hard and local policies.</td>
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<td>state policies also adopted hard and local policies.</td>
<td>This implies that parishes which adopt all four policy toolkits see large gains.</td>
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<td>Parishes that adopted hard and soft policies saw a difference of 28.4 dollars, while</td>
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<td>hard and local policies saw a difference of 29.9 dollars per 1000 persons.</td>
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The results from the synthetic control experiments indicate that the adoption of one policy type on its own does not prove to promote a successful long-term recovery.

Hard and state policies seemed useful for reducing net outmigration, but parishes which paired these with soft and local policies actually reduced their net financial outflow when people left communities.

While state and hard policy can reduce outmigration, soft and local policies may be key to keeping middle and upper-middle class residents from leaving town.
Case Studies
Washington

- Soft & Local policy toolkits
- Small spikes, no correction
- Robust recovery, appropriate for a rural parish
Plaquemines

- Only Hard policy
- Big spikes, immediate plunge
- Construction boom
- Poor recovery
- Geographic factors
St. Bernard

- Hard, Soft, Local policies
- Same devastation, spike, construction boom
- Resurging recovery after stabilization
- 53.3% of pre-Katrina population in 2010
- Relatively successful
Calcasieu

- Hard Soft, Local policies
- Rita/Southwestern parish
- Lake Charles, 5th largest city in LA
- Underwhelming recovery
- Explanations
  - Intra-parish conflict
  - Rebuke of methodology; recovery did occur
Findings

From the results of the quantitative and qualitative analysis, it is clear that the adoption of one policy toolkit on its own does not promote a successful long-term recovery. When looking at Plaquemines parish, had it adopted soft and local policies to supplement its hard policy (like St. Bernard), its recovery could have been sustained past its initial spike.

Hard and state policies seemed useful for reducing net outmigration, but parishes which paired these with soft and local policies actually *reduced* their net monetary outflow when people left towns - those parishes gained people, but lost money.

Our analysis implies that, while state and hard policy can reduce outmigration, soft and local policies may be vital to keeping the middle and upper-middle class residents from leaving the community.
Questions?