

Impacts of Extreme Events, Phase 1: Intercity Passenger Travel Behavior - The September 11th Experience

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The main objective of this project is to assess the impacts of 9/11 upon passenger travel behavior. Models based on Random Utility Theory (RUT) were used to assess behavioral changes. In this context, the random utility models provided the methodological framework for the assessment of behavioral changes, while transportation surveys provided the data to be used in the analyses and model estimation processes.

The choice experiment and the survey instrument

In order to provide a decision context for the respondents, the project team selected a choice situation that involved a compulsory trip, supposedly a business trip to another city. A business trip was selected because its compulsory nature eliminates one choice dimension, i.e., the decision or not to travel. A total of 192 volunteers participated in the study. Respondents were randomly assigned to different trips: New York-Washington, D.C., New York-Boston, and Boston-Washington. They were provided with choice scenarios involving different transportation choices which were characterized in terms of cost, travel time, and inspection/boarding time. The survey asked the respondents to indicate what their pre 9/11 travel preference would have been and how much and in what ways 9/11 changed their travel choices. It also asked about their perceived stress levels.

Major Findings

Participants reported that prior to 9/11 they were most likely to choose transportation mode based on convenience and cost, and the mode of preference by most was car. Trips by car were rated better on cost than air or train, and more secure than trains. On average, participants reported that 9/11 impacted travel change “moderately” but it is important to note that the responses ranged from “not at all” to “significantly”.

The research was successful in finding statistically significant linkages between changes in travel behavior and the impact of an extreme event, in this case 9/11. In all models estimated, the variable that measured the impact of the 9/11 events upon the individuals that participated in the survey, i.e., *Change*, and a psychometric scale of perceived stress level, i.e., *Stress*, were found to play a statistically significant role in the mode choice process. However, the interpretation of the impact of *Stress* and its relation to 9/11 is obscured by the fact that the psychometric measure used provides a measure of overall stress level, not of the stress specifically produced by 9/11. In any case, *Stress* specifically impacted the utility function of air without interacting with any other variable or utility function. In general terms, the higher the stress level, the less likely the decision makers were to choose the air alternative.

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