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Motivation
Does access to emergency medical services matter?

Background
Fatality comparisons are often presented at the national or state level. A preliminary analysis of the fatality rate per 100,000 population among Oregon counties from 2000-2005 ranged from 6.64-211.17. In the event of a severe motor vehicle crash, the literature suggests that the probability of surviving depends on a number of factors, including age of involved person, safety belt used, roadway features, vehicle speed, alcohol, access to trauma hospital, weather. Which of these factors are contributing to the county differences in Oregon? The research intents to answer the question.

Objective
The main purpose of this research is to build a multivariate regression model that best explains the substantial variation in motor vehicle fatality rates in Oregon Counties. The regression model will be of the form:

Fatality rate = f(variables); the likely variables to be included in the model are shown in the table below.

Data and Methodology
- The research consists of 6 years (2000-2005) of motor vehicle crash data.
- The two primary data sources are Fatal Accident reporting system (FARS) and Oregon Department of Transportation's Statewide Crash Data System (CDS).
- FARS dataset contains more than 125 different coded data elements that characterize the crash, vehicles and the people involved. CDS contains data on reported crashes that occur on public highways.
- A Geographic Information System (GIS) was deployed to estimate the travel time between the crash location and the nearest trauma hospital.
- CDS crash data was linked to FARS to estimate out of hospital time for crashes where the patient was transported to the hospital.

Future Work
The next step in this research is to build a multivariate regression model including interpretation of the significant variables that suggests changes in policies that improve overall highway safety.

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