VIRGINIA AUTOMOBILE & BICYCLE CRASH SAFETY ANALYSIS

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MOTIVATION

Pedalcyclist Fatalities as Percentage of Total Fatalities Nationwide

Year

Percentage of Total Fatalities
0.00% 0.50% 1.00% 1.50% 2.00% 2.50%

Total Automobile-Bike Crashes in Virginia

Year
2010 2011 2012 2013 2014

Crashes
641 749 804 739 746
DATA CHARACTERISTICS

- Virginia police crash reported data
- Single automobile - single bicycle crashes
- 2010-2014
- 2435 observations
- Analyzed bicyclist, automobile driver, vehicle, environmental, and roadway characteristics that influence crash safety
METHODOLOGY

Injury Severity Distribution of Virginia Automobile-Bicycle Crashes 2010-2014

Number of Crashes
- Fatal Injury: 20
- Severe Injury: 557
- Minor/Possible Injury: 1357
- No Apparent Injury: 437
- No Injury: 64

Ordered Probit Model

\[ Y_0 = \]  
\[ Y_1 = \]  
\[ Y_2 = \]  
\[ Y_3 = \]  
\[ Y_4 = \]
FACTORS THAT INFLUENCE CYCLIST INJURY SEVERITY

- Driving & biking under the influence
- Higher automobile & bicycle speeds
- Larger vehicles (SUVs, vans, and trucks)
- Horizontal grades & vertical curves
- Divided & one-way roads
QUESTIONS?

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