The Safety Impact of raising speed limits on rural freeways in Ohio

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Angels who guard you when you drive usually retires at 65
— **Burna Shave**

"Don't be excited to fulfil your speed. There are many who affected with it."
— **Aditya Pandya**

"Until slow and steady could win the race, being fast and speedier can bring no further grace"
— **Priyavrat Thareja**

"At the end of a marathon, it's going to hurt whether you're speeding up or slowing down. You may as well push"
— **Summer Sanders**

Brief History

1

In the United States, speed limits traditionally have been the province of the states, counties, and cities.

2

In 1974, the U.S. Congress established the National Maximum Speed Limit, (NMSL) of 55 mph as part of the Emergency Highway Energy Conservation Act

3

The intention was to conserve oil but the NMSL had greater effect on the traffic fatality. A study accounts that NMSL was responsible for 3,000–5,000 fewer deaths in 1974

4

In 1987, Congress relaxed the NMSL, allowing states to increase speed limits to 65 mph on roadways passing through areas with population less than 50,000 "rural interstates"

5

In November 28, 1995 this law was repealed and gave states the authority to set speed limits on the roadways within their boundaries

Research Objective

The primary objective of this study analyze the safety impact of raising the speed limit from **65mph to 70mph** on some **rural freeways in Ohio**.
This research tries to understand if there is a significant relationship between the increase in **speed limit** on **crash frequency** and **severity**

Study Motivation

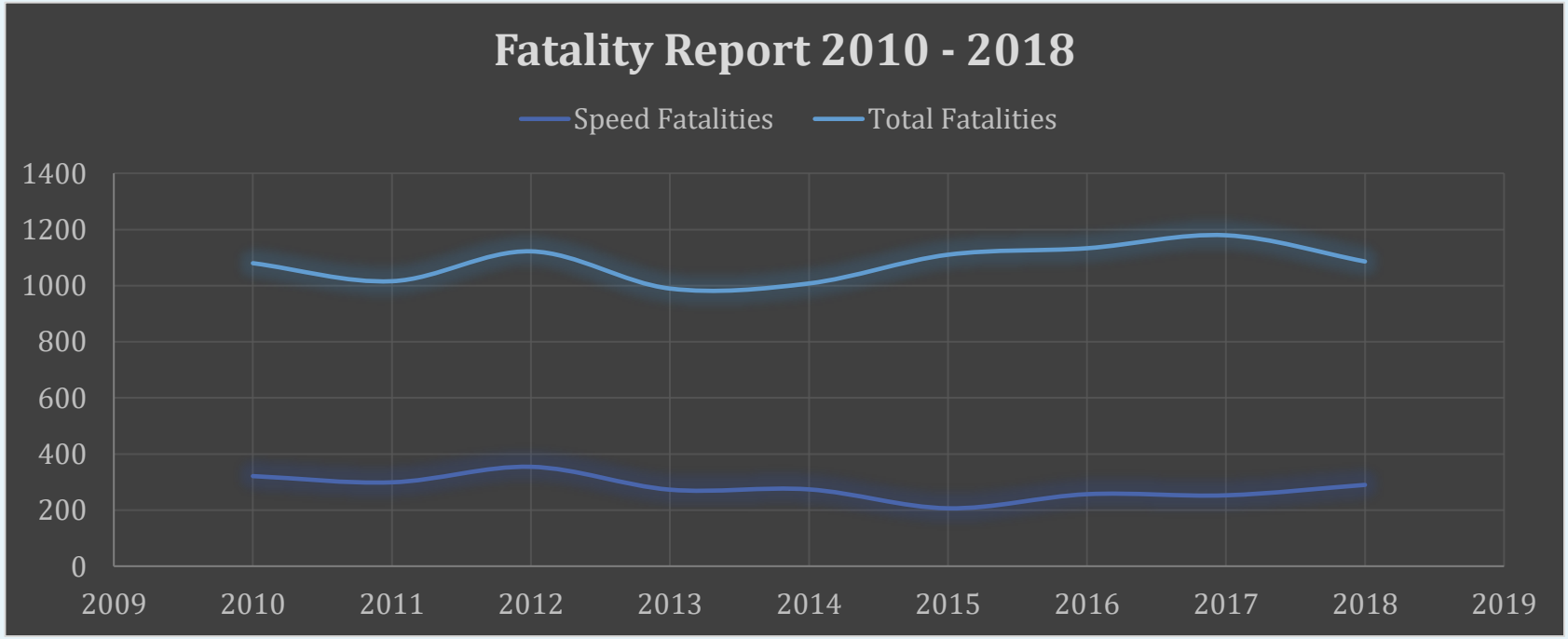
In response to the nationwide ongoing trend of raising speed limits, led to the implementation of the **70-mph speed limit** on **570 miles** of rural freeway in Ohio on **July 1, 2013** and an additional 398 miles of rural freeways starting on **September 29, 2013**

Due to the availability of data and the time frame since the speed limit increase has been made, it seem natural to investigate the effects of these new speed limit on rural freeways and the long-term effect of the increase, which was the motivation behind this study

The graph shows the summary of total crash and fatalities from **2010-2018,** this data determined that the number of traffic fatalities had increased **6.16 percent** over the five-year period from **2014 – 2018** the period after the speed limit was increased.

Also, the number of speed related fatalities had increased **5.84 percent** over the same period

Fatality Report



Methodology

Ohio road data file, crash data and traffic volume data was collected.

Empirical Bayes before-after study will be used which generally focuses on two measures: the actual performance following the increase and what the performance would have been if the increase had not been applied.

Safety performance functions (SPFs) are regression models for estimating the predictive average crash frequency of individual roadway segment.
i.e the frequency of crashes if the increase had not been applied.

Since we are making use of count data, Negative binomial regression was the appropriate modelling framework because it also incorporate the overdispersion parameter.

ANALYSIS

Negative Binomial regression will model the relationship between a dependent variable (Y) and an independent variable (X) in order to explain the way in which the independent variable affects the dependent variable.

Crash severity will be used as the primary dependent variable.

The explanatory variable model will incorporate some factors that could increase crash risk. This includes variables such as AADT, Length of the segment, Vehicle type, driver and weather condition.

CONCLUSION

This is an ongoing process and the conclusion has not been determined.


Thank
you