

This topic is “practice ready.” Yes No

Safety Evaluation of raised speed limits on Kansas freeways using EB method

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Abstract

Many roadway crashes happen due to several reasons and speed limit change is an important factor that lead to crash occurrence. In 2011, Kansas legislature passed the new maximum speed limit law accordingly, effective from July 1st and more than 800 miles of freeways in Kansas saw a speed limit increase from 70 mph to 75 mph as the maximum speed limit on these sections.

The main purpose of this study is to evaluate the safety effects of raising speed limits on Kansas rural freeways in order to get a better understanding of the safety. After identifying the sections where the speed limit changed with the assistance of KDOT, details of the crashes (number, severity, and type, etc.) for before and after the change in the speed limit are collected by using the crash database named as Kansas Crash Analysis and Recording System (KCARS) maintained by KDOT. There are some safety evaluation methods used for this purpose such as before after Empirical Bayes.

There are 39 sites affected by speed limit change (70 mph to 75 mph) and all are counted as freeways. By utilizing the method named earlier, the crash modification factor is estimated and it represented that total crashes have increased by a certain percentage as the speed limit changed from 70 mph to 75 mph. In summary, raising speed limit has caused more fatal, injury, and Property Damage Only (PDO) crashes.

Keywords: Freeway safety—Speed Limit Change—Empirical Bayes method—Total crashes—Crash Modification Factor (CMF)

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