Data Analytics and Merging Behavior in Work Zone: A Driving Simulator Study

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ABSTRACT
This research presents a driving simulator based study to evaluate a driver’s response to alternate work zone sign configurations. This study has compared the Manual on Uniform Traffic Control Devices (MUTCD) configurations against Missouri Department of Transportation (MoDOT) alternate configurations. Study participants within target populations, chosen to represent a range of Missouri drivers, have attempted four work zone scenarios as part of a driving simulator experience. The test scenarios simulated both right and left work zone lane closures with both the Conventional Lane Merge (CLM) and MoDOT alternatives. Statistical data analysis was used to investigate the effectiveness of the alternate configurations employed under different scenarios. Based on the data analysis, there was not a noticeable, statistical difference in location of merging between the MoDOT alternate signs with MUTCD signs in work zones. Regarding the speed analysis there is not any differences between average speeds of drivers in scenarios. This suggests that MoDOT alternative sign is could be considered as an alternative for MUTCD sign.

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