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16. Abstract

This exploratory study investigated the relationship between vision obstructions from body pillars and lane-change crashes. The vision obstructions were quantified by measuring, from the driver's perspective, the horizontal angular sizes and locations of the driver-side A-, B-, and C-pillars.

The sample consisted of 21 vehicle models, including 13 passenger cars, 6 SUVs, 1 minivan, and 1 pickup truck. To control for driver differences, going-straight crashes were used for comparison, with the dependent variable being the ratio of lane-change crashes to going-straight crashes. The analysis used North Carolina crash data.

The results of a multiple regression indicate that the relative frequency of lane-change crashes tended to increase with both wider A-pillars and with A-pillars located farther away from straight ahead. This finding supports the hypothesis that visibility obstructions due to A-pillars have safety implications. However, a more comprehensive analysis would be needed to conclusively exclude other factors as potentially accounting for the obtained finding.

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