

Analysis of Driver's Stop/Go Behavior at the Yellow onset Under Mixed Traffic Conditions

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Abstract

When signal changes from green to yellow at a signalized intersection, often drivers are caught in two minds, whether to cross the intersection or stop at the stop line. Which might lead to right angle collision or rear end collision, when a driver makes an erroneous decision. The area in which the driver is caught in two minds is termed as dilemma zone or indecision zone. Understanding the driver behaviour within the indecisive zone can help in improving the efficiency and safety at the intersections. Most of the studies in the literature have investigated the dilemma zone driving behaviour in homogeneous traffic conditions. Traffic in developing countries like India is heterogeneous containing various vehicle types, where vehicles vary in their physical dimensions and dynamic characteristics. Heterogeneity results in the variability of approach speeds among vehicle types and the acceleration/deceleration capability of the vehicles. Driver behaviour is much more complex in mixed traffic conditions and the research findings cannot be transferred/applied directly. This study analyzes the stop/go behaviour of the drivers at the signalized intersection under mixed traffic conditions from a video based field study. The study findings will be useful in enhancing the safety and efficiency of the signalized intersections.

Keywords: Signalized Intersection, Yellow signal, Stop/go Decisions.

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