

عنوان مقاله:

Analysis of the Impact of users' Violations on the Saturation Flow Rate at Signalized Intersections

محل انتشار:

نشریه بین المللی مهندسی حمل و نقل، دوره 6، شماره 2 (سال: 1397)

تعداد صفحات اصل مقاله: 12

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خلاصه مقاله:

Accurate estimation of saturation flow rate is a prerequisite for accurate estimation of level of service and delays of signalized intersections. Saturation flow rate of intersections depends on many factors, including traffic behavior and culture. One of the important problems of traffic behavior in Iran is the violation of law at the physical region of intersections. The main purpose of this paper is to study the effects of violations such as pedestrians and motorcyclists ignoring the red light and vehicles changing their lanes at the physical region of intersections on the saturation flow rate. Data were gathered through monitoring from 100 cycles of traffic light at Valiasr-Taleghani intersection in city of Tehran during evening peak hours and recording about 3000 headways. The study is based on the use of linear and nonlinear regression models. The results show that users' violations affect saturation flow rate; one unit increase in the traffic light violations by motorcyclists (per hour) leads to 0.66 unit decrease in the saturation flow rate, and one unit increase in the violations by pedestrians passing the crosswalk near the intersection entrance reduced the saturation flow rate by 0.43. The non-linear regression model was used to estimate the coefficients for each of the violations and to adjust the base saturation flow rate values suggested by the highway capacity manual of United State

کلمات کلیدی:

Saturation flow rate, intersection capacity, traffic behavior, traffic law violation

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