

Development of Service Performance Model for Exclusive Motorcycle Lanes.

ABSTRACT

One of the challenges to the planning of transportation is the development of road performance that properly reflects the level of service. The road performance measure or level-of-service scale currently used in the HCM 2010 has basic calculations for motor vehicle, pedestrians and bicycle, but there is no method to use for motorcycle, so this paper assessed rider perception of performance of exclusive motorcycle lane to objective measures of service performance model. Data for the model using field data and video surveys were collected in three exclusive motorcycle lanes in Malaysia. The video surveys data consist of participants' perceptions of comfort, convenience, safety, manoeuvrability, and operational characteristics of exclusive motorcycle lanes. For this reason fifty video clips from a viewpoint of a motorcyclist riding were used. Total 261 participants who were randomly selected contributed in this study and filled out survey forms. Each participant saw ten video clips and ranked them on a scale from 'Excellent to 'Very Poor'. The data were analyzed using a logistic regression model. The result show model is good reliable and has a good correlation coefficient (COX=0.72). Also the important factors to rider perceived road performance were motorcycle speed, total lane width, motorcycle volume and pavement surface quality. The outcome provides guideline for engineers and transportation planners to evaluate different design options by changing the independent variables to find the best combination of factors to achieve the desired road performance. Also existing roadways can be evaluated to determine the present performance level or level-of-service on all segments. On the other hand, this study is also seen as filling the existing knowledge gap between the various types of land transportation amenities and facilities such as pedestrians, bicycles, and vehicles which provides the state service performance index or level-of-service (LOS) of motorcycle facilities.

Keyword: Road performance, Exclusive motorcycle lane, Level of service, Video survey, Logistic regression