Predicting Speed Model of Horizontal Curves on Exclusive Motorcycle Lane.

ABSTRACT

The prediction and estimation of operating speeds on highways are of great significance to planners and designers. A variety of physical factors may influence speeds on highways. Horizontal curvature has the greatest impact on speed. The objective of this study was to develop speed prediction equation on horizontal curve using the geometric characteristics of the curve at 11 sites in exclusive motorcycle lane. To achieve this objective, the speed of motorcyclist was measured in exclusive motorcycle lanes in Malaysia. The multiple linear regression analysis was conducted to evaluate the effect of horizontal curve variables on the speed reduction, expressed as 85th percentile speed reduction, as a dependent variable. The main independent variables entry in the regression analyses were radius of the curve (R), length of tangent (T) and deflection angle (Δ). Also the effect of curve radius on the predicted 85th percentile curve speed was investigated. The findings from the efforts were guidelines in design for different curve types. These guidelines will help both designer and decision makers in evaluating different alignment alternatives.

Keyword: Exclusive motorcycle lane; Speed prediction; Linear regression model; Horizontal curve; Operating speed.