

Development of composite motorcycling safety index along urban roads in Malaysia

ABSTRACT

Motorcycle is a preferred private transportation mode (45%) among Malaysian due to its affordability and ease to move around especially in the hectic urban areas. These vulnerable road users are exposed to greater risk in road collisions due to sharing the roadway with other motor vehicles and unprotected. Worse still, the road was designed without concern for the motorcycle's characteristics. No doubt, segregating motorcycle exclusively from the roadway is an effective engineering measure to address motorcycle safety. But it may not be feasible to introduce in the well-built urban areas. Identification of the road and traffic variables that affecting safe motorcycling in the urban roadway is an initiative to create a safer riding environment. The initial study was carried out to identified traffic and roadway variables that affecting safe motorcycling. The seven pre-determined variables that were found to significantly influencing Malaysian motorcycle riders' safety perception are: pavement condition, paved shoulder width, posted speed limit, mixed traffic volume, type of roadway, lane width, and parking condition. These pre-determined variables were further investigated in the subsequent study, questionnaire with fourteen short video clips representing different traffic and roadway conditions was aired to 483 respondents to rate the motorcycling safety score (MSS) based on their safe riding perception. The response on MSS was further developed into Motorcycling Safety Index (MSI). Lastly, 114 combinations of different traffic and roadway conditions for seven pre-determined variables were formed to establish the Composite MSI boundary. The development of Composite MSI is to enable the road authorities and agencies and/or practitioners to assess the problematic road segments that required immediate remedial actions.

Keyword: Urban road; Mixed traffic; Safe motorcycling; Traffic and roadway variables; Composite Motorcycling Safety Index (Composite MSI)