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| Thesis Title | Application of Traffic Micro Simulation Model to Determine Passenger Car Equivalents at Signalized Intersection |
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Abstract

This thesis studies the passenger car equivalents that are used in planning, analysis, design, and traffic engineering studies. In Thailand, the passenger car equivalents are borrowed from the foreign research; however, these may not be suitable due to differences in many aspects. This study determines the passenger-car equivalents for motorcycles, trucks, and buses at signalized intersections. The passenger-car equivalents are determined based on the delays obtained from the traffic simulation model developed for the study area. The model is calibrated with the field data to reflect driving conditions in Thailand. It is found that the passenger car equivalent of motorcycles is slightly less than one for the case of low traffic volume, and much less than one for the case of high traffic volume. This is because motorcycles tend to share a lane when traffic volume is high. The passenger car equivalents of buses and trucks are slightly greater than one for the case of low traffic volume, and much greater than one for the case of high traffic volume. This is because buses and trucks occupy the lane more than cars do, and have lower deceleration and acceleration rates than cars.

Keywords: Delay-Based Passenger Car Equivalents / Traffic Micro Simulation