INTISARI

Lalulintas di Kota Yogyakarta merupakan lalulintas yang beragam/heterogen, proporsi sepeda motor sangat dominan dalam lalulintas mencapai 76,92% (Jl. Margo Utomo). Penelitian ini bertujuan menghitung nilai ekivalen mobil penumpang (EMP) sepeda motor, kendaraan ringan dan kendaraan berat; menganalisis pengaruh proporsi sepeda motor terhadap nilai EMP-nya; menganalisis model hubungan antara kecepatan, volume dan kepadatan; menganalisis kondisi lalulintas berdasarkan derajat kejenuhannya.

Metode yang digunakan untuk menentukan nilai EMP adalah metode regresi multilinier (berbasis kapasitas). Model hubungan kecepatan, volume dan kepadatan menggunakan model *Greenshields, Greenberg dan Underwood.*

Hasil analisis menunjukkan EMP sepeda motor 0,13, kendaraan ringan 1,00 dan kendaraan berat 6,08. Proporsi sepeda motor berpengaruh besar terhadap EMP sepeda motor dimana semakin besar proporsi sepeda motor dalam komposisi lalulintas maka EMP sepeda motor semakin kecil. Model hubungan kecepatan, volume dan kepadatan yang paling baik yaitu model *Greenshields* dengan koefisien determinasi (R^2) sebesar 0,89 dan volume maksimal (Vm) 1637,91 smp/jam, kecepatan bebas (Vf) 50,84 km/jam serta kepadatan maksimum (Dj) 128,87 smp/km. Kondisi lalulintas secara umum dengan rata-rata nilai DS sebesar 0,83 yang berarti arus mendekati stabil, kecepatan dapat dikendalikan dan nisbah nilai V/C masih dapat ditolerir.

Kata Kunci : Proporsi sepeda motor, Ekivalen Mobil Penumpang, *Greenshields, Greenberg, Underwood*

ABSTRACT

Traffic in the city of Yogyakarta is heterogeneous, the proportion of highly dominant motorcycles in traffic reached 76.92% (Margo Utomo Street). The objectives of this study are to analyze passenger car equivalents (PCE) values for motorcycle, light vehicle and heavy vehicle; to analyze the influence of motorcycle proportion against its PCE; to analyze the relationship models between speed-flow-density; to analyze the traffic condition based on its degree of saturation.

Multiple linear regression method (capacity based) analysis was performed to determine the value of PCE. The relationship between speed-flow-density used Greenshields, Greenberg and Underwood models.

The analysis show that the PCE of motorcycles is 0.13; light vehicle is 1.00; heavy vehicle is 6,08. The proportion of motorcycles has major effect on its PCE value where the greater proportion of motorcycles in traffic composition, the smaller value of motorcycles PCE. The best relationship model of speed-flow-density is Greenshields model with coefficient of determination (R^2) as 0.89 and the maximum volume (Vm) as 1637.91 PCE/h, free velocity (Vf) as 50.84 km/h and maximum density (Dj) as 128.87 PCE/km. In general, traffic conditions with an average DS value as 0.83 which means the flow is close to stable, the speed can be controlled and the ratio of V / C values is still tolerable.

Keywords: Proportion of motorcycles, Passenger Car Equivalent, Greenshields, Greenberg, Underwood