

Jalan Pasar Kembang adalah ruas jalan strategis di Yogyakarta yang terhubung langsung dengan Stasiun Tugu dan kawasan wisata Malioboro. Tingginya aktivitas di lokasi ini memicu maraknya praktik parkir di badan jalan atau *on-street parking*, yang menyebabkan penyempitan lebar efektif jalan dari 13 meter menjadi 6 meter. Kondisi ini secara langsung dapat menghambat arus lalu lintas dan berpotensi meningkatkan biaya operasional kendaraan. Untuk mengatasi permasalahan tersebut, penelitian ini dilakukan dengan tujuan menganalisis dampak *on-street parking* terhadap kinerja lalu lintas, kecepatan, dan biaya operasional kendaraan, serta merumuskan alternatif solusi melalui pemodelan mikrosimulasi.

Penelitian ini menggunakan beberapa pendekatan analisis. Kinerja lalu lintas dianalisis berdasarkan Pedoman Kapasitas Jalan Indonesia (2023), sementara analisis biaya operasional kendaraan mengacu pada metode Departemen Pekerjaan Umum (2005). Karakteristik parkir dianalisis menggunakan metode Munawar (2009). Sementara Pemodelan kondisi eksisting serta kondisi setelah penerapan manajemen parkir dilakukan dengan bantuan perangkat lunak PTV Vissim. Untuk melaksanakan ketiga analisis tersebut, dilakukan pengumpulan data primer melalui survei volume lalu lintas, kecepatan kendaraan, patroli parkir, dan kerataan jalan. Data-data ini selanjutnya menjadi dasar masukan untuk pemodelan kondisi eksisting dan evaluasi skenario perbaikan menggunakan perangkat lunak PTV Vissim.

Hasil penelitian menemukan bahwa tingkat kejenuhan jalan tergolong baik dengan nilai maksimum 0,36, akan tetapi rata-rata kecepatan aktual kendaraan pada hari Sabtu turun drastis hingga 30,16 km/ jam, jauh dari kecepatan teoretis 45,33 km/ jam. Penyebab utama dari penurunan kecepatan ini adalah perbedaan volume lalu lintas dan volume parkir pada setiap periode pengamatan. Dampak dari gangguan ini terukur melalui korelasi negatif yang sangat baik antara volume parkir dan kecepatan kendaraan ringan, dengan nilai R berkisar antara -0,85 hingga -0,96. Dimana pengurangan kecepatan dapat meningkatkan biaya operasional kendaraan. Berdasarkan analisis skenario, solusi paling tepat diimplementasikan adalah menerapkan larangan parkir di sisi kanan jalan. Alternatif ini diproyeksikan mampu meningkatkan kecepatan sedan hingga 68,90 persen dan mengurangi biaya operasional hingga sebesar 12,32 persen tanpa mengganggu aktivitas di sisi kiri jalan.

Kata kunci: *on-street parking*, kecepatan kendaraan, kinerja lalu lintas, biaya operasional kendaraan, PTV Vissim.

Pasar Kembang Street is a strategic road in Yogyakarta, directly connected to Tugu Station and the Malioboro tourist area. The high level of activity in this location has led to the widespread practice of on-street parking, causing a reduction to effective road width from 13 meters down to 6 meters. This condition directly obstructs traffic flow and potentially increases vehicle operating costs. To address this issue, this research was conducted to analyze the impact of on-street parking on traffic performance, speed, and vehicle operating costs, as well as to formulate alternative solutions through microsimulation modeling.

This study employs multiple analytical approaches. Traffic performance was analyzed based on the 2023 Indonesian Road Capacity Manual, while vehicle operating cost analysis referred to the 2005 methodology from the Ministry of Public Works. Parking characteristics were examined using the approach proposed by Munawar (2009). Meanwhile, modeling of both existing conditions and conditions after the implementation of parking management was carried out using PTV Vissim software. To conduct these analyses, primary data were collected through surveys on traffic volume, vehicle speed, parking patrols, and road surface roughness. These data served as key inputs for modeling the existing conditions and evaluating proposed improvement scenarios using PTV Vissim.

The research found that while the degree of saturation was considered good, with a maximum value of 0.36, the actual vehicle speed on Saturdays dropped drastically to 30.16 km/h, far below the theoretical speed of 45.33 km/h. The primary cause of this speed reduction was the variation in vehicle flow and parking volume during each observation period. The impact of this disturbance was measured by a very strong negative correlation (R-value between -0.85 and -0.96) between parking volume and the speed of light vehicles. This reduction in speed, in turn, increases vehicle operating costs. Based on the scenario analysis, the most appropriate solution for implementation is to enforce a parking ban on the right side of the road. This alternative is projected to increase sedan speed by up to 68.90% and reduce vehicle operating costs by 12.32%, without disrupting activities on the left side of the road.

Keywords: on-street parking, vehicle speed, traffic performance, vehicle operating cost, PTV Vissim.