

ANALISIS KINERJA BUNDRAN MENGGUNAKAN *SOFTWARE SIDRA INTERSECTION* DAN MKJI 1997

Studi Kasus: Bundaran, Siyono Wonosari

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ABSTRAK

Bundaran Siyono merupakan salah satu akses yang paling sering dilewati pengendara, dan sebagai jalan utama menuju kawasan Kota Wonosari dari arah Yogyakarta. Bundaran ini akan sangat padat pada jam-jam sibuk, diakibatkan oleh arus lalu lintas yang semakin padat dan akibat hambatan samping yang tinggi. Bundaran ini direncanakan untuk mengurangi titik konflik, derajat kejenuhan simpang, dan tundaan lalu lintas. Sebagian bundaran yang baru dibangun, perlu dilakukan penelitian kinerja bundaran.

Penelitian dilakukan menggunakan metode Manual Kapasitas Jalan Indonesia (MKJI) 1997 dan *Software Sidra Intersection*. Setelah diketahui output kinerja bundaran dari kedua metode, kemudian hasilnya dibandingkan dengan kondisi kenyataan dilapangan, dan dipilih metode yang mendekati hasil observasi. Analisis perbandingan dilakukan dengan metode perhitungan nilai eror, dan pengujian chi square.

Hasil penelitian menunjukkan bahwa derajat kejenuhan bundaran hasil metode MKJI 1997 masih batas aman yaitu (0,50) kurang dari (0,85), sedangkan derajat kejenuhan *SidraIntersection* masih batas aman yaitu (0,625) kurang dari (0,85). Parameter tundaan lalu lintas juga memiliki tundaan yang berbeda diantara kedua metode. Hasil penelitian juga menunjukkan bahwa nilai Error dari analisis metode MKJI 1997 lebih kecil dari pada *Sidra Intersection*. Dan juga dalam penelitian dengan analisis chi square mendapatkan nilai metode MKJI lebih mendekati nilai terima H_0 dengan kepercayaan 95% dibandingkan dengan nilai dari *software Sidra Intersection* yang kesimpulannya tolak H_0 . Penyimpangan nilai MKJI 1997 terhadap hasil observasi juga lebih kecil dibandingkan *SidraIntersection*. Dari hasil penelitian disimpulkan bahwa metode MKJI 1997 lebih mendekati nilai observasi kinerja bundaran siyono.

Kata kunci : Bundaran, Derajat Kejenuhan, Tundaan Lalu Lintas.

COMPARATIVE ANALYSIS OF BUNDAR PERFORMANCE USING SIDRA INTERSECTION AND MKJI SOFTWARE

Case Study: Bundaran, Siyono Wonosari

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ABSTRACT

Siyono Roundabout access is one of the most frequently accessed by motorists, and as the main road to the Wonosari City area from the direction of Yogyakarta. This roundabout will be very crowded during rush hour, due to the increasingly heavy traffic flow and due to high side barriers. This roundabout is planned to reduce the point of conflict, the degree of intersection saturation, and traffic delays. Some of the newly created roundabouts need to conduct a roundabout performance research.

The study was conducted by using the 1997 Indonesian Road Capacity Manual (MKJI) and Sidra Intersection Software. After knowing the roundabout performance output from the two methods, then the results are compared with the real conditions in the field, and the method chosen is close to the observation results. Comparative analysis is done by the method of calculating the error value, and chi square testing.

The results showed that the degree of saturation of the roundabout from the 1997 MKJI method was still a safe limit (0.50) less than (0.85), while the degree of saturation of the Sidra Intersection was still a safe limit (0.625) less than (0.85). The traffic delay parameter also has a different delay between the two methods. The results also showed that the value of the Error from the 1997 MKJI method analysis was smaller than the Sidra Intersection. And also in research with chi square analysis, the value of the MKJI method is closer to the value of accepting H_0 with a 95% confidence compared to the value of Sidra Intersection software, which concludes H_0 . Deviations in the 1997 MKJI value on the results of observations were also smaller than Sidra Intersection. From the results of the study we concluded that the 1997 MKJI method was closer to the observational value of the Siyono roundabout performance.

Keywords: *Roundabout, Degree of Saturation, Traffic Delay.*