

ABSTRAK

Keberhasilan proyek konstruksi jalan sangat dipengaruhi oleh produktivitas dan efisiensi penggunaan alat berat. Pada pekerjaan perkerasan aspal, kinerja alat berat berpengaruh terhadap waktu, kualitas, dan biaya proyek. Produktivitas aktual di lapangan sering berbeda dengan rencana akibat keterlambatan material, koordinasi alat, kondisi lapangan, dan kinerja operator. Oleh karena itu, evaluasi produktivitas dan efisiensi alat berat diperlukan untuk mengoptimalkan sumber daya konstruksi.

Penelitian ini bertujuan mengevaluasi produktivitas dan efisiensi aktual serta membandingkannya dengan produktivitas rencana pada Proyek Rekonstruksi Jalan Luragung–Cibingbin, Kabupaten Kuningan. Penelitian menggunakan metode deskriptif kuantitatif berdasarkan data volume pekerjaan, waktu kerja efektif, spesifikasi, data operasional, dan jumlah alat. Alat yang dianalisis meliputi Dump Truck, Asphalt Finisher, Tandem Roller, dan Pneumatic Tire Roller (PTR). Analisis dilakukan terhadap produktivitas aktual, produktivitas rencana, tingkat pencapaian, deviasi, dan efisiensi penggunaan alat.

Hasil penelitian menunjukkan seluruh alat memiliki produktivitas aktual di bawah rencana. Dump Truck menghasilkan 1,80 ton/jam/unit dari rencana 2,17 ton/jam/unit, dengan tingkat pencapaian dan efisiensi 82,94% serta deviasi 17,06%. Asphalt Finisher menghasilkan 19,58 ton/jam dari rencana 34,86 ton/jam, dengan pencapaian 56,18% dan deviasi 43,82%. Tandem Roller menghasilkan 107,949 m²/jam dari rencana 929,60 m²/jam, dengan pencapaian 11,61% dan deviasi 88,39%. PTR menghasilkan 107,949 m²/jam dari rencana 544,70 m²/jam, dengan pencapaian 19,82% dan deviasi 80,18%. Dump Truck merupakan alat paling efisien, sedangkan Tandem Roller memiliki efisiensi terendah dan deviasi terbesar. Peningkatan koordinasi antaralat, waktu kerja efektif, kelancaran pasokan material, dan optimalisasi pemadatan diperlukan untuk meningkatkan produktivitas proyek.

Kata Kunci: Produktivitas Alat Berat, Efisiensi Alat, Dump Truck, Asphalt Finisher, Tandem Roller, Pneumatic Tire Roller, Rekonstruksi Jalan

ABSTRACT

The success of road construction projects is strongly influenced by the productivity and efficiency of heavy equipment utilization. In asphalt pavement works, heavy equipment performance affects project duration, construction quality, and overall costs. Actual field productivity often differs from planned productivity due to material supply delays, equipment coordination, site conditions, and operator performance. Therefore, evaluating heavy equipment productivity and efficiency is essential to optimize construction resources.

This study aims to evaluate the actual productivity and efficiency of heavy equipment and compare them with the planned productivity on the Luragung–Cibingbin Road Reconstruction Project, Kuningan Regency. A descriptive quantitative method was employed using data on work volume, effective working time, equipment specifications, operational data, and the number of equipment units. The equipment analyzed consisted of Dump Trucks, Asphalt Finishers, Tandem Rollers, and Pneumatic Tire Rollers (PTR). The analysis included actual productivity, planned productivity, productivity achievement, productivity deviation, and equipment efficiency.

The results showed that the actual productivity of all equipment was lower than the planned productivity. The Dump Truck achieved 1.80 tons/hour/unit compared with the planned 2.17 tons/hour/unit, with a productivity achievement and efficiency rate of 82.94% and a deviation of 17.06%. The Asphalt Finisher achieved 19.58 tons/hour compared with the planned 34.86 tons/hour, with an achievement rate of 56.18% and a deviation of 43.82%. The Tandem Roller achieved 107.949 m²/hour compared with the planned 929.60 m²/hour, with an achievement rate of 11.61% and a deviation of 88.39%. Meanwhile, the PTR achieved 107.949 m²/hour compared with the planned 544.70 m²/hour, with an achievement rate of 19.82% and a deviation of 80.18%. The Dump Truck was the most efficient equipment, while

the Tandem Roller had the lowest efficiency and the largest deviation. Improving equipment coordination, effective working time, material supply, and compaction processes is necessary to increase productivity and efficiency in the project.

Keywords: *Heavy Equipment Productivity, Equipment Efficiency, Dump Truck, Asphalt Finisher, Tandem Roller, Pneumatic Tire Roller, Road Reconstruction.*