

ABSTRAK

Kendaraan operasional merupakan sarana penting dalam mendukung kegiatan Dinas Pemadam Kebakaran Kota Palembang. Kerusakan kendaraan dapat menghambat kesiapan operasional, sehingga diperlukan suatu sistem yang dapat membantu menentukan prioritas maintenance secara objektif dan terstruktur. Penelitian ini bertujuan untuk merancang dan membangun Sistem Pendukung Keputusan Prioritas Maintenance Kendaraan Operasional Menggunakan Metode Multi-Objective Optimization on the Basis of Ratio Analysis (MOORA) Berbasis Web. Metode MOORA digunakan untuk menentukan prioritas berdasarkan empat kriteria, yaitu Kelompok kerusakan dengan bobot 35%, usia kendaraan 20%, frekuensi kerusakan 25%, dan lama menunggu 20%. Proses perhitungan dilakukan melalui tahapan penyusunan matriks keputusan, normalisasi, pembobotan, perhitungan nilai optimasi, dan perangkingan alternatif. Hasil penelitian berupa sistem berbasis web yang dapat digunakan oleh Pegawai, Admin, dan Kepala Bidang sesuai dengan hak akses masing-masing. Sistem menyediakan fitur pengelolaan data kendaraan, laporan kerusakan, data maintenance, perhitungan MOORA, hasil perangkingan, dan laporan. Berdasarkan pengujian Black Box Testing, fitur utama sistem telah berjalan sesuai dengan fungsi yang dirancang. Sistem ini dapat membantu proses penentuan prioritas maintenance kendaraan operasional secara lebih objektif, efektif, dan efisien.

Kata Kunci: Sistem Pendukung Keputusan, *Maintenance* Kendaraan, MOORA, Website, Pemadam Kebakaran

ABSTRACT

Operational vehicles are essential facilities that support the activities of the Palembang City Fire Department. Vehicle damage may reduce operational readiness; therefore, a system is needed to assist in determining maintenance priorities objectively and systematically. This research aims to design and develop a Web-Based Decision Support System for Operational Vehicle Maintenance Priority using the Multi-Objective Optimization on the Basis of Ratio Analysis (MOORA) method. The MOORA method is used to determine maintenance priorities based on four criteria: damage level with a weight of 35%, vehicle age with a weight of 20%, damage frequency with a weight of 25%, and waiting time with a weight of 20%. The calculation process consists of constructing the decision matrix, normalization, weighting, optimization value calculation, and alternative ranking. The result of this research is a web-based system that can be used by Employees, Administrators, and the Head of Division according to their respective access rights. The system provides features for managing vehicle data, damage reports, maintenance data, MOORA calculations, ranking results, and reports. Based on Black Box Testing, the main system features functioned according to their intended purposes. This system can support the determination of operational vehicle maintenance priorities in a more objective, effective, and efficient manner.

Keywords: Decision Support System, Vehicle Maintenance, MOORA, Website, Fire Department