SISTEM PENDUKUNG KEPUTUSAN PEMILIHAN JASA LOGISTIK *ON-DEMAND* PADA AUTO7 *CARWASH* MENGGUNAKAN METODE AHP DAN TOPSIS

Tegar Hartoto Rahmatulloh

ABSTRAK

Penelitian ini didasari kebutuhan Auto7 *Carwash* dalam memilih penyedia jasa logistik secara objektif dan sistematis. Tujuan penelitian adalah merancang Sistem Pendukung Keputusan berbasis web guna memfasilitasi evaluasi mitra logistik. Aplikasi dibangun menggunakan Next.js, Tailwind CSS, dan basis data Supabase. Metode komputasi memadukan algoritma *Analytical Hierarchy Process* untuk menetapkan bobot tujuh kriteria, yakni Biaya Pengiriman, Ketersediaan Armada, Kecepatan Pengiriman, Jaminan Asuransi Barang, Ketepatan Estimasi Waktu, Kemudahan Pelacakan, serta Kualitas dan Responsivitas CS. Selanjutnya, algoritma *Technique for Order Preference by Similarity to Ideal Solution* diterapkan untuk merangking tujuh alternatif penyedia layanan. Pengujian fungsionalitas melalui metode *Black Box Testing* mencapai tingkat keberhasilan sebesar 100%. Evaluasi penerimaan pengguna melalui instrumen *User Acceptance Testing* menghasilkan skor kelayakan sebesar 93,33%. Hasil akhir merekomendasikan Lalamove pada peringkat pertama dengan skor 0,7498, disusul Indrive 0,5954, Maxim 0,5789, Qmove 0,5662, Deliveree 0,5280, GrabExpress 0,4816, lalu GoBox 0,3164. Hasil penelitian ini membuktikan bahwa sistem mampu meningkatkan objektivitas, akurasi, dan efisiensi dalam evaluasi pemilihan logistik di Auto7 *Carwash*.

Kata Kunci: Sistem Pendukung Keputusan, Logistik, *Analytical Hierarchy Process*, TOPSIS, Next.js

DECISION SUPPORT SYSTEM FOR SELECTING ON-DEMAND LOGISTICS SERVICE PROVIDERS AT AUTO7 CARWASH USING THE AHP AND TOPSIS METHODS

Tegar Hartoto Rahmatulloh

ABSTRACT

This research was motivated by the need of Auto7 Carwash to select logistics service providers objectively and systematically. The study aimed to design a web-based Decision Support System to facilitate the evaluation of logistics partners. The application was developed using Next.js, Tailwind CSS, and Supabase database technology. The computational method combined the Analytical Hierarchy Process algorithm to determine the weights of seven criteria, namely Shipping Cost, Fleet Availability, Delivery Speed, Cargo Insurance Guarantee, Accuracy of Estimated Delivery Time, Tracking Convenience, and Customer Service Quality and Responsiveness. Furthermore, the Technique for Order Preference by Similarity to Ideal Solution algorithm was applied to rank seven logistics service provider alternatives. Functional testing using the Black Box Testing method achieved a 100% success rate. User acceptance evaluation through the User Acceptance Testing instrument resulted in a feasibility score of 93.33%. The final results recommended Lalamove as the best alternative with a score of 0.7498, followed by Indrive 0.5954, Maxim 0.5789, Qmove 0.5662, Deliveree 0.5280, GrabExpress 0.4816, and GoBox 0.3164. The results of this research prove that the system is capable of improving objectivity, accuracy, and efficiency in the evaluation of logistics selection at Auto7 Carwash.

Keywords: Decision Support System, Logistics, Analytical Hierarchy Process, TOPSIS, Next.js