

ABSTRAK

CV Dekayu Indonesia adalah produsen *hampers* berisi produk kerajinan kayu *daily used*, seperti *wooden tableware*, *kitchenware*, *bathroom accessories* hingga *stationary*. CV Dekayu Indonesia mengalami permasalahan terkait pemenuhan keseluruhan kebutuhan bahan baku (produk kerajinan kayu) oleh *supplier* utama. Selain itu, keterlambatan pengiriman juga seringkali terjadi. Pada kurun waktu mulai dari Januari 2024 hingga Februari 2025 terjadi 14 kasus keterlambatan. Akibatnya, perusahaan harus menentukan *supplier* alternatif agar penyelesaian produksi permintaan pelanggan tepat waktu. Selama ini, penentuan prioritas *supplier* dilakukan tanpa mempertimbangkan kriteria secara mendalam. Penentuan *supplier* secara manual akan membutuhkan waktu yang panjang, sehingga sulit untuk dilakukan secara berkala. Penyimpanan data *supplier* juga masih kurang optimal sehingga masih terdapat data yang hilang. Oleh karena itu, perlu dilakukan perancangan sistem pendukung keputusan penentuan prioritas *supplier* berbasis *website* pada CV Dekayu Indonesia agar proses penentuan prioritas *supplier* dapat berjalan secara lebih efektif dan efisien.

Penentuan prioritas *supplier* dapat dilakukan menggunakan metode *Analytical Hierarchy Process*. Penggunaan metode *Analytical Hierarchy Process* dalam penentuan prioritas *supplier* membutuhkan *input* berupa penilaian perbandingan berpasangan yang nantinya akan dihitung untuk menghasilkan urutan prioritas *supplier*. Selain itu, untuk memudahkan perhitungan dalam penentuan prioritas *supplier* maka dilakukan perancangan sistem pendukung keputusan penentuan prioritas *supplier* menggunakan metode *Software Development Life Cycle* model *Waterfall*.

Hasil penelitian yang dilakukan berupa sistem pendukung keputusan penentuan prioritas *supplier*. Perancangan sistem pendukung keputusan penentuan prioritas *supplier* menggunakan metode *Analytical Hierarchy Process* mampu menghasilkan informasi urutan prioritas *supplier* secara efektif dan efisien. Sistem pendukung keputusan penentuan prioritas *supplier* mampu menghitung secara otomatis dan menghasilkan *output* yang akurat. Hasil perhitungan menunjukkan bahwa prioritas *supplier* kerajinan kayu talenan secara berurutan dari yang teratas sampai terbawah yaitu Ibu Sumi, Bapak Eko Bubut, Ibu Yuni, dan Bapak Yhon. Hasil pengujian sistem pendukung keputusan menggunakan *Black-Box testing* menunjukkan bahwa seluruh fungsi yang terdapat pada sistem dapat berjalan sesuai yang diharapkan atau dapat dikatakan berhasil.

Kata kunci: Sistem pendukung keputusan; *analytical hierarchy process*; *software development life cycle*; penentuan prioritas *supplier*.

ABSTRACT

CV Dekayu Indonesia is a business specializing in hampers composed of daily-use wooden handicraft products, including wooden tableware, kitchenware, bathroom accessories, and stationery. The company has been facing issues in fulfilling the entire raw material (wooden craft products) demands through its primary supplier. In addition, delivery delays have occurred frequently. A total of 14 occurrences of delivery delays were recorded between January 2024 and February 2025. Consequently, the company needs to determine alternative suppliers to ensure timely completion of customer order production. Until now, supplier prioritization has been conducted without comprehensively considering evaluation criteria. The manual process of supplier selection is time-consuming, making it difficult to perform periodically. Furthermore, inefficiencies in supplier data management have resulted in the loss of data. Therefore, it is necessary to design a web-based decision support system for supplier prioritization at CV Dekayu Indonesia to enhance the effectiveness and efficiency of the supplier selection process.

Supplier prioritization can be conducted using the Analytical Hierarchy Process method. The application of AHP in supplier prioritization requires input in the form of pairwise comparison assessments, which are then calculated to generate the supplier priority rankings. Furthermore, to facilitate calculations in supplier prioritization, a decision support system for supplier prioritization was designed using the Waterfall model of the Software Development Life Cycle methodology.

The outcome of this study is a decision support system for supplier prioritization. The design of the system using the Analytical Hierarchy Process method can effectively and efficiently produce information on supplier ranking. The system is capable of automatically performing calculations and generating accurate outputs. The calculation results indicate that the priority ranking of cutting board wooden craft suppliers, from highest to lowest, is as follows: Ibu Sumi, Bapak Eko Bubut, Ibu Yuni, and Bapak Yhon. System testing using Black-Box Testing demonstrates that all system functions operate as expected, indicating successful implementation.

Keywords: *Decision support system; analytical hierarchy process; software development life cycle; supplier prioritization.*