

SISTEM PENDUKUNG KEPUTUSAN PEMILIHAN *SUPPLIER* BAHAN MAKANAN/MINUMAN MENGGUNAKAN AHP DAN TOPSIS PADA KAFE XYZ

Haekal Hasan Thanvindra

ABSTRAK

Proses pemilihan supplier bahan makanan dan minuman pada Kafe XYZ saat ini masih dijalankan secara manual yang nantinya berpotensi memicu subjektivitas serta kesulitan untuk menentukan supplier terbaik. Pemilihan supplier harus mempertimbangkan berbagai kriteria seperti kualitas bahan, harga, waktu pengiriman, serta kecepatan respons supplier agar operasional usaha dapat berjalan dengan baik. Penelitian ini mempunyai tujuan membangun Sistem Pendukung Keputusan (SPK) pemilihan supplier berbasis web menerapkan metode AHP (Analytical Hierarchy Process) serta TOPSIS (Technique for Order Preference by Similarity to Ideal Solution). Sistem dikembangkan menggunakan metode Waterfall dengan framework Next.js serta Supabase sebagai backend dan database system. Metode AHP diterapkan guna menentukan bobot prioritas setiap kriteria dengan melakukan perbandingan pengujian dan berpasangan Consistency Ratio (CR), metode TOPSIS diterapkan guna melakukan proses perangkingan alternatif supplier merujuk dari nilai preferensi tertinggi. Sistem yang dibangun menyediakan fitur login, pengelolaan data kriteria dan alternatif supplier, proses dari perhitungan AHP dan TOPSIS, serta riwayat keputusan yang tersimpan secara terintegrasi. Hasil dari pengujian Black Box memperlihatkan bahwasanya semua fitur sistem berjalan dengan baik sesuai pada kebutuhannya pengguna. Penerapan sistem ini bisa membantu proses pemilihan supplier menjadi lebih objektif, terukur, efektif, dan sistematis sehingga mendukung kelancaran operasional Kafe XYZ.

Kata kunci: Sistem Pendukung Keputusan, Supplier, AHP, TOPSIS.

DECISION SUPPORT SYSTEM FOR SELECTING FOOD AND BEVERAGE SUPPLIERS USING AHP AND TOPSIS AT XYZ CAFÉ

Haekal Hasan Thanvindra

ABSTRACT

The process of selecting food and beverage suppliers at XYZ Cafe is currently still carried out manually, which has the potential to trigger subjectivity and difficulty in determining the best supplier. Supplier selection must consider various criteria such as material quality, price, delivery time, and supplier response speed so that business operations can run smoothly. This study aims to build a web-based Decision Support System (DSS) for supplier selection using the AHP (Analytical Hierarchy Process) and TOPSIS (Technique for Order Preference by Similarity to Ideal Solution) methods. The system was developed using the Waterfall method with the Next.js framework and Supabase as the backend and database system. The AHP method is applied to determine the priority weight of each criterion by conducting comparison tests and pairwise Consistency Ratio (CR), the TOPSIS method is applied to carry out the process of ranking alternative suppliers referring to the highest preference value. The system built provides login features, data management of criteria and alternative suppliers, the process of calculating AHP and TOPSIS, and a history of decisions that are stored in an integrated manner. The results of Black Box testing show that all system features run well according to user needs. The implementation of this system can help the supplier selection process to be more objective, measurable, effective, and systematic, thereby supporting the smooth operation of Cafe XYZ.

Keywords: *Decision Support Systems, Suppliers, AHP, TOPSIS.*