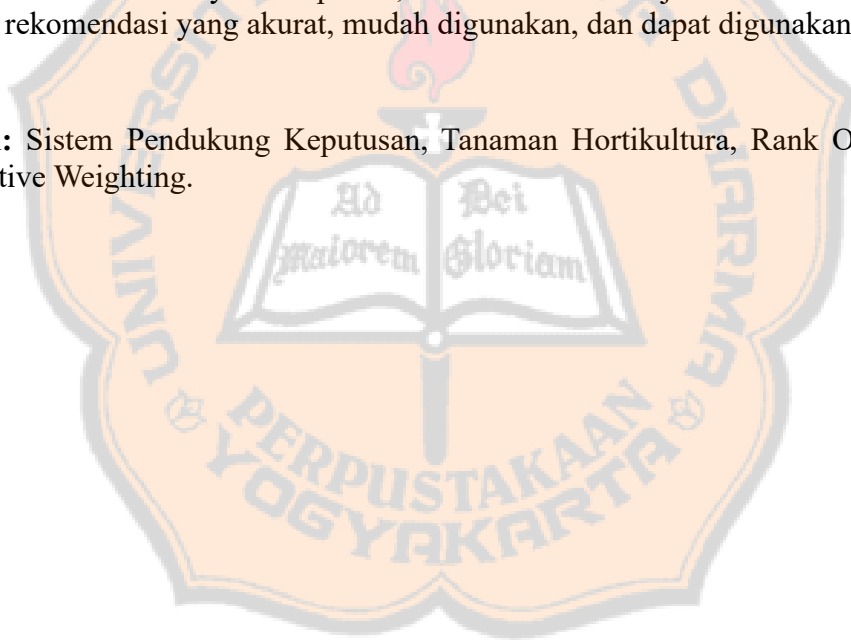


ABSTRAK

Penelitian ini mengembangkan Sistem Pendukung Pengambilan Keputusan (SPPK) Tanaman Hortikultura berbasis website yang menerapkan dua metode utama. Metode Rank Order Centroid (ROC) digunakan untuk menentukan bobot prioritas setiap kriteria lahan (suhu, pH, dan ketinggian) berdasarkan masukan ahli pertanian. Lalu metode Simple Additive Weighting (SAW) diterapkan untuk menghitung skor kesesuaian lahan petani terhadap setiap jenis tanaman hortikultura, dengan normalisasi data menggunakan fungsi piecewise linear untuk menangani kriteria dengan range optimal. Kombinasi kedua metode ini menghasilkan sistem yang dapat memberikan rekomendasi tanaman yang optimal sesuai kondisi lahan. Pengujian sistem dilakukan dalam dua tahap, pengujian berdasarkan ahli untuk memastikan rekomendasi yang diberikan sudah sesuai dan tepat. Kedua, pengujian usability menggunakan metode 5E Usability terhadap 15 pengguna (petani) menunjukkan hasil yang sangat baik. Hasil pengujian usability menunjukkan bahwa Sistem Pendukung Keputusan Tanaman Hortikultura termasuk Sangat Baik dalam hal: Efficiency sebesar 93,89%, Effectiveness sebesar 92,78%, Engagement sebesar 91,67%, Error Tolerance sebesar 95,00%, dan Ease of Learning sebesar 94,44%, dengan rata-rata skor usability mencapai 93,56%. Hal ini menunjukkan bahwa sistem berhasil memberikan rekomendasi yang akurat, mudah digunakan, dan dapat digunakan oleh petani.

Kata Kunci: Sistem Pendukung Keputusan, Tanaman Hortikultura, Rank Order Centroid, Simple Additive Weighting.



ABSTRACT

This research develops a web-based Decision Support System (DSS) for Horticultural Plants that implements two main methods. The Rank Order Centroid (ROC) method is used to determine the weight priority of each land criterion (temperature, pH, and altitude) based on expert agricultural input. Then, the Simple Additive Weighting (SAW) method is applied to calculate the land suitability Skor of farmers against each type of horticultural plant, with data normalization using a piecewise linear function to handle criteria with optimal ranges. The combination of these two methods produces a system capable of providing optimal plant recommendations according to land conditions. System testing was conducted in two stages. First, expert-based testing was performed to ensure that the recommendations provided are appropriate and accurate. Second, usability testing using the 5E Usability method on 15 users (farmers) showed very good results. The usability test results show that the Decision Support System for Horticultural Plants is classified as Very Good in terms of: Efficiency 93.89%, Effectiveness 92.78%, Engagement 91.67%, Error Tolerance 95.00%, and Ease of Learning 94.44%, with an average usability Skor reaching 93.56%. This demonstrates that the system successfully provides accurate recommendations that are easy to use and can be utilized by farmers.

Keywords: Decision Support System, Horticultural Plants, Rank Order Centroid, Simple Additive Weighting.

