

ABSTRAK

Oktafandi, Muhammad Audi . 2026. Sistem Pendukung Keputusan Pemilihan Rute Lari di Kabupaten Jember Menggunakan Metode *Analytical Hierarchy Process* (AHP) Berbasis Web. Tugas Akhir. Program Sarjana. Program Studi Teknik Informatika. Universitas Muhammadiyah Jember.

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Kabupaten Jember memiliki beragam potensi rute lari, namun keragaman ini menyulitkan pelari menentukan rute yang sesuai kebutuhan. Pemilihan rute lari merupakan masalah pengambilan keputusan multi-kriteria yang memerlukan pendekatan sistematis dan objektif. Penelitian ini bertujuan membangun Sistem Pendukung Keputusan (SPK) berbasis web untuk merekomendasikan rute lari terbaik di Kabupaten Jember menggunakan metode Analytical Hierarchy Process (AHP). Enam kriteria yang digunakan meliputi keamanan, jarak, elevasi, waktu berlari, fasilitas, dan daya tarik lingkungan, dinilai terhadap delapan alternatif rute berpola loop. Bobot kriteria diperoleh dari kuesioner perbandingan berpasangan skala Saaty kepada 30 responden pelari aktif, diagregasi dengan geometric mean, dan diuji konsistensinya melalui Consistency Ratio (CR). Hasil menunjukkan kriteria Keamanan memperoleh bobot tertinggi (46,06%), dengan CR gabungan 0,0589 ($\leq 0,10$) yang menunjukkan penilaian konsisten. Perhitungan skor akhir dengan metode weighted sum menghasilkan Alun-Alun Jember Loop sebagai rute peringkat pertama ($S_i = 3,87$), sedangkan Jompo Loop menempati peringkat terakhir. Hasil ini menunjukkan AHP mampu menghasilkan bobot kriteria dan peringkat rute secara objektif, sistematis, dan traceable sebagai dasar pengembangan SPK berbasis web bagi pelari di Kabupaten Jember.

Kata Kunci: *Analytical Hierarchy Process (AHP), Sistem Pendukung Keputusan, Rute Lari, Multi-Kriteria, Kabupaten Jember.*

ABSTRACT

Oktafandi, Muhammad Audi . 2026. *Decision Support System for Running Route Selection in Jember Using the Web-Based Analytical Hierarchy Process (AHP) Method*. Undergraduate Thesis. Bachelor's Program. Informatics Engineering. University of Muhammadiyah Jember.

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Jember Regency offers a wide variety of running routes, yet this diversity makes it difficult for runners to determine the route best suited to their needs. Selecting a running route constitutes a multi-criteria decision-making problem requiring a systematic and objective approach. This study aims to build a web-based Decision Support System (DSS) to recommend the best running routes in Jember Regency using the Analytical Hierarchy Process (AHP) method. Six criteria were used: safety, distance, elevation, running time, facilities, and environmental attractiveness, evaluated against eight loop-pattern route alternatives. Criteria weights were obtained through a Saaty-scale pairwise comparison questionnaire distributed to 30 active runner respondents, aggregated using the geometric mean, and tested for consistency via the Consistency Ratio (CR). Results show that the Safety criterion obtained the highest weight (46.06%), with an aggregated CR of 0.0589 (≤ 0.10), indicating consistent judgments. The weighted sum method ranked Alun-Alun Jember Loop as the top route ($S_i = 3.87$), while Jompo Loop ranked lowest. These findings demonstrate that AHP is capable of producing objective, systematic, and traceable criteria weights and route rankings, providing a foundation for developing a web-based DSS for runners in Jember Regency

Keywords: *Analytical Hierarchy Process (AHP), Decision Support System, Running Route, Multi-Criteria, Jember Regency.*