

**SISTEM PENDUKUNG KEPUTUSAN PEMILIHAN LOKASI
STRATEGIS UNTUK PEMBANGUNAN RUMAH SUBSIDI
MENGUNAKAN METODE *ARAS*
(STUDI KASUS: CV AGUNG KENCANA PROPERTI)**

**OLEH
KETUT EDI NARENDRA
NIM 1915101053**

ABSTRAK

Penelitian ini bertujuan untuk merancang dan mengimplementasikan Sistem Pendukung Keputusan (SPK) berbasis *web* yang dapat membantu CV Agung Kencana Properti dalam menentukan lokasi strategis pembangunan rumah subsidi di Kabupaten Buleleng, serta menguji fungsionalitas sistem yang dibangun. Permasalahan yang melatarbelakangi penelitian ini adalah proses penentuan lokasi lahan yang masih dilakukan secara konvensional sehingga rentan terhadap subjektivitas, padahal penentuan lokasi melibatkan banyak kriteria yang kompleks seperti aksesibilitas, ketersediaan infrastruktur, dan kondisi lingkungan. Penelitian ini menggunakan jenis penelitian pengembangan (*Research and Development*) dengan model *System Development Life Cycle (SDLC)* tipe *Waterfall*, yang meliputi tahap analisis kebutuhan, desain sistem, implementasi, dan pengujian. Metode yang diterapkan dalam proses pengambilan keputusan adalah *Additive Ratio Assessment (ARAS)* dengan tujuh kriteria penilaian, yaitu ketersediaan lahan, kedekatan dengan perkotaan, akses jalan, ketersediaan air dan listrik, keamanan lingkungan, harga lahan, dan akses internet. Sistem dikembangkan menggunakan bahasa pemrograman *PHP* dengan *Framework Laravel*, serta didukung *HTML*, *CSS*, *JavaScript*, dan *MySQL* sebagai basis data. Pengujian sistem dilakukan dengan metode *Black Box Testing* terhadap seluruh fitur utama, meliputi proses *Login*, pengelolaan data alternatif dan kriteria, perhitungan *ARAS*, serta pencetakan laporan. Hasil pengujian menunjukkan bahwa seluruh fitur telah berfungsi sesuai dengan rancangan tanpa ditemukan kesalahan (*Error*) pada skenario yang diuji.

Dengan demikian, sistem yang dikembangkan berpotensi membantu pihak pengembang dalam melakukan analisis pemilihan lokasi secara lebih objektif, terukur, dan berbasis data.

Kata-kata kunci: sistem pendukung keputusan, *ARAS*, pemilihan lokasi, rumah subsidi, *Research and Development*.



**DECISION SUPPORT SYSTEM FOR SELECTING STRATEGIC
LOCATIONS FOR SUBSIDIZED HOUSING DEVELOPMENT USING
THE ADDITIVE RATIO ASSESSMENT (ARAS) METHOD (CASE
STUDY: CV AGUNG KENCANA PROPERTI)**

BY

KETUT EDI NARENDRA

STUDENT ID 1915101053

ABSTRACT

This study aims to design and implement a web-based Decision Support System (DSS) to assist CV Agung Kencana Properti in determining strategic locations for subsidized housing development in Buleleng Regency, as well as to evaluate the functionality of the developed system. The background of this research is the conventional process of selecting land locations, which is prone to subjectivity, even though location selection involves multiple complex criteria such as accessibility, infrastructure availability, and environmental conditions. This study employed the Research and Development (R&D) approach using the Waterfall model of the System Development Life Cycle (SDLC), which consists of the requirements analysis, system design, implementation, and testing phases. The decision-making process was carried out using the Additive Ratio Assessment (ARAS) method with seven evaluation criteria: land availability, proximity to urban areas, road accessibility, availability of water and electricity, environmental safety, land price, and internet access. The system was developed using PHP with the Laravel Framework, supported by HTML, CSS, JavaScript, and MySQL as the database management system. System testing was conducted using the Black Box Testing method on all major features, including login, alternative and criteria management, ARAS calculation, and report generation. The testing results indicate that all system features functioned as designed, with no errors identified in the tested scenarios. Therefore, the developed system has the potential to assist

property developers in conducting location selection analysis in a more objective, measurable, and data-driven manner.

Keywords: *Decision Support System, ARAS, Location Selection, Subsidized Housing, Research and Development.*

