

ABSTRAK

Pengolahan data sampah memerlukan sistem yang mampu mendukung proses pencatatan, verifikasi, dan penyajian informasi secara efektif untuk membantu perencanaan pengolahan sampah. Penelitian ini bertujuan untuk merancang dan membangun Sistem Informasi Pengolahan dan Prediksi Timbulan Sampah Berbasis *Website* pada Dinas Lingkungan Hidup Kota Palembang. Sistem dikembangkan menggunakan framework Laravel dan *database* MySQL, serta menerapkan metode *Single Exponential Smoothing* (SES) untuk melakukan prediksi timbulan sampah berdasarkan data historis. Hasil penelitian menunjukkan bahwa sistem mampu membantu proses pencatatan, verifikasi, pengolahan data, penyajian laporan, dan prediksi timbulan sampah secara terintegrasi. Berdasarkan pengujian menggunakan metode *Black Box Testing*, seluruh fungsi sistem dapat berjalan sesuai dengan kebutuhan yang telah ditentukan. Dengan adanya sistem ini, proses pengolahan dan prediksi timbulan sampah dapat dilakukan secara lebih efektif dan efisien.

Kata Kunci: Sistem Informasi, Timbulan Sampah, Prediksi, *Single Exponential Smoothing*, Laravel

ABSTRACT

Waste data management requires a system that can support data recording, verification, and information presentation effectively to assist waste management planning. This research aims to design and develop a Web-Based Waste Management and Waste Generation Prediction Information System for the Environmental Agency of Palembang City. The system was developed using the Laravel framework and MySQL database, while the Single Exponential Smoothing (SES) method was applied to predict future waste generation based on historical data. The results show that the system is capable of supporting waste data recording, verification, data management, reporting, and waste generation prediction in an integrated platform. Based on Black Box Testing, all system functions operated according to the specified requirements. The developed system is expected to improve the effectiveness and efficiency of waste management and prediction processes.

Keywords: Information System, Waste Generation, Prediction, Single Exponential Smoothing, Laravel