

ABSTRAK

Pengelolaan laporan pelanggan pada layanan air bersih merupakan aspek penting dalam menjaga kualitas pelayanan. Namun, penentuan prioritas pemulihan layanan masih sering dilakukan secara subjektif sehingga berpotensi menyebabkan keterlambatan penanganan. Oleh karena itu, diperlukan sistem yang dapat membantu pengambilan keputusan secara objektif dan terstruktur. Penelitian ini bertujuan menerapkan metode *Technique for Order Preference by Similarity to Ideal Solution* (TOPSIS) yang dikombinasikan dengan metode *Haversine* dalam sistem berbasis web untuk menentukan prioritas pemulihan layanan air bersih di Perumda Tirta Musi Unit Seberang Ulu II Palembang. Metode TOPSIS digunakan untuk menghasilkan peringkat prioritas, sedangkan metode *Haversine* digunakan untuk menghitung jarak antar lokasi berdasarkan koordinat geografis. Sistem melibatkan peran pelanggan, admin, teknisi, dan pimpinan. Kriteria yang digunakan meliputi diameter pipa yang rusak, jenis gangguan, tingkat kerusakan, lokasi gangguan, anggota terdampak, dan jarak lokasi gangguan. Hasil pengujian menggunakan *Black Box Testing* menunjukkan bahwa sistem berjalan sesuai dengan yang diharapkan. Sistem ini mampu membantu penentuan prioritas pemulihan layanan secara lebih efektif, objektif, dan terstruktur.

Kata Kunci: *Haversine*, Layanan Air Bersih, Perankingan, Prioritas, TOPSIS

ABSTRACT

Customer complaint management in clean water services is an important aspect of maintaining service quality. However, determining service recovery priorities is still often carried out subjectively, which can lead to delays in handling. Therefore, a system is needed to support decision-making in an objective and structured manner. This study aims to implement the Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) method combined with the Haversine method in a web-based system to determine the priority of clean water service recovery at Perumda Tirta Musi Unit Seberang Ulu II Palembang. The TOPSIS method is used to generate priority rankings, while the Haversine method is used to calculate distances between locations based on geographic coordinates. The system involves several roles, including customers, administrators, technicians, and management. The criteria used in this study include damaged pipe diameter, type of disturbance, level of damage, location of the disturbance, number of affected customers, and distance to the disturbance location. The testing results using Black Box Testing indicate that the system functions as expected. This system is able to assist in determining service recovery priorities more effectively, objectively, and in a structured manner.

Keywords: Clean Water Services, Haversine, Priority, Ranking, TOPSIS