

Deteksi Anomali Pada Segmentasi Konsumsi Air Pelanggan PDAM dengan Metode *K-Means*

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Abstract

Water consumption is important in meeting the needs of society, but there are often anomalies in customer water consumption. Anomalies occur when there is a deviation from the expected pattern of relationship between water usage and PDAM water pressure. In order to overcome this problem, an analysis is needed to determine the anomalous trend pattern in each customer's data. This study aims to identify anomalous customer water consumption, and segment customers based on monthly consumption trend patterns using the K-Means method. In this study, the data obtained comes from PDAM and the data used is customer data located in Surabaya in 2023, including customer location data, sensor location data, customer water consumption data and water pressure data. The results showed that from a total of 130,023 data, 94690 anomalous data were identified. Evaluation using the silhouette score resulted in a value of 0.9415, indicating that the clustering runs quite well. The results of the analysis are visualised through a website that can facilitate the PDAM in analysing data and optimising its business processes.

Keywords: *Anomaly Detection, Segmentation, K-Means, Website, PDAM.*
