

ABSTRACT

The decreasing sales of Indibiz products indicate the need for a data-based promotional strategy. This research aims to develop a product segmentation system using the Recency, Frequency, Monetary (RFM) analysis and the K-Means Clustering algorithm, visualized in a web-based dashboard using the Flask framework. Indibiz's six-month transaction data was processed through pre-processing, RFM calculation, determining the optimal number of clusters using the Elbow Method and Silhouette Coefficient, and implementing K-Means Clustering. The results show that the data can be grouped into three clusters with distinct RFM value characteristics. In Cluster 0, the recency value is 0.854, the frequency is 0.869, and the monetary value is 0.177, with the highest RFM score of 0.633. Cluster 1 has a recency value of 0.83, a frequency of 0.357, and a monetary value of 0.297, with an RFM score of 0.495. Cluster 2 has a recency value of 0.018, a frequency of 0.5, and a monetary value of 0.165, with the lowest RFM score of 0.288. The developed dashboard can display interactive clustering visualization, enabling the company to design more effective and targeted promotional strategies.

Keywords: *Flask, Indibiz, K-means clustering, Product Segmentation, RFM,*