

ABSTRACT

Waste has been an issue to the world since years ago, especially the waste that cannot be decomposed. Indonesia, in 2010, was nominated as the second largest contributor of plastic waste to the ocean. Some ways have been conducted and one of the ways Indonesia has been done for this issue is by creating waste bank. BankSampah.id is one of online management systems for waste banks developed by Smash.id team as the company. This is a web-based application that has been established since 2015. This application is made to help waste bank managers to manage their customers and waste data. Unfortunately, 86.66% users have not conducted any transactions, 77.02% users have not input the Customer data, 65.30% users have not input the Waste Category data, and 61.15% users has not input any data at all. Smash.id then developed a program which allow a collaboration and partnership with other parties such as government and company. This program is still being tested in Bandung City and the result shows that after the collaboration, Bandung City has 189 waste banks registered in BankSampah.id and 61 of them is actively transacting within the app. This collaboration program needs to be maintained and developed. Unfortunately, Smash.id team has no reference on giving treatment for users as their marketing strategy. Each user surely has different behavior that requires different treatment but giving each user different treatment only cause unnecessary effort. So, classification of waste bank needs to be conducted.

This research is conducted in order to classify the users of BankSampah.id based on their behavior within the app. The classification is done by combining the Analytical Hierarchy Process and Single Linkage Clustering. Customer Lifetime Value (CLV) is used in measuring the objects by adapting LFRMP model: Length (L), Recency (R), Frequency (F), Amount of Waste (M), and Potential (P). The result shows that there are 7 clusters in total. 5 clusters contain of active users and the other 2 contains of inactive users only. Cluster 1 has, in average, 12.4 months of customer life, 1 month of recency, 0 transactions, 0 kg of waste, and 306 customers. Cluster 2 has, in average, 3.7 months of customer life, 2 months of recency, 83 transactions, 54.22 kg of waste, and 169 customers. Cluster 3 has, in average, 4.6 months of customer life, 2 months of recency, 151 transactions, 273.98 kg of waste, and 67 customers. Cluster 4 has, in average, 4.6 months of customer life, 1 month of recency, 507 transactions, 939.52 kg of waste, and 57 customers. Cluster 5 has, in average, 33.31 months of customer life, 32 months of recency, 1 transaction, 4.57 kg of waste, and 1 customer. Cluster 6 is for the older users, and cluster 7 is for the newer users. The marketing strategy is then developed using SWOT analysis by considering the internal factors of Smash.id team as the strength and weakness, and the cluster profile as the opportunity and threat.

Keywords: Clustering, Waste Bank, Marketing Strategy, SWOT