IMPLEMENTASI K-*MEANS CLUSTERING* DENGAN MENGGUNAKAN DATA TRANSAKSI PENJUALAN UNTUK PENENTUAN REWARD PADA AGEN AQUA DAN GAS LPG FF TIRTA

ABSTRAK

Agen Aqua dan Gas LPG merupakan salah satu agen yang berada di Jalan Radar Baru Rt 04 Rw 04, Kel. Kalisari, Kec. Pasar Rebo, Jakarta timur, kompleks pertokoan DITHUBAD. Agen tersebut merupakan salah satu agen yang bergerak dibidang penjualan aqua dan gas LPG. Mengingat banyaknya pesaing bisnis pada usaha yang sama, pemilik agen harus dapat melakukan upaya untuk mencegah terjadinya perpindahan pelanggan, karena pelanggan yang puas dapat memberikan banyak keuntungan bagi agen tersebut seperti dapat memungkinkan tercapainya target transaksi pelanggan. Target pelanggan bagi Agen Aqua dan Gas LPG sangatlah penting karena persaingan antar perusahaan sejenis mungkin terjadi dan mengakibatkan hilangnya kepuasan pelanggan. Maka dari itu, pemilik akan memberikan hadiah berupa reward kepada pelanggan dengan minimal pembelian di atas 100 buah galon dan gas, namun permasalahan yang terjadi saat ini pemilik agen belum mengetahui mana pelanggan dengan minimal pembelian di atas 100 buah galon dan gas, sehingga pemilik agen kesulitan dalam memberikan reward kepada pelanggan tersebut. Berdasarkan penjelasan diatas, maka dilakukan penelitian yang berjudul "Implementasi K-*Means Clustering* Dengan Menggunakan Data Transaksi Penjualan Untuk Penentuan Reward Pada Agen Aqua dan Gas LPG FF Tirta" dengan pengujian menggunakan Davies-Bouldin Index (DBI) dilakukan untuk membuktikan bahwa terdapat perbedaan metode penyelesaian dalam menentukan pusat cluster berdasarkan jumlah squared error. Penelitian ini memiliki tujuan yaitu membangun sistem yang dapat mengelompokkan dan mengetahui tingkat target pelanggan berdasarkan transaksi pembelian agar pihak agen dapat mempertahankan pelanggan yang potensial tersebut dengan cara memberikan memberikan hadiah berupa promo spesial (reward). Hasil penelitian ini ada pengelompokan pelanggan yang mendapatkan reward dan tidak dapat dilihat perbulannya, yaitu pada bulan Januari ada 75 pelanggan mendapatkan reward dan 100 tidak mendapatkan reward, Februari ada 70 pelanggan mendapatkan reward dan 106 tidak mendapatkan reward, Maret ada 80 pelanggan mendapatkan reward dan 96 tidak mendapatkan reward, April ada 35 pelanggan mendapatkan reward dan 141 tidak mendapatkan reward, Mei ada 65 pelanggan yang mendapatkan reward dan 111 tidak yang mendapatkan reward, Juni ada 43 pelanggan yang mendapatkan reward dan 133 tidak mendapatkan reward l, Juli ada 77 pelanggan yang mendapatkan reward dan 99 tidak mendapatkan reward, Agustus ada 48 pelanggan yang mendapatkan reward dan 128 tidak mendapatkan reward, September ada 94 pelanggan mendapatkan reward dan 82 tidak mendapatkan reward, dan Oktober ada 94 pelanggan mendapatkan reward dan 82 tidak mendapatkan reward.

Kata Kunci: *Clustering*, K-*Means Clustering, Reward*, *Davies-Bouldin Index*

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IMPLEMENTATION OF K-MEANS CLUSTERING USING SALES TRANSACTION DATA FOR DETERMINING REWARDS ON AQUA AND LPG GAS AGENT FF TIRTA

ABSTRACT

Agent Aqua and LPG is one of the agents located on Jalan Radar Baru Rt 04 Rw 04, Kel. Kalisari, Kec. Pasar Rebo, East Jakarta, DITHUBAD shopping complex. The agent is one of the agents engaged in the sale of aqua and LPG gas. Considering that there are many business competitors in the same business, the agent owner must be able to make efforts to prevent customer switching, because satisfied customers can provide many benefits for the agent such as enabling the achievement of customer transaction targets. The target customer for the Aqua and LPG Gas Agent is very important because competition between similar companies may occur and result in a loss of customer satisfaction. Therefore, the owner will give gifts in the form of rewards to customers with a minimum purchase of more than 100 gallons and gas, but the problem that occurs at this time is that the agent owner does not know which customer has a minimum purchase of over 100 gallons and gas, so the agent owner has difficulty in giving rewards to these customers. Based on the explanation above, a research entitled "Implementation of K-Means Clustering Using Sales Transaction Data to Determine Rewards for Aqua and LPG Agents FF Tirta" with testing using the Davies-Bouldin Index (DBI) was carried out to prove that there are differences in settlement methods in determining the center of the cluster based on the number of squared errors. This research has the aim of building a system that can classify and determine the level of target customers based on purchase transactions so that agents can retain these potential customers by giving gifts in the form of special promos (rewards). The results of this research are there are groupings of customers who get rewards and cannot be seen monthly, namely in January there were 75 customers who got rewards and 100 did not get rewards, in February there were 70 customers who got rewards and 106 did not get rewards, in March there were 80 customers who got rewards and 96 did not get a reward, in April there were 35 customers who got the reward and 141 did not get the reward, in May there were 65 customers who got the reward and 111 did not get the reward, in June there were 43 customers who got the reward and 133 did not get the reward, in July there were 77 customers who got the reward rewarded and 99 did not receive a reward, in August there were 48 customers who received rewards and 128 did not receive rewards, in September there were 94 customers who received rewards and 82 did not receive rewards, and in October there were 94 customers who received rewards and 82 did not receive rewards.

Keywords: *Clustering, K-Means Clustering, Reward, Davies-Bouldin Index*

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