IMPLEMENTATION OF APRIORI AND ECLAT (EQUIVALENCE CLASS TRANSFORMATION) ALGORITHMS ON SALES TRANSACTION DATA

ABSTRACT

Vhe Pagaralam Minimarket is a minimarket engaged in food retail business activities and various kinds of daily needs. However, in several cases consumers complained about difficulties in finding the desired item and several food products such as noodles (1001115) and wheat flour (0703301) which were contaminated with odors from non-food products such as detergent (1003221). Therefore, recommendations for better layout of goods are needed by taking into account the purchasing patterns formed by consumers when shopping to make it easier for consumers to find items to buy. This study aims to provide recommendations for the layout of goods based on the results of the rules that are formed. This research utilizes the a priori algorithm and the ECLAT (Equivalence Class Transformation) algorithm to compare the results of the rules of the two algorithms. Based on the comparison rules formed, this study resulted in 9 food products that were suggested to be placed side by side, especially Cooking Oil (0802001), Egg (0877765) and Flour (0703853) products because they have a certainty of 97% of products being purchased together. For non-food products, there are 5 products that are recommended to be placed side by side, especially Soap (2810081), Detergent (1460735), Toothpaste (1904103) and Dishwashing Soap (2309150) because it has a certainty of 93% of products purchased together. The rules generated by the ECLAT algorithm are more numerous than the a priori algorithm because they are not limited by the confidence value which causes the rules of the a priori algorithm to be superior because the rules produced tend to be stronger and have greater certainty than the ECLAT algorithm.

Keywords*: Minimarket, Goods Layout, Apriori, ECLAT.*

IMPLEMENTASI ALGORITMA *APRIORI* DAN ECLAT (*EQUIVALENCE CLASS TRANSFORMATION*) PADA DATA TRANSAKSI PENJUALAN

ABSTRAK

Minimarket Vhe Pagaralam merupakan minimarket yang berkecimpung dalam aktivitas bisnis ritel makanan dan berbagai macam kebutuhan sehari-hari. Namun dalam beberapa kasus konsumen mengeluhkan tentang kesulitan dalam pencarian barang yang diinginkan serta beberapa produk *food* seperti mie (1001115) dan tepung terigu (0703301) yang terkontaminasi bau dari produk *non food* seperti *detergent* (1003221). Oleh karena itu, dibutuhkan rekomendasi penyusunan tata letak barang yang lebih baik dengan memperhatikan pola pembelian yang terbentuk oleh konsumen saat berbelanja untuk mempermudah konsumen dalam pencarian barang yang akan dibeli. Penelitian ini bertujuan untuk memberikan rekomendasi tata letak barang berdasarkan hasil *rules* yang terbentuk. Penelitian memanfaatkan algoritma *apriori* dan algoritma *ECLAT (Equivalence Class Transformation)* untuk mengetahui perbandingan hasil *rules* dari kedua algoritma. Berdasarkan perbandingan *rules* yang terbentuk penelitian ini menghasilkan 9 produk *food* yang disarankan diletakkan berdampingan terutama produk Minyak Goreng (0802001), Telur (0877765) dan Tepung (0703853) karena memiliki kepastian sebesar 97% produk dibeli secara bersamaan. Pada produk *non food* terdapat 5 produk yang disarankan diletakkan berdampingan terutama produk Sabun Mandi (2810081), *Detergent* (1460735), Pasta Gigi (1904103) dan Sabun Pencuci Piring (2309150) karena memiliki kepastian sebesar 93% produk dibeli secara bersamaan. *Rules* yang dihasilkan algoritma ECLAT lebih banyak daripada algoritma apriori karena tidak dibatasi oleh nilai *confidence* yang menyebabkan *rules* algoritma *apriori* lebih unggul karena *rules* yang dihasilkan cenderung lebih kuat dan memiliki kepastian daripada algoritma *ECLAT*.

Kata Kunci: Minimarket, Tata Letak Barang, Apriori, ECLAT.