

ABSTRACT

The food industry sells a range of product variations. The company wants to take advantage of their data by building business action from high volumes of transactional data. In this case, data mining technology needs to be implemented to explore valuable information on transactional data to assess customer's preferences to products as a business strategy.

Information about the customers' behaviors of buying food products is important and this can be done by mapping the transaction data which is described as the pattern of customers' tastes. The association method using apriori algorithm is used to map customers' choice.

The challenge is in the data itself, high volumes of data have to be prepared before the data is fetched to the mining process. Data reduction will be held to handle huge instances and attributes of the data. This research focused on the way the data were handled until the association rules were developed. To achieve this objective, three validation levels were implemented to verify the reliability of the association rules shows by percentage confidence.

Furthermore, some data mining technique such as: clustering and time series pattern will be implemented to examine the truth of association rules which were built.

It can be concluded that the association rules were established after three validation levels on reduced high volumes of transactional data, will generate strong association rules with confidence equal or higher than 70% and the rules established truth can be seen from the time series pattern on each group of goods which are then used as the basis of business actions.

Keywords: Data Reduction, Association Rules, Apriori, Confidence, Clustering, Time Series Patterns.