

Product Recommendation System using Market Basket Analysis and Emoji Based Feedback

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Market basket analysis (MBA) or affinity analysis, in the context of e-commerce, is a business intelligence technique for predicting consumer buying decisions by reviewing purchase history and generating association rules. It is connected to the detection of hidden patterns in huge product databases. An effective analysis can improve a company's profitability, quality of service, and customer satisfaction. Therefore, the main aim of this study is to find an efficient way to rate and recommend products based on customer feedback and purchasing habits, as well as to gain a better understanding of current customers' behavior in order to predict future behavior and provide the best product recommendation for their next purchase. As a result of this study, a superior product recommendation system was developed using both MBA and textual/emoji feedback from customers, which eliminated the drawbacks of existing systems. The findings of this study show that analyzing both purchasing history and feedback leads to improved product recommendations for customers' next purchases. The Apriori algorithm model was developed to discover patterns for implementing association rules for recommender systems to find frequent item sets and significant relationships. The minimal confidence and minimum support values used in mining rules to determine the best-related product categories and items are the most important metrics. By analyzing and evaluating feedback data, the customer satisfaction level was determined using the Fast text embedding model. The results of the study reveal that the product recommended appears to be more realistic and applicable because of the use of the Apriori algorithm and Fast text embedding models.

Keywords: CApriori Algorithm, Fast text Embedding Model, Machine Learning, Market Basket Analysis, Recommendation System