UNIVERSITI TEKNOLOGI MARA

MARKET BASKET ANALYSIS FOR MENU RECOMMENDATION AND CROSS-SELLING STRATEGY AT NOREH AND NGOPI

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ABSTRACT

The data has emerged as a key tool for businesses in the food and beverage sector to understand customer purchasing behaviour and optimize their marketing efforts. Noreh and Ngopi currently make menu recommendations and cross selling primarily based on staff experience and manual observation, which restricts the value of sales transaction data for business decision making. So, this study aimed to find the existing business processes and challenges of menu recommendation and cross selling strategies, apply Market Basket Analysis method to find interesting menu associations and create an interactive dashboard to present the analysis results. The study used the Cross-Industry Standard Process for Data Mining (CRISP-DM) framework which consists of the phases of Business Understanding, Data Understanding, Data Preparation, Modelling, Evaluation, and Deployment. Three experiments were conducted using minimum support and confidence of 0.01 (1%) and 0.2 (20%) for experiment 1, 0.02 (2%) and 0.4 (40%) for experiment 2 and 0.04 (4%) and 0.5 (50%) for experiment 3. Resulting to a maximum support, confidence and lift of 0.057 (0.57%), 0.53 (0.53%) and 2.72. Both algorithms were found to be able to identify useful patterns of customer menu selection. On the other hand, although there were some differences, FP-Growth was still faster in all cases. In conclusion, the study shows that Market Basket Analysis is a useful data-driven approach to assist in menu recommendation and cross-selling in Noreh and Ngopi by using meaningful association analysis and Power BI dashboard. Going forwards, larger and longer transaction data sets and including customer demographic data can be used to enhance the accuracy of recommendations and analytical power.