UNIVERSITI TEKNOLOGI MARA

SALES PERFORMANCE ANALYSIS FOR THE BUSINESS MEE UDANG SEPANG BY USING PREDICTIVE ANALYSIS

MUHAMMAD FARHAN NAJWAN BIN MOZAINY

BACHELOR OF INFORMATION SYSTEMS (HONS.) BUSINESS COMPUTING

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ABSTRACT

This study focuses on the application of Business Intelligence (BI) and predictive analytics to enhance the sales performance of a local food and beverage (F&B) business, Mee Udang Sepang, where sales recording is still manual and traditional reporting practices are used. Such practices make it challenging for a business to keep track of sales, customer demand, predict future sales, and make timely decisions about stock, employees, menu and promotions. Thus the objective of the study is to identify the business requirements, build sales prediction models and build an interactive dashboard to assist in decision making. The study uses the Cross-Industry Standard Process for Data Mining (CRISP-DM) as a structured framework, which starts from Business Understanding and ends with Deployment. Data on historical sales were gathered from the point-of-sale receipts and organized in Microsoft Excel. Data was then cleaned, transformed and prepared using various variables including total sales, quantity sold, sales per item, item popularity, payment method, customer activity, and information related to date. Using RapidMiner, two predictive models were built to predict the daily sales and the item sales performance, respectively: Linear Regression and Random Forest Regression. Mean Absolute Error (MAE), Root Mean Squared Error (RMSE) and R^2 were used to evaluate the models. Random Forest achieved better results, recording an RMSE of 31.626, MAE of 24.129 and R^2 of 0.925 for daily sales, and an RMSE of 0.373, MAE of 0.111 and R^2 of 0.996 for item sales. Results presented in an interactive MS Power BI dashboard. In general, the study demonstrates that the use of BI and predictive analytics can enhance sales visibility, sales forecasting and operational planning, as well as data-driven decision making.