

# ***IMPLEMENTATION OF MULTIPLE LINEAR REGRESSION ALGORITHM FOR SALES PREDICTION AT D'KOPIKAP***

*Student Name* : Siti Maisaroh

*NIM* : 6304211327

*Supervising Lecturer* : Ryci Rahmatil Fiska, M.Kom

## ***ABSTRACT***

*The coffee shop industry in Indonesia is growing rapidly, and D'Kopikap is one of the businesses facing challenges in managing production and inventory due to the difficulty of predicting sales. This difficulty is influenced by changes in sales that depend on factors such as the day and time of sale. To overcome this problem, a sales prediction system was developed using a multiple linear regression algorithm, which predicts sales based on factors such as the type of day and time. This system was developed using the Rapid Application Development (RAD) approach to ensure a quick and efficient process. The research results show that the developed sales prediction system is capable of providing daily sales estimates based on day and time variables. Model evaluation was conducted manually and through the system. In manual calculations using 30 days of data, the prediction accuracy was 72.26%, with a Mean Square Error (MSE) of 505.54, Root Mean Squared Error (RMSE) of 22.48, Coefficient of Determination of 0.7226, and Mean Absolute Percentage Error (MAPE) of 30.18%. Meanwhile, the prediction results through the system using full historical data showed an MSE of 72.55, an RMSE of 8.52, a MAPE of 15.86%, a prediction accuracy of 98.09%, but an  $R^2$  value of only 0.0698. This difference in results is due to the characteristics of the data, where the system handles more complex and varied data. Nevertheless, the system remains capable of providing useful predictions to support production planning and inventory management at D'Kopikap.*

***Keywords:*** Sales Prediction, Regression, Multiple Linear, D'kopikap.