

ABSTRACT

The illiteracy rate is influenced by mean years of schooling and the percentage of poor population. The relationship pattern between the mean years of schooling and the percentage of poor population with the illiteracy rate shows data distribution that clusters at certain points, making it more appropriately analyzed using local polynomial nonparametric regression. The data used in this study consist of the Illiteracy Rate (ABH), Mean Years of Schooling (RLS), and Percentage of Poor Population (P0) from 38 provinces in Indonesia in 2024. Based on testing the local polynomial model at degree 0, 1, 2, and 3 with the Gaussian kernel function, the best model was obtained at degree 2. This model produced an MSE value of 3.28881 at local point $X_1 (x_{01})$ value of 8.71 and local point $X_2 (x_{02})$ value of 7.1 , with h_1 value of 1.3 and h_2 value of 3.7. The R^2 value obtained is 87.66397%, categorizing it as a strong model. The SMAPE value for the in sample data is 61.74577% and for the out sample data is 6.05290%, indicating that the model is bias.

Keywords: Illiteracy Rate, Local Polynomial, Nonparametric Regression, MSE, SMAPE