ABSTRACT

Multiple linear regression is a statistical analysis method used to measure the influence of two or more independent variables on the dependent variable. Violation of the assumption of homoscedasticity in multiple linear regression analysis modeling can occur due to spatial heterogeneity. Therefore, it is necessary to analyze by providing spatial weights for each observation location. Multiscale Geographically Weighted Regression (MGWR) is a method developed to analyze spatial data with different scales of influence for each independent variable. This study aims to model the number of poor people in districts/cities in Central Java Province in 2023 using MGWR with the fixed gaussian kernel function. Average Wage of Laborers/Employees/Staff (X_1), Average Wage/Net Salary of Informal Workers (X_2), Number of TKI AKAN (X_3), Number of Unemployed Workers (X_4), APK SLTA (X_5), Number of people aged 15+ who have smoked in the past month (X_6), Percentage of Households Having Access to Clean Drinking Water Sources (X_7), and Percentage of Households Having Access to Proper Sanitation (X_8) each have an effect on the Number of Poor Population (Y) in at least one observation location. The MGWR model has an R^2 value of $0{,}8780482$ and an $R^2 adjusted$ of $0{,}8200639$.

Keywords: MGWR, Number of Poor Population, Fixed Gaussian Kernel