

## ABSTRACT

Central Java faces challenges in ensuring the equitable development of its human resources. This study analyzes the Human Development Index (HDI) model for Central Java in 2023 using ridge regression with Hoerl, Kennard, Baldwin (HKB) and Kibria methods, to identify the impact of variables such as Female Years of Schooling, Male Years of Schooling, Life Expectancy, Population Density, Poverty Rate, and Expenditure per Capita on HDI. The analysis shows that the HKB method identifies three significant variables: Male Years of Schooling, Life Expectancy, and Expenditure per Capita. The Kibria method identifies four significant variables: Female Years of Schooling, Male Years of Schooling, Life Expectancy, and Expenditure per Capita, with an Adjusted R<sup>2</sup> of 94.55%, indicating the model's ability to explain HDI variation while considering the number of independent variables. The MSE of 0.0156 indicates small prediction errors. The ridge regression models with three variables (Male Years of Schooling, Life Expectancy, and Expenditure per Capita) from both HKB and Kibria methods result in an Adjusted R<sup>2</sup> of 96.53%, demonstrating the model's excellent explanatory ability. The MSE of 0.00779 suggests that the predictions closely match the actual values. Both methods are effective in addressing multicollinearity, as indicated by VIF values below 10.

**Keywords:** *Human Development Index, Central Java, ridge regression, multicollinearity, HKB, Kibria*