ABSTRACT

Inflation is a general increase in prices that affects currency value, demand patterns, and the supply of goods and services. High and unstable inflation can hinder economic growth, making its control crucial. This study aims to predict Indonesia's inflation rate using Locally Estimated Scatterplot Smoothing (LOESS) regression, a nonparametric method capable of handling nonlinear data patterns such as inflation. Although LOESS is a nonparametric method, it still requires stationary data. Indonesia's year-on-year (y-o-y) inflation data from June 2016 to May 2024 is used, with data divided into in-sample (80%) for model training and out-sample (20%) for model evaluation. LOESS regression is influenced by three parameters, namely span, degree, and weight function. This study examined the model using span variations between 10% and 95%, degrees of 1 or 2, and the tricube weight function. The best model was found at a 10% span and degree 2, with an R-squared value of 91.163%, indicating the model explains 91.163% of inflation data variation. Out-sample evaluation produced a MAPE of 10.887%, indicating good predictive accuracy. LOESS regression is proven effective for economic policy planning due to its flexibility in capturing complex data patterns.

Keywords: *Inflation*, *Regression*, *Locally Estimated Scatterplot Smoothing* (LOESS), *Nonparametric*, *Span*