

## ABSTRACT

*Food security is a priority for the government of Indonesia in achieving the Sustainable Development Goals (SDGs) 2030, especially in the aspects of No Poverty and Zero Hunger. Overall, the food security of Aceh Province ranks 22 with a moderate food-secure status. However, there are still disparities in several regencies/cities because the data significantly deviates from the average value, resulting in outliers. Regression modelling based on the mean is less effective in explaining data contain outliers because of the large error variance, so causes heterogeneity the error (heteroscedasticity). Therefore, quantile regression modelling will be carried out on Food Security Index (IKP) of Aceh Province. Quantile regression is a regression method can be used on data contain outliers and heteroscedasticity. The parameter estimation is conducted using the LAD (Least Absolute Deviation) method, which minimizes the absolute value of the errors with apply different tau ( $\tau$ ) weights, called by loss function. Based on the quantile regression results for the R-GUI (R-Graphical User Interface), the estimate parameters are resulted different in each quantile. The best model is achieved at the 0,75 quantile. Significant variables for modelling Food Security Index include rice production ( $X_2$ ) and the poverty rate ( $X_3$ ). Quantile regression modelling is better than multiple linier regression modeling because it has a lower AIC value, 159,508.*

**Keyword:** *Food Security Index, Outlier, Heteroscedasticity, Quantile Regression*