

ABSTRACT

THE CLUSTERING OF THE INCIDENCE OF PNEUMONIA IN TODDLERS USING RESPONDED BASED UNIT SEGMENTATION IN PARTIAL LEAST SQAURE (REBUS-PLS) IN EAST JAVA PROVINCE

Response Based Unit Segmentation (REBUS) is one of the statistical methods that can detect and address any alleged heterogeneity in the observation unit derived from different classes. With REBUS PLS, the observation units are then grouped (clustering) based on the similarity of *performance* in the model and simultaneously estimates the parameters of each formed group, and it also produces more precise and rational research results.

The objective of the study is to determine the influence of the latent host and the environment variables towards the latent variable of pneumonia incidence. The indicators of the variables which are researched consist of low birth weight infants ($X_{1.1}$), non-exclusive breastfeeding ($X_{1.2}$), non-complete immunization ($X_{1.3}$), malnutrition ($X_{1.4}$), healthy houses ($X_{2.1}$), houses ($X_{2.2}$), and also the application of REBUS PLS in classifying the occurrence of pneumonia occurred to toddlers in East Java Province.

The type of the study is *non-reactive* or *un-obtrusive*, and smple in this study all districts / cities in East Java Province as many as 38 districts / cities. Data management and analysis use XLSTAT software.

The results of analysis using REBUS PLS generate 2 segments. They are segment 1 consisting of 33 observation units and segment 2 consisting of 5 observation units, and also there is an environmental construct against pneumonia generating value of counting = 5.582 which is $> Z$ score = 1.96. Host constructs against pneumonia generate value of $t_{\text{counted}} = 2.664$ which is $> Z$ score = 1.96. In segment 2, the environmental constructs against pneumonia produce value of $t_{\text{counted}} = 21.261$ which is $> Z$ score = 1.96. Host construct towards pneumonia yields value of $t_{\text{counted}} = 14,586$ which is $> Z$ score = 1.96.

It can be drawn a conclusion that REBUS PLS is able to detect heterogeneity, so there are 2 segments formed from the observation units, and latent variables of host and environment variables significantly affect the pneumonia, either in segment 1 or in segment 2.

Keywords : PLS, REBUS-PLS, The incidence of Pneumonia