ABSTRACT

Human Immunodeficiency Virus (HIV) is a highly lethal disease-causing human civilization throughout history, known as AIDS (Acquired Immuno Deficiency Syndrome), is an infectious disease that became a global health problem and is spread almost all over the country in the world, including Indonesia. These problems include the incidence of HIV/AIDS, which tends to increase from year to year in high mortality rates. Spatial autocorrelation statistics are then used to determine whether there is any influence of the space/spatial of the districts or cities to the occurrence of the HIV/AIDS incidence in East Java. In this case, the Queen’s contiguity matrix is used to be the weighted matrix. Based on the statistical Moran’s I that is 0.5779 and Z-value equal to 4.8161 then finally can be concluded that there is significant space/spatial influence in the HIV/AIDS incidence rate in each district/city in East Java. Positive Moran’s I also indicates that values of adjacent positions tend to form group, that is, districts/cities with high HIV/AIDS incidence rate group together as well as low HIV/AIDS incidence rate districts/cities. In its modeling term, 2p-weibull is the most appropriate distribution to form its survival model. It also includes spatial random effects or spatial frailty terms to overcome its unexplained spatial dependencies in the model. Enclosing the CAR frailty term in the model using Bayesian approach producing minimum DIC among 2 others model competing, survival model with no frailty and survival model with normal frailty. The estimated parameters then used to obtain the hazard function for all the HIV/AIDS sufferer in 38 districts and cities in East Java. It also corresponds to the significant covariates in the model, i.e. information of ARV therapy participation before the program, clinical stadium 1, 2, 3 and 4, functional status of working, body mass index and percentage of the CD4 quantities.

Key words: Human Immunodeficiency Virus (HIV), Acquired immuno deficiency syndrome (AIDS), Spatial Autocorrelation, Moran’s I, 2P-Weibull, Survival Model, Frailty, Bayesian, Conditionally autoregressive (CAR).