

## ABSTRACT

### **Logistic Regression and Multivariate Adaptive Regression Spline (MARS) Binary Response Modeling to Predict HIV-AIDS Incidence in Banyuwangi**

One of regression analysis used to analyze binary response variable is logistic regression. Multivariate adaptive regression splines (MARS) is a nonparametric regression model that assumes the function of the relationship between predictor variables and response is unknown. The objective of this study is to obtain the best model between MARS Binary Response and Regression Logistic to predict the incidence of HIV-AIDS in Banyuwangi, and to see the predictor variables that affect incidence of HIV-AIDS in Banyuwangi.

Study design used in this research is Non Reactive study. Population in this study is people with HIV-AIDS recorded in the registration data from NGO Care HIV / AIDS Kelompok Kerja Bina Sehat Banyuwangi with a sample size of 261 respondents.

Results of the data analysis with logistic regression in models get

$$Y = 0.36 - 2.902 X_2 - 2.378 X_3 + 4.439 X_6 - 3,501 X_7$$

influential variables were age, occupation, casual partners and condom use. Great value probability is 8.45. The best modeling with Binary Response MARS obtained the best model

$$Y = 0844 + 0031 * BF1 - BF2 + 0044 * 0251 * 0323 * BF3 + BF7 - BF9 + 0033 * 0057 * 0024 * + BF11 BF12 BF13 + + 0426 * 0028 * BF15 - BF19 + 0510 * 0911 * BF21 - 0765 * BF23 - BF25 + 0352 * 0680 * BF27$$

Wherein the variables that affect the value of GCV in a row is casual partners, condom use, occupation, age, the pair remained, sex and marital status. From the second model used logistic regression models prediction accuracy is 90.8%, while the accuracy of the MARS models Binary Response of 97.3%. Therefore MARS Binary response models larger than the Logistic Regression Model, it can be concluded that the modeling results MARS Binary Response was better than the logistic regression modeling.

**Key words:** Logistic Regression, MARS Binary Response, HIV-AIDS Incidence Prediction