ABSTRACT

Regression analysis generally uses continuous response variable with normal distribution. However, the response variable used may also be discrete variable with Poisson distribution. If the response variable is discrete numeric with Poisson distribution, the use of linier regression will be inappropriate, and should be replaced with Poisson regression.

The objective of this study was to compare results of analysis on the factors affecting number of maternal mortality in each district and cities in East Java using forward and backward methods.

Case study use was the number of maternal mortality in each distrct and cities in East Java in 1999. the predictor variables were Number of Parturient (X1), Number of First Trimester Visit (K-1) (X2), Number of Fourth Trimester Visit (K-4) (X3), Precentage of High Risk Pregnancy (X4), Precentage of Parturition Assistance by Health Care Providers (X5), Proportion of Medical Care Providers (X6), Proportion of Paramedics (X7), and Proportion of Trained Traditional Midwives (X8). The number of maternal mortality due to parturition in each distrct and cities in East Java was relatively small, if compared to total population.

Data processing was undertaken by reducing likelihood functions into an appropriate model. The model and parameter estimation were applied to the maximum likelihood, so that we obtained non-linear equation system presenting as a parameter value, which may be used to determine the estimation value.

Result of data processing revealed Poisson regression model as follows :
$\mu = \exp(0.5243 + 0.0000X_1 + 0.0189X_2 + 0.0090X_4 - 233.2086X_6)$, so that we obtained that factors affecting number of maternal mortality are Number of Parturient (X1), Number of First Trimester Visit (K-1) (X2), Precentage of High Risk Pregnancy (X4), Proportion of Medical Care Providers (X6).

Keywords : *Poisson regression, maternal mortality*