PARAMETER ESTIMATION AND HYPOTHESIS TESTING IN BIVARIATE WEIBULL REGRESSION MODEL  
(Case Study: Patients with Dengue Hemorrhagic Fever Patients in General Hospital Haji Surabaya in 2011)  

Name  : Andi Quraisy  
NRP  : 1311 201 012  
Supervisor : Dr. Purhadi, M.Sc  

ABSTRACT  

Regression modeling often involves a response variable that Weibull distributed both univariate and multivariate analyzes. To estimate the Bivariate Weibull Regression Model parameters by using the maximum likelihood method (MLE), but the results are not close form so use Newton-Raphson iteration method. In the hypothesis testing method is used to the maximum likelihood ratio test (MLRT). Test that is used is synchronously and partial test that are done with the test statistic chi-square distributed. This study examines the shape parameter estimation and hypothesis testing Bivariate Weibull Regression Model. As an application, this study is applied to the cases of dengue fever in RSU Haji Surabaya in 2011. The results on the estimation of the parameters yield 11 parameters under the population that is \( \Omega = (\theta_1, \theta_2, \theta_3, \theta_4, \theta_5, \sigma, \beta_1, \ldots, \beta_k) \) and 6 parameters under \( H_0 \) that is \( \omega = (\theta_1, \theta_2, \theta_3, \theta_4, \theta_5, \sigma) \) and the comparison of lnlikelihood values under \( H_0 \) with lnlikelihood under population or the formulation of the hypothesis testing. While in practice, the six variables, namely age, gender, hemoglobin, leukocytes, hematocrit, and platelet on testing simultaneously generate at least there is one variable that affects a time grade I and grade II in patients with dengue hemorrhagic fever in the RSU Haji Surabaya, and partial testing results leukocytes and hematocrit variable that are not affected significantly.  

Keywords: bivariate Weibull distribution, Weibull bivariate regression model.