

**ABSTRACT**

**The Modeling Level of Birth Weight Using a Maximum Likelihood Estimation and Generalized Method of Moment**

Maximum Likelihood Estimation (MLE) and Generalized Method of Moment (GMM) are method of estimation used in ordinal logistic regression model to determine the effect among variables without requiring assumptions. This method can be used to estimate parameters in health data. Birth weight is an indicator of the health of the baby because it has an impact on the survival of the infant, if the baby is born less than 2500 grams known low birth weight (BBLR). Low birth weight is one of the causes of high infant mortality and morbidity in Indonesia. The purpose of this research is comparing the ordinal logistic regression Maximum Likelihood estimation method (MLE) and Generalized Method of Moments (GMM) for prediction of birth weight. This type of research was Study of Non Reactive. The sampling technique was simple random sampling with a sample size of 123 data. The study was conducted in April-May 2016. The results of ordinal logistic regression analysis using the MLE and GMM obtained that three variables X that significantly different with birth weight (Y) variable were age of the mother, age of pregnancy, and HB levels while the parity was not significant. The value R square of MLE method of 0.218 while the value of R square of GMM method of 0.242, so it can be concluded that the GMM method was better than the MLE because it has a larger R square.

Keywords: Birth weight, ordinal logistic regression, Maximum Likelihood Estimation, Generalized Method of Moments.