

ABSTRAK

Analisis Regresi Logistik Ordinal adalah analisis regresi yang peubah responnya bersifat ordinal yang memiliki tiga atau lebih kategori. Analisis regresi logistik ordinal didasarkan pada suatu fungsi:

$$P(Y_i \leq j | \mathbf{X}_i) = \frac{\exp(\beta_{0j} + \sum_{k=1}^p \beta_k X_{ik})}{1 + \exp(\beta_{0j} + \sum_{k=1}^p \beta_k X_{ik})}$$

dengan $P(Y_i \leq j | \mathbf{X}_i)$ = peluang kumulatif pada p variabel independen yang dinyatakan dalam vektor \mathbf{X}_i , β_{0j} = parameter intersep kategori ke- j , $\mathbf{X}_i = [X_{i1} \ X_{i2} \ \dots \ X_{ip}]^T$ dan $\boldsymbol{\beta} = (\beta_1, \beta_2, \dots, \beta_p)$.

Analisis regresi logistik ordinal diawali dengan langkah pendugaan parameter model dengan menggunakan metode kemungkinan maksimum (*Maximum Likelihood*) dan metode Newton-Rhapson dan dilanjutkan interpretasi koefisien parameter model.

Kata kunci: regresi logistik ordinal, metode kemungkinan maksimum, pendugaan parameter.

ABSTRACT

Ordinal Logistic Regression analysis is a regression analysis which its variable response is ordinal and have three or more categories. Ordinal Logistic Regression analysis is originated from function:

$$P(Y_i \leq j | \mathbf{X}_i) = \frac{\exp(\beta_{0j} + \sum_{k=1}^p \beta_k X_{ik})}{1 + \exp(\beta_{0j} + \sum_{k=1}^p \beta_k X_{ik})}$$

where $P(Y_i \leq j | \mathbf{X}_i)$ = cumulative probability of variable dependen p which is expressed by vector \mathbf{X}_i , β_{0j} = parameter of category intercept for j , $\mathbf{X}_i = [X_{i1} \ X_{i2} \ \dots \ X_{ip}]^T$ and $\boldsymbol{\beta} = (\beta_1, \beta_2, \dots, \beta_p)$.

Ordinal Logistic Regression analysis is started with parameter estimation of the model by using Maximum Likelihood method and Newton-Rhapson method and be continued by the interpretation of the parameter of the model.

Keyword: *ordinal logistic regression, maximum likelihood method, parameter estimation*