พิมพ์ต้นฉบับบทคัดย่อวิทยานิพนธ์ภายในกรอบสีเขียวนี้เพียงแผ่นเดียว

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The objective of this study is to compare the estimation of parameters in logistic regression. The methods of estimating parameters under consideration in this study are Maximum Likelihood Estimation method (MLE), Discriminant Function method (DF), and Weighted Least Squares method (WLS). The data of the experiment are ungrouped data. Dependent variable (y) is dichotomous (0 or 1). The comparison are done under conditions of sample sizes 20, 40, 60 and 80, proportion of dependent variable y=1 0.50, 0.55, 0.60, 0.65, 0.70, 0.75, 0.80, 0.85, 0.90 and 0.95, and 3 distributions of explanatory variables : 1) Normal distribution 2) Exponential distribution 3) Weibull distribution. The criteria employed for the comparison are square root mean squares error (RMSE) and statistic Deviance is used to support decision. The data of the experiment are generated through The Monte Carlo simulation technique with 500 repetitions. The results of this study are as follows :

1. In case of normal explanatory variable, RMSE of MLE method and RMSE of DF method are the same for all sample sizes, except small sample size ($N \leq 40$) with high proportion of dependent variable y=1 ($p > 0.75$), RMSE of DF method is less than RMSE of MLE method.

2. In case of exponential explanatory variable, RMSE of MLE method is less than RMSE of DF method for all sample sizes, except sample with high proportion of dependent variable y=1 ($p > 0.80$), RMSE of DF method is less than RMSE of MLE method.

3. In case of Weibull explanatory variable, RMSE of MLE method is less than RMSE of DF method for all sample sizes, except small sample size ($N \leq 40$) with high proportion of dependent variable y=1 ($p > 0.75$) and large sample size ($N > 40$) with high proportion of dependent variable y=1 ($p > 0.80$), RMSE of DF method is less than RMSE of MLE method.

4. In case of two explanatory variables (normal and exponential, normal and Weibull, or exponential and Weibull), RMSE of MLE method is less than RMSE of DF method for all sample sizes, except small sample size ($N \leq 40$) with high proportion of dependent variable y=1 ($p > 0.75$) and large sample size ($N > 40$) with very high proportion of dependent variable y=1 ($p > 0.85$), RMSE of DF method is less than RMSE of MLE method.

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