

BIAS ANALYSIS FOR MISCLASSIFICATION IN A MULTICATEGORICAL EXPOSURE IN A LOGISTIC REGRESSION MODEL

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We extend the analysis of asymptotic biases on the logistic regression model parameters in Davidov et. al. (2003) from a binary misclassified exposure to a multcategory misclassified exposure. The formulas are derived under the assumption of differential misclassification and can be simplified under the nondifferential misclassification. Further, in the logistic regression model with the misclassified exposure only, we can determine the signs of the asymptotic biases under nondifferential misclassification assumption. To better understanding of how the bias is influenced by the misclassification model, we use a numerical example. It shows that the magnitude of bias increases as the amount of misclassification error increases in the context of nondifferential misclassification. While in the context of differential misclassification, the change of bias magnitude is more complex without a clear trend.