

## **Model Selection and Model Averaging on Mortality of Upper Gastrointestinal Bleed Patients**

### **ABSTRACT**

Model Selection (MS) is known to produce uncertainty into model-building process. Besides that, the process of MS is complex and time consuming. Therefore, Model Averaging (MA) had been proposed as an alternative to overcome the issues. This research will provide guidelines of obtaining best model by using two modelling approach which are Model Selection (MS) and Model Averaging (MA) and compares the performance of both methods. Corrected Akaike Information Criteria (AICc) and Bayesian Information Criteria (BIC) were applied in the model-building using MS to help determine the best model. In MA process, model selection criteria are needed to compute the weights of each possible models. Two model selection criteria (AICc and BIC) were compared to observe which will produce model with a better performance. For guidelines illustration, data of Upper Gastrointestinal Bleed (UGIB) were explored to identify influential factors which leads to the mortality of patients. At the end of the study, best model using MA shown to have a better performance and AICc is proven to be a better model selection criterion approach in MA. In conclusion, the most significant factors for mortality of UGIB patients were identified to be shock score, comorbidity and rebleed.