

## **A Discrete Logit Survival Model with a Smooth Baseline Hazard for Age at First Alcohol Intake among Students at Tertiary Institutions in Thohoyandou, South Africa**

**Authors :** A. Bere, H. G. Sithuba, K. Kyei, C. Sigauke

**Abstract :** We employ a discrete logit survival model to investigate the risk factors for early alcohol intake among students at two tertiary institutions in Thohoyandou, South Africa. Data were collected from a sample of 744 students using a self-administered questionnaire. Significant covariates were arrived at through a regularization algorithm implemented using the glmmLasso package. The tuning parameter was determined using a five-fold cross-validation algorithm. The baseline hazard was modelled as a smooth function of time through the use of spline functions. The results show that the hazard of initial alcohol intake peaks at the age of about 16 years and that at any given time, being of a male gender, prior use of other drugs, having drinking peers, having experienced negative life events and physical abuse are associated with a higher risk of alcohol intake debut.

**Keywords :** cross-validation, discrete hazard model, LASSO, smooth baseline hazard

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