

A proportional hazard model to figure out Asian countries' food insecurity

ABSTRACT

A statistical approach is employed to examine the affects of covariates on food insecurity among Asian countries in the period of 40 years since 1961. We conduct a statistical technique based on information aspects of each country on human resources, environment and sustainability, land use and land resource, agricultural resource and capacity, water and sanitation, and macroeconomic indicators. We found that 22 of 32 (65.72%) countries experience insecurity food condition. The remaining are censored observations (34.38%). Stepwise Cox's regression model is used to select among the 24 independent covariates that are deemed to be significant contribution to the model. Based on the adopted model, at each time point, the West Asian region are found to be more likely to have insecurity food condition compared to those countries in the other regions. Furthermore, the occurrences of food insecurity for East Asia countries are more likely than for those in the other region. Meanwhile, it can also be seen that countries in Lower-middle income group are more likely to reach insecurity food condition than those in the other group. The analysis also shows that the high income countries have high risk of exposure to insecurity food condition.

Keyword: Cox regression; Food insecurity; Proportional hazard; Survival analysis.