



STS: 047
New Methods in Modeling Count Data

ABSTRACT

Using hurdle and zero-inflated models beyond the negative binomial for modeling count data with excessive zero counts

Joseph M. Hilbe

Arizona State University, Tempe, AZ, USA – hilbe@asu.edu

Hurdle models are commonly used as alternatives to zero inflated models for modeling zero inflated count data. Using simulated and real data, I compare the traditional Poisson and negative binomial hurdle and zero-inflated models with Poisson inverse Gaussian, generalized Poisson, and Greene's 3-parameter NB-P hurdle and zero-inflated models. Data that are not well fit using Poisson and negative binomial models are shown to better fit using these more advanced hurdle and zero-inflated models. Additional 3-parameter zero-inflated count models are also described and used on real data situations.

Keywords: hurdle, zero-inflated, Poisson inverse Gaussian, generalized Poisson, NB-P