Zero Truncated Poisson Distribution

Zero-Truncated Poisson Regression

- Zero-truncated Modelling is used to model count data for which the value zero cannot occur.
- Zero Truncated Poisson Model
- Zero Truncated Negative Binomial Model (Over Dispersion)

Examples of Zero-Truncated Model

Example 1.

- A study of length of hospital stay, in days, as a function of age, kind of health insurance and whether or not the patient died while in the hospital.
- Length of hospital stay is recorded as a minimum of at least one day.

Example 2.

- A study of the number of journal articles published by tenured faculty as a function of discipline (fine arts, science, social science, humanities, medical, etc).
- To get tenure faculty must publish, therefore, there are no tenured faculty with zero publications.

Examples of Zero-Truncated Model

Example 3.

- A study by the county traffic court on the number of tickets received by teenagers as predicted by school performance, amount of driver training and gender.
- Only individuals who have received at least one citation are in the traffic court files.

Example 4.

- Consider for example the random variable of the number of items in a shopper's basket at a supermarket checkout line.
- Presumably a shopper does not stand in line with nothing to buy (i.e. the minimum purchase is 1 item), so this phenomenon may follow a ZTP distribution