

The R code was developed to fit the pre-post ZIP model. The comments in the program will instruct you how to specify the sample size and how to generate data.

Following is the details of model.

Let $\boldsymbol{\theta} = (\beta, \boldsymbol{\alpha})$. $\boldsymbol{\alpha} = (\alpha_1, \alpha_2, \dots, \alpha_l)$ Let ρ_{it} denote the probability of structural zero and μ_{it} the mean of Poisson. \mathbf{x}_{it} is the covariates

The model is

$$\begin{aligned} \text{logit}(\rho_i) &= \beta, & \log(\mu_i | \mathbf{x}_{it}) &= \mathbf{x}_{it}^\top \boldsymbol{\alpha} \\ i &= 1, 2, \dots, n, & t &= 1, 2 \end{aligned}$$

The R code will return the estimates and standard error of β and $\boldsymbol{\alpha}$