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Khyam Paneru* (paneruk@uwv.edu), Department of Mathematics, University of Wisconsin-Whitwater, Whitewater, WI 53190. *Estimation of expected responses at “future” covariate values/vectors in zero-inflated generalized linear model under unequal probability sampling designs.*

An underlying population may contain a large proportion of zero values which causes the distribution spiked at zero, and such population is referred to as zero-inflated population. In statistical analysis of such populations, a common problem known as zero-inflation is caused by the presence of a large proportion of zero values. I will present some examples of zero-inflated population in important applications such as insurance, auditing, meteorology, and manufacturing. I will describe zero-inflated generalized linear model under unequal probability sampling designs via two-component mixture models where probability distribution of non-zero component is known. Since the exact likelihood function is not known due to complex probability sampling designs, pseudo-likelihood function is defined. I will introduce maximum pseudo-likelihood procedure to estimate the expected responses at “future” covariate values/vectors. The simulation results show that maximum pseudo-likelihood procedure gives significantly and systematically shorter confidence intervals. (Received September 16, 2014)