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Quadratic Inference Functions for Longitudinal Survey Data

This paper considers marginal models for longitudinal survey data, via the quadratic inference functions (QIF) method (Qu et al. 2000). We propose weighted QIF method, and sampling weights are used to account for survey design feature. We adopt a two-phase framework under which the inference subjects to two sources of randomness: model and sampling design. We study large sample properties of the weighted QIF estimator: consistency and normality. We also use the weighted QIF to construct likelihood ratio type test and examine the limiting distribution of the test statistic. Simulation results are presented.

Key Words: Joint Randomization, Longitudinal Survey Data