

Semiparametric Estimation of the Transformation Model by Leveraging External Aggregate Data in the Presence of Population Heterogeneity

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Abstract

In this talk, we will introduce the leveraging information in aggregate data from external sources to improve estimation efficiency. We proposed an empirical likelihood-based framework to improve the estimation of the semiparametric transformation models by incorporating information about the t -year subgroup survival probability from external sources. The proposed estimation procedure incorporates an additional likelihood component to account for uncertainty in the external information and employs a density ratio model to characterize population heterogeneity. Next, the simulation studies and large sample properties will be presented. The results indicate that the proposed method is more efficient. Finally, the proposed method is applied to a pancreatic cancer dataset.