INVERSE PROBABILITY OF CENSORING WEIGHTING METHOD IN SURVIVAL ANALYSIS BASED ON SURVEY DATA

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In survival analysis based on survey data, attrition implies that the survival time of some individuals is only partially observed: it is only known that the true time exceeds that observed. These survival times are called right-censored. To simplify the analysis, it is usually assumed that the censoring process is independent. This means that the hazard of censoring does not depend on future failure time. In practice, the assumption of independent censoring may not always hold. For example, when analysing unemployment spells based on survey data, it may very well be that economically inactive persons also may not have a large interest in surveys. This latent trait, ”reluctance”, creates a dependency between a long unemployment duration and a high probability of attrition. Dependent censoring may cause a bias in the estimated distribution of survival times and in the estimated covariate effects. Robins (1993) introduced an inverse probability of censoring weighting (IPCW) method that adjusts for bias due to dependent censoring. Lawless (2003) considered the use of IPCW method in survival analysis based on survey data. To our knowledge, however, there are no empirical applications of the method in the survey data context. In the first phase of our study, we use Monte Carlo methods to study the performance of IPCW method in a hypothetical 2-wave panel survey. In the second phase of the study, we apply the method to the Finnish subset of ECHP data to show how the method performs in a real data set.

References:

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