Using Propensity Scores and Inverse Probability Weighting to Reduce Bias Related to Sample Attribution in Analyzing Longitudinal Data: Examples Based on Data of Taiwan Education Panel Survey and its Follow-Up Surveys

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Every longitudinal study is confronted with the issue of sample attrition after multiple waves of data collection. Attrition threatens sample representativeness and estimation in statistical analysis. One possible solution to the issue is to use weighting to adjust for sample bias under the assumption that the cases were missing with random. We use the data collected by Taiwan Education Panel Survey and its follow-up surveys to demonstrate the effectiveness of using the approach of propensity scores and inverse probability weighting to deal with the issue of attrition in analyzing longitudinal data.