Dealing with Sample Attrition in Survey Panel Data: The Application and Comparison of Weighting and Multiple Imputation

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Abstract

Panel data are often seen in survey research due to the advantage of having both intertemporal and cross-sectional variations. However, one of the issues of panel data is the problem of attrition. Sample attrition may induce invalid inference when the samples are systematically missing. This work deals with the problem of sample attrition in survey data by two approaches: weighting and multiple imputation. Although the two approaches are different in the way they treat missing data, they are similar in "retrieving" missing data from the information of observing data. We investigate the applicability of the two approaches to the problem of sample attrition.

摘要

調查研究有時會蒐集/使用追蹤資料（panel data），其優點在於能有跨時的資料點，以便進行更有效的推論。然而，追蹤資料存在最大的問題是會有資料流失的狀況，即受訪者可能不願意接受第二次訪問。此資料流失的問題，不僅會大大減損追蹤資料的優勢，也可能因為系統性地流失而影響到推論的正確性。本文嘗試從兩個方面來處理追蹤資料流失的問題並且進行比較，一是採用加權的方式來讓未流失的樣本更具代表性；另一是以差補法來補足流失的資料。不論是加權或是差補法，關鍵是用來處理流失資料的額外資訊。因此，本文也將討論這些額外資訊在加權與差補法的差異與適用性。本文將以 2018 年台北市市長選舉的選前與選後電訪資料進行分析。