



統計科學研究所

INSTITUTE OF  
STATISTICAL SCIENCE



S.E.M.I.N.A.R.



S.T.A.T.I.S.

## Postdoc Seminar

Title : Statistical inference for failure time data from a two-phase probability-dependent sampling scheme

Speaker : Mr. Shih-Hua Chen( 陳世驊 博士候選人 )  
( National Yang Ming Chiao Tung University )

Time : 14:00 ~15:00 , Wednesday, May 10, 2023

Place : Auditorium, B1F, Institute of Statistical Science, AS

### Abstract

Some large cohort studies could cost hundreds of millions of dollars. Due to the limited budget, researchers are seeking for cost-effective designs. In this paper, we consider a two-phase probability dependent sampling scheme for failure time data, where one selects a simple random sample at the first phase and targets more informative subjects based on a certain probability at the second phase. Simulation studies show that the proposed estimator outperformed two competitive estimators, one from a simple random sample of the same sample size and the other from the outcome-dependent sampling design. We also develop the optimal allocation of the subsamples for the two-phase probability dependent sampling scheme under the fixed sample size. We then apply our proposed design and estimator to the Busselton Health Study.

Keywords : two-phase probability dependent sampling; failure time data; accelerated failure time model; optimal design

※ Tea reception starts at 15 : 00.

※ Lecture in Mandarin. Online live streaming through Cisco Webex will be available.