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Objet: COLLOQUE DES SCIENCES MATHÉMATIQUES DU QUÉBEC - Université Laval, 6 avril 2017, Jason Fine (UNC at Chapel Hill)

Date: 3 avril 2017 10:51

À: activites@CRM.UMontreal.CA



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COLLOQUE DES SCIENCES MATHÉMATIQUES DU QUÉBEC

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DATE :

Le jeudi 6 avril 2017 / Thursday, April 6, 2017

HEURE / TIME :

15 h 30 - 16 h 30 / 3:30 p.m. - 4:30 p.m.

CONFÉRENCIER(S) / SPEAKER(S) :

Jason Fine (UNC at Chapel Hill)

TITRE / TITLE :

Instrumental variable regression with survival outcomes

LIEU / PLACE :

Université Laval, Pavillon Vachon, salle 3840

RESUME / ABSTRACT :

Instrumental variable (IV) methods are popular in non-experimental studies to estimate the causal effects of medical interventions or exposures. These approaches allow for the consistent estimation of such effects even if important confounding factors are unobserved. Despite the increasing use of these methods, there have been few extensions of IV methods to censored data regression problems. We discuss challenges in applying IV structural equation modelling techniques to the proportional hazards model and suggest alternative modelling frameworks. We demonstrate the utility of the accelerated lifetime and additive hazards models for IV analyses with censored data. Assuming linear structural equation models for either the event time or the hazard function, we proposed closed-form, two-stage estimators for the causal effect in the structural models for the failure time outcomes. The asymptotic properties of the estimators are derived and the resulting inferences are shown to perform well in simulation studies and in an application to a data set on the effectiveness of a novel chemotherapeutic agent for colon cancer.

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Responsables :

Olivier Collin (UQÀM)

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