The Hong Kong Polytechnic University
Department of Applied Mathematics

Colloquium

A Homoscedasticity Test and the Weighted Least-Squares Method for Right-Censored Data in the Accelerated Failure Time Model

By

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Abstract

The semiparametric accelerated failure time (AFT) model is a popular linear model in survival analysis. Most research based on the AFT model assumed homoscedasticity of the survival data. Violation of this assumption has been shown to lead to inefficient and even unreliable estimation, and hence, misleading conclusions in survival data analysis. This talk will discuss a quasi-likelihood ratio test for the homoscedasticity assumption and the weighted least-squares methods in the AFT model. Simulation studies are conducted to show the satisfactory performance of the statistical test and the associated parameter estimation. A real dataset is used to demonstrate the application of this developed test and the weighted least-squares method. This talk is based on the joint research with Professor Lili Yu from Georgia Southern University and publications: 1). Yu, L., Liu, L. and Chen, D.G. (2019). A homoscedasticity test for the Accelerated Failure Time model. Computational Statistics. 34(1): 433-446. 2). Yu, L., Liu, L. and Chen, D.G. (2013). Weighted Least-Squares Method for Right-Censored Data in Accelerated Failure Time Model. Biometrics. 69: 358-365.

Date :   May 8, 2019 (Wednesday)
Time :   4:00p.m. – 5:00p.m.
Venue : TU801, The Hong Kong Polytechnic University

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