COLLOQUIUM

Department of Statistics and Probability

Michigan State University

Hyokyoung (Grace) Hong

City University of New York - Baruch College

Quantile Approaches to Limited Response Variables

Thursday, February 7, 2013
C405 Wells Hall
4:00 p.m. - 4:50 p.m.
Refreshments: 3:30 p.m.

Abstract

When research interest lies in limited response variables that take on values within a known range, the traditional statistical methods may prove inadequate. In this talk, I propose quantile regression methods which effectively handle limited response data. The usefulness of our method is illustrated by two examples. The first example is the estimation of the conditional quantiles of the functional status, which is of an integer value ranging from 1 to 5. The proposed estimation procedures do not rely on any parametric specification of the conditional distribution functions, aiming to reduce model misspecification errors in the prediction. The second example is a fractional response data, which possesses both two-corner solution and continuous outcomes in the interval (0,1). We propose a simple strategy to estimate the conditional quantiles of fractional data, which avoids any restriction imposed on the interval (0,1) and accounts for mass points by the nonparametric transformation and censored quantile regression. Monte Carlo simulations also demonstrate the merits of our approach in the analysis of limited response variables.

Biography

Hyokyoung (Grace) Hong is an assistant professor of the Department of Statistics and Computer Information Systems at the Baruch College, the City University of New York. She received her doctoral degree in statistics from the University of Illinois at Urbana-Champaign in 2008. Her research interests are quantile regression, ordinal data analysis and fractional data analysis with applications to aging research,economics and education.

To request an interpreter or other accomodations for people with disabilities, please call the Department of Statistics and Probability at 517-355-9589.