The University of Chicago
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Master's Thesis Presentation

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Application of Two Types of Multinomial Probit Models: Prediction of Number of Children in a Household and Agricultural Land Use Change in the United States

WEDNESDAY, November 11, 2009, at 9:00 AM
110 Eckhart Hall, 5734 S. University Avenue

ABSTRACT

The Bayesian multinomial probit model (MNP) is often used for data involving discrete choices. There are two types of MNP models: one where the choice outcome is estimated conditionally on all other possible choices, and another where the outcome is ordered such that there is preference in the possible choices. We present two applications illustrating these models. For the unordered case, we use data from 2007 National Immunization Survey to predict the number of children in a household given several covariates. For ordered preferences, the MNP model was developed to predict agricultural land use change in the United States. Both models were fit using Markov chain Monte Carlo methods.

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