# ECON7710/NS6850

## Empirical Methods for the Analysis of Household Survey Data: Applications to Health, Nutrition and Education

## Fall 2013

**Professor David E. Sahn**

**Course description:** This seminar will explore recent empirical research and focus on microeconomics of development. The topics covered are health, nutrition and education, and fertility with an emphasis on models of behavior of individuals and households, as well as the evaluation of programs. While we will briefly review underlying theory and econometric techniques, the course will attempt to bridge the gap between theory and practice, addressing issues such as model identification, functional form, and estimation techniques to control for endogeneity and heterogeneity. A key objective of the class will be to focus on the merits and limitations of randomized control trials (experiments) and non-experimental and econometric methods used to evaluate social interventions as well as understand behavior. We will also discuss the various types of household surveys that are employed for these purposes.

The course will be run like a seminar, rather than a lecture course, in order to encourage active participation of all students. Students are expected to do, and be ready to discuss, all the assigned readings. For each meeting, students will be (randomly) assigned to lead a discussion, in which all the other students are expected to actively participate. Those leading the session will be expected to prepare a short and critical evaluation of the papers, usually of 3–5 pages, in outline or annotated form, on which they are leading the discussion. These will cover central issues related to the strengths and weaknesses of the paper, and their effectiveness in addressing underlying concerns of causation, identification, external validity, and so forth.

Students will also prepare an original empirical research paper in which the students will define a problem and use household survey data to analyze it. The paper should be around 20 double-spaced pages, 12-point font with standard margins, not including tables, figures, and references.

The empirical paper will comprise 50 percent of the final grade. Thirty percent of the final grade will be based on how well the student leads the discussion and their related critical evaluations of the topical papers they are assigned. Class participation, including presentation and discussion of the topical papers, will count for 20 percent of the grade.

Key dates include that a prospectus on the research topic is due on September 13. This should include a discussion of the research questions, the data to be used, and a short bibliography. A 5-page single spaced literature review is due on October 4, which can be incorporated into the final paper. Summary statistics, including means, standard deviations, and basic cross tabulations on the variables to be used in the model will be due on November 1.

A preliminary reading list is found below. More details on how to organize the in-class presentations will be posted on the class website, including the questions and issues to be addressed for each paper reviewed. Furthermore, for our discussion on experimental versus non-experimental techniques, we will organize a debate-style discussion, again where I will provide prompts in advance on the website that will be debated by students in the class.

Students who have limited or no experience with STATA, SAS, or similar software will be expected to find appropriate assistance from CISER or other resources on campus, including other students.

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| **Meeting Time and Location**: | Tuesday, 3:35 p.m. - 6:05 p.m., Savage 200. |
| **Office Hours:** | Professor Sahn will hold office hours by appointment in B16 MVR Hall. |
| **Course Website:** | http://blackboard.cornell.edu |

## I. EVALUATING SOCIAL PROGRAMS -- EXPERIMENTAL VS. STRUCTURAL MODELS

Duflo, Esther, Rachel Glennerster, and Michael Kremer (2008). "Using Randomization in Development Economics Research: A Toolkit." In Schultz, T. and John Strauss, eds., *Handbook of Development Economics, Volume 4.* Amsterdam: North Holland, Chapter 61, pp. 3895-3962.

Ravallion, Martin *(2008).* "Evaluating anti-poverty programs." In Schultz, T. and John Strauss, eds., *Handbook of Development Economics, Volume 4.* Amsterdam: North Holland, Chapter 59, pp. 3787-3846.

*Deaton, Angus. 2010. Instruments, randomization and learning about development, Journal of Economic Literature, 48(2):424-455.*

*Heckman, James J. 2010. Building bridges between structural and program evaluation approaches to evaluating policy, Journal of Economic Literature, 48(2):356-398.*

Easterly, William (2008). "Can the West Save Africa?" NBER Working Paper No. 14363, Cambridge, MA, forthcoming in *Journal of Economic Literature.*

## II. HEALTH AND NUTRITION

*Background Reading:*

Thomas, Duncan and John Strauss (2008). "Health over the Life Course." In Schultz, T. and John Strauss, eds., *Handbook of Development Economics, Volume 4.* Amsterdam: North Holland, Chapter 54, pp. 3375-3474. *Available on the Blackboard.*

*Case Studies:*

## A. HEALTH AND NUTRITION

Kremer, Michael and Edward Miguel (2004). "Worms: Identifying Impacts on Education and Health in the Presence of Treatment Externalities." *Econometrica* 72(1): 159–217.

Alderman, Harold, John Hoddinott, and Bill Kinsey (2006). "Long Term Consequences of Early Childhood Malnutrition." *Oxford Economic Papers* 58(3): 450-474.

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Hoddinott, John and Jere Behrman (2005). "Programme Evaluation with Unobserved Heterogeneity and Selective Implementation: The Mexican PROGRESA Impact on Child Nutrition." *Oxford Bulletin of Economics and Statistics* 67(4): 547-569.

Juan A. Rivera; Daniela Sotres-Alvarez; Jean-Pierre Habicht; et al. (2004). "Impact of the Mexican Program for Education, Health, and Nutrition (Progresa) on Rates of Growth and Anemia in Infants and Young Children: A Randomized Effectiveness Study" *Journal of the American Medical Association* 291(21): 2563-2570.

## B. REPRODUCTIVE HEALTH

Joshi, Shareen and Schultz, T. Paul. 2007. "Family planning as an investment in development and female human capital: Evaluating the long-run consequences in Matlab, Bangladesh", mimeo, Yale University

Ashraf, Nava, Erica Field, and Jean Lee (2012), "Household Bargaining and Excess Fertility: An Experimental Study in Zambia." Mimeo, Harvard. http://www.people.hbs.edu/nashraf/papers/AshrafFieldLeeManuscript-12-16-12.pdf

Field, Erica, and Attila Ambrus. 2008. "Early Marriage, Age of Menarche, and Female Schooling Attainment in Bangladesh". Journal of Political Economy 116(5):881-930.

Glick, Peter, Alessandra Marini, and David E. Sahn (2007). "Estimating the Consequences of Unintended Fertility for Child Health and Education in Romania: An Analysis Using Twins Data," *Oxford Bulletin of Economics and Statistics* 69(5): 667-691.

### C. HIV/AIDS

Thornton, Rebecca (2007). "The Demand for and Impact of Learning HIV Status: Evidence from a Field Experiment." American Economic Review 2008, 98:5, 1829–1863

Dupas, Pascaline, "Do Teenagers Respond to HIV Risk Information? Evidence from a Field Experiment in Kenya," American Economic Journal: Applied Economics, 2011, 3 (1), 1–34.

Oster, Emily (2006). "HIV and Sexual Behavior Change: Why Not Africa?" Journal of Health Economics 31(1): 35-49.

Thirumurthy H, Graff Zivin J. Health and labor supply in the context of HIV/AIDS: the long-run economic impacts of antiretroviral therapy. *Economic Development and Cultural Change* 2012; 61(1): 73-96.

Glick, Peter and David E. Sahn (2008). "Are Africans Practicing Safer Sex? Evidence from Demographic and Health Surveys for Eight Countries." *Economic Development and Cultural Change* 56(2): 397-439.

### D. IMPACT OF HEATH ON PRODUCTIVITY

*Background Reading:*

John Strauss & Duncan Thomas, 1998. "Health, Nutrition, and Economic Development," Journal of Economic Literature, American Economic Association, vol. 36(2), pages 766-817, June.

*Case Studies:*

Case, Anne and Christina Paxson. 2008. "Stature and Status: Height, Ability and Labor Market Outcomes." Journal of Political Economy 116(3): 499-532.

Hoddinott, John, John Maluccio, Jere Behrman, Rafael Flores and Reynaldo Martorell. 2008. Effect of a nutrition intervention during early childhood on economic productivity in Guatemalan adults. Lancet, 381:411-16 and web appendix.

Thomas, Duncan, Elizabeth Frankenberg, Jed Friedman, Jean-Pierre Habicht, Mohammed Hakimi, Nicholas Ingwersen, Jaswadi, Nathan Jones, Christopher

McKelvey, Gretel Pelto, Bondan Sikoki, Teresa Seeman, James P. Smith, Cecep Sumantri, Wayan Suriastini, and Siswanto Wilopo (2006) "Causal Effect of Health on Labor Market Outcomes: Experimental Evidence." California Center for Population Research On-Line Working Paper Series CCPR-070-06, California Center for Population Research, Los Angeles, CA.

Thomas, Duncan & Strauss, John, 1997. "Health and wages: Evidence on men and women in urban Brazil," Journal of Econometrics, Elsevier, vol. 77(1), pages 159-185, March.

### E. IMPACTOF HEALTH AND NUTRITION ON EDUCATION AND SCHOOLING

*Background Reading:*

Glewwe, Paul, and Edward Miguel. 2005. "The Impact of Child Health and Nutrition on Education in Developing Countries Handbook of Development Economics, Vol. 4.

*Case Studies:*

Field, Erica, Omar Robles, and Maximo Torero, "Iodine Deficiency and Schooling Attainment in Tanzania," American Economic Journal: Applied Economics, 2009, 1 (4), 140–69.

Maluccio, John, et al. 2009. "The Impact of Improving Nutrition during Early Childhood on Education among Guatemalan Adults". Economic Journal 119(537): 734-763.

Case, Anne and Cally Ardington. 2006. "The Impact of Parental Death on School Outcomes: Longitudinal Evidence from South Africa." Demography 43(3), 401-420.

Glewwe, Paul, Hanan Jacoby, and Elizabeth King. 2001. "Early Childhood Nutrition and Academic Achievement: A Longitudinal Analysis" Journal of Public Economics 81(3):345-368.

## III. EDUCATION OUTCOMES

*Background Reading:*

Glewwe, Paul, and Michael Kremer (2008). "Schools, Teachers, and Education Outcomes in Developing Countries." In Hanushek, Eric and Finis Welch, eds.,

*Handbook of the Economics of Education, Volume 2.* Amsterdam: North Holland, Chapter 16, pp. 945-1017.

*Case Studies:*

Glick, Peter and David Sahn, "Early Academic Performance, Grade Repetition, and School Attainment in Senegal: A Panel Data Analysis." *World Bank Economic Review* 24(1): 93-120, January, 2010

Glick, Peter and David Sahn, "Cognitive Skills among Children in Senegal: Disentangling the Roles of Schooling and Family Background," Economics of Education Review 28(2): 178–188, April 2009

Glewwe, Paul, Michael Kremer, and Sylvie Moulin (2007). "Many Children Left Behind? Textbooks and Test Scores in Kenya." *American Economic Journal: Applied Economics* 1(1): 112–35.

Urquiola, Miguel (2006). "Identifying Class Size Effects: Evidence from Rural Bolivia." *Review of Economics and Statistics* 88(1): 171-177.

Orazio P. Attanasio & Costas Meghir & Ana Santiago, 2012. "Education Choices in Mexico: Using a Structural Model and a Randomized Experiment to Evaluate PROGRESA," *Review of Economic Studies,* Oxford University Press, vol. 79(1), pages 37-66.

Angrist, J. and V. Lavy. 1999. Using Maimonides' Rule to Estimate the Effect of Class Size on Scholastic Achievement, Quarterly Journal of Economics, 114:533-75.

Todd, P. and K. Wolpin (2006). Assessing the impact of a school subsidy program in Mexico: Using experimental data to validate a dynamic behavioral model of child schooling. *American Economic Review* 96 (5), 1384–1417

Duflo, E. 2001. "Schooling and Labor Market Consequences of School Construction in Indonesia: Evidence From an Unusual Policy Experiment," American Economic Review, 91, 795-813.