

Health Studies 351
HEALTH SERVICES RESEARCH METHODS

Spring Quarter, 2008

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Classes: Monday/Wednesday, 10:30 -11:50 AM, BSLC 313
Office hours: By appointment.

The purpose of this course is to better acquaint students with the methodological issues of research design and secondary data analysis widely used in empirical health services research. To deal with these methods, the course will use a combination of readings, lectures, examples, problem sets (using STATA), and discussion of applications. The course assumes that students have had a prior course in statistics, including the use of linear regression methods.

The final grade for the course will depend on several problem sets (60%), class participation (10%), and a final exam (30%). Any dates noted in the syllabus are tentative.

The primary reading material is excerpted from several econometrics and research design texts:

- Wooldridge, J. (2005). *Introductory Econometrics.*, Third edition, South-Western.
- Stock, J. and M. Watson (2003). *Introduction to Econometrics.*, First edition, Addison-Wesley.
- Shadish WR, Cook TD, and DT Campbell. *Experimental and Quasi-Experimental Designs.* Boston: Houghton Mifflin Company, 2002.
- Baum CF. *An Introduction to Modern Econometrics Using Stata.* College Station: Stata Press, 2006.

Required readings, including applications listed in the syllabus and excerpts from the above texts, can be found on Chalk. The following are additional sources that students may find useful:

- STATA manuals
- Gujarati, D. *Basic Econometrics*, Fourth edition, McGraw-Hill.
- Kennedy, P. *A Guide to Econometrics*, Fourth edition, MIT Press.
- Shi, L. *Health Services Research Methods.* Albany: Delmar Publishers, 1997
- Trochim, William M. The Research Methods Knowledge Base, 2nd Edition. Internet WWW page, at URL: <<http://www.socialresearchmethods.net/kb/contents.htm>>

All required course readings will be on Chalk. Problem sets should be completed using STATA version 9 or 10 (Intercooled or SE), available in Usite, Regenstein and Crerar. Check www.stata.com for helpful information.

COURSE OUTLINE

HSR Basics

- Mar 31 Introduction: What is Health Services Research?
- April 2 Validity in Quasi-Experimental Design
- Shadish, Cook and Campbell, Chapters 2 and 3. (Also see Trochim.)

Review of Cross-Sectional Designs (with an HSR perspective)

- April 7 OLS, Linear Probability Models, and Logit/Probit
- Stock and Watson, pp. 297-322.
- April 9 Interpreting Magnitudes
- Application:*
- Saver BG, Doescher MP. To buy, or not to buy: factors associated with the purchase of nongroup, private health insurance. Med Care. 2000 Feb;38(2):141-51.
- April 14 Interaction Terms
- Stock and Watson, pp. 197-236.
 - (skim) Ai CR, Norton EC. Interaction terms in logit and probit models. Economics Letters 80 (1): 123-129 Jul 2003.
- April 16 Clustering and Robust Standard Errors
- Baum, pp. 133-139

Use of Panel Data in Quasi-Experimental HSR Designs

- April 21 Introduction to Hierarchical/Multilevel/Panel Data Models
- April 23 Fixed Effects and Random Effects
- Wooldridge, pp. 426-475.
 - Stock and Watson, pp. 271-295.
- April 28 Fixed Effects and Random Effects
- Application:*
- Xie J, Dow WH. Longitudinal study of child immunization determinants in China. Soc Sci Med. 2005 Aug;61(3):601-11. Epub 2005 Feb 19.
- April 30 Difference-in-Differences Models
- Stock and Watson, pp. 373-409.
- Applications:*
- Lichtenberg FR, Sun SX. The impact of Medicare Part D on prescription drug use by the elderly. Health Aff (Millwood). 2007 Nov-Dec;26(6):1735-44.
 - Werner RM, Asch DA, Polsky D. Racial profiling: the unintended consequences

of coronary artery bypass graft report cards. *Circulation*. 2005 Mar 15;111(10):1257-63.

Selection Issues in HSR and Several Methods for Addressing Them

- May 5 Introduction to Selection Issues
- May 7 Propensity Scores
- Luellen JK, Shadish WR, Clark MH. Propensity scores: an introduction and experimental test. *Eval Rev*. 2005 Dec;29(6):530-58.
- May 12 Propensity Scores
- Applications:*
- Freburger JK, Carey TS, Holmes GM. Effectiveness of physical therapy for the management of chronic spine disorders: a propensity score approach. *Phys Ther*. 2006 Mar;86(3):381-94.
 - Austin PC, Mamdani MM. A comparison of propensity score methods: a case-study estimating the effectiveness of post-AMI statin use. *Stat Med*. 2005 Oct 11;
- May 14 Instrumental Variables
- Woodridge, pp. 484-514.
 - Stock and Watson, pp. 331-366.
 - Harris KM, Remler DK. Who is the marginal patient? Understanding instrumental variables estimates of treatment effects. *Health Serv Res*. 1998 Dec;33(5 Pt 1):1337-60.
- May 19 Instrumental Variables
- Applications:*
- McClellan, M, et al., "Does More Intensive Treatment of Acute Myocardial Infarction Reduce Mortality?" *JAMA*, Sept 21; 272(11): 859-866, 1994.
 - Konetzka RT, Stearns SC, Park J. The Staffing-Outcomes Relationship in Nursing Homes. *Health Services Research*, forthcoming.

Analysis of Complex Survey Data

- May 21 Introduction to Complex Survey Data
- May 28 Complex Survey Data
- Application:*
- Graubard BI, Korn EL. Analyzing health surveys for cancer-related objectives. *J Natl Cancer Inst*. 1999 Jun 16;91(12):1005-16.
- June 2 Review and Conclusions
- June 5 FINAL EXAM