Stanford University Graduate School of Business

R670 – Research Methods for the Behavioral Sciences

Winter 2002
Fridays, 12:00-3:00

Professors: **Bill Barnett, Jim Baron, Deb Gruenfeld, Rod Kramer, and Misiek Piskorski**

Scope:

This course provides a survey of research design and analysis methods used in the behavioral sciences. We review research strategies, experimental and quasi-experimental design, issues of measurement, archival and survey data collection and methods, dynamic models used to study continuous and discrete outcomes, and network data collection and methods, among other topics. Although the course includes aspects of statistical analysis as well as design, it is intended only as a supplement to courses in statistical analysis.

Format:

The five faculty will each teach two sessions. Each professor has assigned readings for his or her sessions as listed below. Readings outside of the required texts will be contained in a reading packet. To prepare for each session, you will read from the list for that day as assigned. Each student is expected to read all the assigned readings.

Readings:

Required Texts:

1. Blossfeld, Hans-Peter and Gotz Rohwer. 1995. *Techniques of Event History Modeling.* Mahwah, NJ: Lawrence Erlbaum Associates.
2. Wasserman, Stanley and Katherine Faust. 1994. *Social Network Analysis: Methods and Applications*. Cambridge University Press.
3. Campbell, D.T. and Stanley, J.C. (1963). Experimental and Quasi-Experimental Designs for Research. Boston, MA: Houghton-Mifflin.
4. Cook, T.D. and Campbell, D.T. (1979). Quasi-Experimentation: Design and Analysis Issues for Field Settings. Boston, MA: Houghton-Mifflin.
5. McGrath, J.E., Martin, J. and Kulka, R.A. (1982). Judgment Calls In Research. Beverly Hills, CA: Sage.

Recommended Texts:

Babbie, Earl. 1998. *The Practice of Social Research (eighth ed.)*. NY: Wadsworth.
(An overview of research methods, with good references to more specialized readings.)

Greene, William H. 1999. *Econometric Analysis (fourth ed.)*. NJ: Prentice-Hall.
(Includes a review of matrix algebra, probability theory, and a survey of econometrics.)

Requirements:

1. Class participation is required.

2. You are expected to write a short (roughly 3-page) methodological critique of a published empirical research study. The critique should highlight methodological shortcomings, explain the consequences of those shortcomings, and suggest improvements that might solve the problem(s). This assignment is due by the end of the quarter, and should be submitted to the professor who covered the methodology used in the paper being critiqued.

3. By the end of the quarter you are expected to submit a written research paper. The type of paper depends on how far along you are in your development:

   New PhD students:
   You have a choice. You may do an actual analysis as described for 'more advanced' students. Alternatively, you may choose to design a research project. If you choose to design a project, you must explain in operational terms the hypothesis to be tested, the data to be collected, and the methods that would be used in the analysis of data. The project should be theoretically interesting, but the main point of the assignment is to help you to develop skills in research design and methods.

   More advanced PhD students:
   You are expected to gather and analyze data and write up your results. For those using experimental methods, the emphasis should be on the design and implementation of the experiment. Non-experimental researchers may analyze already-collected data if they wish, placing more emphasis on the statistical analysis. You should begin work on this project immediately so that it can be completed by the end of the quarter. The paper should be written as a research report following the format typically used in academic journals.

COURSE OUTLINE

Session 1- Overview of Research Design (Baron).

The first part of this introductory session provides an overview of basic issues in design, conceptualization, and measurement confronted by organizational researchers. In the second part of the session, we will discuss some of the ethical dilemmas and responsibilities faced in conducting research in and about organizations.

Note: the assigned reading load for this week's session is relatively light and for next week's session is heavier, so you might want to read ahead.

PART A: RESEARCH DESIGN, CONCEPTUALIZATION, AND MEASUREMENT

Recommended Background:
1. Singleton, Straits, and Straits, *Approaches to Social Research*, Third edition, Chapters 4 and 5;
2. Babbie, *The Practice of Social Research*, Ninth edition, Chapters 4 and 5

Questions for Discussion:
(1) In your judgment, what are the primary goals of organizational research? What are the main criteria one should use in determining what is good organizational science?
(2) Which is more important, in your opinion: internal validity or external validity? Why? Is there a trade-off between them?
(3) List the main choices that must be made in designing a research study. What factors should guide those choices?

PART B: ETHICAL ISSUES IN ORGANIZATIONAL RESEARCH

Reading:
1. Singleton, Straits, and Straits, *Approaches to Social Research*, Third edition, Chapter 17
2. John Kifner, "Scholar sets off gastronomic false alarm," *New York Times* (September 8, 2001), viewable online at:
http://www.nytimes.com/2001/09/08/nyregion/08EAT.html?ex=1000970626&ei=1&en=

Questions for Discussion:
(1) How do you assess the Frank Flynn controversy? What, if anything, do you think he (and/or others) should have done differently? What should happen now?
(2) Think about a specific piece of research in which you are engaged or which you are thinking about conducting. List all the constituencies or stakeholders who might be affected by that research. What ethical issues and potential conflicts of interest exist vis-à-vis each of those constituencies? How do you intend to manage them?

Session 2- Sampling (Baron).

In this session we will examine key issues involved in designing, implementing, and analyzing samples. We will also pull together what we have done in these two sessions by critically evaluating how research design, conceptualization and measurement, and sampling issues are handled in a specific program of research: the Stanford Project on Emerging Companies.

PART A: OVERVIEW OF SAMPLING

Recommended Background:
1. Babbie, *The Practice of Social Research*, Ninth edition, Chapter 7
2. Carroll and Hannan, *The Demography of Corporations and Industries* (Princeton, NJ: Princeton University Press, 2000): Pp. 85-99, 149-192
3. Kalleberg et al., *Organizations in America* (Thousand Oaks, CA: Sage, 1996): Chapters 1 and 2

Questions for Discussion:
(1) Kalleberg and his colleagues argue strongly for the virtues of nationally representative samples; Carroll and Hannan argue just as forcefully that such samples are often woefully inferior. What are the arguments on both sides and where do you come down on this issue?
(2) Samples in organizational research often involve decisions about *clustering*---for instance, deciding how many individuals to sample within each firm or how many firms to sample within each of a group of targeted industries. What should determine how the researcher makes the tradeoff between sampling many units but few observations within units, versus sampling fewer units but drawing a larger sample of observations within each unit?

PART B: CRITICALLY EVALUATING RESEARCH---THE CASE OF SPEC

Reading:
1. Baron, James N., Michael T. Hannan, and M. Diane Burton. 2001. "Labor pains: organizational change and employee turnover in young, high-tech firms." *American Journal of Sociology* 106 (January): 960-1012.
2. Michael Hannan, James Baron, Greta Hsu, and Ozegan Kocak, "Staying the Course: Early Organization Building and the Success of High-Technology Firms," Unpublished manuscript.
3. Baron, James N., Michael T. Hannan, and M. Diane Burton. 1999. "Determinants of managerial intensity in the early years of organizations," Research Paper #1550, Graduate School of Business, Stanford University, 1999. (Read Appendix; rest is optional).
4. Baron, James N., M. Diane Burton, and Michael T. Hannan. 1996. "The road taken: origins and early evolution of employment systems in emerging companies." *Industrial and Corporate Change* 5(2): 239–75. (Read pp. 245-9, 268-70; rest is optional)

Questions for Discussion:
(1) Write up a list of the strengths and weaknesses of the SPEC research design and sampling plan. What would you have done differently in designing the study? If you were going to replicate and/or extend the study in another setting, how would you propose to do so? Be specific.
(2) What are the strengths and weaknesses of the SPEC research in terms of how it handles issues of conceptualization and measurement? Again, be specific.
(3) What conceptual and methodological issues challenges are involved in trying to study organizations in formation and in their infancy? How can/should these challenges best be handled?

Session 3- Basic Characteristics of Networks: Relational Networks (Piskorski).

In this session, we examine the basic concepts, terminology and mathematical representation in social networks . Subsequently, we introduce two important network properties: centrality and structural equivalence. During the session, you will have an opportunity to familiarize yourselves with these constructs through hands-on exercises. Please note that the session will take place in the Computer Lab Training Room.

Reading:

1. Introduction: Wasserman and Faust, Chs. 1.1-1.4, 2.1-2.4
2. Matrix representation: Wasserman and Faust, Chs. 3, 4.9.1-4.9.3, 4.9.6-4.10.3
3. Centrality and centralization: Wasserman and Faust, Ch. 5
4. Structural equivalence: Wasserman and Faust, Ch. 9

Session 4- Other Network Types, and Modeling Network Hypotheses (Piskorski).

We begin this session by considering similarities and differences between affiliation networks and egocentric networks and the networks we considered in the previous session. Subsequently, we examine how to incorporate network measures into regression analysis, using network formation and inequality between actors as our dependent variables. Please note that the session will take place in the Computer Lab Training Room.

Reading:

1. Affiliation Networks: Wasserman and Faust, Ch. 8.1 – 8.5
2. Egocentric Networks: Ch. 2 in Burt, Ronald S. 1992. *Structural holes: the social structure of competition*. Cambridge, MA: Harvard University Press.
3. Modeling Inequality: Chapter 4 in Burt, Ronald S. 1992. *Structural holes: the social structure of competition*. Cambridge, MA: Harvard University Press. and Podolny, Joel. 1993. "A Status-Based Model of Market Competition." *American Journal of Sociology* 98:829-872.
4. Modeling Network Formation: Gulati, R., and M. Gargiulo. 1999. "Where do interorganizational networks come from?" *American Journal of Sociology* 104:1439-1493 and Stuart, Toby E., and Olav Sorenson. 2001. "Syndication Networks and the Spatial Distribution of Venture Capital Investments." *American Journal of Sociology* 106:1546-86.
5. Problems of Non-Independence: Krackhardt, David. 1987. "QAP Partialling as a Test for Spuriousness." *Social Networks* 9:171-86.

Session 5- Dynamic Analysis of Continuous Dependent Variables (Barnett).

This session introduces the topic of modeling continuous variables over time. We review the uses of time-varying continuous-variable data, especially for purposes of hypothesis testing. The session mainly focuses on models, such as the linear partial adjustment model, that can serve as powerful tools for testing causal hypotheses when processes under study are not in steady-state equilibrium. The Greene reading, and some of our discussion, concerns how to deal with the problems that arise when estimating these models.

Reading:
1. Tuma, Nancy Brandon and Michael T. Hannan. 1984. *Social Dynamics.* Chapter 11: "Linear Deterministic Models". New York: Academic Press.
2. Greene, Chapter 14.

Session 6- Dynamic Analysis of Discrete Dependent Variables (Barnett).

Today we review the use of hazard models to study transition rates. These models are typically used in organizational research to study rates of change in discrete dependent variables over time, such as rates of job change, organizational mortality, or technological change. The Blossfled and Rohwer chapters are accompanied by their software, TDA, which estimates the models discussed in the reading. One may also use STATA (or other programs) to estimate these models.

Reading:
1. Blossfeld and Rohwer, Chapters 5, 7, and 9.
2. Barron, David N. 1992. "Analysis of Count Data: Over-Dispersion and Autocorrelation." Pages 179-220 in Peter V. Marsden (ed.) *Sociological Methodology.* Oxford: Basil Blackwell.

Session 7- Experimental method (Gruenfeld).

We will begin to examine the experimental method by considering the logic of experimentation, its roots in the philosophy of scientific inquiry, and the meanings of causality and validity within this framework. We will also discuss how to effectively conduct an experiment. Our analysis will be geared toward understanding the specific kinds of knowledge that experiments can and should be used to acquire.

Reading:

1. Cook, T.D., and Campbell, D.T. (1979). Causal Inference and the Language of Experimentation (Ch. 1), Quasi-Experimentation: Design and Analysis Issues for Field Settings, pp 1-36.
2. Cook, T.D., and Campbell, D.T. (1979). Validity (Ch.2), Ibid., pp. 37-94. *Note: you might have already seen some of this material in Griffin's M 641 course this fall.*
3. Cook, T.D., and Campbell, D.T. (1979). The Conduct of Randomized Experiments (Ch.8), Ibid., pp. 341-384.
4. Cambell, D.T. and Stanley, J.C. (1963). Experimental and quasi-experimental designs for research, pp. 1-34.
5. Platt, J.R. (1964). Strong inference. Science, 146, 347-352.

Session 8- Experimental method (Gruenfeld).

This week we will discuss when you might choose to conduct an experiment, as opposed to using another research method, considering the relative strengths and weaknesses of the methods available to you. We will also discuss how to deal with and defend yourself against the criticisms of experimental research – even when it is conducted effectively -- that are likely to arise when such work is presented in a business school. We will consider the strategy of designing research programs that employ multiple methods using an example from my own research.

Reading:

1. McGrath, J.E. (1982). Dilemmatics: The Study of Research Choices and Dilemmas. In J.E. McGrath, J. Martin, and Richard A. Kulka (Eds.), Judgment Calls in Research, pp. 69-102.
2. Berkowtiz, L. and Donnerstein, E. (1982). External validity is more than skin deep: Some answers to criticisms of laboratory experiments. American Psychologist, 38, 379-387.
3. Mook, D.G. (1983). In defense of external invalidity. American Psychologist, 38, 379-387.
4. Gruenfeld, D.H (1995). Status, ideology and integrative complexity on the U.S. Supreme Court: Rethinking the politics of political decision making. Journal of Personality and Social Psychology, 68(1), 5-20.
5. Gruenfeld, D.H., Thomas-Hunt, M.C. and Kim, P. H. (1998). Cognitive Flexibility, Communication Strategy, and Integrative Complexity in Groups: Public versus Private Reactions to Majority and Minority Status. Journal of Experimental Social Psychology, 34, 202-226.

Session 9- Qualitative Research and Organization Theory: Exploring Inductive Research Yearnings (Kramer).

This session provides an introduction to the role of qualitative methods in social science research. We will explore how theory gets built from the "ground up." We will examine some basic ideas regarding the purpose of qualitative research, looking at its place in the stream of theory-producing and testing in the social sciences. Using several qualitative studies, we will examine how a researcher might go about stalking data, capturing it, and taming it for eventual public exhibition.

Reading:
1. Weick, K. E. (1992). Agenda setting in organizational behavior: A theory-focused approach. Journal of Management Inquiry, 1, 171-182.
2. Weick, K. E. (1989). Theory construction as disciplined imagination. Academy of Management Review, 14, 516-531.
3. Weick, K. E. (1993). The collapse of sensemaking in organizations: The Mann Gulch disaster. Administrative Science Quarterly, 38, 628-652.
4. Weick, K. E., & Roberts, K. H. (1993). Collective mind in organizations: Heedful interrelating on flight decks. Administrative Science Quarterly, 38, 357-381.

Session 10- The Process of Inductive Work: "Nuts and Bolts" of Qualitative Work (Kramer).

Building on the foundation laid last session, we will explore in more detail the "nuts and bolts" of doing qualitative research on organizational phenomena. For this session, I have selected some recent examples of qualitative research involving a variety of different and quite interesting organizational settings. As you will see, the pieces are also motivated by different theoretical concerns.

Reading:

1. Fine, G., & Holyfield, L. (1996). Secrecy, trust, and dangerous leisure: Generating group cohesiveness in voluntary organizations. Social Psychology Quarterly, 59, 22-38.
2. Sutton, R. I., & Hardegon, A. Brainstorming groups in context: Effectiveness in a product design firm. Administrative Science Quarterly, 41, 685-718.
3. Kramer, R. M. (1998). Revisiting the Bay of Pigs and Vietnam decisions 25 years later: How well has the groupthink hypothesis stood the test of time? Organizational Behavior and Human Decision Processes, 73, 236-271.
4. Elsbach, K., & Kramer, R. M. (1996). Members' responses to organizational identity threats: Encountering and countering the *Business Week* rankings. Administrative Science Quarterly, 41, 442-476.