课程大纲

统计运算与数据分析

课程编号：02814900　　　　　　　　　　　　　授课对象：学术研究生

学　　分：2　　　　　　　　　　　　　　　　任课教师：江亭儒

课程类型：必修　　　　　　　　　　　　　　　开课学期：2015 年秋

先修课程：

任课教师简历（500 字左右）：

江亭儒博士现任北京大学光华管理学院组织管理系助理教授，为美国华盛顿大学佛斯特商学院工商管理博士。主要研究领域为家长式领导、跨文化领导、及高管决策。研究已获国际学术期刊如 Journal of Management、Organizational Behavior and Human Decision Processes、Academy of Management Best Proceedings 发表，其博士论文并获得中国管理研究国际学会（IACMR）李宁论文奖首奖。

在加入光华之前，江亭儒博士在美国华盛顿大学教授本科与 MBA 的领导与组织行为课程，曾两度获得优良教师，其教学专长为领导力培训、跨文化管理、及组织行为。

任课教师联系方式：

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助教姓名及联系方式：

辅导、答疑时间：

一、项目培养目标

1　**Learning Goal 1** Graduates will be thoroughly familiar with the specialized knowledge and theories required for the completion of academic research.

　　1.1　Objective 1 Graduates will have a deep understanding of basic knowledge and theories in their specialized area.

　　1.2　Objective 2 Graduates will be familiar with the latest academic findings in their specialized area and will be knowledgeable about related areas.

　　1.3　Objective 3 Graduates will be familiar with research methodologies in their specialized area, and will be able to apply them effectively.

2　**Learning Goal 2** Graduates will be creative scholars, who are able to write and publish high-quality graduation dissertation and research papers.

　　2.1　Objective 1 Graduates will write and publish high-quality graduation dissertation and research papers

　　2.2　Objective 2 Graduates will be critical thinkers and innovative problems solvers.

3　**Learning Goal 3** Graduates will have a broad vision of globalization and will be able to communicate and cooperate with international scholars

　　3.1　Objective 1 Graduates will have excellent oral and written communication skills

　　3.2　Objective 2 Graduates will be able to conduct efficient academic communication in at

least one foreign language

4 **Learning Goal 4** Graduates will be aware of academic ethics and will have a sense of social responsibility.
   4.1 Objective 1 Graduates will have a sense of social responsibility.
   4.2 Objective 2 Graduates will be aware of potential ethical issues in their academic career.
   4.3 Objective 3 Graduates will demonstrate concern for social issues.

Course Description

This course introduces you to a variety of techniques and considerations important in dealing with data analyses in management research. You will be exposed to descriptive and inferential methods and learn about their underlying assumptions, correct usage, and proper interpretation.

This course is not simply a —statistics‖ one but emphasizes the application of statistical techniques in management research. You will learn more detailed nuances of relevant statistical procedures in different courses; this course is designed to give you a good start of making sense of others' research and of conducting your own research. In addition, this course is not of a —software‖ one: although I will use Excel, SPSS, AMOS, HLM, and other software to illustrate how you can —get things done,‖ the focus will be how to make sense of the statistic outcomes obtained from the software and how to conduct next steps in your research.

You will gain experience through a variety of problems, critiques, and data analysis projects. Critiques are primarily based on articles published in the Academy of Management Journal, so students will also attain a high degree of familiarity with articles published in that journal and the norms associated with that journal.

Course Objectives

After successfully completing this course, you should be able to run fundamental data analyses in research and test hypotheses with analysis results. You should be familiar with the whole data processing techniques (including data collection processes), and more detailed, advanced techniques can be learned through later courses or by self-learning activities. Because this course is intended to help research-oriented students to grasp the essence of research question-data interactions, students are encouraged to explore discipline-related datasets and use methods learned in class to analyze them. One approach is to talk to your mentor (I assume you have one) and analyze some used or unused datasets. Possibly after analyzing the data effectively you may find some interesting results that are publishable.

Articles Discussion
At the beginning of each session, we will be discussing the articles that you will have read for the day. These have been chosen to highlight various strengths/flaws in design and to highlight statistical techniques. A lot can be learned by observing the strengths/weaknesses of various attempts at research. You should come prepared with comments and questions. You should be ready to discuss each article and be able to compare and contrast the articles in terms of methodology. I will specifically assign one person to each article. This person will have added

responsibility for summarizing this article and succinctly describing the relationships that are being tested, evaluate its limitations in terms of measures and methods, and perhaps come up with ways that it could be improved.

In-class discussion   50%
Final exam   50%

Textbook: Tabachnick and Fidell (T & F), Using Multivariate Statistics, Fourth Edition, Allyn and Bacon, 2001 or later edition

陈晓萍、徐淑英、樊景立(2012)。组织和管理研究的实证方法（第二版）。北京大学出版社。

Fall 2015 Course Schedule
Sessions   Topics
1   The Basics of Research & Data
2   Data Cleaning and Handling
3   Measurement and Scale Development; Reliability and Validity
4   Principal Component Analysis; EFA and CFA
5   Comparing Groups; Multiple Regression
6   Mediation and Moderation I
7   Mediation and Moderation II
8   Multilevel Linear Modeling I

Week 1: The Basics of Research & Data
Week 2: Data Cleaning and Handling
T & F, Chapter 1 and 4
Introduction
Cleaning up your act: Screening data prior to analysis

Bettis, "The search for asterisks: Compromised statistical tests and flawed theories", Strategic Management Journal, 2012, 108-113.

Wainer, H. 1984. "How to display data badly." The American Statistician, 38, 137-147.

Judd, Smith, Kidder, Research Methods in Social Relations, Chapter 2- Examining social relations research.

Week 3: National Holidays
Week 4: National Holidays
Week 5: Measurement and Scale Development; Reliability and Validity
Hinkin, T. R. 1998. A brief tutorial on the development of measures for use in survey questionnaires. Organizational Research Methods, 1: 104–121.

Judd, Smith, Kidder, Research Methods in Social Relations, Chapter 3—Measurement:
From abstract concepts to concrete representations.

Week 6: Principal Component Analysis; EFA and CFA
T & F, Chapter 13
Principle components and factor analysis

Kachigan, Statistical Analysis: An interdisciplinary introduction to univariate and multivariate analysis, Chapter 15.

Ragins and Cotton, "Easier said than done: Gender differences in perceived barriers to gaining a mentor", Academy of Management Journal, 1991, 939-951.

Weaver, Trevino, and Cochran, "Integrated and decoupled corporate social performance: Management commitments, external pressures, and corporate ethics", Academy of Management Journal, 1999, pp. 539-552.

Flannery, May, "Environmental ethical decision making in the US Metal-Finishing Industry, Academy of Management Journal, 2000, pp. 642-662.

Week 7: Comparing Groups; Multiple Regression
T & F Chapter 5 & 6
Multiple regression
Analysis of covariance

Long, Bowers, Barnett, White, "Research productivity of graduates in management: Effects of academic origin and academic affiliation." Academy of Management Journal, 1998, pp. 704-714.

Porath, Erez, "Does rudeness really matter? The effects of rudeness on task performance and helpfulness", Academy of Management Journal, 2007, pp. 1181-1197.

Gomez-Mejia, Balkin, "Determinants of faculty pay: An agency theory perspective." Academy of Management Journal, 1992, pp. 921-955.

Balkin, Markman, Gomez-Mejia, "Is CEO pay in high-technology firms related to innovation?" Academy of Management Journal, 2000, pp. 1118-1129.

Week 8: Mediation & Moderation I
Aiken, West, Multiple Regression: Testing and interpreting interactions, Sage Publications, 1991. Chapters 2-4.

Baron, Kenny, "The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations." Journal of Personality and Social Psychology, 1986, 1173-1182.

Edwards, J. R. 2008. Seven deadly myths of testing moderation in organizational research. In C. E. Lance & R. J. Vandenberg (Eds.), Statistical and methodological myths and urban legends: Received

doctrine, verity, and fable in the organizational and social sciences (pp. 145-166). New York: Routledge.

Week 9: Mediation & Moderation II
Dean, Snell, "Integrated manufacturing and job design: Moderating effects of organizational inertia." Academy of Management Journal, 1991, 776-804.

Waldman, Ramirez, House, and Puranam, "Does leadership matter? CEO leadership attributes and profitability under conditions of perceived environmental uncertainty", Academy of Management Journal, 2001, pp. 134-143.

Edwards, J. R., & Lambert, L. S. 2007. Methods for integrating moderation and mediation: A general analytical framework using moderated path analysis. Psychological Methods, 12: 1-22.

Week 10: Multilevel Linear Modeling I
T & F Chapter 15
Multilevel Linear Modeling

Klein, K. J., & Kozlowski, S. W. 2000. From micro to meso: Critical steps in conceptualizing and conducting multilevel research. Organizational research methods, 3(3): 211-236.

Week 11: Hierarchical Linear Modeling II
Liu*, D., Liao, H., & Loi, R. 2012. The dark side of leadership: A three-level investigation of the cascading effect of abusive supervision on creativity. Academy of Management Journal, 55: 1187-1212.

Liu, D., Chen, X. P., & Yao, X. 2011. From autonomy to creativity: A multilevel investigation of the mediating role of harmonious passion. Journal of Applied Psychology, 96: 294-309.