University of Ljubljana
SEB SCHOOL OF ECONOMICS AND BUSINESS

ONLINE Ljubljana Doctoral Summer School 2022

Experimental Design and Analysis (Part I – Fundation) (ECTS: 4)

11 – 15 July

15.00 – 19.00 (CEST, Ljubljana)

Course leader:
Singh Jagdip, Case Western Reserve University, United States

Aims of the course:

Interest in experimental designs in research and practice is driven by an emphasis on strong causal evidence in publishing research at top journals. This course is aimed at Ph.D. students and faculty who are motivated by this interest to conduct experimental and quasi- or field-experimental research in business (e.g., accounting, information systems, marketing, organizational behavior) and related disciplines (e.g., economics, psychology). This first course[1] focuses on foundational concepts and tools for scholarly research. It is appropriate for scholars who have completed a basic (first-level) graduate course in statistics, but lack expertise in experimental design. We will examine experimental designs and analyses from the perspective of an applied researcher, not from that of a statistician. Although there will be sufficient coverage of statistical concepts (to ensure that the procedures and techniques are applied intelligently), we will not focus on statistical theory per se. We will be using SPSS for course work with an option to use Stata/R/Python if the student is interested.

Course syllabus with list of readings:

Book: We will be using Experimental Design and Analysis book by Professor Howard Seltman (2018). This book will be available as a free e-text for enrolled students. All chapters in the syllabus are sourced from this book. We will supplement this book with recent articles.

1. **Designing Controlled Experiments and Credible Manipulations**

   Chapters 1 and 7: Experimental Designs and Validity Threats

   Joseph K Goodman, Gabriele Paolacci, Crowdsourcing Consumer Research, *Journal of Consumer Research*, Volume 44, Issue 1, June 2017, Pages 196–210, https://doi.org/10.1093/jcr/ucx047

   Fabrigar, Leandre R., Duane T. Wegener, and Richard E. Petty. "A Validity-Based Framework for Understanding Replication in Psychology." *Personality and Social Psychology Review* (2020): 1088868320931366.

   Workshop & Assignment: Designing a High Validity Experimental Study

[1] A second-level experimental design and analysis is also offered for scholars with advanced skills.

EFMD EQUIS ACCREDITED
AACSB ACCREDITED
ASSOCIATION AMBA ACCREDITED

2. **Foundations of Experimental Data Analysis: Between-Subjects Design**

   Chapters 7 and 10: A/B Testing, Analysis of (Co)-Variance

   Workshop & Assignment: Manipulation Checks, Profile Plots

3. **Foundations of Experimental Data Analysis: 2-way Designs with Regression Option**

   Chapters 8, 9, and 11: Accounting for Threats, 2-way Designs and Complex Interactions

   Workshop & Assignment: Plotting Interactions, Blending ANOVA and Regression Diagnostics

4. **Features of Experimental Data Analysis: Planned/Post-Hoc Contrasts, Effect Size & Power**

   Chapters 12 and 13: Statistical Power, Contrasts and Custom Hypotheses

   Tom Meyvis, Stijn M J Van Osselaer, Increasing the Power of Your Study by Increasing the Effect Size, *Journal of Consumer Research*, Volume 44, Issue 5, February 2018, Pages 1157–1173, https://doi.org/10.1093/jcr/ucx110

   Workshop & Assignment: Power Calculations and Contrasts in 2-way ANOVA

5. **Designing Field Experiments**

   Andrea C Morales, On Amir, Leonard Lee, Keeping It Real in Experimental Research—Understanding When, Where, and How to Enhance Realism and Measure Consumer Behavior, *Journal of Consumer Research*, Volume 44, Issue 2, August 2017, Pages 465–476, https://doi.org/10.1093/jcr/ucx048

   Luca, Michael, and Max H. Bazerman. *The Power of Experiments: Decision Making in a Data-driven World*. MIT Press, 2020.
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   http://dln.jaipuria.ac.in:8080/jspui/bitstream/123456789/7351/1/The%20Power%20of%20Experiments%20Decision%20Making%20in%20a%20Data-Driven%20World%20by%20Michael%20Luca%20Max%20H.%20Bazerman.pdf

   Baldassarri, D., & Abascal, M. (2017). Field Experiments Across the Social Sciences. Annual Review of Sociology, 43(1), 41–73.

   Hall, Todd A., and Sharique Hasan. "The Politics of Experimentation." *Available at SSRN 3571296* (2020).

Teaching methods:

The seminar is designed in the lecture-discussion-workshop format. Student must be prepared to (a) discuss the material assigned for each meeting period, (b) workshop the analytical approaches taught in classroom activity/participation sessions and (c) present the assigned and submitted homework for class learning. Students should expect a homework and reading assignment for each meeting period. The course is designed for doctoral students and academic researchers who have an interest in exploring or implementing an experimental design approach in their current or future research projects.

Asessment:

The course grade will be based on 4 analytical assignments. Students will be working on the assignment after each session and submitting it in advance of the next session. Submitted assignments will be discussed in the class to facilitate hands-on learning and students will have a chance to refine and update their work. Students may work in a team of 2 to enable group learning that complements the course sessions.

Course leader's biographical note:

Jagdip Singh is AT&T Professor of Design and Innovation, and has an undergraduate degree in Electrical Engineering. He is an internationally recognized scholar of organizational frontline effectiveness. Jagdip's expertise involves designing, managing and sustaining effective and enduring customer connections at the frontlines of organizations. Jagdip is twice recipient of the Weatherhead School of Management's Research Recognition Award for outstanding contributions to research in 1997 and again in 2018. In 2019, Jagdip was awarded the University's Faculty Distinguished Research award, the highest honor for enduring and significant research impact.

Also in 2019, Jagdip received the Lifetime Achievement award from the American Marketing Association's SIG-Sales. In 1992, Jagdip received the Case Western Reserve University's John S. Diekhoff award for excellence in graduate teaching, and the Excellence in Doctoral Teaching and Mentoring award in 2007 and again in 2017. Jagdip co-founded the interdisciplinary "Organizational Frontlines Research" initiative spawning an annual symposium (since 2015) sponsored by the Marketing Science Institute, Sheth Foundation and several leading Sales and Service centers. Dr Singh has received the "Excellence in Reviewing" awards from the Journal of Marketing, Journal of the Academy of Marketing Science, Journal of Retailing, and the Journal of Personal Selling and Sales Management. Dr Singh has participated in seminars at leading international business schools in Australia, Belgium, Brazil, China, France, Germany, Hong Kong, India, Netherlands, Norway, Slovenia, Switzerland, Sweden, Thailand, and United Kingdom.