



ONLINE Ljubljana Doctoral Summer School 2021

Experimental Design and Analysis (ECTS: 4)

12 – 16 July

15.00 – 19.00 (CEST, Ljubljana)

Course leader:

[Singh Jagdip](#), Case Western Reserve University, United States

Aims of the course:

This course is aimed at Ph.D. students and Faculty who intend to conduct experimental and quasi- or field-experimental research in business (e.g., accounting, information systems, marketing, organizational behaviour) and related disciplines (e.g., economics, psychology). The primary objective is to provide participants with foundational concepts and tools needed for collecting and analysing behavioural data. Previous experience in experimental research is not necessary, but it would help to have completed a basic (first-level) graduate course in statistics. We will examine experimental designs and analyses from the perspective of an applied researcher, not from that of a statistician.

That is, we will emphasize the actual use of proper experimental data collection procedures and analysis techniques for rigorous (i.e., publishable) theory testing. 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, although students may use other comparable statistical software they are familiar with.

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 Replication (Crisis)

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



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

Chapters 7, 10, and 11: A/B Testing, Analysis of (Co)-Variance with Interactions (1 & 2-way)

Workshop & Assignment: Manipulation Checks, Profile Plots, Main Effects and Interactions

3. 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

4. Advanced Experimental Data Analysis: Higher-Order Designs and Mediation

Chapters 14 and 15: Within Subject Designs and Mixed Models

Pirlott, Angela G., and David P. MacKinnon. "Design approaches to experimental mediation."

Journal of Experimental Social Psychology 66 (2016): 29-38.

Workshop & Assignment: Repeated Measures and Mediated Effects Analysis

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.

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.