9824 Experimental Design

***Special Topics (Marketing) Seminar** [2019-2020]*

Winter: Thursdays, 9–12 (2102)

First Meeting: January 9, 2020

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This is a course on the fundamentals of experimental design couched within a marketing and consumer behavior/psychology paradigm, intended for graduate students planning a research career. The course will enable students to (1) understand and review experiments presented in academic journals, and (2) design and conduct experiments as part of research projects intended for publication in good marketing and consumer behavior/psychology journals. There are no pre-requisites for the course but it is a good idea to have passed graduate-level courses on research methods and statistics.

Outcomes:
- To understand the scientific rationale of experimentation
- To master the facets of validity for causal inference
- To place experiments in the larger context of research
- To understand concepts, methods, and statistics related to experiments

Materials:
- Gary W. Oehlert (2010) A First Course in Design and Analysis of Experiments, available at http://users.stat.umn.edu/~gary/book/fcdae.pdf
- Andrew F. Hayes (2018), Introduction to Mediation, Moderation, and Conditional Process Analysis.
- Other PDF readings

Evaluation:

Contribution	60%
Paper Presentation	10%
Paper	30%
TOTAL	100%

The final average in this class will likely be in the 80% to 85% range, though there is no policy specifying it cannot be higher or lower. 90%+ = A+ (= truly exceptional); 80-90% = A (doing just fine); 70-80% = B ('we should talk').

Contribution (60%): The course is a seminar, a format that requires you to prepare ahead of time and to speak. I evaluate your contribution two ways. First, I evaluate the quality and quantity of what you contribute to class discussions. Did you show evidence that you have thought about the readings and that you are well prepared for the session? Did you ask good questions or provide thoughtful answers or excellent commentary etc?

Second, throughout the semester students will lead the discussion of assigned readings by talking about and 'teaching' the important content of the reading in whatever manner you think will be most effective. Every time you lead the discussion, you should also distribute a hard-copy handout (no more than 1 page, double sided) that summarizes, explains etc… When you lead the discussion, please no powerpoint or reading from notes. You have to make the determination of what is important and focus on that. Get into the details where appropriate - remember this is a course on experimental design so that should always be the focus (e.g. not critiquing the theories embedded in empirical papers…).

If you are assigned an empirical research paper (as opposed to, for example, a chapter summary) you must: (a) provide a detailed conceptual model (either an overall one for simpler papers or sets of models where the papers are more complicated) and (b) present the details of the experimental design (i.e. what is manipulated? How? What are the manipulation checks? What is the measure of process (if any)? Etc… Once I know who is enrolled in the class, I will assign readings.

All students are also expected to attend the "LAB: Qualtrics Programming" session that is occurring during class time on Feb. 13.

Paper Presentation (10%): You will present your paper idea during Session 9. This will take the form of a typical conference presentation with all the associated structure and formality. The presentation will be about 15 minutes long (this will be determined in part by the number of students registered), it will include motivation, contribution, research question, presentation of background literature and an explicit theoretical model, formulation of hypotheses and a detailed explanation of your experimental design. You may not use any notes during your presentation, which must be engaging and polished.

The class and I will give you feedback after your presentation – your final paper (below) should be responsive to this feedback (especially mine – it might be helpful to think of me as the editor or conference organizer and the other students as conference reviewers).

Paper (30%): Find a topic: do not start with a data set, a method or some idea you have already developed elsewhere. Rather, <u>start with a problem</u> that is new to you that also meets the following criteria:

- Is interesting (i.e. would a paper addressing this problem be received with interest at the good journals in your field? Is the topic important and relevant?)
- Has enough conceptual richness that you can formulate a research question around it and develop several novel hypotheses informed by academic literature.
- Implicates a 'consequential dependent measure'. This means it "requires participants to (a) invest a resource, such as money, time, or effort; or (b) experience a real outcome, such as receiving their chosen option" (<u>Inman et al. 2018</u>).

Then, write a paper about it. Since the course is only a few months long, I do not expect you to

collect data. The paper must be *de novo (*e.g. independent of other current or past coursework or workplace efforts). I want this to be your work exclusively, so please do not get help conceptualizing or developing the paper. So, for example, it is not permissible to have anyone read or provide feedback on a draft of the paper prior to handing it in and it is not permissible to use any form of copy editor or assistance in writing the paper. It must represent your own work and nobody else's. The paper must be hypothesis driven (present 2-4 hypotheses) and it must demonstrate a good grasp of the literature; it must attempt to make a significant contribution and put theory front and centre:

- Title Page (title, author name and abstract)
- Statement of Contribution (see http://www.ejcr.org/contribution-statement.htm or https://www.ama.org/submission-guidelines-journal-of-marketing/ under "Statement of Intended Contribution"). One page.
- Introduction section (e.g. Position paper. Why is it important? What is the contribution? What is the general approach of the paper? What is the paper's goal? What is the motivating problem?). This section must include a succinct and precise representation of your research question. Use examples and be clear about the nature of the motivating problem.
- Literature Review and hypotheses development: Derived from and supports your research question.
- Study Design: Based on an experimental framework, provide a detailed overview of your proposed experiment(s). Include your instrument(s) as an appendix. Present the details of one or two experiments.
- What specifically are your expected results? If you do not have data (I do not expect you to, but if you have it, feel free to use it), provide (mock-ups of) your results (figures, tables etc…).
- Discussion. Assume the hypotheses are supported. So what? Where do we go from here? What did you contribute? What are the limitations of this approach etc…
- You must include an explicit theoretical model. That is, there must be a theoretical figure, a picture of how you conceptualize the relationships among your core variables.
- References: must be accurate and complete.

Due: *By midnight, Thursday, April 16, 2020. Submit via Turn It In but also email me a PDF copy as a backup.* I am limiting you to 10 pages of text (not including references, tables and figures, title page and statement of contribution). Develop your ideas logically and clearly. I value depth over breadth. You are free to hand the paper in early but you may only hand it in once (I tend to grade these as I receive them).

Formatting: typed, 1.5 spaced, 1-inch margins, 12-point font, Times New Roman. Use section headings and subheadings and page numbers. For other formatting issues (e.g. references, tables/figures…), adopt a style used by a top research journal in your field.

Course Rules:
- I will not accept late papers except by prior written arrangement or unless I receive what I judge to be unambiguous evidence of extenuating circumstances in which case it is at my discretion how to handle grading. Otherwise, late papers will earn a grade of zero. Assignments that exceed page limits will receive at a minimum a 25% penalty.
- I expect you to attend all classes and to be on time. If you plan to be absent or late, email me ahead of time. If you miss 5 or more classes, you may not do the final exam (which in this class is effectively the final paper). If you miss a class, you are responsible for completing any assignments, readings etc…

- Pay attention to the quality of your writing/arguments (well organized, specific and clear meanings; perfect formatting etc…). COMMUNICATE IN SUCH A MANNER THAT YOU CANNOT POSSIBLY BE MISUNDERSTOOD.
- I use Turn It In.com for all written assignments. Please submit your paper through it. However, here is some official language on the matter: "All required papers may be subject to submission for textual similarity review to the commercial plagiarism-detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between Western University and Turn It In. See also:
    o https://www.lib.uwo.ca/tutorials/plagiarism/
    o https://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_grad.pdf .

Academic integrity: Plagiarism and other forms of academic dishonesty will be dealt with consistent with the official policies of the university. This concept applies with equal force to all assignments and is considered a major Scholastic Offence. I will be holding you to a high standard of integrity and professional conduct. If you have concerns, queries etc…, talk to me immediately. Here is some language that the university requires: "Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:

http://www.uwo.ca/univsec/handbook/appeals/scholastic_discipline_grad.pdf

Mental Health: As part of a successful graduate student experience at Western, we encourage students to make their health and wellness a priority. Western provides several on campus health-related services to help you achieve optimum health and engage in healthy living while pursuing your graduate degree. For example, to support physical activity, all students, as part of their registration, receive membership in Western's Campus Recreation Centre. Numerous cultural events are offered throughout the year. Please check out the Faculty of Music web page http://www.music.uwo.ca/, and our own McIntosh Gallery http://www.mcintoshgallery.ca/. Information regarding health- and wellness-related services available to students may be found at http://www.health.uwo.ca/ Students seeking help regarding mental health concerns are advised to speak to someone they feel comfortable confiding in, such as their faculty supervisor, their program director (graduate chair), or other relevant administrators in their unit. Campus mental health resources may be found at http://www.health.uwo.ca/mental_health/resources.html

To help you learn more about mental health, Western has developed an interactive mental health learning module, found here: http://www.health.uwo.ca/mental_health/module.html. This module is 30 minutes in length and provides participants with a basic understanding of mental health issues and of available campus and community resources. Topics include stress, anxiety, depression, suicide and eating disorders. After successful completion of the module, participants receive a certificate confirming their participation.

READING LIST:

Session 1: Introduction (January 9)
- Oehlert Chapter 1
- Hayes Chapter 1
- Hayes Chapter 2
- Kardes (1996), "In Defense of Experimental Consumer Psychology"
- Lehmann, McAlister and Staelin (2011), "Sophistication in Research in Marketing".
- Lynch, Alba, Krishna, Morwitz and Gurhan-Canli (2012), "Knowledge Creation in Consumer Research: Multiple Routes, Multiple Criteria"

Session 2: Validity (January 16)
- Calder, Phillips, and Tybout (1982), "The Concept of External Validity"
- Lynch (1982), "On the External Validity of Experiments in Consumer Research"
- Winer (1999), "Experimentation in the 21st Century: The Importance of External Validity"
- Morales, Amir and Lee (2017), "Keeping it Real in Experimental Research – Understanding When, Where, and How to Enhance Realism and Measure Consumer Behavior"
- Peterson (2001), "On the Use of College Students in Social Science Research: Insights from a Second-Order Meta-Analysis"

Session 3: Randomization, Placebos and Control (January 23)
- Oehlert Chapter 2
- Oehlert Chapter 3
- Campbell, Cook and Shadish Chapter 8
- McFerran, Dahl, Fitzsimmons and Morales (2010), "I'll Have What She's Having: Effects of Social Influence and Body Type on the Food Choices of Others"
- Yzerbyt, Muller and Judd (2004), "Adjusting Researchers Approach to Adjustment: On the Use of Covariates When Testing Interactions".
- Shiv, Carmon and Ariely (2005), "Placebo Effects of Marketing Actions: Consumer May Get What They Pay For".

Session 4: Sample Size, Power and Effect Sizes (January 30)
- Oehlert Chapter 7
- Ellis, Chapter 1 (Introduction to Effect Sizes)
- Maxwell, Kelley and Rausch (2008), "Sample Size Planning for Statistical Power and Accuracy in Parameter Estimation"
- Meyvis and Van Osselaer (2018), "Increasing the Power of Your Study by Increasing the Effect Size"

Session 5: Factorial Designs (February 6)
- Oehlert Chapters 8 and 9

Each student will find a recent article from JCR/JCP/JM/JMR/JAMS that uses a factorial design. Distribute the article electronically to the class no less than 24 hours before the session. Prepare a one-page handout based on what you think is the most interesting (Best? Worst?) experiment in that paper. This should include:

(1) conceptual model for that experiment (draw it);
(2) detailed description of the factors (details about manipulations);

(3) provide (if possible) or describe (if not provided) and evaluate the evidence the paper presents to support the success of the manipulations;

(4) assess the evidence – do the analysis and evidence match (1) and (2) and support the conclusions made in that study?

LAB: Qualtrics Programming (February 13)

Session 6: Mediation (February 27)
- Hayes Chapter 3
- Hayes Chapter 4
- Zhao, Lynch and Chen (2010), "Reconsidering Baron and Kenny: Myths and Truths about Mediation Analysis"
- Bullock, Green and Ha (2010), "Yes, But What's the Mechanism? (Don't Expect an Easy Answer)
- Pieters (2017), "Meaningful Mediation Analysis: Plausible Causal Inference and Informative Communication"
- Reich, Campbell and Madrigal (2019), "Who Deserves Faulty Products? How Blaming the Victim Prevents Consumer Punitive Actions"

Session 7: Moderation (March 5)
- Hayes Chapter 7
- Hayes Chapter 8
- Spencer, Zanna and Fong (2005), "Establishing a Causal Chain: Why Experiments Are Often More Effective than Mediational Analyses in Examining Psychological Processes"
- Winterich, Reczek and Irwin (2017), "Keeping the Memory but Not the Possession: Memory Preservation Mitigates Identity Loss from Product Disposition"
- Huang, Huang and Wyer (2018) "The Influence of Social Crowding on Brand Attachment"

Session 8: Practicum on Interactions (March 12)
- Hayes Chapters 5, 11 and 12

Session 9: Paper Presentations (March 19)

Session 10: Meta-Analysis (March 26)
- Rosenthal and Dimatteo (2001), "Meta-Analysis: Recent Developments in Quantitative Methods for Literature Reviews"
- Peterson and Brown (2005), "On the Use of Beta Coefficients in Meta-Analysis"
- McShane and Bockenholt (2017), "Single-Paper Meta-Analysis: Benefits for Study Summary, Theory Testing and Replicability"
- Iyer, Blut, Xiao and Grewal, "Impulse Buying: A Meta-Analytic Review"
- Khamitov, Wang and Thomson (2019), "How Well Do Consumer Brand Relationships Drive Customer Brand Loyalty? Generalizations from a Meta-Analysis of Brand Relationship Elasticities"

Session 11: Quasi Experiments (April 2)
- Shadish and Cook (2009), "The Renaissance of Field Experimentation in Evaluating Interventions"
- Goldfarb and Tucker (2014), "Conducting Research with Quasi-Experiments: A Guide for Marketers"

- Angle, Dagago-Jack, Forehand and Perkins (2017), "Activating Stereotypes with Brand Imagery: The Role of Viewer Political Identity"
- Pattabhiramaiah, Sriram and Manchanda (2019), "Paywalls: Monetizing Online Content"

Session 12: Field Experiments (April 9)
- Gneezy (2017)
- West, Biesanz and Pitts (2000)
- Goldstein, Cialdini and Griskevicius (2008), "A Room with a Viewpoint: Using Social Norms to Motivate Environmental Conservation in Hotels"
- White and Simpson (2013), "When Do (and Don't) Normative Appeals Influence Sustainable Consumer Behaviors?"
- Johnson, Lewis and Nubbermeyer (2017), "Ghost Ads: Improving the Economics of Measuring Online Ad Effectiveness"