



COURSE	DESIGN and ANALYSIS of EXPERIMENTS
BIMESTER/YEAR	2 ND / 2024
PROGRAM	SCHOOL OF METHODS
CLASS-HOURS	30 hours
PROFESSOR	DELANE BOTELHO
LANGUAGE	PORTUGUESE

COURSE OBJECTIVES

The objectives of this course are to develop participants' ability: a) to design, operationalize and analyze an (lab or field) experiment, and write the rationale of a scientific manuscript in experimental research applied to social sciences, particularly business and public administration; b) to develop original ideas on any research topic in experimental research for social sciences; and c) to critique the current research with an experimental approach.

LEARNING GOALS

The learning goals are presented below, demonstrating how they contribute to the program learning goals.

Program learning goals	Course learning goals	Level of contribution
Qualitative research methods		○ ○ ○
Quantitative research methods	Participants will practice the main methods of analyzing experimental data, such as evaluating the internal consistency of the scales, performing manipulation checks (t test), analyzing the effect of indepvar on depvar (ANOVA) and evaluating the mediation and moderation effect of variables (PROCESS).	● ● ●
Knowledge of the research topic / theory		○ ○ ○
Research procedures	Participants will design their own experiments, based on <i>a priori</i> hypotheses.	● ● ●
Relevance and innovation in research	Participants will design their experiments based on theories and state of the art in their areas of interest. Throughout the course, original thinking will be practiced, through constant criticism of the existing literature and suggestions for future research that advance the the knowledge of the area.	● ● ○
Development of academic papers	Participants will prepare a paper project, which can be developed after the end of the course for submission.	● ○ ○
Other course objectives:		

PREVIOUS KNOWLEDGE REQUIRED

Students must master basic statistics concepts, such as hypothesis testing. Some familiarity with research methods brings great advantage.

CONTENT / METHODOLOGY

- Cause and effect
- Hypotheses development to be tested through experiments
- Types of experiments
- Internal and external validity



- Field and Lab experiments
- Random assignment
- Stimuli and manipulations checks
- Priming
- Measurement
- Analysis: ANOVA & ANCOVA
- Moderation & Mediation
- Ethics in experimental research.

The learning process is student-centered, which calls for preparation and the prior undertaking of the recommended activities and readings. In class, students will be responsible for presenting the recommended readings and guiding the discussion on the theme. They also will critically read the literature to generate ideas for new studies, which will contribute to the development of original thinking. Students will also enlarge their knowledge of a specific topic by elaborating a research project with an experimental approach. The professor will cooperate with the students to create and coordinate a relevant learning experience, providing guidance, advice, and assessment.

ASSESSMENT

Exercises (30%) (individual)

Students should generate an idea for a new study in each class. Each student will be responsible for writing up a one-page (1.5-spaced) about an idea for a study that relates to the class' readings (only articles), e.g., a new study or studies designed to extend a particular paper or to build a bridge between papers. Please specify the research question, why it is important, and a brief overview of the proposed design (e.g., the independent and dependent variables) and hypotheses. Everyone should plan on outlining their ideas in class.

Participation and presentation (30%)

Students should come to class prepared to discuss each article/chapter in-depth and to present the major ideas, contributions, strengths, and weaknesses if asked to do so.

Research Project (40%) (individual)

Students should develop an experimental project with the following topics:

1. Introduction

- A. Theme (introduce the topic to the reader)
- B. Justify your theme (present up-to-date data, gaps in the literature; show the importance of the study)
- C. Research problem and/or general and specific objectives

2. Theoretical frame of reference / Literature Review

- A. Theory on each variable (precise definitions, preferably from more than one author)
- B. Hypotheses, with theoretical background

3. Method

- A. Data collection
- B. Manipulation of the independent variables and operationalization of dependent variables (definition of scales)
- C. Data analysis

4. Results (of the pre-test only)

5. Final Remarks (implications, limitations)

6. References (according to APA)

7. Appendix

- A. Questionnaire (clarifying the scales used)



SCHEDULE

DAY 1 2mai

Cause and effect

Hypotheses development to be tested through experiments

DAY 2 9mai

Types of experiments

Internal and external validity

DAY 3 16mai

Random assignment

Measurement

DAY 4 23mai

Stimuli and manipulations checks

Priming

DAY 5 6jun

Analysis: ANOVA & ANCOVA

Moderation & Mediation

DAY 6 13jun

Analysis: ANOVA & ANCOVA

Moderation & Mediation

DAY 7 20jun

Field and Lab experiments

Ethics in experimental research.

DAY 8 27jun

Students' presentations of the experimental projects.

REFERENCES

Books

1. American Psychological Association (2019). **Publication manual of the American Psychological Association**. 7th Ed. Washington, DC: APA.
2. Coleman, R. (2018). **Designing experiments for the social sciences**: How to plan, create, and execute research using experiments. Sage publications.
3. Field, A. (2009). **Discovering statistics using SPSS**. Sage publications.
4. Hayes, A. F. (2013). **Introduction to mediation, moderation, and conditional process analysis**: A regression-based approach. Guilford Press.

Articles

1. Bachrach, D. G., & Bendoly, E. (2011). Rigor in behavioral experiments: A basic primer for supply chain management researchers. **Journal of Supply Chain Management**, 47(3), 5-8.
 2. Batista, J. M., Barros, L. S., Peixoto, F. V., & Botelho, D. (2022). Sarcastic or Assertive: How Should Brands Reply to Consumers' Uncivil Comments on Social Media in the Context of Brand Activism?. **Journal of Interactive Marketing**, 57(1), 141-158.
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3. Cao, C., Cao, X., Cashman, M., Kumar, M., Timoshenko, A., Yang, J., & Wernerfelt, B. (2019). How do successful scholars get their best research ideas? An exploration. **Marketing Letters**, 30(3), 221-232.
 4. Chatterji, A. K., Findley, M., Jensen, N. M., Meier, S., & Nielson, D. (2016). Field experiments in strategy research. **Strategic Management Journal**, 37(1), 116-132.
 5. De Luca, R., & Botelho, D. (2020). Olfactory priming on consumer categorization, recall, and choice. *Psychology & Marketing*, 37(8), 1101-1117.
 6. Ferreira, K., & Botelho, D. (2021). (Un) deservingness distinctions impact envy subtypes: Implications for brand attitude and choice. **Journal of Business Research**, 125, 89-102.
 7. MacInnis, D. J., Morwitz, V. G., Botti, S., Hoffman, D. L., Kozinets, R. V., Lehmann, D. R., ... & Pechmann, C. (2020). Creating boundary-breaking, marketing-relevant consumer research. **Journal of Marketing**, 84(2), 1-23.
 8. Saab, A. B., & Botelho, D. (2020). Are organizational buyers rational? Using price heuristics in functional risk judgment. **Industrial Marketing Management**, 85, 141-151.
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