

Amsterdam Business Research Institute

Experimental Research

Course Manual

Academic year 2023- 2024



Course title	Experimental Research
Coordinator(s)	Prof. Dr. Femke van Horen
Lecturer(s)	Prof. Dr. Femke van Horen, Marketing department
Study period	Intensive course March 5 till March 8, 2024 (on campus); Final presentation April 5, 2024 (hybrid).
ECTS	5 ECTS
Tuition	€1250 (early bird discount 20% €1000)
Target Groups	The course Experimental Research is open to Research Master students, PhD candidates, Postdocs and junior faculty from the VU and other Dutch and international universities. The course is meant for participants engaged in experimental research projects broadly related to business and management or organization studies. This is an advanced methods course that assumes basic prior understanding of business and management or organization studies, and basic understanding of statistics and quantitative research methods.

- Course objective** After the successful completion of this course, participants will be able to:
- Understand important concepts, tools, and technical skills needed for planning and designing laboratory experiments
 - Understand the creative skill of experimentation and how to design and set up your own experiment
 - Understand the principles and the logic of the following statistical techniques: Regression, Analysis of Variance, Analysis of Covariance, Contrast Analysis, Mediation Analysis, Moderation Analysis
 - Understand issues related to statistical power and effect size, ethical research practices (both in terms of human subjects and handling and reporting of data), replicability, and open science.
 - Design and run your own experiment based on hands-on experience developed in this course. Analyze and interpret the data of your own experiment and report the results in a scientific paper.

Course content Do people buy more on a website with calming or arousing colors, and may this depend on the type of product that is sold? Do people behave more or less sustainable when feeling uncertain due to, for instance, an economic crisis and why? Are employers more likely to recruit you when you include a picture of yourself or not? These are the kind of questions that we investigate as experimental researchers.

In this course you will learn how to do experimental research. Contrary to a survey, an experiment enables a researcher to test a hypothesized *causal* relationship between an independent variable (e.g., uncertainty) and a dependent variable (e.g., sustainable behavior) by manipulating the independent variable (e.g., imagining an uncertain vs certain situation). In this course, we will dig deeper into the different phases of designing and conducting an experimental study. First, we will discuss how to come up with specific hypotheses, ready to be tested in an experimental context. Second, we discuss how to design and conduct an experiment in which you manipulate independent variable(s), measure dependent variable(s), and control for extraneous variable(s). Third, we discuss how to analyze the results from an experiment, with the appropriate statistical tools (SPSS). Finally, we discuss how to interpret the results of an experiment, eliminate alternative hypotheses, and design a set of follow-up studies. These

discussions are set against the backdrop of actual examples from practice and, in combination with your assignment, from your own research ideas.

Teaching Methods The course is organized around one intensive modules of four days on campus in Amsterdam, and one hybrid session four weeks later. Each day of the intensive course will consist of an input session during which the instructor will introduce participants to the various aspects of experimental research, analyses, and research practices. Throughout this part, students will be invited to engage in discussions. The last hour of each workshop will comprise of a tutorial in which the students can get hands on experience on what we have covered in the class using short assignments. Please bring your own laptop with SPSS installed on it (SPSS can be installed for free with a campus license).

After the intensive module, the participants will work on their own experiment. They will be asked to think of a research question, to set up the experiment, to run the experiment, and to analyze and report the results (final assessment). The experiments will be presented twice:

- On **Wednesday March 20, 2024** the participants will have to submit a presentation with voice recording of their experiment (general idea, hypothesis, conceptual framework, experimental design, and possible confounds), upon which they will receive written feedback, from both the lecturer and two students.
- On **Friday, April 5, 2024** participants will present their final experiment, results, and discussion (*hybrid format*). The feedback should be used to improve the final written report of the experiment.

Assessment

Attendance and active participation in the sessions is mandatory to pass this course. The requested readings are assumed to have been read prior to class. The students will present their experiment twice (see above). In addition, they will write a research report (introduction, methods, results, discussion) based on their experiment, including the analyses of the data. The final grade of the course will be based on both presentations (20% each) and the research report (60%). The course workload represents 5 ECTS.

Venue

Sessions will take place at the campus of the Vrije Universiteit Amsterdam, which is at walking distance from Amsterdam Zuid train station and short train ride from Amsterdam Schiphol Airport. More information: <https://vu.nl/en/about-vu/moreabout/route-description>. If accommodation is needed, Delphi hotel (<https://www.delphihotel.nl/>) is an interesting and affordable option.

Program

This is a preliminary program and subject to change.

	Date	Time	Content Workshop	Content Tutorial
1	Tuesday 5-3-2024	13:30 - 17:30 Forum 4	Basics of experimentation Experimental designs Experimental issues: Confounds	Qualtrics How to handle your data
2	Wednesday 6-3-2024	9:00 – 12:30 Forum 4	Best research practices Replication and open science Type I and Type II errors Power and effect size	G-power
3	Thursday 7-3-2024	10:00 – 13:00 <i>Lunch</i> 14:00 – 17:00 Forum 6	Intuition behind ANOVA ANOVA Repeated Measures ANCOVA	ANOVA Mixed design ANCOVA
<i>Joint dinner at Lemon 18:30 - 21:00 (optional)</i>				
4	Friday 8-3-2024	10:00 – 13:00 <i>Lunch</i> 14:00 – 17:00 Forum 6	Mediation Simple and moderated mediation Causal chain model Regression Spotlight and floodlight analyses	Mediation Conditional Process Spotlight and floodlight analyses
5	Friday 5-4-2024	10:00 – 14:00 <i>Hybrid</i> Forum 6	Mini-conference Final presentations of experiments	

Literature

A list of articles will be announced via the course website on Canvas.