Amsterdam Business Research Institute

R for Business and Management Research

Course Manual

Academic year 2024 – 2025

Course title	R for Business and Management Research
Coordinator	dr. Dennis Herhausen
Lecturers	dr. Baris Kocaman
	dr. Dennis Herhausen
Study period	October 2024– December 2024 (Period 2)
ECTS	5 ECTS
Tuition	€1250 20% discount on early bird registration: €1000

Course objective After successfully completing this course, the student

- is familiar with R Studio and is able to use R base functionality as well as functionality that is available through packages (e.g., for data science, geovisualisation or text analytics – in particular tidyverse)
- is familiar with basic data structures in R and is able to perform data operations such as merging data frames and aggregating data
- is able to summarize and plot categorical data, and test basic hypotheses about such data in R
- is able to summarize and plot continuous data, and test basic hypotheses about such data in R
- is able to perform simple and multiple regression in R
- is able to explore endogeneity in regression analysis
- is able to perform reproducible research by reporting in R Markdown

Course content The understanding of research methods to analyze (large) datasets becomes ever more important. To use analytics to solve research problems, you need to have a solid background not only in the available statistical methods, but also in the inherent boundaries of these statistical methods. This course teaches technical skills in R while simultaneously deepening the understanding of modelling, research designs, and the limitations of data analysis.

What to expect You get familiar with several different statistical methods and the inherent boundaries of these methods. You gain technical skills in working with R for data processing, data visualizing, data analysis, and interpretation of results. This will also deepen your understanding of modelling, research designs, and the limitations of data analysis. For the communication of issues regarding the course (planning, content, assignments, lectures etc.) Canvas will be used.

Teaching methods   The course consists of hands-on tutorials, alternated with more generic reflections on the materials when needed. It is very important that you actively apply what you've learned during the tutorials. Practice is vital to mastering a programming language. We will meet twice a week in the first two weeks of the course, and twice a week in week 5 and 6. You are expected to work on the assignments in the weeks where no tutorials are planned. Although the tutorials are not mandatory, your attendance is highly recommended to keep up with the course materials.

During the course you'll work on two assignments. During week 1-4, you work on assignment 1 (available on Canvas). During week 5-8 you work on assignment 2. Note that at the start of week 5 we introduce assignment 2. At the end of week 3 (Friday 23.59) and the end of week 6 (Friday 23.59) you have to submit drafts of your assignments using Canvas. These drafts will receive feedback from your fellow students. At the end of the course you need to hand-in a revised version of both assignments. Please prepare for the tutorials by reading the assignment beforehand and downloading the data in advance.

Course coordinators and lecturers

Course coordinator, lecturer (dennis.herhausen@vu.nl)

Dennis Herhausen (Ph.D., University of St.Gallen) is Associate Professor of Marketing at Vrije Universiteit Amsterdam. Previous he was an Associate Professor of Marketing at KEDGE Business School, Visiting Professor at the St.Gallen Institute of Management in Asia, a Visiting Academic at Cardiff University, and an Assistant Professor of Marketing at the University of St.Gallen. Before joining academia, he worked as an International Marketing Manager for a German Food Producer and a Sales and Marketing Consultant. Dennis' research, teaching, and executive education revolve around the themes of digital communication, customer journeys and experience, multichannel management, digital capabilities, and social media management.

Lecturer (b.kocaman@vu.nl)

Baris Kocaman is an Assistant Professor of Marketing at Vrije Universiteit Amsterdam since January 2023. His research focuses on the impact of new technologies, business models, and marketing instruments on customer value creation (acquisition, retention, and expansion). He employs advanced regression-based approaches and causal inference to understand customer behavior and provide data-driven insights. Baris has taught business statistics with applications in marketing, operations, and innovation management at BSc, MSc, and EMBA levels. He holds a PhD from Eindhoven University of Technology and an MSc from Columbia Business School.

Assessment

Your overall course grade is based on two assignments. During the course you will work on these two assignments. You submit each assignment twice: first you receive feedback from another student (and have to give feedback to the same student), the second time you receive a grade. The quality of the feedback you provide will be graded by the lecturers, and each counts for 10% of your grade. The final submission of the assignments will be graded and count for 40% each. The overall course grade needs to be a 5.50 or higher.

Study material

There is no required study book for this course, as we will mostly practice R. In case you would like to have a book as a reference, you might consider: R for data science by Grolemund and Wickham (https://r4ds.had.co.nz/). If you would like to prepare yourself for this course in terms of programming knowledge, and to refresh your knowledge of statistics, you could try to complete the first course of the coursera 'Statistics with R' specialization: (https://https://www.coursera.org/specializations/statistics). subscribe yourself for free if you do not require a certification.

Study load

Preparing the tutorials / working on assignments	52 hours
Attending the tutorials	32 hours
Peer review	16 hours
Finalizing the assignment	40 hours
Total	140 hours

Plagiarism

What is plagiarism?
If you do not include proper references in your work, you could be accused of plagiarism: passing off others' work, ideas or arguments as your own. Plagiarism is regarded as fraud and is taken very seriously in the academic world. If you commit plagiarism during your studies, you could face serious punishment including exclusion from a course or even expulsion from the university. For academics, plagiarism can mean the end of their career.

What is regarded as plagiarism?
The following are clear examples of plagiarism:
Handing in somebody else's work as if it is your own.
Copying passages, long or short, from a source without acknowledging it.

But the following also count as plagiarism:

- 'Borrowing' somebody else's words or ideas without acknowledgement.
- Making just a few changes to a text, graph or diagram and then claiming it as your own.
- 'Forgetting' to put quotation marks around a literal quote.
- Including an incorrect or incomplete reference, so that the source cannot be traced.
- Not including a reference every time you draw upon a particular source; this is equivalent to passing off part of the information used as your own work.
- Using so many words or ideas from a source that they make up the bulk of your paper – even if you do credit the source!

(Source: http://webcursus.ubvu.vu.nl/)

Assessment Overview

Format	Mimimum required	% grade	Resit
Peer review	5.00	20% (10% each)	No resit offered
Final assignments	5.00	80% (40% each)	
Overall course grade	**5.50**		

Assessment Matrix

Format	Bridging theory and practice- Knowledge	Bridging theory and practice- Quant skills	Research skills	Academic Skills	Bridging theory and practice- Application
Assign-ments	Ability to • understand and interpret statistical models • work with large datasets andto extractuseful information from thesedatasets	Ability to • analyze datasets using the right technique. • build on your knowledge of statistical tests that you learned during business statistics. • understand and recognize a variety of advanced modeling techniques. • to translate academic research into practically relevant outcomes • to translate practically relevant problems into academically relevant research questions	Ability to • translate theoretical ideas into testable models. • apply abstract statistical models to concrete datasets. • translate theoretical ideas into testable models. • go from an abstract regression model to a concrete recommendation based on the findings in your data. • interpret findings, and to argue correctly what this means for the theoretical model that is tested.	Ability to • conduct business research using the proper methods, and analyzing and interpreting them accordingly. • interpret findings, and to argue what this means for the theoretical model that is tested. • to select the correct method and / or technique for quantifying, analyzing and solving a specific problem • formulate abstract models, using mathematical notation, and translating the results into correct interpretations	Ability to • apply the knowledge learned during the course to the practical problem

Course Schedule 2024

Session 1:
Monday 28 October, 9.00 – 12.00 in Forum 4 (HG-1D12)

Session 2:
Tuesday 29 October, 9.00 – 12.00 in Forum 4 (HG-1D12)

Session 3:
Monday 4 November, 9.00 – 12.00 in Forum 4 (HG-1D12)

Session 4:
Tuesday 5 November, 9.00 – 12.00 in NU-02A59

Session 5:
Monday 25 November, 13.30 – 16.30 in HG-06A37

Session 6:
Tuesday 26 November, 13.30 – 16.30 in Forum 4 (HG-1D12)

Session 7:
Tuesday 3 December, 13.30 – 16.30 in Forum 4 (HG-1D12)

Session 8:
Wednesday 4 December, 13.30 – 16.30 in Forum 4 (HG-1D12)