Quantitative Social Research Methods

Code: 101146
ECTS Credits: 6

2025/2026

Degree	Type	Year
Sociology	OB	2

Contact

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Teachers

(External) A partir de l'1 de setembre la responsable de l'assignatura serà la Roberta Rutigliano. Per qualsevol incidència podeu escriure a roberta.rutigliano@ehu.eus

Teaching groups languages

You can view this information at the end of this document.

Prerequisites

It is recommended to have successfully completed the first-year subject Methodology and Design.

Objectives and Contextualisation

The course is an introduction to the methods and techniques of data production (collection) and basic analysis from a quantitative methodological perspective. The main goal is to provide students with the knowledge and ability to apply the main methods and techniques for producing and analyzing quantitative data in the field of sociology.

Specifically, the course aims for students to build their learning based on:

• Knowledge and understanding of concepts related to the research process in social sciences from a distributive or quantitative perspective, from the construction of the object of study, data collection/production, to statistical analysis.

• Beginning to acquire the ability to design and plan a complete research process, especially one derived from survey research.

• Ability to apply, through an actual empirical work exercise, the technical tools needed to measure sociological concepts through a questionnaire: building the questionnaire, defining the statistical sample, conducting fieldwork, preparing, and performing basic analysis of collected data.

• Basic and instrumental knowledge in using statistical software (RStudio) for entering and identifying survey data, transforming it, and conducting univariate statistical analysis.

• Ability to interpret statistical analysis results from both technical and substantive perspectives based on the theoretical and methodological model developed.

• Basic ability to evaluate the validity and reliability of survey study results and critically argue its limitations and hypothesis-testing capabilities.

The course belongs to the area of knowledge about statistical methods and quantitative techniques. On one hand, it builds upon the first-year course Methodology and Design, which introduces research methodology and logic in social sciences. On the other, it runs parallel to the qualitative methodology course, and both precede the second-semester Methods of Analysis course.

Competences

- Applying the main quantitative and qualitative methods and techniques of social research to a specific topic.
- Describing social phenomena in a theoretically relevant way, bearing in mind the complexity of the involved factors, its causes and its effects.
- Designing a social research project by defining a comprehensive theoretical framework with clearly defined concepts, formulating consistent and significant hypothesis, choosing suitable investigation techniques for the adopted concepts, and analysing the empirical results obtained with those techniques.
- Developing critical thinking and reasoning and communicating them effectively both in your own and other languages.
- Developing self-learning strategies.
- Enumerating the methodology and investigation techniques that support the main hypothesis about social relationships, the positions and practices of individuals in a social structure and the social changes.
- Searching for documentary sources starting from concepts.
- Students must be capable of assessing the quality of their own work.
- Students must be capable of managing their own time, planning their own study, managing the relationship with their tutor or adviser, as well as setting and meeting deadlines for a work project.
- Working in teams and networking in different situations.

Learning Outcomes

1. Defining concepts of analysis.
2. Developing critical thinking and reasoning and communicating them effectively both in your own and other languages.
3. Developing self-learning strategies.
4. Explaining the methodological basis of these quantitative and qualitative methods and techniques.
5. Formulating a hypothesis with these concepts.
6. Identifying the main quantitative and qualitative methods and techniques.
7. Indicating their dimensions, their possible quantitative indicators and the significant qualitative evidence in order to empirically observe them.
8. Measuring a social phenomenon with these instruments on the basis of a theoretical framework of analysis.
9. Mentioning the main concepts of sociology.
10. Obtaining conclusions from the information obtained with this tool.
11. Preparing an analytical tool that is significant to this hypothesis.
12. Relating them with the different approaches of sociology.
13. Searching for documentary sources starting from concepts.
14. Students must be capable of assessing the quality of their own work.
15. Students must be capable of managing their own time, planning their own study, managing the relationship with their tutor or adviser, as well as setting and meeting deadlines for a work project.
16. Using the appropriate software to the basic multivariate statistical tools.

17. Using the appropriate software to the univariate statistical tools.
18. Using the basic multivariate statistical tools.
19. Using the univariate statistical tools.
20. Working in teams and networking in different situations.

Content

Part I. Data production

Topic 1. Introduction to the quantitative methodological perspective

Topic 2. The survey

2.1. From analysis model to operationalization of concepts

2.1.1. Analysis model and design

2.1.2. Research process and stages of the survey method

2.1.3. Operationalization of concepts

2.1.4. Measurement: concept and types of measurement. Validity and reliability

2.2. General characteristics of survey research

2.2.1. Definition and characteristics of the survey

2.2.2. Types of surveys

2.2.3. Sample design

2.3. Questionnaire construction: context of the statement

2.3.1. Types of questions

2.3.2. Formulation of questions

2.3.3. Construction of scales

2.3.4. Questionnaire organization: questions and discourse

2.4. Questionnaire administration

2.4.1. Context of statement: social situation and communication contract

2.4.2. Fieldwork: organization and planning

2.5. Information recording

2.5.1. Data and data matrix. Units and variables

2.5.2. Coding and data recording

2.5.3. Identification of data in digital format

Part II. Data analysis

Topic 3. Descriptive statistics of a variable

3.1. Statistical data analysis

3.1.1. Statistics in Social Sciences: descriptive and inferential statistics

3.1.2. Graphical representation: coordinate systems, linear functions, other functions

3.2. Descriptive statistics of one variable

3.2.1. Frequency distributions

3.2.2. Graphical representations of qualitative and quantitative variables

3.2.3. Measures of central and non-central position

3.2.4. Measures of dispersion

3.2.5. Measures of shape

3.2.6. Exploratory data analysis

Topic 4. Data preparation for analysis

4.1. Data control and verification

4.2. Variable transformation

4.2.1. Recoding variables

4.2.2. Variable transformations: position and dispersion. Standardized scores

4.2.3. Variable generation: typologies, indexes, rates

Topic 5. Inferential statistics

5.1. Sample and population. Random sampling

5.2. Statistical distributions: Normal distribution, Student's t-distribution

5.3. Parameters and statistics: point and interval estimation

5.4. Confidence interval for population mean and proportion

5.5. Introduction to hypothesis testing

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Master class	26	1.04	1, 11, 9, 4, 5, 6, 7, 8, 10, 12, 17, 19
Practices in the classroom	26	1.04	1, 3, 11, 9, 4, 5, 6, 7, 8, 10, 12, 17, 19
Type: Supervised			
Programmed tutorials programmed	4	0.16	14, 13, 1, 3, 11, 9, 4, 5, 15, 6, 7, 8, 10, 12, 20, 17, 19
Type: Autonomous			

Individual preparation of written tests	30	1.2	9, 4, 6, 7, 12, 17, 19
Reading of texts	30	1.2	3, 11, 9, 4, 6, 7, 8, 10, 17, 19
Teamwork	30	1.2	14, 13, 1, 3, 11, 9, 5, 15, 7, 8, 10, 12, 20, 17, 19

The course is designed with a continuous teaching and learning dynamic, which involves following the course pace and the various content that has been designed according to the different scheduled learning activities.

The course content has a common thread linked to the research process, and therefore, the continuity of learning is justified by the progressive incorporation of concepts and tools, as well as by problem-solving and questions, based on the assimilation and practice of each subject matter.

Since the goal of the training is for students to learn how to conduct research in sociology from a quantitative perspective, the teaching methodology and the course's formative activities are a combination of lectures with problem-solving exercises and classroom practices that allow the application of acquired concepts, as well as follow-up tutorials and independent work.

In this regard, the theoretical and practical content are equally weighted in this course, meaning the number of sessions is divided equally between theory and practice, which is also reflected in the assessment.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Assessment

Continous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Individual test	50 %	4	0.16	14, 13, 1, 3, 2, 11, 9, 4, 5, 15, 6, 7, 8, 10, 12, 20, 16, 17, 18, 19
Part I. Group research project	25 %	0	0	14, 13, 1, 3, 2, 11, 9, 4, 5, 15, 6, 7, 8, 10, 12, 20, 16, 17, 18, 19
Part II. Group research project	20 %	0	0	14, 13, 1, 3, 2, 11, 9, 4, 5, 15, 6, 7, 8, 10, 12, 20, 16, 17, 18, 19
Practical exercices	5 %	0	0	13, 1, 3, 9, 4, 5, 6, 7, 8, 12, 20, 17, 19

This course does not offer a unique assessment system.
Broadly speaking, the course is evaluated based on three elements: course participation (5%), group work (45%), and a written exam (50%).

Group Work
Research projects will be carried out in groups of 4-5 people and will consist of two parts: data production (25%) and data analysis (20%).
The objective of the data production task is to generate a survey questionnaire that can answer a research question. This first assignment will be due approximately halfway through the course.
Regarding the data analysis task, students will need to collect data from their own questionnaire and conduct a univariate analysis of the data, including exploratory, descriptive, and inferential analysis.

To pass the group work, a minimum of 5 points is required for each of the two submissions. Assignments that do not reach a score of 5 may be repeated. If, after repeating, they are still not approved, the course will be failed.

Written Exam
Although there is a single written exam, it will differentiate between the two parts of the course: data production and data analysis. Each part will carry the same weight in the exam. To pass the written exam, a minimum of 4 points is required in each part, and the average of both parts must be above 5 points.
In case of failure, a re-sit exam must be taken.

Practical Exercises for Follow-up
Throughout the semester, various practical exercises will be assigned. These may be requested during class sessions or require out-of-class work.
Although these practical exercises cannot be retaken, exceptional and justified circumstances will be considered, especially when the exercises are carried out in class.

Consideration of Non-Assessable Students

Students will be considered non-assessable if they have not completed either of the first two assessment components: the written test or the group project.

On Plagiarism in Academic Work or Written Exams
It is reminded that, when signing your enrollment, you agreed to the following statement:
"I DECLARE that the Universitat Autònoma de Barcelona has informed me that (...) Plagiarism is the act of disclosing, publishing, or reproducing a work or part of it in the name of an author other than the original, which means appropriating ideas created by another person without explicitly recognizing their origin. This appropriation violates the intellectual property rights of that person, which I am not authorized to infringe under any circumstances: exams, assignments, practices… Therefore, I COMMIT to respecting the regulatory provisions regarding intellectual property rights in relation to teaching and/or research activities carried out by the UAB in the studies I am undertaking."
In the event that plagiarism is detected, the evaluation of the test, exam, individual, or group assignment will receive a score of 0.

Use of Artificial Intelligence

The use of Artificial Intelligence (AI) technologies is permitted in this course exclusively for support tasks, such as literature or information searches, text correction, translations, and assistance with using the RStudio software package.

Students must clearly identify which parts were generated using AI, specify the tools used, and include a critical reflection on how these influenced the process and the final outcome of the activity.

Lack of transparency in the use of AI will be considered a breach of academic honesty and may result in partial or total penalties to the activity grade, or more serious sanctions in severe cases.

Regarding Students with Linguistic Difficulties (Faculty Agreement April 2024)
Only Catalan, Spanish, or English (the working languages of the Faculty) are accepted for exam responses and assessable submissions.
The use of electronic devices during exams is not allowed, except in two justified cases: enrollment in subjects outside the degree program (ERASMUS) or PIUNE adaptations.

Bibliography

Compulsory readings:

López-Roldán, P.; Fachelli, S. (2015). *Metodología de la investigación social cuantitativa*. Bellaterra (Barcelona): Dipòsit Digital de Documents, Universitat Autònoma de Barcelona. 1a. edición. http://ddd.uab.cat/record/129382

+ Recursos digitals (dossiers de pràctiques, documents, enllaços,...), programació i la resta d'informació de l'assignatura al *Campus Virtual*.

Alternative readings:

Azofra, M. J. (1999) *Cuestionarios*. Madrid: CIS. Cuadernos metodológicos, 26. [Descarga gratuita en la web del CIS]

Bardina, X.; Farré, M.; López-Roldán, P. (2005). *Estadística: un curs introductori per a estudiants de ciències socials i humanes. Volum 2: Descriptiva i exploratòria bivariant.* Bellaterra (Barcelona): Universitat Autònoma de Barcelona. Col·lecció Materials, 166.

Cea D'ancona, M. A. (1998) *Metodología cuantitativa. Estrategias y técnicas de investigación social*. Madrid: Síntesis.

Cea D'ancona, M. A. (2004). *Métodos de encuesta. Teoría y pràctica, errores y mejora*. Madrid: Síntesis.

Domínguez, M.; Simó, M. (2003). *Tècniques d'Investigació Social Quantitatives*. Edicions de la Universitat de Barcelona. Col·lecció Metodologia, 13.

Farré, M. (2005). *Estadística: un curs introductori per a estudiants de ciències socials i humanes. Volum 1: Descriptiva i exploratòria univariant.* Bellaterra (Barcelona): Universitat Autònoma de Barcelona. Col·lecció Materials, 162.

García Ferrando, M. (1994) *Socioestadística. Introducción a la estadística en sociología*. 2a edició rev. i amp. Madrid: Alianza. Alianza Universidad Textos, 96.

Llaudet, Elena; Kosuke, Imai (1997) *Data analysis fos social science: a friendly and practical introduction*. Princeton: Princeton University Press

López-Roldán, P. (2015). *Recursos per a la investigació social*. Dipòsit Digital de Documents. Bellaterra (Barcelona): Universitat Autònoma de Barcelona. http://ddd.uab.cat/record/89349 | http://pagines.uab.cat/plopez

Quivy, R.; Campenhoudt, L. Van (1997) *Manual de Recerca en Ciències Socials*. Barcelona: Herder.

Rial, A.; Varela, J.; Rojas, A. J. (2001). *Depuración y análisis preliminares de datos en SPSS. Sistemas informatizados para la investigación del comportamiento*. Madrid: RA-MA.

Rojas, A. J.; Fernández, S.; Pérez, C. (1998). *Investigar mediante encuestas. Fundamentos teóricos y aspectos prácticos*. Madrid: Síntesis.

Sánchez Carrión, J. J. (1999). *Manual de análisis estadístico de los datos*. Madrid: Alianza. Manuales 055.

Software

- Word Processing: LibreOffice Writer or Microsoft Word
- Presentations: LibreOffice Impress or Microsoft PowerPoint
- Spreadsheets: Microsoft Excel
- Quantitative Data Analysis: RStudio

Groups and Languages

Please note that this information is provisional until 30 November 2025. You can check it through this link. To consult the language you will need to enter the CODE of the subject.

Name	Group	Language	Semester	Turn
(SEM) Seminars	1	Catalan/Spanish	first semester	morning-mixed
(SEM) Seminars	51	Catalan/Spanish	first semester	afternoon
(TE) Theory	1	Catalan/Spanish	first semester	morning-mixed
(TE) Theory	51	Catalan/Spanish	first semester	afternoon