UAB
Universitat Autònoma de Barcelona

Sampling and Survey Design

Code: 104854
ECTS Credits: 6

2024/2025

Degree	Type	Year
2503852 Applied Statistics	OB	2

Contact

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Teachers

Montserrat Ferre Delgado

Teaching groups languages

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

Prerequisites

It is not necessary to have specific prior knowledge since it is an introductory course. However, it is useful to have notions of concepts from the social and behavioral sciences, knowledge of basic statistics, some experience with statistical programs or packages (R, SPSS, ...), EXCEL or Power BI and some presentation programs (Power Point, Sway, Prezi,...). Those who consider that they need additional training will be recommended the pertinent bibliography.

Objectives and Contextualisation

In today's society, surveys are an increasingly important tool to obtain information about the population for scientific, business, political or administrative purposes.

This course in survey methodology has as its objective that students understand and critically evaluate surveys as a social research technique, and that they develop the necessary skills to design, carry out and analyze surveys.

The mastery of the survey methodology gives access to good professional opportunities. There is a demand for well-prepared experts in this field, both in the private sector (market research, public opinion companies, political consultancy) and in the public sector (CEO, Idescat, CIS, INE, departments and various secretariats). The knowledge of the survey methodology is also very useful for academic research in various disciplines such as psychology, economics, business administration, sociology, political science, or education.

Learning Outcomes

1. CM05 (Competence) Interpret situations based on sets of data, graphic representations and statistical summaries.
2. CM06 (Competence) Apply the knowledge acquired to organise data, create and show tables and work with different data representations.
3. CM07 (Competence) Design a survey to analyse the results, considering the ethical aspects.
4. CM07 (Competence) Design a survey to analyse the results, considering the ethical aspects.
5. KM08 (Knowledge) Recognise sources and techniques to acquire statistical data through experiments, observations and surveys, considering the ethical aspects of these.
6. KM08 (Knowledge) Recognise sources and techniques to acquire statistical data through experiments, observations and surveys, considering the ethical aspects of these.
7. SM07 (Skill) Select the most suitable data acquisition techniques for each study.
8. SM08 (Skill) Analyse survey results.

Content

This course is an introduction to the principles and practice of survey design. The main contributions of the research in Survey Methodology are reviewed on the factors that affect the quality of the surveys.

This subject aims to combine the theoretical perspective with the development of applied skills to design and carry out surveys. Using the phases of the survey process as a common thread, the different sources of error will be presented following the perspective of the Total Survey Error, as well as the ways to mitigate it. . The concept of error will be used as a framework to discuss the consequences of using different methods of data collection, the coverage capacity of the sampling frames, alternative sampling designs and their impact on the standard errors of the survey statisticians, the effects of the design of the questionnaire as an instrument of measurement (impact of the order of the questions, differences in its wording, among others), the supervision systems of the field work, the role of the interviewer and the respondent, the impact of the non-response in the statistics of the survey, or the treatment and analysis of the data obtained. The design of surveys implies taking a set of decisions making an adequate balance between the research objectives, the survey errors, the economic costs, and the calendar restrictions that they entail.

Module 1: Basic concepts and definition of a project

1. Definition of survey

1.1 Origins of the surveys

1.2 Essential characteristics of the surveys

1.3 Strengths and weaknesses of the surveys

1.4 Types of surveys

1.5 Phases of a survey

1.6 Types of error

2. Survey methods

3. The design of the sample

3.1 Delimitation of the study universe

3.2 The sampling frame

3.3 The sample size

3.4 Probabilistic sampling

3.4.1. Simple random sampling

3.4.2. Systematic random sampling

3.4.2.Stratified random sampling

3.4.3. Random sampling by conglomerates: mono / bi / multistage

3.5 Non-probabilistic sampling

3.5.1. Sampling by installments

3.5.2. Strategic sampling or "trial"

3.5.3. Circumstantial sampling: of "volunteers", "snowball"

3.6 The sampling error (E)

3.7 The confidence interval

Module 2: Design and administration of a questionnaire

4. Definition of research objectives

4.1 Operationalization of concepts. Construction of questions

4.2 Types of variables and questions

4.3 Measurement and pretest errors

4.4 Order and presentation of the questionnaire

4.5 Test questionnaire and final drafting

5. The administration of the questionnaire

5.1 Contribution of the surveyors to the survey error

5.2 Supervision of fieldwork

5.3 Non-response errors

Mòdul3: Analysis and presentation of results

6. Data preparation

6.1 Preparing the data to work

6.2 Analysis of the data

6.2.1 Univariable exploration

6.2.2 Bivariate analysis

6.3 Data quality

6.3.1 Validity

6.3.2 Reliability

6.4 Results report

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Unless the requirements enforced by the health authorities demand a prioritization or reduction of these contents

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Supervised			
Data processing	22	0.88	
Definition of survey	9	0.36	
Design of a project	17	0.68	
Questionnaire design	23	0.92	
Sampling procedure	9	0.36	
Survey	12	0.48	
Transversal project	45	1.8	
Work field	13	0.52	

In the subject the sessions are divided into theoretical, with presentations of the contents by the teacher, and practices. The practices will be done in the computer under the supervision of the teacher, and others will be autonomous. The correction of exercises and recommended practices will be supervised by the teacher.

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
Data processing	15	0	0	CM05, CM06, SM08
Definition of survey	6	0	0	SM07

Design of a project	11	0	0	CM07, KM08
Questionnaire design	15	0	0	
Sampling procedure	6	0	0	
Survey	8	0	0	
Transversal project	30	0	0	
Work field	9	0	0	

The evaluation method consists of preparing a set of practices and taking a final exam.

Weighting of the final grade:

1. Exam: 40% in the final computation of the grade and must be passed to pass the subject. With a grade lower than 5 in the final exam, no average will be made with the practices.

The final exam will be devoted to the evaluation of theoretical knowledge.

In case of failing, only those students who have a grade greater than or equal to 3.5 and who have passed the practices will have access to a new exam.

This new exam cannot be used to raise a grade.

2. Practice: 60% in the final computation of the note.

Group practices (must be approved): Groups of 4-5 students will be formed to carry out a work that will include all the phases of a survey.

It will be mandatory to make all deliveries of group practices.

Deliveries made after the deadline will have a 50% reduction in the grade.

The final grade for group practices will be the average of each of the deliveries.

It represents 35% of the final grade.

Individual practices (must be approved): It will consist of carrying out 6 individual practices and it will be mandatory to present at least 5.

Deliveries made after the deadline will have a grade of 0.

If copied practices are detected, all of them will have a grade of 0.

The final mark of the individual practices will be the average of each one of the deliveries. If a delivery is not made, it will have a grade of 0.

It represents 25% of the final grade.

EXCEL practices will be proposed that can be used to raise the grade by up to 10% depending on the achievement of the objectives.

There is no possibility of doing single avaluation.

Bibliography

Cea D'Ancona, Mª Ángeles. 2004. Métodos de encuesta. Teoría y práctica, errores y mejora.

Bosch Gardella, Agustí y Orriols Galve, Lluís. 2011. Ciencia política para principiantes. Barcelona: Editorial UOC.

Domínguez, Màrius i Simó, M. Tècniques d'Investigació Social Quantiatives. Barcelona: Edicions Universitat de Barcelona.

Gerber, Alan i Green Donald. 2012. Field experiments.

Cea D'Ancona, Mª Ángeles. 2005. "La senda tortuosa de la "calidad" de la encuesta". Reis 11/05: 75-103

Anduiza Perea, Eva i Crespo Martínez, Ismael y Méndez Lago, Mónica. 2009. Metodología de la ciencia política. Cuadernos metodológicos nº28 2ª edición revisada. Madrid: CIS.

Filgueira López, Esther. 2001. "La calidad de la medición frente al error estadístico: la categoría intermedia y la no respuesta parcial". Revista de Metodología de Ciencias Sociales, 4:193-207.

Barreiro, Belen. 2010. "Diez tesis sobre las encuestas demoscópicas". Disponible en:

http://www.cis.es/cis/export/sites/default/-Archivos/IntervencionPtaFNS.pdf

"Decálogo de la buena encuesta". Diario ABC, 8/3/2015: 20-21. Disponible en: http://

www.abc.es/espana/20150312/abci-decalogo-buena-encuesta-201503091152.html

Font Fàbregas, Joan y Pasadas del Amo, Sara. 2016. "Las encuestas de opinión" CSIC 73

Cea D'Ancona, Mª Ángeles. 2012. Fundamentos y aplicaciones en metodología cuantitativa. Madrid: Editorial Sintesis.

Software

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Language list

Name	Group	Language	Semester	Turn
(PAUL) Classroom practices	1	Catalan	first semester	afternoon
(PLAB) Practical laboratories	1	Catalan	first semester	afternoon
(TE) Theory	1	Catalan	first semester	afternoon