Syllabus

Course Description

Course Title	Research methods and experimental design
Course Code	31002
Course Title Additional	
Scientific-Disciplinary Sector	STAT-01/A
Language	English
Degree Course	Master in Tourism Management
Other Degree Courses (Loaned)	
Lecturers	Prof. Alessandro Casa, Alessandro.Casa@unibz.it https://www.unibz.it/en/faculties/economics-management/academic-staff/person/46549 Dott. Dimitri Storai, Dimitri.Storai@unibz.it https://www.unibz.it/en/faculties/economics-management/academic-staff/person/46058
Teaching Assistant	
Semester	Second semester
Course Year/s	1
CP	6
Teaching Hours	36 Prof. Alessandro Casa
Lab Hours	12 EXE Dott. Dimitri Storai
Individual Study Hours	-
Planned Office Hours	18 Prof. Alessandro Casa
Contents Summary	The course offers a comprehensive introduction to empirical research methods, covering both qualitative and quantitative approaches. It guides students through the entire research process, from designing studies and developing questionnaires to applying appropriate sampling techniques and collecting data. Key statistical topics include descriptive statistics, data visualization, statistical inference, bivariate analysis such as correlation and

	contingency tables, linear and logistic regression models and their extensions. Basic concepts of statistical programming are also introduced, with a focus on practical applications using R.
Course Topics	- Review of basic statistical concepts: descriptive statistics, key definitions, classification of variables, frequency distributions, graphical representations, measures of central tendency and variability, random variables, sample statistics, confidence intervals and hypothesis testing. - Data: types, sources, and quality. - Sample surveys: objectives, phases, and potential sources of bias. - Sampling techniques: probabilistic vs. non-probabilistic sampling, advantages and disadvantages of different schemes. - Survey design: formulation and types of questions, modes of administration, scaling techniques, assessment of internal consistency. - Experimental studies and randomized controlled trials. - Introduction to multivariate analysis: contingency tables, covariance and correlation. - Linear regression and extensions: simple and multiple regression, model estimation and evaluation, model assumptions, inferential tools, qualitative predictors, interaction effects.
Keywords	statistics, multivariate analysis, sampling techniques, sample surveys, experimental studies, regression
Recommended Prerequisites	No formal prerequisites are required. Nonetheless, knowledge of basic concepts in descriptive and inferential statistics is useful, and attending a pre-course in mathematics/statistics is recommended.
Propaedeutic Courses	
Teaching Format	In-person lectures and exercises. Whenever possible, lectures will be structured to prioritize in-class time for discussions, and practical applications.
Mandatory Attendance	_
Specific Educational Objectives and Learning Outcomes	INTENDED LEARNING OUTCOMES (ILO) ILO 1: KNOWLEDGE AND UNDERSTANDING ILO1.1 The student acquires the competence to understand and quantitatively analyse tourism phenomena in order to support business decision-making processes.

	ILO 1.2 The student acquires the ability to interpret and use synthetic indicators of interest for the economic and market development policies of tourist destinations as well as of individual enterprises in the sector. ILO 1.3 The student understands and uses statistical-quantitative methodologies for the description, monitoring and evaluation of problems characterising the tourism system. ILO 2: AUTONOMY OF JUDGEMENT ILO 2.1 Acquire the ability to select data and use appropriate information to describe a problem concerning the management of tourism enterprises as well as tourism associations and destinations ILO 3: COMMUNICATION SKILLS ILO 3.1 The Master's degree graduate will be able to communicate effectively in oral and written form the specialised content of the individual disciplines, using different registers depending on the recipients and the communicative and didactic purposes, and to evaluate the formative effects of his/her communication. Written and oral communication skills are particularly developed in the training activities carried out for the preparation of the Master's thesis, in the discussion of business cases and in interactive lectures involving group discussions and the comparison of individual analyses. ILO 4: LEARNING SKILLS ILO 4.1 To identify thematic connections and to establish relationships between different cases and contexts of analysis ILO 4.2 To frame a new problem systematically and generate appropriate taxonomies. ILO 4.3 To develop general models from the phenomena studied.
Specific Educational Objectives and Learning Outcomes (additional info.)	
Assessment	Written exam with practical exercises, review questions and interpretation of output from statistical softwares. Assessment criteria are the same for both attending and non-attending students. All ILOs are assessed (ILO 1-4)

Evaluation Criteria	Assessment of Written final exam is based on the following criteria: correctness and completeness of answers, ability to read and interpret the data analysis output correctly, clarity of explanations and comments.
Required Readings	Agresti, A. Statistical Methods for the Social Sciences. Pearson, 2018. For each topic, slides and exercise sheets will be provided by the professor.
Supplementary Readings	James, G., Witten, D., Hastie, T., Tibshirani, R. An Introduction to Statistical Learning with Applications in R. Springer, 2013. Freely available at http://wwwbcf. usc.edu/~gareth/ISL/ Watkins, J. C., (2023) An Introduction to the Science of Statistics: From Theory to Implementation. Preliminary Edition. https://www.math.arizona.edu/~jwatkins/statbook.pdf Azzalini, A. and Scarpa, B. Data analysis and data mining: An introduction. OUP USA, 2012 Moore, D.S., McCabe G.P., Craig, B.A. Introduction to the Practice of Statistics., New York, WH Freeman, 2009.
Further Information	
Sustainable Development Goals (SDGs)	Good health and well-being, Climate action, Reduced inequalities, Decent work and economic growth