

Quantitative Techniques Applied to Tourism

Code: 104951
ECTS Credits: 6

Degree	Type	Year	Semester
2500894 Tourism	FB	1	2

Contact

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Use of Languages

Principal working language: english (eng)
Some groups entirely in English: Yes
Some groups entirely in Catalan: Yes
Some groups entirely in Spanish: No

Prerequisites

None

Objectives and Contextualisation

At the end of the course, students will be able to:

- Use properly the vocabulary of Statistics.
- Identify which types of variables are suitable for the quantitative analysis of tourism.
- Collect, analyse and represent quantitative and qualitative information in the tourism and hospitality industry.
- Analyse data, populations and samples, as well as the association between variables in order to assess the economic dimension of tourism.
- Know the main concepts and parameters of descriptive Statistics and establish criteria for presenting data at analytical and graphical level.
- Identify tourism-related variables characterized by randomness and analyse them using basic probabilistic techniques.
- Implement statistical inference using hypotheses testing and estimation.
- Perform time series analysis and forecasting of key tourism variables.
- Establish the advantages and disadvantages of different statistic methods for a given kind of observations.
- Identify key sources of quantitative data in tourism and hospitality (e.g. publications, surveys, etc.) and know how to use them.

Competences

- Adapt to ongoing technological changes.
- Develop a capacity for independent learning.
- Evaluate the economic dimension of tourism at different scales and analyse the interrelationship between them.
- Self-assess the knowledge acquired.
- Use communication techniques at all levels.
- Work in a team.

Learning Outcomes

1. Adapt to ongoing technological changes.
2. Analyse data, populations and samples, tables and graphics, and associations between variables to be able to evaluate the economic dimension of tourism.
3. Develop a capacity for independent learning.
4. Gather, represent and analyse quantitative and qualitative information on the tourism sector.
5. Identify situations in the tourism sector that are characterised by randomness and use basic probabilistic tools to analyse them.
6. Self-assess the knowledge acquired.
7. Use communication techniques at all levels.
8. Work in a team.

Content

TOPIC 1. INTRODUCTION TO STATISTICS

Basic Concepts in Statistics. Organizing and presenting data: Tables and frequency distribution and graphic representations.

TOPIC 2. MEASURES OF CENTRAL TENDENCY

Concepts of mean, median, mode, quintiles. Relationship between measures. Procedures and applications.

TOPIC 3. MEASURES OF DISPERSION

Range, interquartile range, deviation, variance, standard deviation and coefficient of variation.

TOPIC 4. FREQUENCY DISTRIBUTION

Theoretical frequency distribution of a variable. Measures of concentration and inequalities: asymmetry and kurtosis. Normal distributions.

TOPIC 5. SERIES OF TWO VARIABLES

Definition and graphical representation. Central tendency. Statistical dispersion. Covariance.

TOPIC 6. STATISTICAL DEPENDENCE. CORRELATION

Correlation: concept, procedure and application. Pearson's correlation coefficient. Fitting linear regressions amongst two variables. Least squares approach.

TOPIC 7. TIME SERIES

Definition and graphical representation. Components of time series. Seasonal variation. Seasonal Indices. Seasonal adjustment.

TOPIC 8. A DESCRIPTIVE ANALYSIS OF TIME SERIES

Index numbers. Complex index numbers with and without weights. Paasche, Laspeyres and Fisher indices. Link and changes of base periods. Deflation of economic series.

Methodology

The course has three methods of teaching and learning:

- a) Theory sessions

During the lectures the concepts will be explained in a theoretical way and exemplified with practical applications. Some sessions will require student's participation to solve problems.

b) Practice sessions

During these sessions, topics covered in the theory sessions will be reviewed through exercises, group projects and individual tests that will be undertaken throughout the course. Tourism-related case studies will be presented and specific variables of this industry will be analysed. Students will receive guidance from the instructor in carrying out a project involving the use of statistical and computer skills. Specialised software will be used as much as possible during the sessions.

c) Self-learning

The Virtual Campus will be used as a complement and as an alternative means of communication between students and their instructor. All the relevant material of the course, examples and exercises will be attached here online.

Each student should manage their time to study and solve problems proposed in addition to work on a research project using statistical data in the tourism sector to be presented at the end of the course.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Solving cases	15	0.6	5, 7, 4, 6, 8
Theory sessions	43	1.72	2, 5
Type: Supervised			
Tutorship	20	0.8	2, 5, 4
Type: Autonomous			
Autonomous study	23	0.92	2, 3, 5, 4, 6
Research	15	0.6	1, 2, 3, 5, 4, 8
Solving problems and assignments	26	1.04	2, 3, 5, 4, 6, 8

Assessment

Students may choose between a continuous assessment and direct access to the final examination (a unique final evaluation).

Continuous assessment

- Individual and group exercises developed throughout the quarter. This represents 20% of the final mark.
- Group work with a public presentation in the classroom which will be worth 20% of the final mark.
- Two individual tests based on theory and exercises, which will be worth 60% of the final mark.

To get the final mark, an average of at least 4 out of 10 must be reached in each part being evaluated.

Unique final evaluation

Students will be examined on all the topics taught in class and the result of this exam will count for a 100% of the final mark.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Final project and presentation	20%	4	0.16	1, 2, 3, 5, 7, 4, 8
Individual and group assignments	20%	0	0	1, 2, 3, 5, 4, 6, 8
Partial exam 1	30%	2	0.08	2, 3, 5, 4, 6
Partial exam 2	30%	2	0.08	2, 3, 5, 4, 6

Bibliography

Buglear, J. (2010). *Stats means business- Statistics with Excel for business, hospitality & tourism* (2nd ed.). New York: Elsevier.

Davis, G., & Pecar, B. (2009). *Business Statistics using Excel* (2nd ed.). Oxford University Press.

Good, P. I., & Hardin, J. W. (2012). *Common errors in statistics (and how to avoid them)*. [Hoboken, N.J.]: John Wiley.

Newbold, P., Carlson, W. L., & Thorne, B. (2013). *Statistics for business and economics*. Harlow, Essex: Pearson Education.

Ross, S. M. (2010). *Introductory statistics*. Amsterdam [etc.]: Elsevier: Academic Press.

Rugg, G. (2007). *Using statistics: a gentle introduction*. Maidenhead: McGraw-Hill.

UNWTO (2010) *International Recommendations for Tourism Statistics 2008*, Statistics and Tourism Satellite Account, World Tourism Organization, New York. [Available [online](#)]

UNWTO (2015) *Methodological Notes to the Tourism Statistics Database 2015*, World Tourism Organization, Madrid. [Available [online](#)]