
Title of the course

- **220019 Structural equation modeling based on partial least squares**

Organizing center/area leading the course

Deusto International Research School (DIRS)

Training category

AF7. Methodology and research techniques

Professor/Coordinator of the training course

Josune Sáenz

Priority group

PhD students

Competences

By the end of the course, the student will be able to:

- Distinguish between covariance-based and partial least squares-based structural equation models.
- Decide when to apply each technique.
- Propose a structural equation model.
- Analyze and interpret a basic structural equation model based on partial least squares (measurement model and structural model).
- Analyze and interpret more complex models: hierarchical models, mediation and moderation effects.
- Use SmartPLS software.
- Present results obtained by means of structural equation modeling based on partial least squares for scientific publication.

Pre-requisites / prior knowledge

Basic Statistics

Contents

1. Structural equation modeling: What is it?
2. What is the advantage of structural equation modeling over first generation techniques for multivariate analysis?
3. What are the basic components of a structural equation model?
4. Different methods for structural equation modeling: covariance-based methods and methods based on partial least squares (PLS)
 - a. Differences between both methods
 - b. When should we use each method?

5. What is PLS?
6. Elements making up a PLS model
 - a. Latent variables
 - b. Indicators
 - c. Relationships
7. Indicator types: reflective and formative.
8. Conditions for using PLS
 - a. Sample size
 - b. Measurement scales
 - c. Variable distribution
9. Analyzing and interpreting a PLS model
 - a. Assessment of the measurement model
 - b. Assessment of the structural model
10. Additional issues
 - a. Hierarchical models
 - b. Mediation
 - c. Moderation

Level of the course

Introductory

Methodology

Once the fundamentals of the technique will be presented (session 1), the teaching and learning process will take place through several research models that will be proposed, executed, analyzed and interpreted step by step. To that end, a database will be provided to the students, as well as the software to run the models.

Language of instruction

English

Mode of instruction

In-class with the option of attending remotely

Number of places

PhD students: 15

Personnel: 10

Assessment

An assignment will be proposed in which the students will have to analyze and interpret a PLS model.

Number of hours

20 hours

[San Sebastian](#) Campus

- Month when the course begins: February 2023
- Schedule: 13, 15, 20, 22, 27 February
- Time: 10:00 to 14:00

Monday, 13 February 2023 (10:00-14:00)

Wednesday, 15 February 2023 (10:00-14:00)

Monday, 20 February 2023 (10:00-14:00)

Wednesday, 22 February 2023 (10:00-14:00)

Monday, 27 February 2023 (10:00-14:00)
