



"El saber de mis hijos
hará mi grandeza"

UNIVERSITY OF SONORA

CENTRAL REGION UNIT

SCHOOL OF ECONOMIC AND ADMINISTRATIVE SCIENCES

DEPARTMENT OF ECONOMY

DEGREE IN BUSINESS AND INTERNATIONAL COMMERCE

Identification Data

Subject: Statistics II	Formative Pillar: Basic
Teaching-learning process: Course-Workshop	Pre-requirement: Statistics I
Hours per course: 5	Post-requirement: none
Nature of subject: Mandatory	Credit Value: 8

Introduction:

The Statistical II subject, theoretical-practical type, is of fundamental importance for the Degree in Organizational Communication since it addresses the tools for the analysis and interpretation of information, both organizational and environmental.

In Statistics I course, techniques for managing manifest variables are studied and applied. Only latent variables are considered in this course, based on the observation and interpretation of the manifest variables.

General Objective:

The student will develop basic skills in the use of statistical tools that allow him to measure, describe, analyze and infer information about the opinions, attitudes, and behaviors of the organization's internal and external audiences, in those aspects that can only be inferred from indicators or manifest variables.

Specific Objectives:

- Understand the importance of the use of statistics in communication and in organizations, to measure, describe, analyze, and infer information related to them.
- Learn the notion of causality as well as the guidelines for the modeling of causal relations.
- Address the modalities of factor analysis, basic in the conformation of latent variables.
- Review strategies for the analysis of emerging variables.
- Develop structural models.
- Apply structural modeling for practical situations in organizations.

Proficiency Units

Proficiency Unit I – Causal analysis

- 1.1 Causality and correlation.
- 1.2 Types of causal relations.
- 1.3 Rules of causation.
- 1.4 Analysis of trajectories.

1.5 Hypothesis testing.

Proficiency Unit II – Factorial analysis

2.1 Exploratory factor analysis

2.2 Extraction, rotation, and retention of factors.

2.3 Factor analysis, reliability, and validity.

2.4 The multi-trait-multi-method approach.

2.5 Confirmatory factor analysis.

Proficiency Unit III – Canonical analysis

3.1 Canonical analysis and the general linear model.

3.2 Canonical correlation.

3.3 Discriminant analysis.

3.4 Canonical variables and emerging variables.

Proficiency Unit IV – Structural equation models

4.1 Latent variables and manifest variables.

4.2 Reliability and validity.

4.3 Analysis of causal relationships.

Didactic strategies:

This course has a theoretical and practical focus. Therefore, the work strategy will aim to provide the student with the necessary theoretical knowledge that will allow him to understand the essential concepts of statistics on latent variables. Simultaneously, the student must be trained with the necessary resources to identify the areas of application of this knowledge in the field of work and know how to use them as a valuable tool that allows him to identify, analyze, and project information in his work context. The use of computer packages should also be promoted, especially for practical work.

Evaluation: general criteria for successful completion of course

To achieve a comprehensive evaluation of the subject learning, the following evaluation criteria and strategies will be considered:

- Present tasks that require the practical application in organizations of the theoretical concepts and procedures studied. Self-assessment strategies can be used here.
- Periodic evaluation of the knowledge obtained.
- Evaluation of the final project which should reflect the application of theoretical knowledge in practical cases.
- Final evaluation, where the concepts indicated in the previous subsections are integrated.

Bibliography

Basic

Corral, Víctor, Frías, Martha, González, Daniel. Análisis Cuantitativo de Variables Latentes. Colección Textos Académicos. Universidad de Sonora, México. 2001.

Pérez, Cesar. Técnicas Estadísticas con SPSS. Prentice Hall. Madrid, España. 1999.

Additional/Supplementary

Computer packages

SPSS (Statistical Package for Social Sciences) 12.0 for Windows.

EQS / Windows (Structural equation package in windows environment)

Desirable academic profile in the teacher

Academic training

Professional training and / or degree in related area. Minimum master's degree required.

Teaching experience

Teaching experience in these subjects. Two years minimum.

Didactic and Pedagogical training

- Ease in carrying out teaching-learning tasks.
- Ease of group and individual communication with students.
- Ability to use didactic technologies and techniques (computer, image projects, cannons, acetates, slides, videos, etc.).
- Comply with the provisions that the University defines on the matter.
- Knowledge of computer packages related to the course.

Others:

- English language proficiency (specifically the four basic skills).