Statistical Laboratory

Applied Mathematics for Economics and Management

Detailed Program

Chapter 1 – Fundamental Concepts of Statistics

1.1 Introduction
1.2 Statistical Analysis
1.3 Measurement scales, variables, and data representation
1.4 Data collection in the context of empirical research in Economics and Management

Chapter 2 – Exploratory Data Analysis

2.1 Frequency distributions
2.2 Graphical representation of data
2.3 Shapes of distributions
2.4 Stem-and-leaf plots
2.5 Order statistics and quantiles
2.6 Comparison of data sets
2.7 Time plots

Chapter 3 – Organizing and Summarizing Data

3.1 Frequency distributions
3.2 Cumulative frequency functions
3.3 Measures of location and position
3.4 Measures of dispersion and concentration
3.5 Measures of skewness

Chapter 4 – Association and Relationships Between Variables

4.1 Introduction
4.2 Correlation and regression

4.3 Contingency tables and association

Chapter 5 – Index Numbers

5.1 Simple indices
5.2 Composite indices
5.3 Laspeyres and Paasche formulas
5.4 Fisher's Ideal Index
5.5 Link indices and chain indices
5.6 Change of Base and Reconciliation

Chapter 6 – Time Series

6.1 Introduction
6.2 Definition of a time series
6.3 Objectives of time series analysis
6.4 Components of a time series
6.5 Trend analysis
6.6 Seasonal Variations