STATISTICS

Instructor: Associated Prof. Dr. Doğan Nadi LEBLEBİCİ

Source: Kaplan, Robert M. <u>Basic Statistics for the Behavioral Sciences</u>, Allyn and Bacon, Inc., Boston, 1987

INTRODUCTION



Excellent health statistics - smokers are less likely to die of age related illnesses.' Mathematics is perfectly unnatural field of study. Human being created numbers. Unlike food and water we have no physiological need for numbers. However, we are dependent on numbers, arithmetic, and mathematics to understand the world we live in. We count and measure things like money.

Numbers and quantification provides us with a very special language that allows us to express ourselves precisely !



Statistics is the quantitative methodology for collecting, classifying presenting and analyzing numerical data.

www.synergyaids.com/lacriaids/glossary.asp



Methods used for organizing, summarizing and describing our numerical observations are called DESCRIPTIVE STATISTICS.



Drawing general conclusions about probabilities on the basis of a sample is called INFERENTIAL STATISTICS.

THUS, STATISTICS CAN ALSO BE DEFINED AS THE "SCIENCE OF PROBABILITY."

OUTLINE OF THE COURSE

I. Descriptive Statistics

- * Graphs and their distributions
 - * Properties of scales
 - * Types of scales
 - * Discrete and contionous variables
 - * Distributions and their graphs
 - * Upper and lower limits: Midpoints
 - * Frequency distributions for nominal scales
 - * Graphs

I. Descriptive Statistics

- * Measures of central tendency
- * Measures of variability
- * Samples and populations
- * Finding points within distributions
 - * Percentile ranks
 - * Calculation of percentiles
 - * Percentiles
 - * Standardized scores and distributions
 - * quartiles and deciles

II. INFERENTIAL STATISTICS

- * Introduction to probability
 - * Basic terms
 - * Basic probability for independent events
 - * Rules of decisions
 - * Parameters and statistics
 - * Standart error of mean
 - * Confidence intervals and limits
 - * t distributions

II. INFERENTIAL STATISTICS

- * Metdods for comparing two sets of observation
 - * Basic rules of statistical testing
 - * Some tests for comparison
- * One-Way Analysis of variance
- * Two-Way Analysis of variance

III. OTHER STATISTICAL TECHNIQUES

- * Correlation and regression
- * Reliability and validity
- * Chi-Square and other nonparametric statistics