Psychological Statistics

Introduction

What We Will Cover in This Section

- Course requirements.
- Introduction.
- Research designs.
- Variables.
- Numbers.

Course Requirements

- Text
  - Heiman
- Study Guide
- Assignments
- Pocket calculator
- SPSS
- Attendance
- Contacting me.

Evaluation

- Frequent quizzes.
- Occasional homework problems in the study guide.
- No final examination.
- No extra credit.

Course Web Site

- Syllabus.
- How to contact me.
- PowerPoint slides.
- Interesting sites.
- Pictures of me.

Approach to the Course

- Theory.
- How computations are done.
- Interpretation.
- Assumptions.

WARNING!

Miss a Class

Major Goal of the Course

Give you the basic knowledge to understand basic psychological statistics.

Basic Terms and Concepts

Basic Terminology

STATISTICS

Numerical techniques for describing groups of people or events.

Fundamental Uses

DESCRIPTIVE STATISTICS

Techniques used to organize, summarize, and describe sets of numbers.

INFERENTIAL STATISTICS

Techniques that allow us to make estimates about populations based on sample data.

Population

All members of a group that are alike on at least one characteristic.

PARAMETER

Symbol used to indicate the properties of a population.

In statistics, parameters are expressed in Greek letters (μ, σ).

Sample

A group that is less than the total population from which it is drawn.

STATISTIC

Symbol used to indicate the properties of a sample.

Statistics are expressed in Roman letters (M, S, r).

Sample Types

REPRESENTATIVE SAMPLE

Sample that is selected in such a way that its characteristics accurately reflect the population from which it was drawn.

RANDOM SAMPLE

Method of selecting a sample so that each member of the population has an equal chance of being selected.

Variables

Experimental Variables

- Independent variable.
  - The treatment or condition that is manipulated by an experimenter.
- Dependent variable.
  - The variable that is measured in an experiment.

Measurement Variables

DISCRETE VARIABLE

A variable that can take on only whole values.
Example: Number of toes or number of cars you have.

CONTINUOUS VARIABLE

A variable that can take on fractional values.
Example: Speedometer reading, height.

Using Numbers

Levels of Measurement

NOMINAL SCALE

Numbers are used as labels.

ORDINAL SCALE

Numbers are used to indicate rank order.

Levels of Measurement

INTERVAL SCALE

Numbers are used to indicate an actual amount and there is an equal unit of measurement between adjacent numbers.

RATIO SCALE

Numbers indicate an actual amount and there is a true zero.

The End