

# One-Sample Hypothesis Testing

LECTURE 10

## Objectives

- ▶ Define Terms
- ▶ Explain what to consider in selecting the correct statistical test.
- ▶ Select and execute the correct one sample test of means.
- ▶ Execute a chi-square test of variance.
- ▶ Correctly choose between a one-tailed and two-tailed test.
- ▶ Use the ten-step procedure to setup the test.

## Test selection

- ▶ Most of what we are going to talk about the remainder of the semester consists of a variety of statistical procedures that can be used to test specific hypotheses.
- ▶ These procedures are very specific to the situations to which they can be applied.

## Test selection

- ▶ Beginners have a difficult time selecting the correct procedure to conduct out of the multitude of possible tests that might work.
  - ▶ This is a course objective
  - ▶ A portion of the remaining exams and most of the final exam will rely on your ability to select and/or execute the correct procedure.

## Test selection

- ▶ The ten-step procedure introduced in the previous class period is a guide to facilitate, among other things, the selection of the correct test.

## Test selection

- ▶ The important factors to consider when selecting a test are:
  - ▶ Variable scale
  - ▶ Number of samples
  - ▶ What aspect of the variable do you want to compare
  - ▶ What information is given or available
  - ▶ Assumptions of the possible tests relative to the available data

## One sample tests of means

- ▶ Comparing the sample mean to a hypothesized population mean.
  - ▶ Population standard deviation is known (Z-test)
  - ▶ Population standard deviation is not known (t-test).

## One sample tests of means

- ▶ Examples 8, 9, and 10

## One sample tests of variance

- ▶ Comparing the sample variance to a hypothesized population variance.
- ▶ Example 11