Lab 7

Testing Hypotheses

Overview of Lab Session:

In this lab we use data on the television viewing habits of men and women to test the hypothesis that men and women watch about the same number of hours of television. So we are performing a test comparing the means of two independent samples (the means we are comparing are the average number of hours men view television weekly for men and women. In this lab the standard deviation is not known so we perform a t-test.

I. Get Started

Use your ID number and password to log onto the computer.
Launch SPSS by clicking on Start, All Programs, Classes, then SPSS.
Load the data www.csulb.edu/~saleem/Course-F08-503/Data/mw.sav

II. Testing a Hypothesis

Test the null hypothesis that the average weekly number of hours of television viewing is the same for men and women. Let $\mu_x$ and $\mu_y$ be the true average for men and women respectively.

STEP 1  Do the two independent sample t-test

From the top menu choose Analyze > Compare Means>Independent-Sample t-Test
From Options choose 95%
Choose the variable tvhours
Choose the grouping variable sex
Choose Define Groups (put appropriate numbers that represent men and women)
To find out how the numerical values for the groups “men” and “women” go to Variable View.

STEP 2  Repeat Step 1 for the same data but use the 99% confidence interval.
Worksheet for Lab 7

1. From the results of the SPSS output. The “mean” refer to “the mean hours of weekly tv viewing.”

   (a) What is the mean for the men __________.

   (b) What is the mean for women __________.

   (c) What is the 95% confidence interval in the output? (__________, __________)

      This is the 95% confidence interval for what? ________________________________

   (d) Let $\mu_x$ and $\mu_y$ be the true average for men and women respectively. State the formula

      SPSS used to calculate the 95% confidence interval.

2. From the results of your SPSS data.

   (a) What do you conclude from this data about the television viewing habits of men and

      women. Explain how the t-test supports your conclusion.

   (b) How does your conclusion change if you use the 99% confidence interval.