BUS 735: Business Decision Making and Research
Instructor: Dr. James Murray
Homework: Introductory Statistics
Fall 2013
Deadline: Tuesday, September 17, 2013

1. The following questions use the dataset **eurointernet.sav** on the class website. This is annual data for 32 European countries on the percentage of individuals in the population that have used the Internet to purchase items for personal usage within the last three months.

    (a) The last column is a dummy variable for whether each country was one of the original members of OECD (Organization for Economic Cooperation and Development), originally signed on December 14, 1960 (most European countries have since joined). Test whether or not original OECD European countries have a higher average Internet commerce usage in 2010 than European countries who did not originally join.

    (b) Test whether or not the average Internet commerce usage among European countries in 2010 is less than 25%.

    (c) Test whether or not the average Internet commerce usage increased in European countries from 2006 to 2010.

2. The director of training for an electronic equipment manufacturer is interested in determining whether different training methods have an effect on the productivity of assembly line employees. She randomly assigns 42 recently hired employees into two groups of 21. The first group (Training=0) receives a computer-assisted, individual-based training program and the second group (Training=1) receives a face-to-face team-based training program.

    Upon completion of the training programs the employees are evaluated on the time (in seconds) it takes to assemble a part. After one month, each employee is also given a questionnaire with a single question, "How confident are you in your ability to perform you assembly line duties? Select one (Not Confident [1] / Somewhat Confident [2] / Very Confident [3]). The data for these variables is given in *training.sav* on the class website.

    (a) Is there evidence that one training program is more effective than the other in terms of time to assemble a part? Be sure to state your hypotheses, what tests you decide to run, report your p-value and report in plain English a description of your result.

    (b) Is there evidence that one training program leads to greater confidence in employees' abilities to perform their job? As always, state your hypotheses, what tests you decide to run, report your p-value and report in plain English a description of your result.