**Statistical Analysis Week 5 Applications**

**Hypothesis Testing**

**Excel File: Coffee**

1. The Federal Trade Commission (FTC) periodically conducts statistical studies designed to test the claims that manufacturers make about their products. For example, the label on a large can of Hilltop Coffee states that the can contains 3 pounds of coffee. The population standard deviation is assumed to be .18. The FTC knows that Hilltop’s production process cannot place exactly 3 pounds of coffee in each can, even if the mean filling weight for the population of all cans filled is 3 pounds per can. However, as long as the population mean filling weight is at least 3 pounds per can, the rights of consumers will be protected. Please see the excel file referenced above for raw sample data.
   1. Develop the null and alternative hypothesis.
   2. At α = 1%, what is your conclusion?
2. In hope of learning what would be a better strategy for marketing to teenagers. A marketing analyst wonders if those teenagers spend more than 24 hours a week looking at Instagram. Past research has indicated that if a customer spends more than 24 hours on a site, they are more likely to click on ads. Data is gathered for 35 teenagers and it is found that average amount of hours spent on Instagram of those 35 teenagers is 26.5 hours and a sample standard deviation of 4.22 hours.

a. Develop the null and alternative hypothesis.

b. At α = 5%, what is your conclusion?

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