**Conference presentation in class – chapter 12 – one-way between subjects ANOVA**

1. Delish Delight, founder of a local elixir company has produced a new product designed to improve one’s math ability. He calls it Memoralicious. Delish gathered a group of thirty people and randomly assigned them to one of three groups. The first group gets a low amount of elixir, the second group a moderate amount of elixir, and the third group a high amount of elixir (but not enough so that they pass out). The goal is to figure out if in fact his elixir affected the respondents’ ability to do well on the math test. After each respondent in each group glugged the elixir, he gave a math exam to all the respondents. He recorded their scores (on a 100 pt scale).

Amount of elixir glugged in each group and corresponding match exam scores.

Group 1 Group 2 Group 3

12oz 24oz 36 oz

70 74 68

68 74 50

83 89 89

65 80 70

90 96 72

89 89 82

54 55 70

75 80 89

79 75 79

82 85 87

Provide a quality and comprehensive conference presentation to Delicious and his Executive Board. Be sure to thank your audience, tell them why you are there, and why the problem you are investigating is important. Next identify and use the appropriate ANOVA with an α=.05 to determine whethe.r there are any significant mean differences and what that means for the elixir. Calculate, the eta-squared (I can’t get the capital N in Greek to insert here) to quantify the effect size for this study. What are your policy recommendations? Be sure to provide descriptives, info about hypotheses, appropriate tables, your conclusion and policy recommendations. Should Delish spend more capital on the elixir? Why are why not?

1. A recent SPA graduate has launched a successful consulting business which has developed a flavor enhancement additive for food. They way she thinks it’ll work is that by adding this “spice” people will like the food more and eat more making the food producer a very wealthy person. One thing is that in some earlier work she found the enhancement tasty nasty. So she’s unsure whether using the additive will make people eat faster or slower. She needs you to test this. So, she gathered these data from 27 people (randomly placed in one of the three groups) to show how many minutes it took nine participants to eat food with either low, moderate or high levels of enhancement added. These scores are below:

Amount of enhancement “spice” added to the food

Low Moderate High

2.6 5.6 9.0

3.9 4.5 5.6

3.4 3.7 3.5

1.2 2.0 7.8

2.1 3.3 6.4

1.2 4.6 7.5

1.8 3.1 4.4

2.2 2.0 3.8

2.4 2.5 9.2

Provide a quality and comprehensive conference presentation to our SPA Alumna. Be sure to thank your audience, tell them why you are there, and why the problem you are investigating is important. Next identify and use the appropriate ANOVA with an α=.05 to determine whether there are any significant mean differences and what that means for the elixir. Did you reject or fail to reject the null? Calculate, the eta-squared (I can’t get the capital N in Greek to insert here) to quantify the effect size for this study. What are your policy recommendations? Be sure to provide descriptives, info about hypotheses, appropriate tables, your conclusion and policy recommendations.

1. Published reports indicate that a brain region called the nucleus accumbens (NAC) is involved in interval timing, which is the perception of time in the second-to-minutes range. The scientists wonder what can be done to minimize the amt of time a rat recognizes a reward has shown up. To test this, researchers investigated whether removing the NAC interferes with rats’ ability to time the presentation of a liquid reward. The researchers randomly selected 24 rats and placed them (randomly) in one of three groups. In the first group, the rats did not have their NAC removed surgically. In the second group, the rats did have their NAC removed, but received no physical therapy. And in the third group, the rats had their NAC removed and did get two weeks of physical therapy.

For each group, the cruel researcher had rats press a lever for a reward that was delivered after 16 seconds regardless of the group they were in. The time in seconds that rats pushed the lever was recorded in the table below.

No NAC Surgery Yes NAC Surgery NAC Surgery + PT

15 20 22

14 26 26

16 20 24

16 18 20

17 25 26

18 21 20

15 18 19

16 23 22

Provide a quality and comprehensive conference presentation about this issue, your findings and policy recommendations. Be sure to thank your audience, tell them why you are there, and why the problem you are investigating is important. Next identify and use the appropriate ANOVA with an α=.05 to determine whether there are any significant mean differences and what that means for the surgery and PT. Did you reject or fail to reject the null? Calculate, the eta-squared to quantify the effect size for this study. What are your policy recommendations? Be sure to provide descriptives, info about hypotheses, appropriate tables, your conclusion and policy recommendations.