

DA 6823

Kilger

Module 3: Part #2 (15 points)

### Dependent Samples t test

**General Instructions:** In your own words, answer each of the following questions - don't copy (e.g. cut and paste) some definition out of a book word for word. This is not a group project – you are expected to complete this module on your own. You may refer to text books, online or other sources but not your fellow classmates. If you don't understand the question, feel free to ask the instructor in class, in office hours or in an email.

Here is the SAS printout for an dependent samples ttest that compares advertising receptivity (scale =person has low ad receptivity, 5=person has high ad receptivity) before and after the person drinks a shot of tequila.

The SAS System					
The TTEST Procedure					
Difference: after_booze - before_booze					
N	Mean	Std Dev	Std Err	Minimum	Maximum
25564	1.0037	0.4092	0.00256	0.0101	1.9972
Mean	95% CL Mean	Std Dev	95% CL Std Dev		
1.0037	0.9987	1.0087	0.4092	0.4057	0.4128
DF	t Value	Pr >  t			
25563	392.13	<.0001			

1. State the null and alternative hypotheses for the dependent sample t test. (4 points)

$H_{null}$ : advertising receptivity Before Boozes = advertising receptivity After Boozes.

$H_{alt}$ : advertising receptivity Before Boozes  $\neq$  advertising receptivity After Boozes.

2. Name one assumption of the dependent sample t test ( 2 points)

advertising receptivity Before Boozes  $\neq$  advertising receptivity After Boozes.

no - normal distribution of the dv -1

3. What is the difference in the before and after alcohol means? (2 points)

$1.0037/0.00256 = 392.07$

no - just 1.0037 -1

4. What can you conclude about the change in advertising receptivity due to the application of alcohol to a respondent? (4 points)

Since p value is  $< 0.0001$  there is a difference in advertising receptivity before and after boozes.

5. Why is this called a “paired” or dependent sample t test? (3 points)

A paired sample t test is when 2 groups that are doing the same repetitive actions can be measured, and means are compared. In this case the 2 groups are before booze and after boozes and the measured action is the advertising receptivity.