# AS2 (Assignment 2, Unit 5): Dependent Measures t-test

## Please write your answers in red ☺

An investigator is interested in whether the number of dresses tried on in a department store for a wedding will be affected by viewing a fashion magazine. A sample of 5 women was measured on how many dresses each tried on before and after viewing a fashion magazine. The before-and-after scores are as follows:

| Subject | Before | After |
|---|---|---|
| 1 | 6 | 2 |
| 2 | 5 | 7 |
| 3 | 9 | 6 |
| 4 | 1 | 3 |
| 5 | 8 | 5 |

l. What is the research's hypothesis?

Viewing a fashion magazine has an effect on the number of dresses tried on in a department store for a wedding.

2. What is the null hypothesis?

Viewing a fashion magazine has no effect on the number of dresses tried on in a department store for a wedding.

3. What is the independent variable? Fashion Magazine

4. What is the dependent variable? Number of Wedding Dresses tried on in a department store for a wedding.

5. What is the name of the *research design*? Within -subjects research design

6. What is the appropriate *hypothesis test* to analyze these data? Dependent Measures t-test

7. Please run the appropriate SPSS analysis and cut and paste your results here:

**Paired Samples Statistics**

| | | Mean | N | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Pair 1 | VAR00001 | 4.6000 | 5 | 2.07364 | .92736 |
| | VAR00002 | 5.8000 | 5 | 3.11448 | 1.39284 |

**Paired Samples Correlations**

| | | | | Significance | |
|---|---|---|---|---|---|
| | | N | Correlation | One-Sided p | Two-Sided p |
| Pair 1 | VAR00001 & VAR00002 | 5 | .410 | .246 | .493 |

**Paired Samples Test**

| | | Paired Differences | | | | | t | df | Significance | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 95% Confidence Interval of the Difference | | | | | |
| | | Mean | Std. Deviation | Std. Error Mean | Lower | Upper | | | One-Sided p | Two-Sided p |
| Pair 1 | VAR00001 - VAR00002 | -1.20000 | 2.94958 | 1.31909 | -4.86238 | 2.46238 | -.910 | 4 | .207 | .414 |

8. Based on your SPSS results, please answer the following questions:

(a) What decision did you make? Reject or fail to reject the null? Fail to reject the null hypothesis Ho.

es

(b) Please write your "statistical statement": Running a paired t-test, t = (4) = –.910  P< .05 is not at the significant level of .05

(c) Please interpret the results of your analysis "in words" and relating DIRECTLY back to the research question.

The mean number of dresses tried on before viewing a fashion magazine was M= 5.8 with a SD = 3.1 .The mean number of dresses tried on after viewing a fashion magazine was M= 4.6 with a SD = 2.07 . Our data did not support that viewing a fashion magazine has no effect on the number of dresses tried on a department store for a wedding .t= (4) = –.. 910 P< .05 not at the significant level.

There is no difference between before and after scores. Therefore, the number of dresses tried on in a department store for a wedding will not be affected by viewing a fashion magazine.

(d) Is there a probability of Type I error?  Yes _____  No_____X.

(e) Is there a probability of Type II error?  Yes_____X  No_____