SPSS Examples – One sample T-Test; T-Test for Two Independent Sample

A psychologist has prepared an “Optimism Test” that is administered yearly to graduating college seniors. The test measures how each graduating class feels about its future – the higher the score, the more optimistic the class. Last year’s class had a mean score of µ= 15. A sample of 9 seniors from this year’s class was selected and tested. The scores for these seniors are:

7, 12, 11, 15, 7, 8, 15, 9, 6.

Thinking about the four steps of hypothesis test…

State the hypotheses (null and alternative).

Identify the alpha value, df, and number of tails). What is the critical value?

Compute the t-statistic.

Decision

Effect size and variance explained?

In a study of jury behavior, two samples of participants were provided details about a trial in which the defendant was obviously guilty. Although group 2 received the sample details as group 1, the second group was also told that some evidence had been withheld from the jury by the judge. Later the participants were asked to recommend a jail sentence. The length of term suggested by each participant is presented here. Is there a significant difference between the two groups in their responses?

Group 1 Group 2

4 3

4 7

3 8

2 5

5 4

7 6

4 8

Thinking about the four steps of hypothesis test…

State the hypotheses (null and alternative).

Identify the alpha value, df, and number of tails). What is the critical value?

Compute the t-statistic.

Assumptions

Decision

Effect size and variance explained?

Siegel (1990) found that elderly people who owned dogs were less likely to pay visits to their doctors after upsetting events than were those who did now own pets. Professor Hogwarts decides to see if this is still the case of if dog owners and non-dog owner are similar in doctor visits. The following are the number of times each visited the doctor in the last year. Is there a difference?

No Pets Pets/Dogs

10 7

8 4

7 9

9 3

13 7

7

6

12

Thinking about the four steps of hypothesis test…

State the hypotheses (null and alternative).

Identify the alpha value, df, and number of tails). What is the critical value?

Compute the t-statistic.

Assumptions

Decision

Effect size and variance explained?

A psychology department secretary notices that the average number of student complains the department receives per week is 1.4 (µ = 1.4). He notices that the department has made some poor policy changes recently and wants to see if the number of complaints that the department receives has increased. He records the following number of complaints that came in per week for 8 weeks:

2

4

3

5

4

1

1

4

Thinking about the four steps of hypothesis test…

State the hypotheses (null and alternative).

Identify the alpha value, df, and number of tails). What is the critical value?

Compute the t-statistic.

Assumptions

Decision

Effect size and variance explained?

In a study on the likability of comedians, 10 participants observed one of two comedians (one funny, one not funny) and rated how likable these comedians were on a 7-point scale from 1 (not likable) to 7 (very likable). The rating by each participant are given below.

Humorous Not Humorous

Ratings Ratings

8 2

6 3

7 4

4 5

5 1

Thinking about the four steps of hypothesis test…

State the hypotheses (null and alternative).

Identify the alpha value, df, and number of tails). What is the critical value?

Compute the t-statistic.

Assumptions

Decision

Effect size and variance explained?

Research suggest a relationship between the TV viewing habits of 5-year old children and their future performance in high school. A client from “Burz Yer Eyez” Video Productions needs you to research this relationship using data from 20 high school students. You are given data for ten students who as 5 year olds watched Sesame Street, and 10 who did not. The question given to you is whether there is a significant difference between the two groups on these average high school grads for each.

Average High School Grade

Watch SS Did not watch SS

86 90

87 89

91 82

97 83

98 85

99 79

97 83

94 86

89 81

92 92

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Assumptions

Decision

Effect size and variance explained?