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MSDS 6371

Post-Live Session Homework: Unit 2

* 1. I am trying to test the claim that the intrinsic group has a higher mean creativity score than the extrinsic group. I will set the null hypothesis for the difference in the means: , and the alternative hypothesis . This will be a one-tailed test with signifigance level
  2. Because this is a randomized experiment using independent samples I will use a two-sample t-test.
  3. The code for this test is:

data creativity;

input score treatment $;

datalines;

5 Extrinsic

5.4 Extrinsic

6.1 Extrinsic

10.9 Extrinsic

11.8 Extrinsic

12 Extrinsic

12.3 Extrinsic

14.8 Extrinsic

15 Extrinsic

16.8 Extrinsic

17.2 Extrinsic

17.2 Extrinsic

17.4 Extrinsic

17.5 Extrinsic

18.5 Extrinsic

18.7 Extrinsic

18.7 Extrinsic

19.2 Extrinsic

19.5 Extrinsic

20.7 Extrinsic

21.2 Extrinsic

22.1 Extrinsic

24 Extrinsic

12 Intrinsic

12 Intrinsic

12.9 Intrinsic

13.6 Intrinsic

16.6 Intrinsic

17.2 Intrinsic

17.5 Intrinsic

18.2 Intrinsic

19.1 Intrinsic

19.3 Intrinsic

19.8 Intrinsic

20.3 Intrinsic

20.5 Intrinsic

20.6 Intrinsic

21.3 Intrinsic

21.6 Intrinsic

22.1 Intrinsic

22.2 Intrinsic

22.6 Intrinsic

23.1 Intrinsic

24 Intrinsic

24.3 Intrinsic

26.7 Intrinsic

29.7 Intrinsic

;

proc print data = creativity;

run;

title 'Two sample t-test';

proc ttest data = creativity sides = L alpha = .005;

class treatment;

var score;

run;

* 1. Report from Output.

t = 2.92

p = 0.0028

* 1. The p-value is less than α, so I will reject the null hypothesis. There is a 0.0028 percent chance that I would get this test statistic if the null hypothesis were true.
  2. I Reject . There is significant evidence that the intrinsic group has a higher mean creativity score than the extrinsic group. I used a one sided test so I needed to divide the alpha by 2 because I am only interested in half of the alpha region.

1. The confidence interval for the two-sample, one-tailed t-test of the difference in sample means is between 0.31 and Infinity. This interval does not contain 0 and is consistent with the test above.
2. The assumptions made in order to run the test are that the samples are independent with normal distributions.