PSY 003 Homework 5

1

let the Mean with Imagery be μ_1
let the Mean with NO Imagery be μ_2.

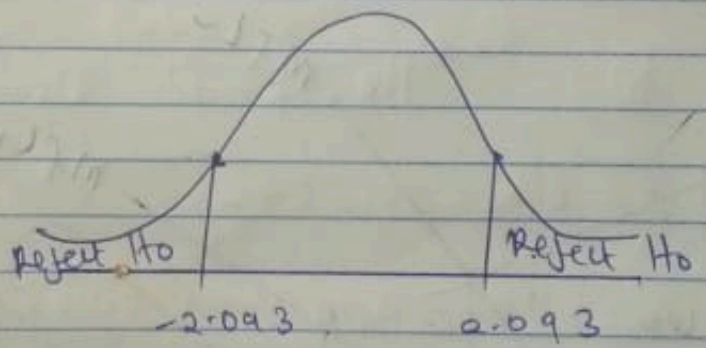
1) $H_0 : \mu_1 = \mu_2$
$H_A : \mu_1 \neq \mu_2$

2 A two Sample t-test at $\alpha = 0.05$

3 The design employed is testing the Mean of no Imagery and with Imagery.

4 Sample has size $n = 6$, $\mu_1 = 11.67$, $\mu_2 = 8.83$, the Variance are assumed to be equal.

5



6 Test statistic $T = \dfrac{\bar{\mu}_1 - \mu_2}{s_p\sqrt{1/n_1 + 1/n_2}}$ $T = \dfrac{11.67 - 8.83}{1.51\sqrt{1/6 + 1/6}}$

$T = 3.25$ $N = 19$ $S_1 = 3.448$, $S_2 = 3.291$

7 $3.257_0 > 2.097$.

8 Reject Ho and Conclude that use of Imagery vs no Imagery leads to a different number of memories being recalled.

Q1 (2)

1) H_0: New Keyboard has faster typing than old keyboard

H_A: New Keyboard has slower typing than old Keyboard

(2) A Two sample T-Test at $\alpha = 0.01$

(3) Is Typing speed of new keyboard faster or slower than the old keyboard The will involve Testing the mean word per minute typed

(4) Mean of New Keyboard, $\mu_1 = 59.67$

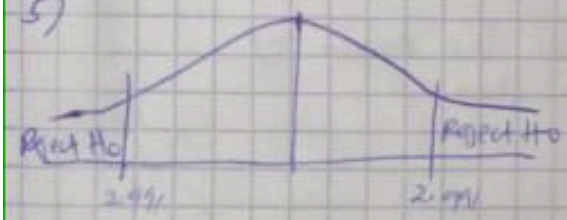
Standard Deviation of new keyboard $= 5.588 = \delta_1$

Mean of Old keyboard $= \mu_2 = 57.67$

standard Deviation of old keyboard $= \delta_2 = 7.630$

Sample size $n = 6$ for each

5)



(6) Test statistic $T = \dfrac{\mu_1 - \mu_2}{S_p\sqrt{1/N_1 + 1/N_2}}$, $S_p^2 = \dfrac{(N_1-1)S_1^2 + (N_2-1)S_2^2}{N_1 + N_2 - 2}$

$S_p = 2.991$

$T = \dfrac{59.67 - 57.67}{2.991\sqrt{1/6 + 1/6}} = 2.006$

$t_{1-\alpha/2,\nu} = t_{0.995,10} = 1.994$

(7) $2.006 > 1.994$

Reject H_0

(8) The New keyboard does not have faster Typing

Qn 3

1) H_0: Knowledge about popular music at University A is different than the general population of College aged students scoring 12 Question correct

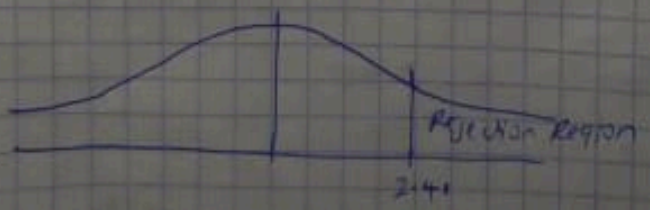
H_A: Knowledge about popular music at University A is not different than the general population of college aged students scoring 12 Question correct

(2) This is a one sample Test, $n = 41$

(3) This study employs the Test of the mean of one sample using Normal Distribution

(4) $n = 41$
$\mu = 15$
$s = 6$

(5) Rejection Region at $\alpha = 1\%$ is 2.41



(4.4) 1) H_0: Adults spending 6 months or more overseas are more creative than the general population

H_1: Adults spending 6 months or more overseas are less creative than the general population

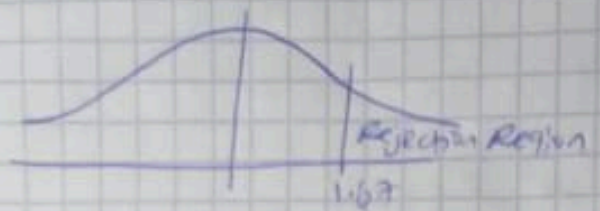
2) This is a one sample Test

3) This study employs normal Approximation

4)

Sample	Population
$\bar{x} = 15$	$\mu = 4$
$n = 5$	$\sigma = 2$
$s = 1.5$	

(5) Rejection Region at $\alpha = 5\%$ is 1.67



(6) $z = \frac{\bar{x} - \mu}{SE} = \frac{5 - 4}{3/\sqrt{15}} = 0.2582$

(7) $0.2582 > 0.05$, Reject H_0

(8) Adults spending 6 months or more overseas are not more creative than the general population