Kovijska Krsmanović 26/22

3.

52
53
49
55
60
56
48

$H_0: \mu = 50$ ✓

Računanje parametara

$$\bar{X} = \frac{52+53+49+55+60+56+48}{7} = \frac{373}{7} = 53,28$$ ✓

Varijansa

$$V = \frac{(52-53,28)^2 + (53-53,28)^2 + (49-53,28)^2 + (55-53,28)^2 + (60-53,28)^2 + (56-53,28)^2 + (48-53,28)}{7-1}$$

$$V = \frac{(-1,28^2) + (-0,28^2) + (-4,28)^2 + 1,72^2 + 6,72^2 + 2,72^2 + (-5,28)^2}{6}$$

$$V = \frac{1,63 + 0,078 + 18,31 + 2,95 + 45,15 + 7,39 + 27,87}{6}$$

$$V = \frac{103,37}{6} = 17,22$$

5/10

$$S = \sqrt{V} = \sqrt{17,22} = 4,14$$ ✓

Test statistika

$$T = \frac{\bar{X} - \mu}{S} \cdot \sqrt{n} = \frac{53,28-50}{4,14} \cdot \sqrt{7} = \frac{3,28}{4,14} \cdot 2,64$$

$T = 0,79 \cdot 2,64 = 2,08$ ✓

dalje? uporediti s krit. vr.

10/22 Muno Hengocut B.P.

7.

52
53
49
55
60
56
48

Test očekivanja norm. raspodjele

$H_0: M = 50\,cm \quad H_1: M > 50\,cm$

1. $\bar{x} = \frac{371}{7} = \bar{X} = 53.2.$

$V = \frac{(52 - 53.2)^2 + (53 - 53,2)^2 + \dots}{7}$

$(49 - 53.2)^2 + (55 - 53.2)^2 + (60 - 53,2)^2 + (56 - 53,2)^2$

$\frac{(48 - 53,2)^2}{7-1} = 1,44 + 0,04 + 46.24$ 4110

$= \frac{1,44 + 0,04 + 17,64 + 3,24 + 46,24 + 7,84 + 104.04}{6} = \frac{180,44}{6} = 30.07$

dalje?

3,4 Mann Whitney 10/22 B.D

④

PG	8	9	10	11	12	13	$n_1 = 6$
NK	9	11	12	8	7	3	$n_2 = 6$

Uporedjujemo očekivanja 2 populacije

$H_0 : M_1 = M_2$ $H_1 = M_1 \neq M_2$

Računanje parametara

PG $\overline{x_1} = \frac{54}{6} = x_1 = 9$ 4/15

$S_1^2 = V_1 = \frac{(8-9)^2 + (9-9)^2 + (10-9)^2 + (11-9)^2 + (12-9)^2 + (12-9)^2}{6-1} = \frac{1+1+4+9+16}{5} = 6.2$

$S_1 = \sqrt{6.2} = 2,48$

$S_2 = \dots$, $S = \dots$

dalje? uporedjivanje

NK $\overline{x_2} = \frac{50}{6} = 8.3$

$S_2^2 =$

4. Upoređivanje očekivanja 2 populacije

Aleksandar Banjević
30/22

Pod	Nik
8	9
9	11
10	12
11	8
12	7
13	3

$H_0 = \mu_1 = \mu_2 \quad H_1: \mu_1 \neq \mu_2$

$\bar{X}_1 = \frac{8+9+10+11+12+13}{6} = 10.5$

$V_1 = \frac{(8-10,5)^2+(9-10.5)^2+(10-10.5)^2+(11-10.5)^2+(12-10.5)^2+(13-10.5)^2}{6-1}$

$V_1 = \frac{6.25+2.25+0.25+0.25+2.25+6.25}{5} = \frac{17.5}{5} = 3.5$

$S_1 = \sqrt{3.5} = 1.87$

$X_2 = \frac{9+11+12+8+7+3}{6} = \frac{50}{6} = 8.3$

$V_2 = \frac{(9-8.3)^2+(11-8.3)^2+(12-8.3)^2+(8-8.3)^2+(7-8.3)^2+(3-8.3)^2}{6-1}$

$V_2 = \frac{0.50+7.20+14.20+0.09+1.80+28.10}{5} = 20.25$

$S_2 = \sqrt{20.25} = 4.50$

2. Test statike

$T = \frac{\bar{X}_1 - \bar{X}_2}{S} \cdot \frac{1}{\sqrt{\frac{1}{n_1}\cdot\frac{1}{n_2}}} = \frac{10.5-8.3}{} \cdot \frac{1}{\sqrt{\frac{1}{6}+\frac{1}{6}}}$

$S^2 = \frac{1}{n_1+n_2-6} = ((n-1)S_1^2 + (n-1)S_2^2)$

$S^2 = \frac{1}{6+6-2} = (5 \cdot 3.5 + 5 \cdot 20.25) = (17.5 + 101.25) = 118.75$

$T = \frac{10.5-8.3}{\sqrt{118.75}} \cdot \frac{1}{\sqrt{\frac{1}{6}+\frac{1}{6}}} = 0.018 \cdot \frac{1}{\sqrt{0.16+0.16}} = 0.018 \cdot 3.125$

$= 0.056$

2.2

(3) upoređivanje s konst. vr.?

7/15

52, 53, 49, 55, 60, 56, 48

3.

H_0 $\mu = 50cm$ H_1: $\mu \neq 50$

$n = 7$

$\alpha = 0,03$

$$\bar{x} = \frac{52+53+49+55+60+56+48}{7} = \frac{373}{7} = 53,28$$

$$V = \frac{(52-53,28)^2+(53-53,28)^2+(49-53,28)^2+(55-53,28)^2+(60-53,28)^2+(56-53,28)^2}{7-1}$$

$$V = \frac{(52-53,28)^2+(53-53,28)^2+(49-53,28)^2+(55-53,28)^2+(60-53,28)^2+(56-53,28)^2+(48-53,28)^2}{7-1}$$

$$V = \frac{1,63+0,07+18,31+2,95+45,15+7,39+27,87}{6}$$

$$V = \frac{103,37}{6}$$

$V = 17,22$

$s = \sqrt{V} = 4,14$ ✓

KRITIČNA VRIJEDNOST?

5/10

BP Anja Dražulaić

~~$s_2^2 = 9 + 11$~~

$$s_2^2 = \frac{(9-8,33)^2 + (11-8,33)^2 + (12-8,33)^2 + (8-8,33)^2 + (7-8,33)^2 + (3-8,33)^2}{6-1}$$

$$s_2^2 = \frac{0,44 + 7,12 + 13,46 + 0,10 + 1,76 + 28,40}{5} =$$

$$s_2^2 = \frac{51,28}{5} = 10,25$$

(2) Test statistik

$$F = \frac{s_2^2}{s_1^2} = \frac{10,25}{3,5} = 2,92$$

(3)

$$F_{0,05}(6-1, 6-1) = F_{0,25}(5,5)$$

$$\frac{0,05}{2} = 0,025$$

$$F < F_{0,025}(5,5)$$

Prihvatamo H_0

TBP Asja Dautbašić

Stanišić Maja
41/22 B.P.

3.

52
53
19
55
50
56
18

$H_0 : \mu = 50cm \quad H_1 : \mu > 50cm$

10/10

1) Srednja vrijednost:

$$\bar{x} = \frac{52+53+49+55+60+56+48}{7} = \frac{373}{7} = 53,3$$

Varijansa:

$$V = \frac{(52-53,3)^2+(53-53,3)^2+(49-53,3)^2+(55-53,3)^2+(60-53,3)^2+(56-53,3)^2+(48-53,3)^2}{6}$$

$$V = \frac{1,69+0,09+18,49+2,89+44,89+7,89+28,09}{6}$$

$$V = 17,3$$

$$S = \sqrt{V} = \sqrt{17,3} = 4,2$$

2) test statistika

$$T = \frac{\bar{x}-\mu}{S} \cdot \sqrt{n} \Rightarrow T = \frac{53,3-50}{4,2} \cdot \sqrt{7} = 0,78 \cdot 2,65 = 2,07$$

3) Kritična vrijednost

$t_{0,03}(6) = 3,143 > T$

nema 0,03 vrijednosti u tablici pa sam uzela najbližu 0,02

Zaključujemo da se nije povećala duljina.

4

Podgorica	8	9	10	11	12	13
Nikšić	9	11	12	8	7	3

$\alpha = 0,05$

R) Test uporedivanja 2 populacije!

$H_0: \mu_1 = \mu_2 \quad H_1 = \mu_1 \neq \mu_2$

① Računanje parametara

$$\overline{X_1} = \frac{8+9+10+11+12+13}{6} =$$

$$\overline{X_1} = \frac{63}{6} = 10.5$$

$$V_1 = \frac{(8-10.5)^2+(9-10.5)^2+(10-10.5)^2+(11-10.5)^2+(12-10.5)^2+(13-10.5)^2}{6-1} =$$

$$V_1 = \frac{(-2.5)^2+(-1,5)^2+(-0.5)^2+(0.5)^2+(1,5)^2+(2.5)^2}{5} =$$

$$V_1 = \frac{6.25+2,25+0,25+0.25+2,25+6.25}{5} =$$

$$V_1 = \frac{17,5}{5} = 3.5$$

$$S_1 = \sqrt{V_1} = \sqrt{3.5} = 1.8$$

Popović Mila
48/22

④ $\overline{X_2} = \frac{9+11+12+8+7+3}{6}$

$\overline{X_2} = \frac{50}{6} = 8.3$

$V_2 = \frac{(9-8.3)^2+(11-8.3)^2+(12-8.3)^2+(8-8.3)^2+(7-8.3)^2+(3-8.3)^2}{6-1}$

$V_2 = \frac{0.49+7.29+13.69+0.09+1.69+28.09}{5} =$

$V_2 = \frac{51.34}{5} = 10.2$

dalje ?.

9 | 5

Andrijana Jagić 13/22

4. R. Upoređivanje očekivanja 2 populacije

$H_0: \mu_1 = \mu_2$ $H_1: \mu_1 \neq \mu_2$

1. Parametri

$$\bar{x}_1 = \frac{8+9+10+11+12+13}{6}$$

$$\bar{x}_1 = 10{,}5$$

$$S_1^2 = V_1 = \frac{(8-10{,}5)^2+(9-10{,}5)^2+(10-10{,}5)^2+(11-10{,}5)^2+(12-10{,}5)^2+(13-10{,}5)^2}{6-1}$$

$$= \frac{6{,}25+2{,}25+0{,}25+0{,}25+2{,}25+6{,}25}{5}$$

$$= 3{,}5 \qquad V_1 = 3{,}5$$

$$S_1 = \sqrt{3{,}5} = 1{,}87$$

$$\bar{x}_2 = \frac{9+11+12+8+7+3}{6}$$

5 | 15

$$\bar{x}_2 = 8{,}33$$

$$S_2 = V_2 = \frac{(9-8{,}33)^2+(11-8{,}33)^2+(12-8{,}33)^2+(8-8{,}33)^2+(7-8{,}33)^2+(3-8{,}33)^2}{6-1}$$

$$= \frac{0{,}45+7{,}13+13{,}46+0{,}10+1{,}7+28{,}4}{5}$$

$$= 10{,}24 \qquad V_2 = 10{,}24 \qquad S_2 = \sqrt{10{,}24} = 3{,}2$$

3. $\bar{x} = \frac{52+53+49+55+60+56+48}{7} = 53,28$ ✓

$$V = \frac{(52-53,28)^2+(53-53,28)^2+(49-53,28)^2+(55-53,28)^2+(60-53,28)+(56-53,28)^2+(}{7-1}$$

$$V = \frac{1,63 + 0,07 + 18,31 + 2,95 + 45,15 + 7,39 + 27,87}{6}$$

$V = 17,22$

$S = \sqrt{17,22} = 4,14$

2. Test statistike

$T = \frac{\bar{x} \cdot \mu}{S} \cdot \sqrt{n}$ ✓

$T = \frac{53,28 \cdot 50}{4,14} \cdot \sqrt{7}$

$T = \frac{2,66}{4,14} \cdot 2,64$

$T = 1,69$

3 i 2 0

Kritična vrijednost

$t_{0,03}(6) = 0,9484$

? i !