Statistics

Lecture 17

Feb 19-8:47 AM

Consider the chart below

Morning	Afternoon
72 86 70	98 85 100
80 90 95	78 75 90
100 85	95
$\bar{x} \approx 85$	$\bar{x} \approx 89$
$S \approx 10$	$S \approx 10$
$n = 8$	$n = 7$

1) Store in L1 & L2
Find $\bar{x}$, S, and n
for each class
Round to whole #

2)

Group 1	Group 2
$n_1 = 8$	$n_2 = 7$
$S_1 = 10$	$S_2 = 10$

Ndf = 7 → ← Ddf = 6

3) Use $\alpha = .1$ to test the claim that $\sigma_1 = \sigma_2$.

$H_0: \sigma_1 = \sigma_2$ claim

$H_1: \sigma_1 \neq \sigma_2$ TTT

CTS F = 1

P-Value P = .984 ✓

2-SampF Test

P-Value Method

P-Value > α

.984 .1

H_0 Valid & H_1 invalid

Valid claim → FTR the claim

Feb 12-5:03 PM

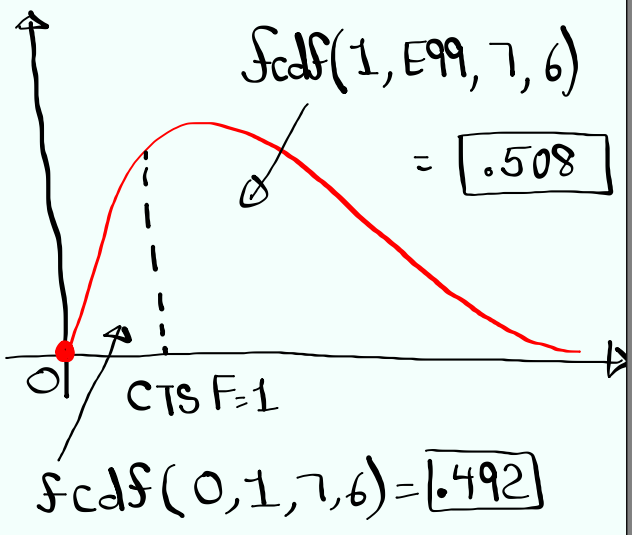
CTS F=1

Ndf = 7

Ddf = 6

TTT

Find P-Value.



P-Value = 2 · Smaller Area

= 2(.492) = .984

Feb 12-5:13 PM

Comparing at least 3 pop. means: SG 33

$H_0: \mu_1 = \mu_2 = \mu_3 = \cdots = \mu_K$

H_1: At least one mean is different. RTT

Method: ANOVA (Analysis of Variance)

K → # of groups Ndf = K-1

n → Total Sample Size Ddf = n-K

CTS F STAT TESTS ↑ ANOVA

P-Value P L1,L2,L3,...

Use testing chart to proceed for the validity of H_0 & H_1 Enter

Final Conclusion has to be about claim.

Feb 12-5:18 PM

L1 Mt. SAC	L2 Chaffey	L3 ELAC
75 98 100	80 88 99	72 86 88
80 85 75	70 65	100 95 62
68 90		58 98

$K = 3$ $\Rightarrow$ $Ndf = K - 1 = 2$

$n = 8 + 5 + 8 = 21$ $\quad Ddf = n - K = 21 - 3 = 18$

$\alpha = .05$

Test the claim that all pop. means are the same.

$H_0: \mu_1 = \mu_2 = \mu_3$ claim

H_1: At least one mean is different.

RTT

STAT TESTS ↑ ANOVA(L1, L2, L3 Enter

CTS $F = .095$

P-Value $P = .910$

P-Value $> \alpha$ H_0 Valid

VALID claim

FTR the claim

Feb 12-5:25 PM

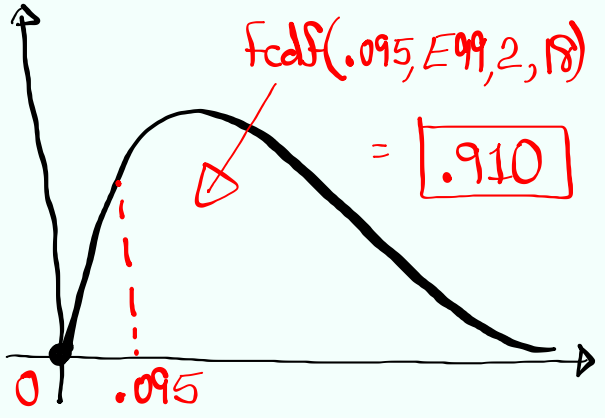
CTS $F = .095$

$Ndf = 2$

$Ddf = 18$

Always RTT

Find P-Value



Feb 12-5:35 PM