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/Users/bps/PycharmProjects/regression_anova/venv/bin/python /Users/bps/PycharmProjects/regression_anova/main
.py
Welcome to Regression,Correlation, Anova Calculator by AG

1.Regression
2.Correlation
3.One Way Anova
4.Two Way Anova
4



4.Two Way Anova

Enter the no of Treatments: 4
Enter the no of Blocks: 3
Level of significance: 0.01

Enter the Data

45 43 51
47 46 52
48 50 55
42 37 49

a (No of Treatments) = 4
b (No of Blocks) = 3
a*b (Total no of Samples) = 12

Ti. = [139. 145. 153. 128.]
T.j = [182. 176. 207.]
ΣΣ yij^2 = 26867.0
C (T..^2 / a*b) = 26602.08333
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SS(Tr) = 110.91667
SS(Bl) = 135.16667
SSE = 18.83333
SST = 264.91667

MS(Tr) (SS(Tr)/(a-1)) = 36.97222
MS(Bl) (SS(Bl)/(b-1)) = 67.58334
MSE (SSE/(a-1)*(b-1)) = 3.13889

F_Tr (MS(Tr)/MSE) = 11.779
F_Bl (MS(Bl)/MSE) = 21.531

Source of variation	Degree of freedom	Sum of square	Mean square	F
Treatments	a-1 = 3	SS(Tr) = 110.91667	MS(Tr) = 36.97222	F(Tr)11.779
Blocks	b-1 = 2	SS(Bl) = 135.16667	MS(Bl) = 67.58334	F(Bl)21.531
Error	(a-1)(b-1) = 6	SSE = 18.83333	MSE = 3.13889	
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Total	ab-1 = 11	SST = 264.91667		

Treatments Testing
Testing α1≠α2≠α3≠α4≠0 the alternative Hypothesis to test with null α1=α2=α3=α4=0
The null α1=α2=α3=α4=0 must be rejected if F>9.7795

Calculations

F(Tr) = 11.779

Decision

Null α1=α2=α3=α4=0 must be Rejected at level of significance 0.01 and Accept α1≠α2≠α3≠α4≠0

Blocks Testing
Testing β1≠β2≠β3≠0 the alternative Hypothesis to test with null β1=β2=β3=0
The null β1=β2=β3=0 must be rejected if F>10.9248

Calculations

F(Bl) = 21.531

Decision

Null β1=β2=β3=0 must be Rejected at level of significance 0.01 and Accept β1≠β2≠β3≠0

Process finished with exit code 0