Name: Sulav Adhikari

Roll no: 23081003

Subject: Statistics II, Lab 7(Q16) (BCSIT III Sem)

Section: ‘B’

**Working expression:**

= MSR =

= MSC =

= MST =

MSE=

**Working procedure:**

Define variable in Name (Row, Column, Treatment, Value) → Make Treatment to string and other Numeric→ Give decimal 1 for Values other 0→Make Label same as Name→ Make it all align to center →Measure for all scale except put treatment in Nominal→ Analyze → General linear model → Univariate → Put values in the dependent variable → Put row, column and treatment in fixed factors → Click model → Go to custom → row, column and treatment in factor and covariates send to model → Type main effects → Sum of square type III → continue → click post Hoc → Send row, column and treatment in factors in Post Hoc tests for → click LSD → continue → ok → Copy only ANOVA table in word file

**SPSS Output:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Tests of Between-Subjects Effects** | | | | | |
| Dependent Variable: Values | | | | | |
| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
| Corrected Model | 675.141a | 12 | 56.262 | 2.228 | .090 |
| Intercept | 53305.574 | 1 | 53305.574 | 2111.078 | .000 |
| row | 139.810 | 4 | 34.952 | 1.384 | .297 |
| column | 183.966 | 4 | 45.991 | 1.821 | .190 |
| treatment | 351.366 | 4 | 87.841 | 3.479 | .042 |
| Error | 303.005 | 12 | 25.250 |  |  |
| Total | 54283.720 | 25 |  |  |  |
| Corrected Total | 978.146 | 24 |  |  |  |
| a. R Squared = .690 (Adjusted R Squared = .380) | | | | | |

**Testing procedure:**

**Setting up Hypothesis**

H0: There is no significance difference between rows, columns, and treatments.

H1: There is significance difference between rows, columns, and treatments.

**Level of significance**

α=0.05

**Decision**

For row, p = 0.297 > α = 0.05, Hence we accept H0 and H1 is rejected

For column, p = 0.190> α = 0.05, Hence we accept H0 and H1 is rejected.

For treatment, p = 0.042 < α = 0.05, Hence we accept H1 and H0 is rejected.

**Conclusion:**

Hence, we conclude that there is no significant difference between rows and columns but there is significant difference in treatments.

Name: Sulav Adhikari

Roll no: 23081003

Subject: Statistics II, Lab 7(Q17) (B. Sc. CSIT III Sem)

Section: ‘B’

**Working expression:**

= MSR =

= MSC =

= MST =

MSE=

**Working procedure:**

Define variable in Name (Row, Column, Treatment, Value) → Make Treatment to string and other Numeric→ Give decimal 1 for Values other 0→Make Label same as Name→ Make it all align to center→ Measure for all scale except put treatment in Nominal→ Analyze → General linear model → Univariate → Put values in the dependent variable → Put row, column and treatment in fixed factors → Click model → Go to custom → row, column and treatment in factor and covariates send to model → Type main effects → Sum of square type III → continue → click post Hoc → Send row, column and treatment in factors in Post Hoc tests for → click LSD → continue → ok → Copy only ANOVA table in word file

**SPSS Output:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Tests of Between-Subjects Effects** | | | | | |
| Dependent Variable: values | | | | | |
| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
| Corrected Model | 16.063a | 9 | 1.785 | .675 | .714 |
| Intercept | 5513.063 | 1 | 5513.063 | 2083.677 | .000 |
| Row | 1.188 | 3 | .396 | .150 | .926 |
| Column | 9.688 | 3 | 3.229 | 1.220 | .381 |
| Treatment | 5.188 | 3 | 1.729 | .654 | .609 |
| Error | 15.875 | 6 | 2.646 |  |  |
| Total | 5545.000 | 16 |  |  |  |
| Corrected Total | 31.938 | 15 |  |  |  |
| a. R Squared = .503 (Adjusted R Squared = -.243) | | | | | |

**Testing procedure:**

**Setting up Hypothesis**

H0: There is no significance difference between rows, columns, and treatments.

H1: There is significance difference between rows, columns, and treatments.

**Level of significance**

α=0.05

**Decision**

For row, p = 0.926 > α = 0.05, Hence we accept H0 and H1 is rejected

For column, p = 0.381> α = 0.05, Hence we accept H0 and H1 is rejected.

For treatment, p = 0.609 > α = 0.05, Hence we accept H0 and H1 is rejected.

**Conclusion:**

Hence, we conclude that there is no significant difference between rows, columns, and treatments.