Problemas ANOVA Friedman

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## Ejemplo

Friedman rank sum test

data: performance and Pasto and Parcela Friedman chi-squared = 8.0973, df = 3, p-value = 0.04404

* **statistics**:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | * Chisq | * p.chisq | * F | * p.F |
|  | * 8.097 | * 0.04404 | * 3.192 | * 0.03622 |

* **parameters**:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | * Df | * ntr | * t.value | * alpha | * test | * name.t |
|  | * 3 | * 4 | * 2.035 | * 0.05 | * Friedman | * Pasto |

* **means**:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | * rankSum | * performance | * std | * r | * Min | * Max |
| * **Pasto.1** | * 38 | * 11.08 | * 3.526 | * 12 | * 3.5 | * 14 |
| * **Pasto.2** | * 23.5 | * 6.854 | * 3.375 | * 12 | * 3.5 | * 14 |
| * **Pasto.3** | * 24.5 | * 7.146 | * 2.413 | * 12 | * 3.5 | * 10.5 |
| * **Pasto.4** | * 34 | * 9.917 | * 4.372 | * 12 | * 3.5 | * 14 |

* **comparison**:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | * Difference | * pvalue | * sig. | * LCL | * UCL |
| * **Pasto.1 - Pasto.2** | * 14.5 | * 0.0149 | * \* | * 3.02 | * 25.98 |
| * **Pasto.1 - Pasto.3** | * 13.5 | * 0.0226 | * \* | * 2.02 | * 24.98 |
| * **Pasto.1 - Pasto.4** | * 4 | * 0.4834 |  | * -7.48 | * 15.48 |
| * **Pasto.2 - Pasto.3** | * -1 | * 0.8604 |  | * -12.48 | * 10.48 |
| * **Pasto.2 - Pasto.4** | * -10.5 | * 0.0717 | * . | * -21.98 | * 0.98 |
| * **Pasto.3 - Pasto.4** | * -9.5 | * 0.1017 |  | * -20.98 | * 1.98 |

* **groups**:

## Problema 1

* **statistics**:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | * Chisq | * p.chisq | * F | * p.F |
|  | * 0.4655 | * 0.9264 | * 0.1441 | * 0.9327 |

* **parameters**:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | * Df | * ntr | * t.value | * alpha | * test | * name.t |
|  | * 3 | * 4 | * 2.035 | * 0.05 | * Friedman | * Indice |

* **means**:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | * rankSum | * porcentaje | * std | * r | * Min | * Max |
| * **Índice.1** | * 31.5 | * 8.334 | * 11.27 | * 12 | * 0.1 | * 34.6 |
| * **Indice.2** | * 31.5 | * 8.333 | * 11.25 | * 12 | * 0.2 | * 35.09 |
| * **Indice.3** | * 28.5 | * 8.333 | * 11.37 | * 12 | * 0.2 | * 34.43 |
| * **Indice.4** | * 28.5 | * 8.332 | * 11.1 | * 12 | * 0.78 | * 35.1 |

* **comparison**:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | * Difference | * pvalue | * sig. | * LCL | * UCL |
| * **Índice.1 - Indice.2** | * 0 | * 1 |  | * -13.13 | * 13.13 |
| * **Índice.1 - Indice.3** | * 3 | * 0.645 |  | * -10.13 | * 16.13 |
| * **Índice.1 - Indice.4** | * 3 | * 0.645 |  | * -10.13 | * 16.13 |
| * **Indice.2 - Indice.3** | * 3 | * 0.645 |  | * -10.13 | * 16.13 |
| * **Indice.2 - Indice.4** | * 3 | * 0.645 |  | * -10.13 | * 16.13 |
| * **Indice.3 - Indice.4** | * 0 | * 1 |  | * -13.13 | * 13.13 |

* **groups**:

## Problema 2

* **statistics**:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | * Chisq | * p.chisq | * F | * p.F |
|  | * 17.42 | * 0.0005792 | * 10.31 | * 6.111e-05 |

* **parameters**:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | * Df | * ntr | * t.value | * alpha | * test | * name.t |
|  | * 3 | * 4 | * 2.035 | * 0.05 | * Friedman | * Droga |

* **means**:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | * rankSum | * helmintos | * std | * r | * Min | * Max |
| * **Droga.1** | * 30 | * 23.83 | * 4.648 | * 12 | * 17 | * 31 |
| * **Droga.2** | * 15 | * 14.92 | * 6.431 | * 12 | * 6 | * 24 |
| * **Droga.3** | * 35.5 | * 30.08 | * 13.11 | * 12 | * 10 | * 51 |
| * **Droga.4** | * 39.5 | * 43.33 | * 21.91 | * 12 | * 13 | * 70 |

* **comparison**:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | * Difference | * pvalue | * sig. | * LCL | * UCL |
| * **Droga.1 - Droga.2** | * 15 | * 0.0032 | * \*\* | * 5.39 | * 24.61 |
| * **Droga.1 - Droga.3** | * -5.5 | * 0.2528 |  | * -15.11 | * 4.11 |
| * **Droga.1 - Droga.4** | * -9.5 | * 0.0526 | * . | * -19.11 | * 0.11 |
| * **Droga.2 - Droga.3** | * -20.5 | * 1e-04 | * \*\*\* | * -30.11 | * -10.89 |
| * **Droga.2 - Droga.4** | * -24.5 | * 0 | * \*\*\* | * -34.11 | * -14.89 |
| * **Droga.3 - Droga.4** | * -4 | * 0.4034 |  | * -13.61 | * 5.61 |

* **groups**:

## Problema 3

* **statistics**:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | * Chisq | * p.chisq | * F | * p.F |
|  | * 29.77 | * 1.54e-06 | * 52.6 | * 1.145e-12 |

* **parameters**:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | * Df | * ntr | * t.value | * alpha | * test | * name.t |
|  | * 3 | * 4 | * 2.035 | * 0.05 | * Friedman | * Fertilizante |

* **means**:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | * rankSum | * produccion | * std | * r | * Min | * Max |
| * **Fertilizante.1** | * 39.5 | * 284.5 | * 34.18 | * 12 | * 229 | * 322 |
| * **Fertilizante.2** | * 44.5 | * 293.8 | * 31.43 | * 12 | * 235 | * 349 |
| * **Fertilizante.3** | * 17 | * 175.3 | * 33.19 | * 12 | * 128 | * 247 |
| * **Fertilizante.4** | * 19 | * 185.9 | * 35.95 | * 12 | * 121 | * 219 |

* **comparison**:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | * Difference | * pvalue | * sig. | * LCL | * UCL |
| * **Fertilizante.1 - Fertilizante.2** | * -5 | * 0.0767 | * . | * -10.57 | * 0.57 |
| * **Fertilizante.1 - Fertilizante.3** | * 22.5 | * 0 | * \*\*\* | * 16.93 | * 28.07 |
| * **Fertilizante.1 - Fertilizante.4** | * 20.5 | * 0 | * \*\*\* | * 14.93 | * 26.07 |
| * **Fertilizante.2 - Fertilizante.3** | * 27.5 | * 0 | * \*\*\* | * 21.93 | * 33.07 |
| * **Fertilizante.2 - Fertilizante.4** | * 25.5 | * 0 | * \*\*\* | * 19.93 | * 31.07 |
| * **Fertilizante.3 - Fertilizante.4** | * -2 | * 0.4699 |  | * -7.57 | * 3.57 |

* **groups**:

## Problema 4

* **statistics**:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | * Chisq | * p.chisq | * F | * p.F |
|  | * 29.34 | * 1.901e-06 | * 48.45 | * 3.457e-12 |

* **parameters**:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | * Df | * ntr | * t.value | * alpha | * test | * name.t |
|  | * 3 | * 4 | * 2.035 | * 0.05 | * Friedman | * Estacion |

* **means**:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | * rankSum | * Biomasa | * std | * r | * Min | * Max |
| * **Invierno** | * 17.5 | * 44 | * 5.36 | * 12 | * 37 | * 54 |
| * **Otoño** | * 18.5 | * 43.08 | * 5.696 | * 12 | * 30 | * 52 |
| * **Primavera** | * 41.5 | * 27.67 | * 4.459 | * 12 | * 21 | * 35 |
| * **Verano** | * 42.5 | * 27 | * 6.296 | * 12 | * 16 | * 37 |

* **comparison**:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | * Difference | * pvalue | * sig. | * LCL | * UCL |
| * **Invierno - Otoño** | * -1 | * 0.7249 |  | * -6.73 | * 4.73 |
| * **Invierno - Primavera** | * -24 | * 0 | * \*\*\* | * -29.73 | * -18.27 |
| * **Invierno - Verano** | * -25 | * 0 | * \*\*\* | * -30.73 | * -19.27 |
| * **Otoño - Primavera** | * -23 | * 0 | * \*\*\* | * -28.73 | * -17.27 |
| * **Otoño - Verano** | * -24 | * 0 | * \*\*\* | * -29.73 | * -18.27 |
| * **Primavera - Verano** | * -1 | * 0.7249 |  | * -6.73 | * 4.73 |

* **groups**: