GOLF BALL DESIGN HYPOTHESIS TESTING

1. Hypothesis

Distance covered by all 4 designs of Golf ball are equal

1. Data
2. Data source

https://www.kaggle.com/zaranadoshi/anova-golfball

1. Data description

The dataset records distance travelled by Golf balls manufactured through different designs. There is one categorical variable which has 4 labels for the designs along with a continuous variable which holds to distance travelled.

1. Study Data

The complete dataset has 40 observations. Each design type has 10 distance readings associated.

1. Analysis

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Parameter | Design 1 | Design 2 | Design 3 | Design 4 |
| Normality Testing | K-S Test NOT significant | K-S test NOT significant | K-S test NOT significant | K-S test NOT significant |
| Test Applicable | One-way ANOVA | | | |
| Test Statistic value | 53.030 | | | |
| p-value | <0.01 | | | |
| Significance level | 0.05 | | | |
| decision | Reject null hypothesis | | | |

Rejecting the null hypothesis tells us that one or more pair-wise mean comparisons are NOT EQUAL (or STATISTICALLY SIGNIFICANT )

All post-hoc analyses indicates that EXCEPT design 3 compared to design 4 are STATISTICALLY SIGNIFICANTLY (or NOT EQUAL)(See attached image)

1. Conclusion
2. The (either one or more pair) mean distance comparison across the 4 designs of Golf balls is NOT equal (or statistically significant)
3. Only design 3 compared to design 4 has similar/equal (or NOT statistically significantly different) mean distance.

