**Statistical Testing Summary**

This section summarizes the statistical tests conducted to determine whether observed differences in production performance between Shifts, Teams, and Lines are statistically significant.

**Methodology**

* A **One-Way ANOVA (Analysis of Variance)** test was used to compare the mean production outputs (good\_count) across three or more groups (e.g., Shift 1, Shift 2, Shift 3; multiple Teams).
* A **T-test** was not applied, as it is intended for comparisons between exactly two groups.
* A **Chi-Square Test** was not applicable, as the variables analyzed were numerical (production counts) rather than categorical.
* The use of ANOVA ensures proper statistical evaluation given the dataset structure and comparison needs.

**Results**

* **Shifts (Shift 1, Shift 2, Shift 3):**
  + P-value ≈ 0.0074
  + Conclusion: A statistically significant difference in production output exists across shifts (p < 0.05).
* **Teams (Multiple teams):**
  + P-value ≈ 0.1247
  + Conclusion: No statistically significant difference in production output was found between teams (p > 0.05).
* **Lines:**
  + Statistical testing was not performed for Lines, as the dataset did not contain a distinct Line identifier.

**Conclusion**

The statistical testing indicates that **Shift timing** significantly impacts production output, whereas **team assignment** does not have a statistically significant effect.