Assessing Normality

i) **Normal Probability Plots**: Look for the observations to fall reasonably close to the green line. Strong deviations from the line indicate non-normality.

The observations fall very close to the line. There is very little indication of non-normality. There is clear indication that the data do not follow the line. The assumption of normality is clearly violated.
ii) **Histogram:** Look for a “bell-shape”. Severe skewness and/or outliers are indications of non-normality.

Although the histogram is not perfectly symmetric and bell-shaped, there is no clear violation of normality.

There is a clear indication that the data are right-skewed with some strong outliers. The assumption of normality is clearly violated.

**Caution:** Histograms are not useful for small sample sizes as it is difficult to get a clear picture of the distribution.
iii) **Boxplots:** It is hard to detect normality using a box-plot. But, at the very least, look for symmetry. Severe skewness and/or outliers are indications of non-normality.

Although the box-plot is not perfectly symmetric, there is no clear violation of normality.

There is a clear indication that the data are right-skewed with some strong outliers. The assumption of normality is clearly violated.
Assessing Equal Variability

Boxplots: Look for roughly an equal spread of the data.

There is a clear difference in the spreads. The assumption of equal variability seems violated.

There is no severe difference in the spreads. The assumption of equal variability seems to be satisfied.