**3. Visualization**

**3.1 Appropriate Plot for the Research Question**

The following visualizations are created to investigate the correlation between ball possession and the number of goals scored during the 2018 FIFA World Cup. Our research question is about the correlation and as a result of the test, the data is not normal. Histogram and scatterplot are used for the visualization.

**3.2 Additional information relating to understanding data**

* **Scatterplot with Linear Trendline**

A scatterplot was created to illustrate the correlation between the independent and the dependent variables. The trendline and widely scattered scores indicate no correlation.

A graph of a football goal

Description automatically generated

* **Histogram with Normal Curve Overlay**

The histogram shows the frequency distribution of the dependent variable. The data is strongly skewed to the right, and the data is not normally distributed.

A graph with a red line

Description automatically generated

**3.3 Useful information for the data understanding**

The scatterplot shows no clear trend, with a minimal slope in the trendline, indicating a weak or non-existent linear relationship between the two variables. The histogram reveals that the distribution of goals scored deviates from the normal curve, justifying the use of Spearman’s test for correlation analysis due to the data's non-normality.