

The reason behind the 1.5

The value “1.5” in the outlier boundary calculation ($Q1 - 1.5 * IQR$ and $Q3 + 1.5 * IQR$) is an empirically determined constant. It's widely adopted in statistics, particularly in Tukey's method for outlier detection, because it effectively identifies data points that are significantly distant from the bulk of the data without being overly sensitive to minor fluctuations.

This factor is not derived from a complex mathematical proof for all distributions, but rather has proven to be a robust and practical guideline across a wide variety of datasets.