Why we use 1.5 multiply with IQR in outlier?

The interquartile (IQR) method of outlier detection uses 1.5 as its scale to detect outliers because it most closely follows Gaussian distribution. As a result, the method dictates that any data point that's 1.5 points below the lower bound quartile or above the upper bound quartile is an outlier.

Standard Deviation 3 is very important in this calculation. Let's calculate the IQR decision range in terms of standard deviation

Taking scale = 1:

Formula:

Q1-1*(Q3-Q1)

We get a value 2.025 .This make the decision range too exclusive so it make too much outliers. So it is not applicable

Taking scale=2:

Formula:

Q3+2*(Q3-Q1)

We get a value 3.375 .This make the decision range too inclusive so it make too fewer outliers. So this also not applicable.

Taking scale=1.5:

Formula:

Q3+1.5*(Q3-Q1)

We get a value 2.7.This make the decision range is closet to the Gaussian distribution, so we consider this for outlier detection