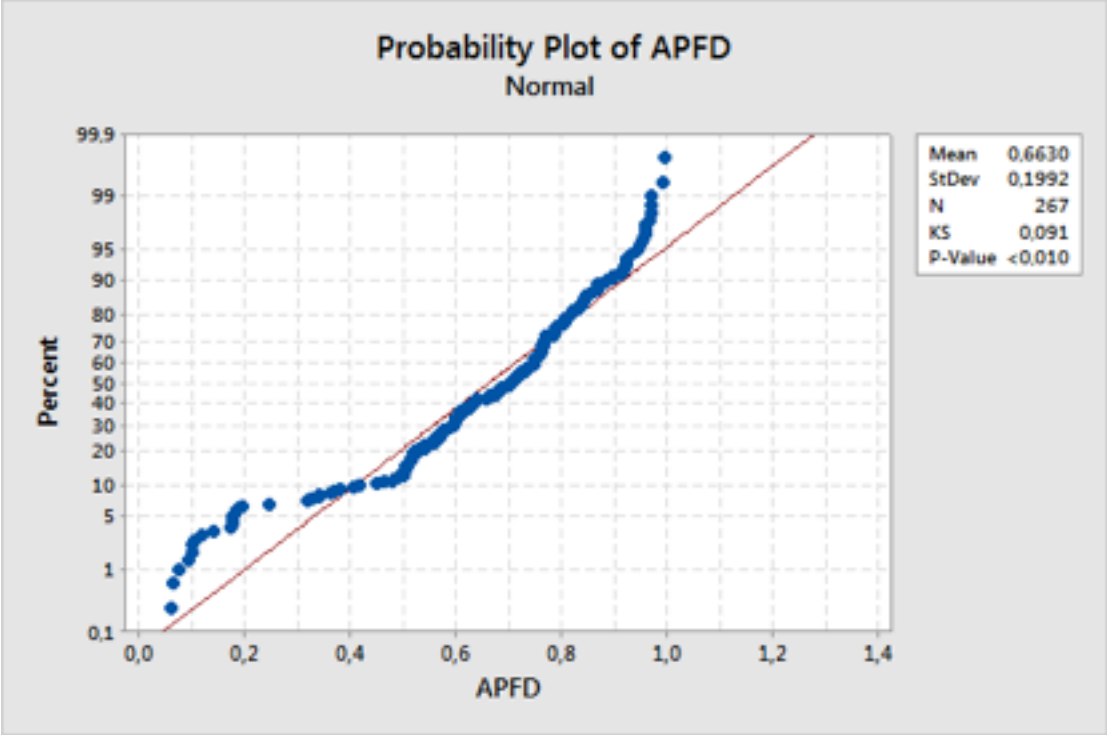
Analysis 4 – test case type effect on APFD.
1 factor (test case type) and 2 treatments (JUnit or TSL)

H0 – The means of TCP techniques execution results obtained using JUnit and TSL test suites are equal.
H1 – The means of TCP techniques execution results obtained using JUnit and TSL test suites are significantly different.

Data is available here.

Normality test:
As the sample has 267 values, Kolmogorov-Smirnov test is used.



Given that the p-value is < 0.010, which is less than the established level of significance 0.05, the sample has a non normal distribution.

As the distribution is not normal, a non-parametric hypothesis test is used. In this case, we use Kruskal-Wallis test.

Kruskal-Wallis Test: APFD versus TEST_SUITE_TYPE

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Kruskal-Wallis Test on APFD

TEST_SUITE_TYPE     N  Median  Ave Rank      Z
JUnit             142  0,6860     135,8   0,40
TSL               125  0,7140     132,0  -0,40
Overall           267             134,0

H = 0,16  DF = 1  P = 0,689
H = 0,16  DF = 1  P = 0,689  (adjusted for ties)
```

A p-value of 0,689, which is bigger than the established significance level of 0.05, indicates that we don't have enough evidence to reject the null hypothesis. Thus, we can't say that source code source has a significant effect on APFD results, based on the analyzed data.