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| --- | --- | --- | --- | --- | --- |
| **Test** | **Description** | **Normality gauge** | | | **Justification** |
| Histogram CRP | Binned data with PDF curve. | Attained | Closely attained | Not attained | Visually +vely skewed and kurtosed. |
| Histogram LogCRP | Attained | Closely attained | Not attained | Relatively less skewed and ~0 kurtosis. |
| PP Plot CRP | Plot of theoretical CDF distribution versus observed CDF distribution. | Attained | Closely attained | Not attained | Plot shape indicates less dispersed observed values. |
| PP Plot LogCRP | Attained | Closely attained | Not attained | Plot shape indicates relatively more dispersed observed values. |
| QQ Plot CRP | Plot of theoretical inverse CDF (QF) distribution versus observed inverse CDF distribution.[[1]](#footnote-1) | Attained | Closely attained | Not attained | Plot shape indicates less dispersed observed values. |
| QQ Plot LogCRP | Attained | Closely attained | Not attained | Plot shape indicates relatively more dispersed observed values. |
| Box Plot CRP | Plot showing the median, Upper/lower quartile, minimum, maximum values and outliers. | Attained | Closely attained | Not attained | Plot shape indicates less dispersed Baseline CRP with heavy positive skewness/Kurtosis including outliers. |
| Box Plot LogCRP | Attained | Closely attained | Not attained | Plot shape indicates more dispersed transformed data with relatively less skewness and kurtosis. |
| Shapiro-Wilk (S-W) Test (LogCRP) | Testing our empirical distribution to a normal distribution (Test for normality). | Attained | Closely attained | Not attained | p-value of 0.059 > 0.01 indicates normality. Appropriate for small sample sizes. |
| Skewness z-score (LogCRP) | Calculate the z-score based on skewness statistic and standard error (SE). | Attained | Closely attained | Not attained | p-value of 0.046 > 0.01 indicates no skewness hence normality. Z-scores within the 99% confidence interval. |
| Kurtosis z-score (LogCRP) | Calculate the z-score based on kurtosis statistic and standard error (SE). | Attained | Closely attained | Not attained | p-value of 0.552 > 0.01 indicates no kurtosis hence normality. Z-scores within the 99% confidence interval. |
| Normality (LogCRP) | Aggregation of all the tests above to arrive at a final determination on the normality of our transformed data. | Attained | Closely attained | Not attained | Visual representations indicate closely attained normality; coupled with the S-W tests and skewness/kurtosis z-scores, we arrive at normality attained. |

1. QF = quantile function [↑](#footnote-ref-1)