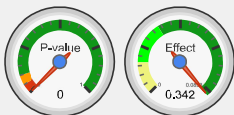


Shapiro-Wilk Test Calculator

Reporting Shapiro-Wilk test in APA Format

The Shapiro-Wilk test showed a significant departure from normality, $W(19) = .61, p < .001$

Parameter	Value
P-value	0.000005519
W	0.6092
Sample size (n)	19
Average ($\bar{x}$)	88.8795
Median	91.11
Sample Standard Deviation (S)	8.14
Sum of Squares	1192.6815
b	26.9557
Skewness	-3.1207
Skewness Shape	 Asymmetrical , left/negative (pval=0)
Excess kurtosis	10.9968
Kurtosis Shape	 Leptokurtic , long heavy tails (pval=0)
Outliers	78.9, 58.88



Shapiro-Wilk-test, using tables as distribution (right-tailed)

Since $n \leq 50$ we used the Shapiro-Wilk tables to calculate the p-value.

The normal distribution chart is only for visualization.

1. H_0 hypothesis

Since $p\text{-value} < \alpha$, we reject the H_0 .

It is assumed that the data is not normally distributed.

In other words, the difference between the data sample and the normal distribution is big enough to be statistically significant.

2. P-value

The p-value equals **0.000005519**, ($P(x \leq 4.3958) = 1$). It means that the chance of type I error (rejecting a correct H_0) is small: 0.000005519 (0.00055%). The smaller the p-value the more it supports H_1 .

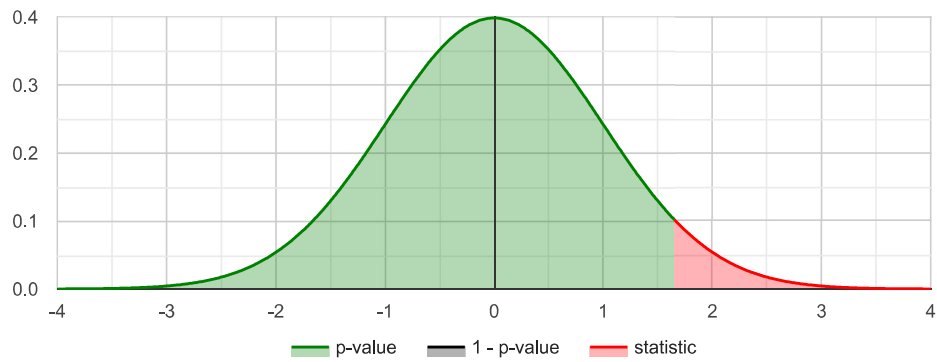
3. Test statistic

The test statistic **W** equals **0.6092**, which is not in the 95% region of acceptance: [0.9007, 1].

4. Effect size

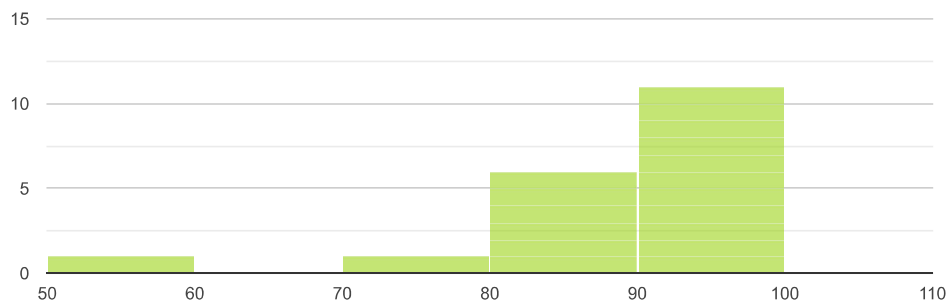
The observed effect size **KS - D** is **large, 0.342**. This indicates that the magnitude of the difference between the sample distribution and the normal distributions is large.

Distribution: Normal(mean:0, std:1)

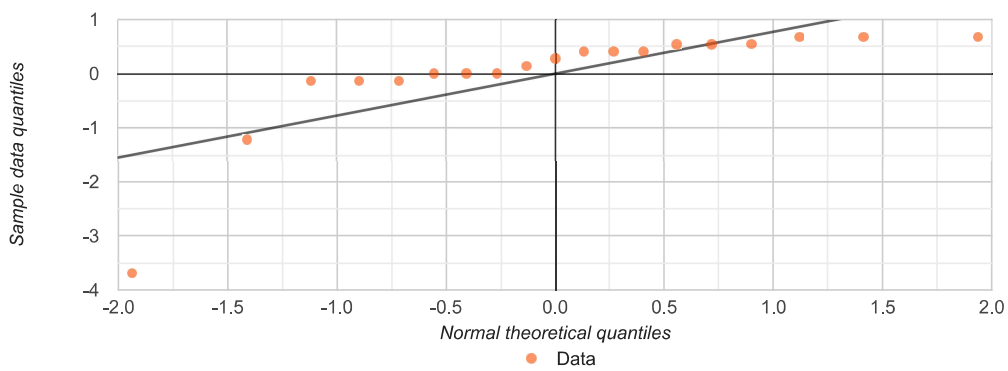


Significance level (α)

Histogram



Q-Q Plot



-5%

-7%

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