How do we test whether the set of data we have collected follows a normal distribution?

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Before any further elaboration on the types of tests that can be conducted to find out if a data set follows a normal distribution, we need to verify the method based on depending why we need to do the test. Furthermore, we need certain requirements for preliminary information that may be of value. In the first place, it is challenging to determine normality with small sample sizes. Based on observations on how skewed the data points are, it is impossible to conclude either way. The assumption is that data set is normally distributed unless concluded.

What I would think in such a scenario is that I would be most likely trying to determine whether to apply a parametric statistical test such as a T-test or one-way ANOVA test. Either way, I could also instead perform a non-parametric test. Based on my research, statistical parametric tests are more convincing as compared to non-parametric tests. There is the possibility that in terms of non-parametric tests, they might fail to record a statistically significant difference that a parametric test would find. This is because a parametric statistical test is required to make assumptions about the parameters of the population distribution from which the exact data is drawn from.

Today, I learned a method that I have some familiarity with for measuring normality of any data set which is the Chi-square good ness of fit test. Using this method, we just need to assume that, H0: data are sampled from a normal distribution. In the test, the term goodness of fit is used to compare the observed sample distribution with the expected probability distribution. This in turn determines how well hypothesized normal distribution fits the empirical distribution. In conclusion, we can test the null hypothesis that the data set comes from a population with a normal distribution.

Thank You and Have a Nice Day! :)