

# COMPARING THE DURABILITY OF TIRES

## 10. Checking the Normality Assumption

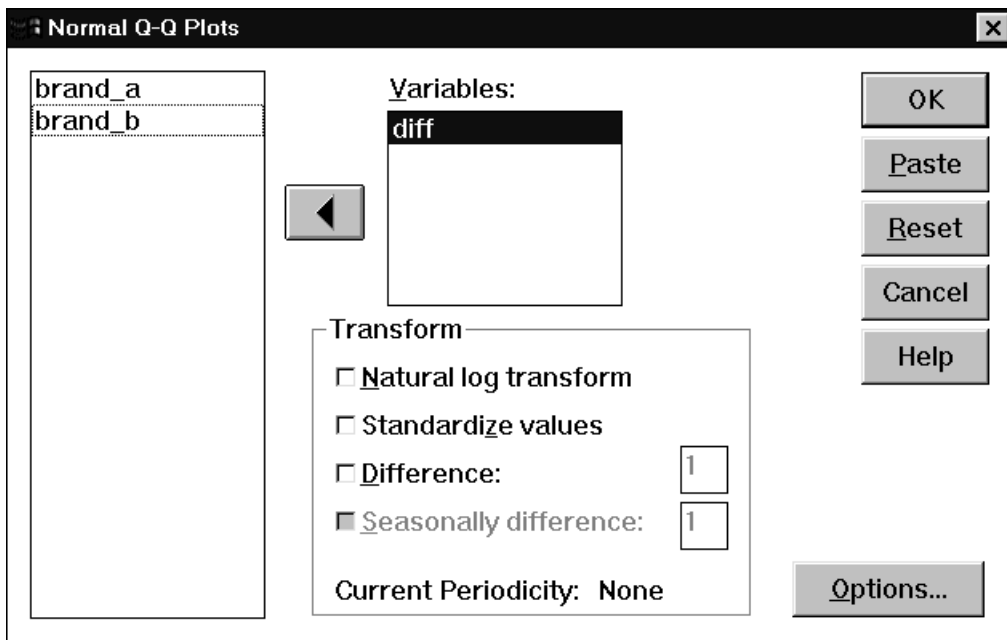
The assumptions of the t-tools (test and confidence interval) applied to the observed differences are that the observations are independent of one another, and they come from a population having a normal distribution. We will demonstrate here how to verify the normality assumption.

In order to determine whether or not a variable is normally distributed, you can use one of the two available procedures: *Normal Q-Q* plot or *Normal P-P* plot from the *Graphs* submenu.

The *Normal Q-Q* plot plots the quantiles of a variable's distribution against the quantiles of the normal distribution. If the data come from a normal distribution, the plot should resemble a straight line. The *Normal P-P* plot plots the cumulative proportions of a variable's distribution against the cumulative proportions of the normal distribution. Similarly, if the sample is from a normal distribution, points will cluster around a straight line.



The P-P Plots and Q-Q Plots dialog boxes are identical.



The normal probability plot for the differences is displayed in Section 6.