

## Analysis of Variance (ANOVA)

Analysis of Variance (ANOVA) is one of the most powerful tool in Lean Six Sigma toolbox. Unfortunately, it not explained many times and as a result, the benefits are not fully realized. Participants will learn about the basic concepts of variation and the practical application of analyzing the variation when the process data is collected in groups. Examples of the data collected in groups would be process data from two or three shifts or raw material batch performance from two or more vendors. It is common to see some difference between the group averages.

The main question is whether such differences are significant or not. The answer to question is important because that will decide the course of action if you want to reduce the variation. If the difference between the group averages are significantly different you must further investigate as to the reasons of shift or vendor differences. On the other hand, if the group averages are not significantly different, you should not waste your time in trying to find such differences.

Participants will learn about the ANOVA graphical techniques based on “signal” and “noise.” The discussion will center around a hypothetical situation of differences in process performance in different shifts. You will also be introduced to the numerical methods that were originally used by R.A. Fisher.