

Common Control Chart Myths

...Donald Wheeler

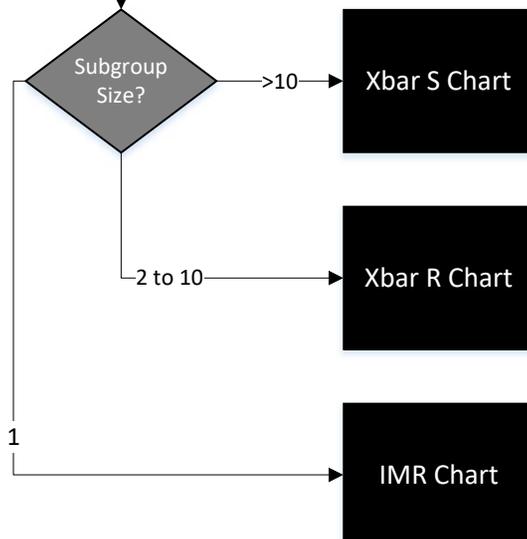
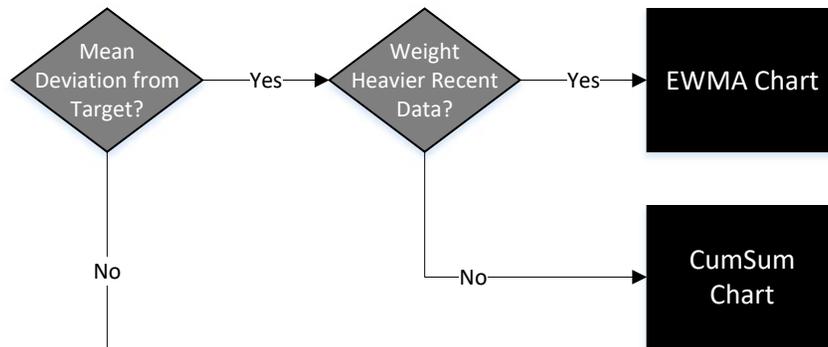
Data must be normally distributed:

"The normality of the data is neither a prerequisite for, nor a consequence of, a predictable process."

Control charts work because of the central limit theorem:

"The conservative nature of three-sigma limits makes the central limit theorem irrelevant."

"The central limit theorem does not apply to subgroup ranges, therefore, if the central limit theorem were the basis for control charts, then the range chart would not work."



Western Electric Rules

1. One point more than three standard deviations from the center line.
2. Nine points in a row on the same side of the center line.
3. Six points in a row steadily increasing or decreasing.
4. Fourteen points in a row alternating up and down.
5. Two out of three points in a row at least two standard deviations from the center line on the same side of the center line.
6. Four out of five points in a row at least one standard deviation from the center line on the same side of the center line.
7. Fifteen points in a row within one standard deviation from the center line on either side of the center line.
8. Eight points in a row beyond one standard deviation from the center line on either side of the center line.