Demo: Creating an I and MR Chart Using the Control Chart Builder

An individual and moving range, or I and MR, chart is used to monitor individual measurements over time.

In this video, we show how to create an I and MR chart using the Control Chart Builder with the White Polymer Crisis Team data.

Recall that, in this scenario, an improvement team is tasked with improving Yield, and that Yield is related to both MFI and CI. We focus on the variable MFI in this video.

Because the control limits assume that the data are approximately normally distributed, we start by checking this assumption.

We select Distribution from the Analyze menu, select MFI for Y, Columns, and click OK.

Then we select Normal Quantile Plot from the top red triangle.

If the distribution is approximately normal, the points will more-or-less follow the diagonal line.

Here we can conclude that the data are approximately normal. We go ahead and construct an I and MR chart.

We select Control Chart Builder from the Analyze menu under Quality and Process.

The Control Chart Builder has a drag-and-drop interface for creating control charts, much like the Graph Builder.

We drag the column MFI into the Y drop zone. An individual and moving range chart is created automatically.

All of the points in the individual chart fall within the control limits. One point falls outside the control limits on the Moving Range Chart, but it's close to the upper control limit.

The limits for the control charts are reported in the Limit Summaries table. The LCL for the individuals chart, or Lower Control Limit, is 177.783, and the upper control limit is 219.05. If the process doesn't change, we can expect nearly all observations to fall within this window.

Options for the two charts are available below the column selection panel, and additional options are available from the top red triangle.

Finally, click the Done button to close the control panel.

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