PUMP

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# Links to Get Started With XmR Charts

XmR charts are the preferred way to display our PuMP-generated performance measures. If you want to get started with XmR charts, here are some resources to help.

## What is an XmR chart?

Most performance reports encourage us to react to trends that aren't there at all, and to miss important signals about future problems. Misinterpreting our KPIs and performance signals is huge business risk no-one can afford. XmR charts are an excellent solution to this problem. XmR charts are a type of 'statistical process control' chart, or 'process behaviour' chart, which include three very powerful features that dramatically improve our interpretation of and response to our performance measures and KPIs: a central line that shows us the current performance baseline, and an upper and a lower natural process limit which together show us the normal variation of our measure values.

- https://www.staceybarr.com/measure-up/three-things-you-need-on-every-kpi-graph/

## Why are XmR charts so useful?

The most useful way to see true signals of change in your KPI is to use an XmR chart. Every performance measure varies, or goes up and down with random, but very natural, variation. This variation is caused by all the complex interplay of factors that affect performance. So we cannot know if one month is better or worse than last month, because the difference might just natural variation and not a true change in performance.

- https://www.staceybarr.com/measure-up/why-statistical-thinking-is-essential-to-great-kpis/

## How is an XmR chart interpreted?

There are some basic statistical rules that help us interpret signals in our measures, that are not confused with normal variation in the measures:

- https://www.staceybarr.com/measure-up/3-essential-signals-to-look-for-in-your-kpis/

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## How is an XmR chart built?

XmR charts are statistical tools, and a bit more sophisticated than line charts or bar graphs. But they are very easy and quick to construct, if you follow some basic steps.

- https://www.staceybarr.com/measure-up/build-xmr-chart-kpi/

## Do XmR charts work for all types of performance measures?

The short answer is yes. As long as your measure values are not auto-correlated (like a moving average is, where a measure value in one time period is based on data from previous time periods). You can use them for measure values that are computed by counts, sums, percentages, averages or ratios.

The two most common situations where XmR charts are not immediately suited to a measure are when the measure values are seasonal or cyclical, or have an underlying trend. But you can adjust your measure values so that an XmR chart can show you real signals of change, without being influenced by the cyclical pattern or underlying trend:

- For measures with a seasonal or cyclical pattern: https://www.staceybarr.com/measure-up/how-to-find-signals-in-your-seasonal-kpis/
- For measures with an underlying trend: https://www.staceybarr.com/measure-up/interpreting-signals-in-trending-kpis/

## Find more examples, case studies and information about XmR charts

Donald Wheeler is the guru for XmR charts, and you might want to start with Stacey's interview with him, here:

- https://www.staceybarr.com/measure-up/interview-donald-wheeler-on-interpreting-signals-from-our-kpis/

To see all that Stacey has written about XmR charts, go here:

- https://www.staceybarr.com/?s=xmr