

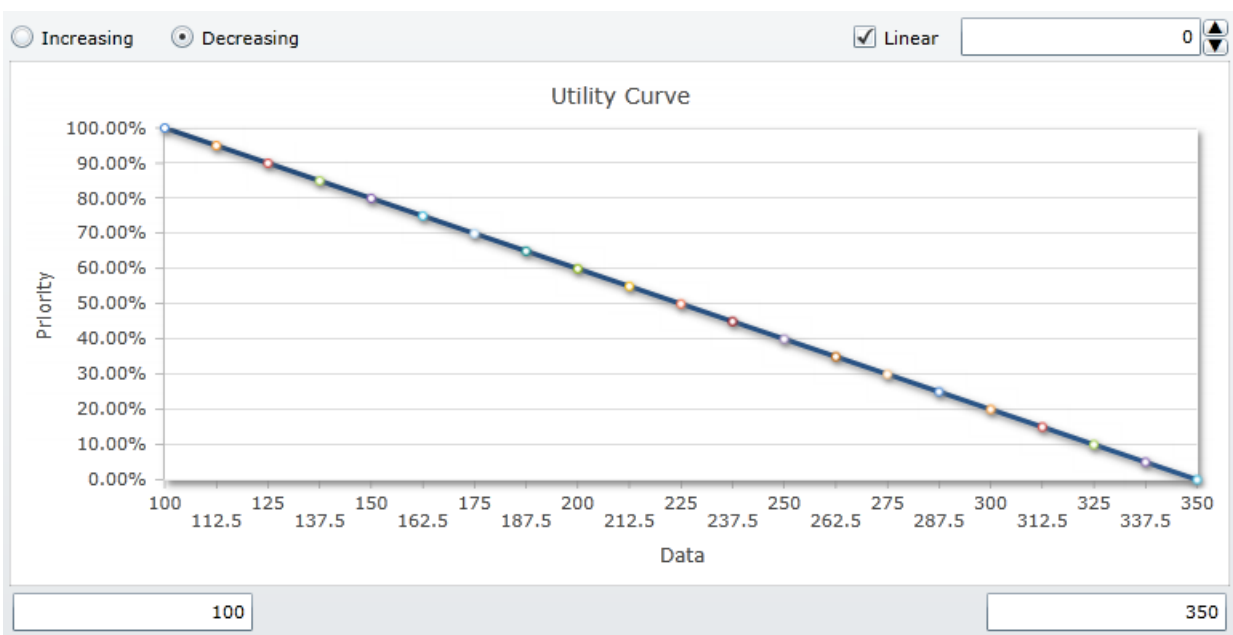
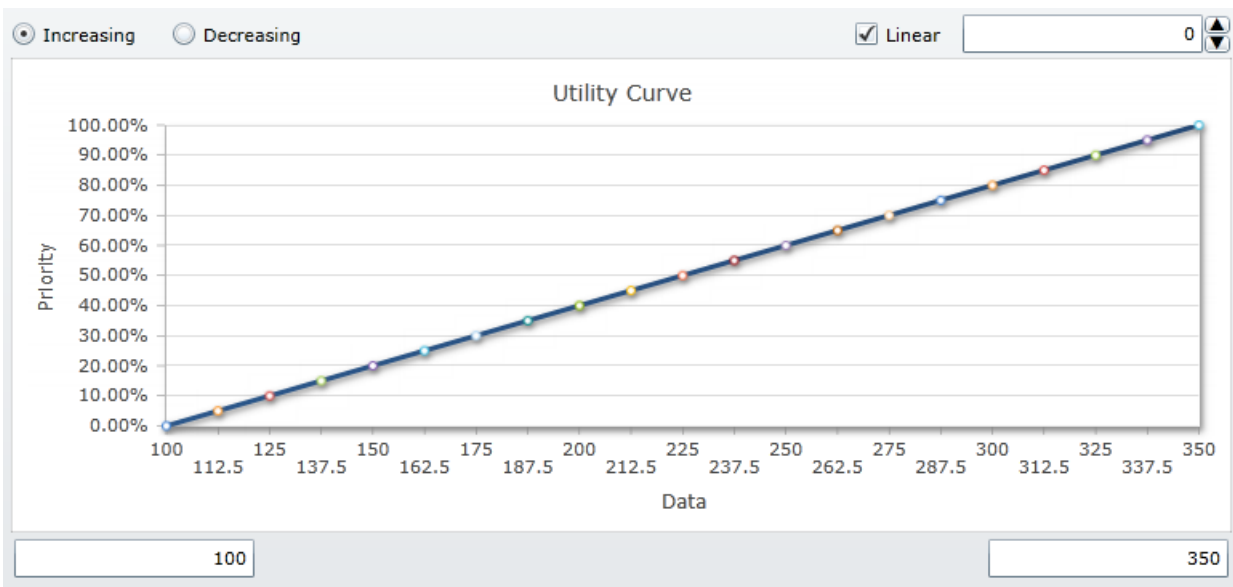
Quantitative data

Quantitative data is highly valued. But there are several potential problems using raw quantitative data:

- It may not **represent** what you think it does; for example, data about the past does not necessarily reflect what will happen in the future.
- To be useful, quantitative data often requires interpretation by subject matter experts.
- If the quantitative data is not ratio scale data (e.g., a percentage from 0 to 100) it has to be converted to ratio scale data before it can be used in a meaningful way with other data.

There are some techniques available for overcoming these problems.

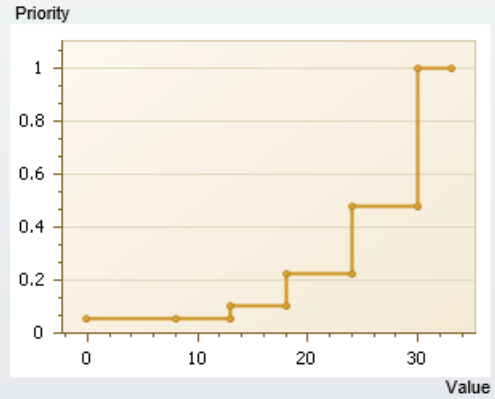
A **Utility Curve** converts quantitative data into quantitative ratio scale data. The Utility Curve can be increasing or decreasing, concave or convex.



A **Step Function** also converts quantitative data into quantitative ratio scale data, but in discrete steps. The priorities for each step are derived using pairwise comparison. Step functions can be increasing or decreasing, piecewise linear or not piecewise linear.

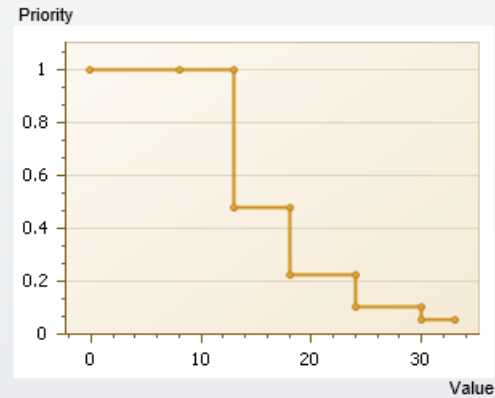
Piecewise Linear

Name	Lower bound data	Priority
Excellent (30 and up)	30	1.000
Very good (24-29)	24	0.478
Good (18-23)	18	0.222
Fair (13-17)	13	0.103
Poor (8-12)	8	0.052



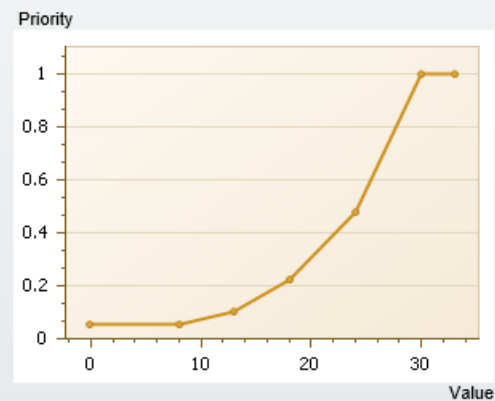
Piecewise Linear

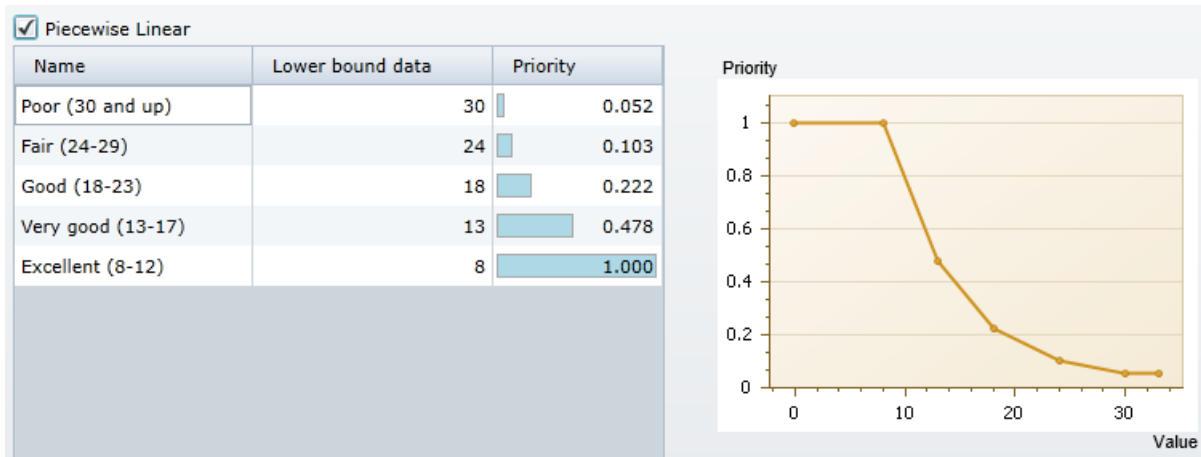
Name	Lower bound data	Priority
Poor (30 and up)	30	0.052
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Good (18-23)	18	0.222
Very good (13-17)	13	0.478
Excellent (8-12)	8	1.000



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Next: [Collaboration](#)