

WEB APPENDIX

Sarstedt, M. & Mooi, E. (2019). *A concise guide to market research. The process, data, and methods using SPSS* (3rd ed.). Heidelberg: Springer.

Further reading on MaxDiff scales

In Chapter 4, we briefly mentioned the MaxDiff scale. MaxDiff is an abbreviation of *maximum difference scaling*. Maximum difference scaling provides a set of attributes and requires the respondent to indicate which attribute is the most and the least important. The idea is for the respondents to evaluate all possible pairs of items within the displayed set of items and to choose the two items that are most and least important from these, thereby indicating the maximum difference in preference or importance. Figure A4.1 shows an example of such a scaling and a response.

What is the least and most important attribute of Oddjob Airway's economy seat?		
Least important		Most important
<input type="checkbox"/>	Seat width	x
<input type="checkbox"/>	Seat pitch	<input type="checkbox"/>
<input type="checkbox"/>	Recline	<input type="checkbox"/>
<input type="checkbox"/>	Cleanliness	<input type="checkbox"/>
x	Charging point	<input type="checkbox"/>

Figure A4.1 Set 1: Example of the MaxDiff scale

From this example, we now know that (for one respondent) the charging point is less important than the seat width. We also know that the importance of the three other attributes is in-between. Note that this difference is discrete and does not indicate how large the difference is, only what is most and what is least important. Similarly, we know nothing about the other attributes' importance. We could subsequently modify the scale by replacing two attributes, which we show in figure A4.2.

What is the least and most important attribute of Oddjob Airway's economy seat?		
Least important		Most important
<input type="checkbox"/>	Seat width	x
<input type="checkbox"/>	Seat pitch	<input type="checkbox"/>
<input type="checkbox"/>	Recline	<input type="checkbox"/>
x	Size of arm rest	<input type="checkbox"/>
<input type="checkbox"/>	Size of tray table	<input type="checkbox"/>

Figure A4.2 Set 2: Example of the MaxDiff scale

From this we now know that the seat width is still the most important, while the size of the arm rest is less important. However, we also know that the other attributes are in-between. When we combine the two sets, the seat width appears to dominate the options shown in this set. We also know that the charging point and the size of the arm rest are less important. We could therefore (adaptively) give the respondent a choice between the two attributes and ask

them to make a choice. This would reveal the rank-order of importance.

MaxDiff scaling is a version of what is called *best-worst* scaling. On <https://eprints.qut.edu.au/63057/2/63057.pdf> you will find an excellent introduction to best-worst scaling.

While the MaxDiff scale reliably identifies preference orders, its disadvantage is that the resulting data cannot be analyzed easily by means of standard software. This analysis requires creating utility curves to determine how many times respondents preferred (or did not prefer) an item. Specialized software programs, such as MaxDiff/Web System (<http://www.sawtoothsoftware.com/products/maxdiff/>), provide a thorough analysis of the information obtained through MaxDiff. However, for a basic analysis, SPSS can produce simple counts fairly easily.

Differences between MaxDiff and other scales

Relation to the semantic differential: MaxDiff scaling appears similar to the semantic differential scale where respondents indicate the degree to which an adjective applies. The difference, however, is that the MaxDiff scale reveals the items' relative importance. When a respondent answers a set of semantic differential scales, the researcher still does not know what the key items are. Importantly, if we survey a respondent and use semantic differential scales, the respondent could tick all the items as important and we would still not know how the items differ in importance.

Relation to ranking scales: At first glance, it would appear that a rank order scale, where respondents assign a number to indicate each attribute's importance, does the same as the MaxDiff scale. However, respondents find it hard to distinguish between many attributes, since their attention is inclined to focus on the extremes (i.e., the most and least preferred attributes) and they struggle to reveal anything about the other attributes. In addition, if there are many attributes, the task becomes even more complex.

See <http://www.sawtoothsoftware.com/download/techpap/maxdiff.pdf> for further information on MaxDiff scaling.