Evidence-Based Survey Design: The Use of Ascending or Descending Order of Likert Response Options

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Abstract
This article is one in the teams’ series of articles, addressing the issue of using ascending or descending order of Likert response options. The ascending order of Likert response options is: Strongly disagree, Disagree, Neutral, Agree, and Strongly agree, whereas the descending order is: Strongly agree, Agree, Neutral, Disagree, and Strongly disagree. The purpose of this article is twofold: 1) describe several issues to be aware of when using ascending or descending order of Likert response options and 2) present research-based evidence and recommendations regarding the use of ascending or descending order of Likert response options in structured survey instruments.
Evidence-Based Survey Design:
Use of Ascending or Descending Order of Likert-Type Options
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Organizational Performance and Workplace Learning

Purpose: To Understand Response Order Effect

Developed in the 1930s by Rensis Likert, an American Psychologist, the Likert Scale has been widely used to measure attitude-related propositions.

Certain survey designs, however, can cause response biases, which reduce validity and reliability of survey data. Survey developers should be aware of their survey designs and assess if they could be producing biased results. For example,

Is there a difference between having the Likert scale go in descending order (strongly agree—strongly disagree) versus ascending order (strongly disagree—strongly agree)?

Our research looked at the effects of the Likert scale presented in descending or ascending order with a horizontal layout.

Ascending Order:
- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

Descending Order:
- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

Procedure: A Review of Theories and Research

Our research included an analysis of 24 peer-reviewed research articles that focused on survey design, especially the impact of the order of response options on respondent behavior.

Research shows that survey developers should be aware of the following response biases:

1. Primacy and Recency Effects
   - Primacy Effects: The tendency to select the options at the beginning of the response option list.
   - Recency Effects: The tendency to select the options at the end of the response option list.

2. Satisficing Bias
   The tendency to select options that are satisfactory to minimize psychological costs, even though they may not be the most accurate.

3. Acquiescence Bias
   The tendency to agree with the statement even though it may not be the most accurate response (aka yea-saying bias).

4. Unclear
   - Option 1 with the positive label and descending numeric scale received the highest ratings.

Maeda (2015): There was a significant difference between the descending and ascending groups. Respondents given the descending-ordered scale selected their responses on the left side of the scale (Clear 10 … 0 Unclear). This resulted in that option having higher ratings.

Friedman et al. (1994): Respondents’ ratings from the descending-ordered scale were higher than the ratings from the ascending-ordered scale.

B: Ascending response order

Hartley and Betts (2010): Adult respondents were biased toward the positively-worded label associated with higher numbers presented on the left side of the scale (Clear 10 … 0 Unclear). This resulted in that option having higher ratings.

Results: Left-Side Bias Causes Higher Ratings

<table>
<thead>
<tr>
<th>Option</th>
<th>Clear</th>
<th>Unclear</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friedman</td>
<td>10 9 8 7 6 5 4 3 2 1 0</td>
<td>Unclear</td>
</tr>
<tr>
<td>Hartley</td>
<td>10 9 8 7 6 5 4 3 2 1 0</td>
<td>Clear</td>
</tr>
</tbody>
</table>

Maeda (2015): There was a significant difference between the descending and ascending groups. Respondents given the descending-ordered scale selected responses on the left by .13 increments – or 3.3% of the scale.

A: Descending response order

B: Ascending response order

Implications: To Create Stronger Surveys

Researchers recommended:

1. Use ascending-ordered response scales when possible
2. Utilize vertically presented response labels when possible
3. Ask respondents to verbalize their responses
4. Administer two types of the survey: One with all ascending-ordered scales and the other with all descending-ordered scales, and use mean scores
5. Use clear, unambiguous statements and short surveys to maintain respondent attention and motivation
6. Be aware that even seemingly trivial survey design features can have an effect on responses