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LORE Methodological Note 2015:9

Primacy effects in rating scales with horizontal layout – first case

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ABSTRACT

This methodological note examines if the order response options are presented in affects the response distributions in a rating scale with horizontal layout. Earlier research on primacy effects suggests that respondents tend to choose the first acceptable response choice in visually presented scales due to satisficing response strategies. In a web survey experimental setup, the standard and reversed direction of a scale with horizontal layout is compared for five different survey questions. The results show no statistically significant differences and no specific pattern in the response distributions between the experiment groups. The findings in this study cannot confirm any primacy effects in rating scales with horizontal layout.

Introduction

Primacy effects in response behavior refer to the tendency of respondents favoring response options placed earlier in a scale. In scales with a horizontal direction the response options further to the left will become chosen more often than if they would have been if placed further to the right (at least for people reading from left to right). According to the same principle, scales with vertical direction would result in distributions where respondents choose response options placed earlier (higher up) more often than if the same options would be placed later (further down) in the scale. Krosnick (1999:549) explains primacy behavior in visually presented surveys as an effect of satisficing response strategies, due to limited cognitive abilities, fatigue or lack of interest or motivation. Following up on the satisficing perspective, Weng and Cheng (2000) tested effects of response order on Likert-type scales in horizontally directed scales but found no such effects in their study. This methodological note aims to conduct a similar test in the Swedish context and examine if changing the order response options are presented in for a horizontal rating scale affects response distributions.

Method and data

The experimental set-up tests a five-point, horizontally directed scale presented in two different orders, standard and reversed. The experiment was embedded in an omnibus style survey sent out to 3,400 members of the Citizen Panel on June 18th, 2012. The sample was selected from the opt-in part of the Citizen Panel. The field work period lasted for 56 days, and the overall survey achieved a gross participation rate of 57% (corresponding to AAPOR's RR6), and 61% gross participation rate for the subsample that received the experiment.

In the experiment, a subsample of 958 members in the Citizen Panel were randomly assigned into one of two treatment groups. The participants were asked their opinion on five policy proposals common in the Swedish political debate. The policy proposals regarded reducing the public sector (item 1), investment in an environmental-friendly society (item 2), lowering the taxes (item 3), accepting fewer refugees in Sweden (item 4), and increasing the unemployment benefits (item 5). For half of the sample, the response scale started with the label very good proposal to the left and ended with very bad proposal to the right, and the other half was presented with the same scale but in reversed order, i.e. the scale started with very bad proposal and ended with very good proposal.

Results

The response distributions for the five items with the response scale in standard and reversed order are presented in Table 1. Chi-Square tests for each five items showed that the two response distributions did not differ significantly from each other for any of the five items. The differences were generally small, only around a few percentage points, and out of 25 possible effects ten were positive, eleven were negative and four did not differ at all.

Table 1. Comparison of response scale order: good-bad proposal (standard) versus bad-good proposal (reversed) (percent)

Policy proposal	Very good proposal	Rather good proposal	Neither good nor bad proposal	Rather bad proposal	Very bad proposal	Total	n	Chi^2
Item 1								
standard	10	16	15	25	34	100	280	.27
reversed	7	12	17	22	42	100	298	
Item 2								
standard	21	33	15	19	12	100	281	.93
reversed	22	35	14	19	10	100	297	
Item 3								
standard	11	20	19	27	23	100	278	.64
reversed	8	18	19	29	26	100	295	
Item 4								
standard	16	13	18	25	28	100	279	.79
reversed	14	11	19	28	28	100	297	
Item 5								
standard	17	32	26	20	5	100	281	.71
reversed	17	33	27	16	7	100	298	

Comment: **The question read "The following proposals are common in the public debate, which is your opinion on each one of them?". Item 1 read "reduce the public sector", item 2 "invest in an environmental-friendly society, even if it means low or no economic growth", item 3 "lower the taxes", item 4 "accept fewer refugees in Sweden", and item 5 "increase the unemployment benefits". The standard scale is very good proposal; rather good proposal; neither good nor bad proposal; rather bad proposal; and very bad proposal. The reversed scale is very bad proposal to very good proposal with the same response options in the reversed order.**

Primacy effects suggest that respondents tend to favor response options further to the left in horizontal scales. To clarify the results from Table 1, the percentage point difference between the two endpoints of the standard and reversed scales are presented in Table 2. The chi-square test presented earlier showed no significant differences for the distributions as a whole. In addition, Table 2 demonstrates that out of ten comparisons between endpoints, none were statistically significant at the 95% confidence level.

Table 2. The effect of response order in scale endpoints (percentage point difference)

Policy proposal	Very good proposal (standard) minus Very good proposal (reversed)	p-value	Very bad proposal (standard) minus Very bad proposal (reversed)	p-value
Item 1	3	.26	8	.06
Item 2	-1	.79	-2	.44
Item 3	3	.22	3	.39
Item 4	2	.37	0	.93
Item 5	0	.92	2	.28

Comment: The numbers represent the difference in percentage points between the share of respondents choosing a certain response option when the response scale is presented in standard order or in reversed order. The numbers for very good proposal and very bad proposal are found in Table 1. Significance tests are made using Stata's prtest command.

Looking at the directions of the effects, the results were somewhat mixed, slightly suggesting a tendency of primacy, as six of the effects were positive, while only two were negative effects and two did not differ at all. However, the number of responses in each cell was small, between as low as 20 responses and at most 125 responses. In sum, the results did not provide any convincing evidence of primacy effects.

Concluding remarks

This study examined if presented order of response scale options in a rating scale affects response distributions, as an effect of primacy. The results showed no statistically significant differences in response distributions, and the observed differences ran in both directions. However, further examinations are encouraged. A larger sample could further disentangle potential primacy effects among respondents with less interest in the questions at hand, and with lower cognitive ability, as such characteristics are claimed to correlate with primacy behavior in visually presented questionnaires (Krosnick, 1999). Furthermore, examinations of potential primacy effects in vertically versus horizontally directed scales are encouraged as well.

References

Krosnick, J. A. (1999) *Survey research*. Annual Review of Psychology, 50, 537-567.

Weng, L-J., Cheng, C-P. (2000) *Effects of Response Order on Likert-Type Scales*. Educational and Psychological Measurement, 60:6, 908-924.

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