Improving the reliability of self-reported attribute non-attendance behaviour through the use of polytomous attendance scales

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Introduction

Choice experiments are used to discover preferences for goods and services which can be described as bundles of attributes by asking individuals to choose between bundles. We assume they pay attention to all the attributes, but they may not, potentially biasing and invalidating results.

<table>
<thead>
<tr>
<th>Example choice set with ignored attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Program A</strong></td>
</tr>
<tr>
<td>Program location</td>
</tr>
<tr>
<td>Weekly weight control goal</td>
</tr>
<tr>
<td>Weekly reward available</td>
</tr>
<tr>
<td>Payment frequency</td>
</tr>
<tr>
<td>Payment form</td>
</tr>
<tr>
<td>Total reward available in program</td>
</tr>
</tbody>
</table>

Despite its prevalence and importance, attribute non-attendance behaviour is difficult to identify. Self reports have been criticized for disagreeing with theoretical expectations and inferred attendance behaviour.

5 How frequently do you consider each of the following program characteristics when choosing weight control programs in the previous four questions? Please rate how frequently you consider each aspect of the scenario by checking one box for each aspect on the following 5-point scale. Five represents "Always" and One represents "Never."

<table>
<thead>
<tr>
<th>a) Program location</th>
<th>b) Weekly weight control goal</th>
<th>c) Weekly reward available</th>
<th>d) Payment frequency</th>
<th>e) Payment form</th>
<th>f) Total reward available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>Always</td>
<td>Always</td>
<td>Always</td>
<td>Always</td>
<td>Always</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

Data

We conducted a choice experiment in late 2011 and early 2012 on financial incentives for a behavioural weight loss program. We recruited obese and overweight individuals among the patients of Carilion Clinic, a healthcare organization in southwest Virginia (671 respondents, 49% response rate).

Methods

Models constrained by stated attendance
Here, “ignored” attributes are assumed to have zero effect on choice. For each model, a different set of attendance levels that are assigned to “ignored”.

Models unconstrained by stated attendance
Here, interactions allow attribute preferences to vary by attendance level. For each model, attendance levels are mapped differently to the points of the original six-point attendance scale.

Inferred attendance
We infer attendance from preference distributions conditioned on an individual’s responses. Non-attendance is inferred when the coefficient of variation of the respondent-specific conditional distribution is greater than two.

Inferred attendance were consistent with stated attendance, then the rates of inferred non-attendance should decrease with higher stated attendance. However, we do not see this trend for any of the attribute preferences.

Conclusions

- The six-point attendance scale is no more informative than the simplified two- and three-level scales, suggesting that a dichotomous or trichotomous scale may be sufficient.
- The simplified scales do not provide consistency with any theoretical expectations or inferred attendance behaviour, suggesting that polytomous attendance scales did not improve the reliability of self-reported attendance behaviour.

Acknowledgements

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