Eliminate Item Non-Response:
The Effect of Forced Responses in Web Surveys

Laura Leach
Graduate Management Admission Council®
Agenda

• Introduction
• 3 Hypotheses
• Related studies
• Survey results
• Summary and Future consideration
• Q&A
Graduate Management Admission Council®

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• Providing timely and trended research and market intelligence
GMAC Survey Series

**mba.com Prospective Students Survey**
- 15,410 global candidates

**Application Trends Survey**
- 744 programs at 359 schools

**Alumni Perspectives Survey**
- 4,135 alumni responded across graduating classes of 2000-2011

**Corporate Recruiters Survey**
- 1,096 employers includes 70 of the Fortune 100

**Global Management Education Graduates Survey**
- 136 schools, 5,366 grads responded
Hypotheses about forced responses

<table>
<thead>
<tr>
<th>Higher Drop Off Rate</th>
<th>Increased Item Non-Response</th>
<th>Bias or Quality Questions</th>
</tr>
</thead>
</table>

[Image showing a warning sign, two children in a confrontational pose, and a garbage bin filled with papers]
Motivation/Statement of Problem

1. Does forcing a respondent to answer a question before moving on to the next question in a web survey produce a lower response rate?
Motivation/Statement of Problem

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Hypothesis:

Higher drop-off rate among respondents who are forced to answer questions in web survey
Motivation/Statement of Problem

2. Does item non-response increase if respondents are not forced to answer a question in a web survey?
Motivation/Statement of Problem

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Hypothesis

Item non-response increases among respondents who are not forced to answer a question in a web survey.
Motivation/Statement of Problem

3. Does requiring respondents to answer questions in a web survey induce response bias?
Motivation/Statement of Problem

3. Does requiring respondents to answer questions in a web survey induce response bias?

Hypothesis

Forcing respondents to answer questions will bias the results of the survey
Related Work

Related Work


Related Work


Study Method

Random split sample was used among 4,135 respondents

2,059 randomly selected in the “Forced answer” condition

OR

2,076 in the non-forced condition; they received a reminder message if they left a question blank.

You must respond to continue.
Survey Messages

Forced-response

Request-response
Results: Hypothesis 1

Higher drop-off rate among respondents who are forced to answer questions

Overall – No significant differences in drop off

- Forced-response: 93% partial complete, 7% complete
- Request-response: 94% partial complete, 6% complete
Results: Hypothesis 1 (cont.)

Higher drop-off rate among respondents who are forced to answer questions

- No significant differences by age, gender, citizenship, and graduation year by survey drop-out by forcing responses
Results: Hypothesis 1 (cont.)
Higher drop-off rate among respondents who are forced to answer questions

- No significant differences by age, gender, citizenship, and graduation year by survey drop-out by forcing responses

- However, individual differences in drop-out rates were found within demographic groups
Results: Hypothesis 1 (cont.)

Higher drop-off rate among respondents who are forced to answer questions

Graduation Year

- 2011: 11%
- 2010: 8%
- 2009: 4%
- 2008: 5%
- 2000-2007: 5%
Results: Hypothesis 1 (cont.)

Higher drop-off rate among respondents who are forced to answer questions

Graduation Year

- 2011: 11%
- 2010: 8%
- 2009: 4%
- 2008: 5%
- 2000-2007: 5%

Gender

- Male: 8%
- Female: 6%

Age

- 27 and younger: 11%
- 28-34: 7%
- 35 and older: 4%
Results: Hypothesis 2
Item non-response increases among respondents who are not forced to answer a question in a web survey.

Overall – no differences in item nonresponse.
Results: Hypothesis 2

Item non-response increases among respondents who are not forced to answer a question in a web survey.

Overall – no differences in item nonresponse

- **Forced-response**
  - 4.9 missed items

- **Request-response**
  - 5.0 missed items
Results: Hypothesis 2

Item non-response increases among respondents who are not forced to answer a question in a web survey.

Overall – no differences in item nonresponse

- **Forced-response**
  - 4.9 missed items

- **Request-response**
  - 5.0 missed items

There were no significant differences in age, gender, graduation year, or citizenship by the forced-response treatment.
Results: Hypothesis 2 (cont.)

Item non-response increases among respondents who are not forced to answer a question in a web survey.

Similar to hypothesis 1, individual differences were found within demographic groups for item non-response.

<table>
<thead>
<tr>
<th>Citizenship</th>
<th>Central Asia</th>
<th>Europe</th>
<th>Asia/PI</th>
<th>Canada</th>
<th>United States</th>
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<td>Mean Missed Questions</td>
<td>5.4</td>
<td>5.2</td>
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<th>Gender</th>
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<td>Male</td>
<td>4.8</td>
</tr>
<tr>
<td>Female</td>
<td>5.3</td>
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Results: Hypothesis 2 (cont.)

Item non-response increases among respondents who are not forced to answer a question in a web survey.

Similar to hypothesis 1, individual differences were found within demographic groups for item non-response.
Results: Hypothesis 3
Forcing respondents to answer questions will bias the results of the survey

- Question responses were analyzed at beginning, middle and end points of the survey to assess the quality of the response (i.e., bias and fatigue)
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Forcing respondents to answer questions will bias the results of the survey

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• Consistent with hypothesis 1 and 2, no effect was found by forcing the respondent to answer the question.
Results: Hypothesis 3
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• Consistent with hypothesis 1 and 2, no effect was found by forcing the respondent to answer the question.

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<th>Overall Value – Forced-Response</th>
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<td>Outstanding</td>
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<td>31%</td>
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<table>
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<tr>
<th>Overall Value – Request-Response</th>
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<tbody>
<tr>
<td>Outstanding</td>
</tr>
<tr>
<td>29%</td>
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Results: Hypothesis 3 (cont.)
Forcing respondents to answer questions will bias the results of the survey.

• Near the end of the survey, respondents are asked about their financial return on their educational investment.
Results: Hypothesis 3 (cont.)
Forcing respondents to answer questions will bias the results of the survey

• Near the end of the survey, respondents are asked about their financial return on their educational investment.

• There were **no significant differences** in this personal and financial question at the end of a 20 minute web survey.

<table>
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<tr>
<th>Forced-response</th>
<th>81.3% ROI</th>
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<tbody>
<tr>
<td>Request-response</td>
<td>84.1% ROI</td>
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Results: Hypothesis 3 (cont.)

Forcing respondents to answer questions will bias the results of the survey.

- An opinion-based follow-up question was asked about ROI expectations. There were no differences by the forced-choice treatment.
Summary and Future Considerations

• Forcing motivated respondents to answer questions prior to progressing in the survey has no significant effect on
  ▪ Survey drop out,
  ▪ Item non-response, or
  ▪ Quality of responses (regardless of position in survey)

• Demographic differences exist despite forced-response treatment

• Future work will examine demographic and cross-cultural differences in non-response
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