2022

Do Question Topic and Placement Shape Breakoff Rates

Luke Plutowski
Vanderbilt University

Elizabeth Zechmeister
Vanderbilt University

Do Question Topic and Placement Shape Survey Breakoff Rates?

Luke Plutowski & Liz Zechmeister (LAPOP Lab at Vanderbilt University)

Presentation for C-Dem Workshop @ MapleMeth Conference

Friday, May 27, 2022

LAPOP

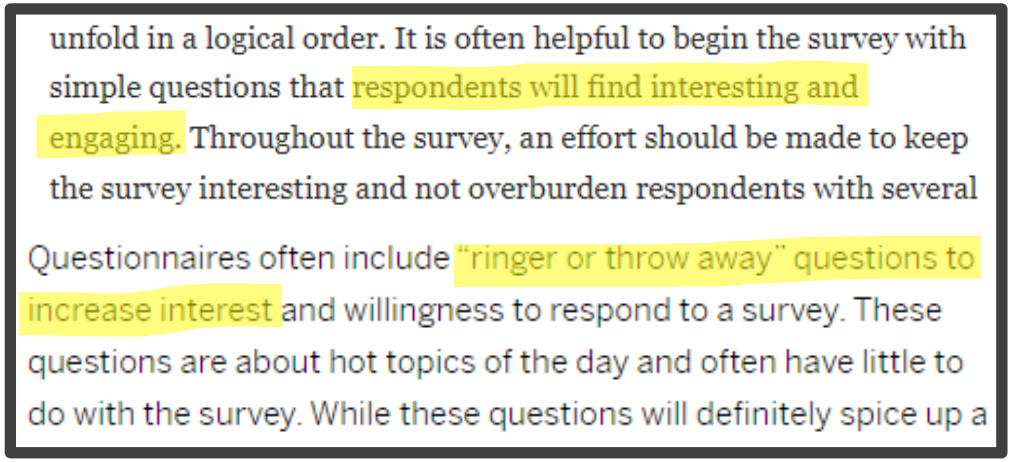
Summary

- ***Hypothesis***. Beginning a survey with questions about highly salient issue reduces breakoffs
- ***Data.*** Original experiment in Haiti (April-June 2020) randomizes placement of module about COVID-19
- ***Results***. Those who received COVID questions at top of survey were marginally less likely to breakoff (especially among those more concerned about COVID)

Background & Theory

Motivation

- At the beginning of lockdown, respondents seem more interested in surveys about COVID-19
- Common advice for surveys: begin with most interesting questions



unfold in a logical order. It is often helpful to begin the survey with simple questions that respondents will find interesting and engaging. Throughout the survey, an effort should be made to keep the survey interesting and not overburden respondents with several

Questionnaires often include "ringer or throw away" questions to increase interest and willingness to respond to a survey. These questions are about hot topics of the day and often have little to do with the survey. While these questions will definitely spice up a

Recommendations from Pew Research (top) and Qualtrics (bottom) regarding interesting questions

Literature

- Breakoffs can inhibit data quality and data collection efficiency (Keeter et al. 2016; Peytchev 2009; Roßmann, Blumenstiel, and Steinbrecher 2015)
- Questionnaire features can influence cooperation rates (Galesic 2006; McGonagle 2013; Roßmann, Blumenstiel, and Steinbrecher 2015)
- Response rates are influenced by stated survey topic (Groves, Presser, and Dipko 2004; Groves, Singer, and Corning 2000; Holland and Christian 2009; Keusch 2013; Krosnick and Presser 2010; Martin 1994; Van Kenhove, Wijnen and De Wulf 2002)

Do question topic and order influence breakoff rates?

Theory

- "**Topic-induced motivation**" – more important or relevant question content ought to increase engagement and, therefore, decrease breakoff
- Three non-rival explanations:
  - Temporary bump in respondent's "bank" of interest
  - Convinces respondent that research is worthwhile or contributing to an important cause
  - Establishes rapport by acknowledging a sensitive or timely issue

Research Design

Research Design (I)

- ***Goal***. Leverage the onset of the pandemic to assess whether the questions about the pandemic creates topic-induced motivation to engage in a survey
- ***Questionnaire Design.*** Questions about pandemic within a broader survey about other topics
- ***Experiment***. Random assignment into 2 conditions: receive COVID module at beginning or end of survey
- ***COVID module***. 10 questions
    - About 35 questions in between treatments

Research Design (II)

- ***Outcomes***.
  - Break off rate: breakoffs as a percentage of breakoffs + completes
  - Time-to-breakoff: number of questions asked before breakoff
  - Item non-response: percentage of answers with “don’t know”/ “no response”
- ***Hypotheses***. Respondents who receive COVID questions first:
  - H1: Are less likely to breakoff
  - H2: Answer more questions before breaking off
  - H3: Give fewer non-responses
  - **H1a: If theory is true, effects should be stronger among those who are more concerned about COVID**

Data (I)

- Original data collection effort in Haiti
  - April 23-June 10, 2020
  - Computer-Assisted Telephone Interviewing (CATI)
  - Nationally representative sample of voting age cellphone users using list of activated cell numbers
- Sample size
  - 3,327 connected calls
  - 1,037 excluded due to ineligibility, rejection, pre-treatment breakoff, or quality control
  - 2,290 remain and are assigned to treatment
    - 61 early terminations due to inadvertent reasons (e.g. dropped call)
      - Excluded from breakoff analysis, included in non-response
    - 2,018 completes
    - 211 breakoffs **(9.5% breakoff rate)**

Data (II)

- 10 question COVID module
  - COVID-First treatment: asked immediately after consent question
  - COVID-Late treatment: asked at end of “core”, before ending demographic bloc
- COVID concern: “How serious of How serious of a problem do you think the coronavirus outbreak is for Haiti?”
  - (1) Very serious (2) Somewhat serious (3) Not so serious (4) Not serious at all (5) Have not thought much about this
- About 35 questions between two treatments

Analysis Strategy

- ***Tests.*** Difference of proportions z-test (H1) and difference of means t-test (H2, H3)
  - Standard errors clustered by interviewer
  - One-tailed p-values
- ***"Limited Sample".*** 439 observations indicated COVID outbreak was "not so serious", "not at all serious", or "have not thought much about it"
  - Excluded in some analysis – treatment should have no effect
  - 1,407 said "very" or "somewhat" serious; 274 non-responses or N/A

Results

H1 and H1a – Breakoff Rate

Table 1: Breakoff Rate (%), by Question Order Treatment

	Full Sample	Limited Sample
COVID Questions First	8.6 (0.8)	8.7 (1.0)
COVID Questions Late	10.3 (0.9)	11.8 (1.0)
Net Difference	-1.7 (1.6)	-3.1 (2.2)
p-value	0.16	0.09
n	2,229	1,790

Note: Standard errors in parentheses. Standard errors for "Net difference" are calculated from two-sample difference-in-proportion z-test and are clustered by interviewer. p-value is one-tailed.

34

On a 2000-person survey, by placing COVID questions first, 34 fewer respondents need to be interviewed in order to reach the target sample size (or 62, if everyone thought the topic was a serious issue)

H2 – Questions Answered Before Breakoff

Table 2: Average Number of Questions Asked Before Breakoff, by Question Order Treatment

	Full Sample	Limited Sample
COVID Questions First	18.9 (1.6)	18.4 (1.8)
COVID Questions Late	17.0 (1.4)	16.1 (1.4)
Net Difference	1.9 (1.5)	2.3 (2.1)
p-value	0.11	0.15
n	203	177

Note: Standard errors in parentheses. Standard errors for "Net difference" are calculated from two-sample independence of means t-test and are clustered by interviewer. p-value is one-tailed.

H3 – Item Non-Response Rate

Table 3: Item Non-Response Rate (%), by Question Order Treatment

	Full Sample	Limited Sample
COVID Questions First	11.9 (0.5)	12.6 (0.6)
COVID Questions Late	12.1 (0.4)	12.6 (0.5)
Net Difference	-0.2 (0.7)	0.0 (0.9)
p-value	0.37	0.52
n	2,279	1,829

Note: Standard errors in parentheses. Standard errors for "Net difference" are calculated from two-sample independence of means t-test and are clustered by interviewer. p-value is one-tailed. 2290 subjects were assigned to a treatment group (1840 in the limited sample), but 11 broke off on the first question, leaving an n of 2,279 (1,829 in limited sample).

Extension 1: Ecuador Experiment

Analysis Strategy

- Replicated experiment in similar study in Ecuador (Dec 2020-Jan 2021)
- Sample characteristics
  - Random digit dial of cell-phone numbers
  - Target sample size of 800 voting-age citizens of Ecuador
- Questionnaire characteristics
  - Experiment embedded within broader study of democratic attitudes
  - Same structure as Haiti questionnaire, though COVID module and other questions vary slightly
- Respondents much more highly engaged in Ecuador

Results

Table 5: Results from Ecuador Experiment

	Breakoff Rate (%)	Qs Asked Before Breakoff	Item Non-Response Rate (%)
COVID Qs First	0.7 (0.4)	33.6 (8.3)	3.5 (0.2)
COVID Qs Late	2.4 (0.7)	30.7 (6.9)	3.7 (0.3)
Net Difference	1.7 (0.8)	-3.0 (12.1)	0.2 (0.3)
p-value	0.03	0.41	0.29
n	835	13	864

Extension 2: Four Country Correlation Analysis

Analysis Strategy

- ***Theory.*** Observable implication of topic-induced motivation theory: among those who begin survey with questions about COVID, those who think it is serious issue should be less likely to break off than those who do not
- ***Data***. Similar studies conducted in Mexico (July-Aug 2020) and Peru (July 2020), which featured COVID questions at the beginning (not randomized)
- ***Test.*** Logistic regression of breakoff (0/1) on 5-point concern about COVID measure

Results

Table 6: Breakoff Rate by Country and Rating of COVID Seriousness

	Haiti	Peru	Mexico	Ecuador
Very serious	6.83% (1.10)	0.48% (0.17)	3.53% (0.49)	0.61% (0.43)
Somewhat serious	5.38% (1.99)	1.43% (0.72)	4.51% (1.04)	1.96% (1.96)
Not so serious	4.52% (1.57)	4.54% (4.55)	8.03% (2.58)	0%
Not at all serious	12.12% (5.78)	0%	11.11% (5.31)	0%
Haven't thought much about this	19.23% (5.52)	0%	4.70% (2.31)	0%
Logit Coefficient *(p-value)* *n*	-0.20 (0.04) 919	-0.28 (0.296) 2,099	-0.20 (0.029) 2,076	0.05 (0.945) 408

Notes: Data from Haiti and Ecuador excludes those who received "COVID-Last" treatment condition. Top five rows display breakoff rate among each country and rating of seriousness of coronavirus outbreak in the country. Standard errors are in parentheses. The last row shows coefficients of logistic regressions of breakoff (0/1) on COVID concern level (interval, 1-5), with p-value in parentheses. The COVID seriousness variable was heavily skewed toward the more serious end, explaining the large standard errors among the less serious categories.

Conclusion

Recap & Implications

- ***Findings.*** Beginning questionnaire in Haiti & Ecuador with items about COVID-19, a salient issue, modestly decreased breakoff rate, especially among group who is more concerned about COVID
    - Marginal significance, and no treatment effect on time-to-breakoff or NR rate
- ***Literature.*** Question topic influences completion rates as survey topic influences response rates, though perhaps not to same extent
- ***Practice.*** All else equal, better to begin with questions on more salient issue, though may not be worthwhile if it adds to length of questionnaire or interrupts survey flow

Future Research

- ***Mechanisms***. Is treatment effect driven by interest in the question, belief that the survey is worthwhile, interviewer rapport, or something else?
- ***Other topics.*** Does the same pattern hold for other types of issues?
- ***Interviewer effects.*** Breakoffs varied greatly by interviewer. Why?

Luke.Plutowski@Vanderbilt.edu
Liz.Zechmeister@Vanderbilt.edu