

SurveyMonkey at AAPOR Laura Wronski

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Presentations

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8.	Web survey experiments on fully balanced, minimally balanced and unbalanced rating scales (preliminary findings presented at PAPOR 2015)	Sarah Cho and Mingnan Liu			
9.	The Mobile Landscape in the United States: How Much and How are Americans using their Smartphones? (poster)	Abhinav Agrawal, Kelvin Law, and Noble Kuriakose			
10.	The Impact of Scale Direction, Alignment, and Length on Responses to Rating Scale Questions in a Web Survey (poster)	Florian Keusch, Mingnan Liu, Ting Yan			



Impact of Name Order and Presentation Format on Support for Candidates in a Presidential Primary Poll

CNN Poll June 2015

- 1. Marco Rubio
- 2. Jeb Bush
- 3. Mike Huckabee
- 4. Scott Walker
- 5. Ted Cruz
- 6. Rand Paul
- 7. Ben Carson
- 8. Rick Perry
- 9. Chris Christie
- 10. George Pataki
- 11. Donald Trump
- 12. Rick Santorum
- 13. Carly Fiorina
- 14. Lindsey Graham
- 15. Bobby Jindal
- 16. John Kasich

CNN Poll June 2015

	Cond 1	Cond 2	Cond 3	Cond 4	Cond 5	Cond 6	Cond 7	Cond 8	Cond 9	Cond 10
1	Rubio	Cruz	Rubio	Pataki	Rubio	Kasich			Rubio	Kasich
2	Bush	Walker	Bush	Christie	Bush	Jindal			Bush	Jindal
3	Huckabee	Huckabee	Huckabee	Perry	Huckabee	Graham			Huckabee	Graham
4	Walker	Bush	Walker	Carson	Walker	Fiorina			Walker	Fiorina
5	Cruz	Rubio	Cruz	Paul	Cruz	Santorum			Cruz	Santorum
6			Paul	Cruz			Paul	Jindal	Paul	Trump
7			Carson	Walker			Carson	Graham	Carson	Pataki
8			Perry	Huckabee			Perry	Fiorina	Perry	Christie
9			Christie	Bush			Christie	Santorum	Christie	Perry
10			Pataki	Rubio			Pataki	Trump	Pataki	Carson
11							Trump	Pataki	Trump	Paul
12					Santorum	Cruz	Santorum	Christie	Santorum	Cruz
13					Fiorina	Walker	Fiorina	Perry	Fiorina	Walker
14					Graham	Huckabee	Graham	Carson	Graham	Huckabee
15					Jindal	Bush	Jindal	Paul	Jindal	Bush
16					Kasich	Rubio			Kasich	Rubio

Would not vote Other (please specify)

Result: response order effect

	Cond. 1	Cond. 2	Cond. 3	Cond. 4	Cond. 5	Cond. 6	Cond. 7	Cond. 8	Cond. 9	Cond. 10
	Top 1-5	Top 5-1	Top 1-10	Top 10-1	Top 1-5 +Bottom 1-5	Top 5- 1+Bottom 5- 1	Top 6-15	Top 15-6	Full list 1-16	Full list 16-1
Test for whole sample	<i>p</i> =0.43		<i>p</i> =0.87		<i>p</i> =0.67		<i>p</i> =0.27		<i>p</i> =0.95	

Findings: combined support for top 5 candidates



Percent of combined support for the Top 5 Republican candidates (Rubio, Bush, Huckabee, Walker and Cruz) for the presidential nomination in 2016.

Conclusion

- No response order effect
 - Miller and Krosnick (1998) found primacy effect in elections, they also show that the effect is stronger when races have been minimally publicized.
 - Media coverage, name recognition for Presidential election and candidates high
- Presenting names vs. not presenting names, big difference
 - Test open-ended question
 - Which is more accurate?



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		Top 1-5	Top 5-1	Top 1-10	Top 10-1	Top 1-5 +Bottor	Top 5-1+Bottom	Top 6-15	Top 15-6	Full list 1-16	Full list 16-1
		1	2	3	4	5	6	7	8	9	10
1	Marco Rubio	18%	14%	11%	12%	16%	12%	5%	4%	11%	11%
2	Jeb Bush	20%	21%	17%	14%	18%	17%	6%	5%	14%	15%
3	Mike Huckabee	10%	10%	5%	5%	6%	9%	1%	1%	5%	4%
4	Scott Walker	16%	14%	12%	12%	12%	12%	4%	6%	9%	8%
5	Ted Cruz	15%	15%	12%	11%	15%	14%	7%	7%	12%	10%
6	Rand Paul	3%	4%	13%	9%	2%	3%	16%	11%	6%	8%
7	Ben Carson	6%	4%	9%	13%	4%	4%	13%	13%	7%	9%
8	Rick Perry	0%	1%	3%	4%	1%	2%	7%	7%	2%	3%
9	Chris Christie	2%	3%	5%	5%	2%	0%	7%	7%	6%	4%
10	George Pataki	0%	0%	0%	1%	0%	0%	1%	1%	0%	0%
11	Donald Trump	10%	11%	11%	11%	11%	11%	19%	25%	17%	17%
12	Rick Santorum	0%	0%	0%	0%	3%	3%	4%	4%	1%	1%
13	Carly Fiorina	1%	1%	1%	1%	3%	5%	5%	3%	4%	4%
14	Lindsey Graham	0%	0%	0%	0%	1%	1%	1%	1%	0%	1%
15	Bobby Jindal	0%	1%	0%	0%	3%	4%	3%	3%	2%	3%
16	John Kasich	1%	1%	1%	1%	3%	4%	0%	1%	2%	2%
	Sample size	463	503	482	466	448	472	490	464	509	456



The Mode Effect on Racial Sensitive Questions between Web and Computerassisted Self-interview

Background

- How much discrimination is there in the U.S. today against blacks? (American National Election Studies)
- Social desirability
- Removing interviewers may help
 - Web surveys
 - Computer-assisted self-interviews (CASI)
- 2012 American National Election Studies (ANES)
 - Sampling
 - Face-to-face: an address-based, stratified, multi-stage cluster sample
 - Web: GfK KnowledgePanel, address-based sampling or random-digit dialing



Feeling thermometer questions 0 = Cold or unfavorable feeling 100 = Warm and favorable feeling





Hard-working 1 = Hard-working 7 = Lazy





Summary





Effects of Question Order and Paging in Online Surveys

Condition 1 General first, one page

Condition 2 General last, one page

Condition 3 General first, multi page

Condition 4 General last, multi page

Life satisfaction

- Relationships 1
- Relationships 2
- Relationships 3
- Relationships 4
- Relationships 5
- Housing 1
- Housing 2
- Housing 3
- Housing 4
- Housing 5
- Employment 1
- Employment 2
- Employment 3
- Employment 4
- Employment 5
- Well being 1
- Well being 2
- Well being 3
- Well being 4
- Well being 5

• Relationships 1

- Relationships 2
- Relationships 3
- Relationships 4
- Relationships 5
- Housing 1
- Housing 2
- Housing 3
- Housing 4
- Housing 5
- Employment 1
- Employment 2
- Employment 3
- Employment 4
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- Well being 3
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- Well being 5

- Relationships 1Relationships 2
- Relationships 2
- Relationships 4
- Relationships 5
- Housing 1
- Housing 2
- Housing 3
- Housing 4
- Housing 5

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- Employment 1
- Employment 2
- Employment 3
- Employment 4
- Employment 5
- Well being 1
- Well being 2
- Well being 3
- Well being 4
- Well being 5
- Life satisfaction

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Mean Life Satisfaction









Trap questions in online surveys

What <u>IS</u> a Trap Question?

Which of the following is your favorite sport to watch? This is a data quality check. Regardless of your true preference, please select Hockey.

Baseball
 Basketball
 Soccer
 Hockey
 Tennis

Experimental design

- Ran 3 experiments
 - 1. Difficulty and placement of the trap questions
 - 2. One vs. two trap questions
 - 3. Announcement and verification trap questions

- Looked for
 - Trap success
 - % of respondents who were "trapped" in each condition
 - Data quality indicators
 - Straight lining
 - Speeding
 - Rounding
 - Response consistency
 - Open-ended response quality

Trap Rates

Percent of respondents who were trapped





Summary of Results

- Different trap questions will have different trap rates
- Some trap questions trap too many respondents
 → think about why you're using a trap question and whether you really need it
- 1 trap question is good enough
- Data quality check announcement doesn't do much good
- Picture verification is best
- Future research--different types of trap questions
- 1. Which of the following numbers represents the biggest risk of getting a disease?
 - 1 in 100 1 in 1000
 - 1 in 10



Explicit vs. Implicit Data: Comparing Responses from a Web Survey to Behavioral Data Collected Directly from Smartphones

Data

SurveyMonkey Intelligence

- Mobile behavioral panel
 - Passively collects mobile app usage and (some) browsing behavior
 - Used to make estimates generalized to U.S. smartphone population
- Recruitment sources
 - Facebook
 - Advertising on mobile networks
 - SurveyMonkey Contribute

Contribute panelists

- Originally recruited on the SurveyMonkey platform
 - After customer surveys, on survey thanks page
 - Images of puppies, teachers, girl scouts
 - Charity incentive-- \$0.50 to charity for each survey completion
- Recruitment for mobile panel
 - Targeted to small selection of existing panelists
 - Directed to the app store to install a plug-in (Android)
 - Asked to install VPN (iOS)
 - Offered double charity incentive as long as panelists provide mobile data

Overall accuracy on apps



Last Week Last Month



Conclusions

- Generally, survey data reflected the right trends
 - No large differences on last month vs. last week
 - Could be a function of the apps tested
- Popular, well known apps see over-reports of usage
 - Could be because respondents don't distinguish
- Inversely, possible that utility apps are under-reported in surveys
- Respondents generally can't reliably estimate number of apps used
 - Similar data for time spent on smartphones (underestimate)

Using Machine Learning to Infer Demographics for Respondents

Data

SurveyMonkey Intelligence

- Mobile behavioral panel
 - Recruited from SurveyMonkey panels and external sources
 - Passively collects mobile app usage and (some) browsing behavior
 - Used to make estimates generalized to U.S. smartphone population
- Profiling survey to ask demographics
- Subset of panel for testing
 - iOS
 - n=3,500



Illustrative features

- Time spent per app
 - Sparse
 - Tons of apps in the stores
 - Each individual uses only a few apps
 - Results in lots of 0s
- Total time spent on phone
- Number of apps installed
- Concentration of app usage
- Mobile websites visited
- Metadata
 - Day of week of joining the panel





Results

k-fold validation and out-of-bag error







K-Nearest Neighbor

76%

Support Vector Machine

77%

Random Forest

84%

- 🎧 -

Summary of Findings

Conclusion

- Impact of Name Order and Presentation:
 - No response order effect
 - Big difference in names that are presented and not presented
- Mode Effect and Social Desirability Bias
 - Web respondents have less SDB even compared to CASI
- Question Order and Paging
 - Order doesn't matter when everything is on the same page
- Trap Questions
 - No perfect trap rate; different trap questions get different trap rates
 - Picture verification is best
- Explicit vs. Implicit Data
 - Promising area for survey research to delve into
- Machine Learning to Infer Demographics
 - Not perfect but it can by done



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