Survey Design and Tools Part I

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Part II will be on March 12th

Agenda

- Successful Surveys
- Survey Design
- Distribution Methods
- Testing
- Licensing and Copyright
- Online Survey Tool Comparison
- Regulatory and Contracting

SUCCESSFUL SURVEYS

Doing A Survey Right

○ First, a fundamental recognition: This is a social exchange

○ Consider 3 critical elements to social exchanges

- Rewards
- Costs
- Trust

○ Account for each of these in your design: Maximize awards & build trust while minimizing costs

○ This is the easiest thing to forget in survey design – you get caught up in what you want to know and forget the other person involved in the exchange

SURVEY DESIGN

Survey Design:
How Hard Can It Be?

In the past six months, how many times have you checked your blood sugar? _____

In the past year, how often have you checked your blood sugar?
- **Regularly**
- **Occasionally**
- **Rarely**
- **Never**

Doctors usually recommend checking your blood sugar at least once per day. How often do you check your blood sugar?
- **Once a day or more**
- **Less than once a day**
- **Never**

Survey Design:
Okay, Let's Do It!

Preparing to Do A Survey:

- **Who** are you going to survey?
- **How** are you going to survey them?
- **What** are you going to ask them?

What Could Possibly Go Wrong?

- **Who:** Coverage Error, Sampling Error, Non-response Error
- **How:** Method Effect
- **What:** Measurement Error

Survey Design:
How to Screw Up A Survey

1. *The Who: Survey the Wrong People*

A. First Question: Should you draw a sample?

Question: You have 5,000 patients. Which is better?
        Survey all 5,000 & get 40% back (2000 completes) OR
        Survey a sample of 500 & get 80% back (400 completes)?

Answer depends on trade-off between two different types of error:

Sampling error: You survey only a sample instead of everyone. It's unavoidable if you sample, but also known & controllable.

Non-response error: A significant number of people you tried to survey don't respond, *and* they differ from the respondents in a way that's important to the study.

Survey Design:

How to Screw Up A Survey

2. The How: Choose the Wrong Survey Method

Each type of survey has advantages & disadvantages:

○ **Mail Surveys:** Cheap, easy, but sensitive to non-response error.

○ **Phone Surveys:** Quick results, know who completed it, but expensive & vulnerable to coverage error.

○ **Face to Face Surveys:** Most thorough data, but very expensive and subject to social response bias.

Method Effect: The mode of your survey may impact how people respond to certain types of questions.

--Have You Used Illegal Drugs In the Last Week?

Survey Design:

How to Screw Up A Survey

3. The What: Ask Really Bad Questions

Do you own a car?
- Who is the "you"? Me? My wife? My family?
- What does "own" mean? What if I lease? If I still owe money on it, do I own it?
- What is included in "car?" Can it be a Van, an SUV?

Two Main Things to Consider About Your Survey Questions:

- Are your questions reliable?
- Are your questions valid?

Survey Design:
What's Wrong With This Question?

In the last six months, how many times have you had your A1C checked by a medical professional?

❑ None

❑ Once

❑ More than Once

How Would You Fix It?

Survey Design:

What's Wrong With This Question?

Because of the association between lung cancer and cigarette smoking, many people in the US have quit smoking in recent years.   Do you smoke every day, some days, or not at all?

❑ Every Day
❑ Some Days
❑ Not At All

How Would You Fix It?

What's Wrong With This Question?

In the last 6 months, what percentage of your medical bills did you spend on each of the following types of care?

Office visits: _____%

ED Visits or hospital stays: _____%

Prescription drugs: _____%

Dental Care: _____%

Other Types of Care: _____ %

How Would You Fix It?

Survey Design:
Writing Good Questions

Other Question Writing Tips:

○ Write at a 6th grade level.
○ Use complete sentences.
○ Use as few words as possible.
○ Define your terms.
○ Never make the first questions open-ended, difficult, embarrassing or directly about themselves.
○ Avoid complicated skip patterns in mail surveys.
○ Make sure the question requires an answer. Questions beginning with "If" or "When" often don't.

Survey Design:
Cognitive Testing

- Find a group like your study population, but who are probably not in the sample frame: 10-15 is perfect
- Optimal to test the survey in same way in which it will be administered, but not essential.
- Two possible approaches:
  - Sit with respondent, one-on-one and have the respondent "think out loud" as they answer each question.
  - After survey completion, review each question with the respondent. How did they interpret the question? What was going through their minds when they read the question? Was anything unclear?
- Revise and review based on what you learned.

Survey Design:
Caveats

- Limit branching or skip logic on paper distributed surveys

- Ensure text is large enough to be read easily
  - Recommend minimum font size 11

- Determine how you're going to analyze the data (including missing responses)

- Avoid asking 'Open-ended' questions
  - Requires time for deciphering

DISTRIBUTION METHODS

Distribution Methods:

Picking A Method

○ There are four main choices to consider:

- Self-Administered (mail, e-mail, Web, drop-off surveys, etc)
- Telephone survey
- Face-to-face surveys
- Mixed Method

○ Each has a good (advantages), a bad (disadvantages), and an ugly (things survey people would rather not talk about).

Distribution Methods:
Self-Administered Surveys

The Good:

- Usually cheap ($3-5 per survey plus incentive costs).
- Sense of privacy, good for sensitive questions
- Less sensitive to social response bias.

The Bad:

- Inflexible – hard to do complex questions.
- Literacy/language dependent

The Ugly:

- No control over survey once it's mailed

Distribution Methods:
Phone Surveys

The Good:

- Quick results & good response rates.
- Can do complex questions, skip patterns, etc.
- Can probe answers for more depth.

The Bad:

- Cost is higher -- $20-25 per survey
- Not everyone has phones

The Ugly:

- Wireless substitution & cultural shifts

Distribution Methods:

Face To Face Surveys

The Good:

- Lengthy questionnaires okay, lots of depth
- Can "convert" non-responders, avoid non-response bias
- Capture people hard to get with other modes

The Bad:

- Requires highly trained interviewers
- Subject to social response bias

The Ugly:

- Cost! ($500 to $1000 or more per survey)

Distribution Methods:
Mixed Mode Surveys

The Good:

- Get who you can cheaply, then pursue non-responders with more expensive modes
- Allows maximum "capture" of sample

The Bad:

- Cost can be hard to predict in advance
- Complicated to administer

The Ugly:

- Method effects: Response to same question may differ if asked by mail, phone, or in person

Distribution Methods:
Maximize Rewards & Trust

- Respect the respondent: tell why the research is being done, provide a toll-free number for questions, say thanks.

- Ask for advice: we need your feedback, we need information only you can provide.

- Offer a financial or tangible reward (even a token) in advance of their completing the survey.

- Make project seem important, prominent. Emphasize legitimating sponsorships or affiliations.

Distribution Methods:
Minimize Costs

- Don't embarrass the respondent–don't use complicated language or phrases they might not understand.

- Minimize inconvenience to the respondent – keep it short, don't include too many complex questions.

- Ask for personal information only when necessary; if necessary, soften the request. Make sure respondent understands why it is important.

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TESTING

Testing:
Getting it right

- ○ Validated surveys
  - Already tested in target audience?
  - Translation of validated surveys may 'invalidate' a survey

- ○ Non-validated surveys
  - Test in small target audience in the format (distribution method)
    - ○ Protocol should include:
      - Testing survey in small 'target audience' before proceeding
      - Informational interview about survey in small 'target audience'
        - ○ Asking about confusing wording and interpretation of questions or available responses

LICENSING & COPYRIGHTS

Licensing & Copyrights:
A Plethora of Variations

- ○ Most validated instruments have copyright restrictions

- ○ Copyright restrictions may be based on
  - Versions
  - Attribution
  - Any reproduction of questions
  - Reproduction method (paper OK, electronic not)
  - Scoring only
  - Investigator

- ○ Obtaining and documenting clear and unambiguous permission for use is essential
  - Intellectual Property is vigorously protected

SURVEY TOOLS

Survey Tools:
Paper

BEST:
- Adobe InDesign
- Microsoft Publisher

MOST OFTEN USED:
- Microsoft Excel
- Microsoft Word

Survey Tools:
Comparison for Online

Feature	REDCap	Survey Monkey	Survey Gizmo
Question types:			
Radio	X	X	X
Dropdown	X		X
Check-all that apply	X	X	X
Visual analog scale	X	X	X
Text	X	X	X
File upload	X		X
Descriptive text	X	X	X
Image/attachment	X	X	X
Comment/essay	X	X	X
Matrix (grid)	X	X	X
Calculated fields*	X		X
Rankings			X

* Fields used in calculation must be text-numerical or date fields Values

Survey Tools:
Comparison for Online

Feature	REDCap	Survey Monkey	Survey Gizmo
Basic package	Free	$	$
Response volumes	Unlimited	~1,000 per month*	Unlimited
Support	Email & in person	Email	Email & online tutorials
Security encryption	256 bit SSL	128 bit SSL	128 bit SSL
Solicitation	Never	Possible*	Never
Data Export	Excel, .csv, .pdf, or to SAS, R, STATA, SPSS	Excel	Excel, Word, .pdf, .csv, or SPSS
Storage of additional data	X		

Survey Tools:
Comparison for Online

Feature	REDCap	Survey Monkey	Survey Gizmo
Participant access	Email or web link	Web link	Email or web link
No. of questions	Unlimited	Unlimited	5,000 per survey
Look and feel	Customizable *	Survey themes	Use of templates
Skip logic Page Question	 X	X X	X
Completion status	*Page X of Y*	Progress bar	
Option for redirect on complete		X	X
Save & continue later	X		X

Survey Tools:
Comparison for Online

Similar Features

- Ease of use
- Creation of custom invitations
- Import email contact list
- Tracking options:
  - De-identification – option to collect responses anonymously
  - Response tracking
- Piping
- Survey reminders
  - Automate follow-up for non-responders
- Response viewing – real time
- Require response option

REGULATORY & LICENSING

Regulatory & Contracting:
Considerations

- **Protocol** – includes description of participant recruitment, data types, survey tools, individually identifiable data, measures to protect confidentiality

- **Consent/Authorization** – Informs participant about where data will be stored and whom it will be shared with

Regulatory & Contracting:
Online – Recruiting Using a Survey

For studies where researchers want to use an online survey to individuals that have not signed a consent form:

●**Consent/Authorization** – IRB approved *Waiver of Authorization*; Consent as first page of online survey or part of recruitment materials

	REDCap	Survey Monkey	Survey Gizmo
Business Associates Agreement Required		X	X
Accounting of Disclosures		X	X

Survey Design & Tools – Part II

~~March 23, 2015~~

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