

Poor	<input type="checkbox"/>
Satisfactory	<input type="checkbox"/>
Good	<input type="checkbox"/>
Excellent	<input checked="" type="checkbox"/>

Surveys

I214 22 Oct 2008

Importance of operationalization

Ex: measuring internet access

▶ **A Nation Online:**

- ▶ Individuals age 3+
- ▶ “Is there a computer or laptop in this household?”
- ▶ “Does anyone in this household connect to the Internet from home?”
- ▶ “Other than a computer or laptop, does anyone in this household have some other device with which they can access the Internet, such as:
 - ▶ cellular phone or pager
 - ▶ a personal digital assistant or handheld device
 - ▶ a TV-based Internet device
 - ▶ something else/ specify”
- ▶ **Sept. 2001: 143,000,000**

▶ **Nielsen/NetRatings**

- ▶ “All members (2 years of age or older) of U.S. households which currently have access to the Internet.”
- ▶ “Internet usage estimates are based on a sample of households that have access to the Internet and use the following platforms: Windows 95/98/NT, and MacOS 8 or higher”
- ▶ **Sept. 2001: 168,600,000 (+18%)**



nielsen
.....



Critical Mass

The Worldwide State of the Mobile Web

Nielsen Mobile
July 2008

[http://
www.nielsenmobile.com/
documents/CriticalMass.pdf](http://www.nielsenmobile.com/documents/CriticalMass.pdf)

When We Use Surveys

- ▶ Requirements specification
- ▶ User and task analysis
- ▶ User feedback/evaluation
 - ▶ after implementation
 - ▶ “prototypes” – e.g., large companies like Yahoo can implement test interfaces with a small % of users



Surveys

- ▶ Principles, methods of survey research in general
- ▶ Content of surveys for needs and usability
- ▶ Interpreting results for needs, usability

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How surveys are important for needs and usability

▶ Others' surveys:

▶ Their data: understanding, evaluating, using it

▶ Marketing research (a lot is proprietary)

▶ Public policy-related research

□ *Pew Internet and American Life project*: <http://www.pewinternet.org/>

▶ Sources of questions for your surveys

□ Suggestions

□ Presumably (ahem) have been pre-tested

▶ **Your own surveys**



Definitions American Heritage Dictionary

▶ **Survey:**

- ▶ (n): A gathering of a sample of data or opinions considered to be representative of a whole.
- ▶ (v): To conduct a statistical survey on.

▶ **Questionnaire:** (n) A form containing a set of questions, especially one addressed to a statistically significant number of subjects as a way of gathering information for a survey.

▶ **Interview**

- ▶ (n): A conversation, such as one conducted by a reporter, in which facts or statements are elicited from another.
- ▶ (v) To obtain an interview from.

▶ **Interview schedule**

- ▶ List of questions to be asked in an interview
-



Why surveys?

- ▶ Answers from many people, including those at a distance
 - ▶ Asynchronous data collection
 - ▶ Low cost
 - ▶ Easy for people to participate
 - ▶ Can continue for a long time
 - ▶ Yield quantitative data
 - ▶ Easy to summarize
 - ▶ Can do various kinds of statistical analyses
 - ▶ Can be comparable over time, across surveys
 - ▶ Can provide conduit for user feedback
 - ▶ Create impression that sponsor cares (“Help us to improve...”)
-

Surveys

- ▶ **But surveys require**
 - ▶ Relatively simple and straightforward questions
 - ▶ Answers that are easy to count, summarize
 - ▶ A reasonable method of administering them
 - ▶ Ability to get enough participants to respond
- ▶ **And they lack**
 - ▶ In-depth understanding of what, how, and why
 - ▶ Ability to follow up on interesting answers
 - ▶ Ability to customize (beyond simple logic) to respondent, responses



Surveys vs Interviews

Surveys

- ▶ More respondents
- ▶ Less staff-intensive
- ▶ Highly structured
- ▶ Same for everyone
- ▶ Easy to analyze, summarize
- ▶ Can't change qns or follow up on answers
- ▶ Many qns can't be asked

Interviews

- ▶ Fewer respondents
- ▶ More staff-intensive
- ▶ Less structured
- ▶ Customizable
- ▶ Hard to analyze, summarize
- ▶ Follow-up, ask clarification, new questions
- ▶ More versatile



When to do interviews?

- ▶ Need details that can't get from survey
- ▶ Need more open-ended discussions with users
- ▶ Small #s OK
- ▶ Can identify and gain cooperation from target group
- ▶ Sometimes: want to influence respondents as well as get info from them
 - ▶ Karl Rove surveys!
 - ▶ Marketing surveys



Surveys and interviews

- ▶ Interviews > survey
- ▶ Survey > interviews
- ▶ Interviews > survey > interviews
- ▶ Survey > interviews > survey



Surveying Steps

- ▶ Goal-setting
 - ▶ Survey design – in general
 - ▶ Sampling design
 - ▶ Questionnaire construction
 - ▶ *Pre-testing*
 - ▶ *Questionnaire revision*
 - ▶ Data collection
 - ▶ Sample selection
 - ▶ Survey deployment
 - ▶ Data analysis
 - ▶ Reporting
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What Info Can Be Collected via Surveys?

▶ Facts

- ▶ Characteristics of respondents
 - ▶ Demographics, experience, employment...
- ▶ Self-reported behavior
 - ▶ This instance
 - ▶ Generally/usually
 - ▶ Past
 - ▶ Anticipated (who will you vote for?)

▶ Opinions and attitudes:

- ▶ Preferences, opinions, satisfaction, concerns, perceptions
- ▶ Their expectations of their future behavior

▶ Knowledge

- ▶ What do they they know about x, y, z



Some Limits of Surveys

- ▶ Reaching users easier than non-users, members/non-members, insiders/outsideers
- ▶ Relies on voluntary cooperation, possibly biasing responses
- ▶ Relies on self-reports
- ▶ Questions have to be unambiguous, amenable to short answers
 - ▶ Can be hard to interpret answers
- ▶ Only get answers to the questions you ask
 - ▶ Have to anticipate ahead of time all the info you'll want
- ▶ The longer, more complex, more sensitive the survey the less cooperation



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Some sources of error

- ▶ Sample, respondents
- ▶ Question choice
- ▶ Question wording
- ▶ Question order
- ▶ Method of administration
 - ▶ Surveyor, if administered person to person
- ▶ Inferences from the data
- ▶ Users' interests in influencing results
 - ▶ “vote and view the results”



Ways of Administering Surveys

- ▶ In person
- ▶ Phone
- ▶ Mail
- ▶ Paper, in person
- ▶ Email (usually with a link)
- ▶ Web
 - ▶ SurveyMonkey.com
 - ▶ Zoomerang.com
 - ▶ .



Active vs passive

- ▶ **Active: solicit respondents**

- ▶ Send out email (with questions, or link), letters, phone,
 - ▶ Use sampling frame to develop a sample, i.e. list
- ▶ Ideal survey design:
 - ▶ Keep track of who responds
 - ▶ Follow up on non-respondents if possible
 - ▶ Compare respondents/non-respondents looking for biases

- ▶ **Passive – “poll”**

- ▶ Popup box: “would you take a few minutes to help us...”
- ▶ Link on a site
- ▶ Pew typology



Response Rates

- ▶ % of sample who actually participate
- ▶ low rates may indicate bias in responses
 - ▶ Whom did you miss? Why?
 - ▶ Who chose to cooperate? Why?
- ▶ How much is enough?
 - ▶ For statistically valid sample
 - ▶ Babbie: 50% is adequate; 70% is very good
 - ▶ Web surveys tend to be 3%, 5%.....



Increasing response rates

- ▶ Harder to say 'no' to a person
- ▶ Captive audience
- ▶ NOT an extra step
- ▶ Explain purpose of study
 - ▶ Don't underestimate altruism
- ▶ Why you need *them*
- ▶ Incentives
 - ▶ Reporting back to respondents as a way of getting response
 - ▶ Money; entry in a sweepstakes
- ▶ Follow up (if you can)



Bob's timing was a little off.



What to look for in web survey software/site



- ▶ # of questions you can ask
- ▶ # of respondents
- ▶ How long the survey will be available
- ▶ Variety of question designs/formats, or at least the designs you need
- ▶ Kind of data analysis they support
- ▶ Reports they produce for you
- ▶ Whether you can download data into Excel etc
- ▶ How long the data will be available to you
- ▶ *Most have free/lowcost versions and premium*



Web surveys

- ▶ Active: send out link
- ▶ Passive: pop-up, link on website



Web surveys: what are you sampling?

People vs transactions (e.g., visits)



Active vs passive sampling

- ▶ **active: solicit respondents**
 - ▶ Send out email, letters, phone
 - ▶ Use sampling frame to develop a sample, I.e. list
 - ▶ Keep track of who responds
 - ▶ Follow up on non-respondents if possible
 - ▶ Compare respondents/non-respondents looking for biases
- ▶ **Passive**
 - ▶ Popup box: “would you take a few minutes to help us...”
 - ▶ Link on a site

Ex: <http://www.pbs.org/now/> -- their weekly poll

<http://www.pbs.org/now/polls/poll-435.html> Sarah Palin poll



PEW / INTERNET
PEW INTERNET & AMERICAN LIFE PROJECT





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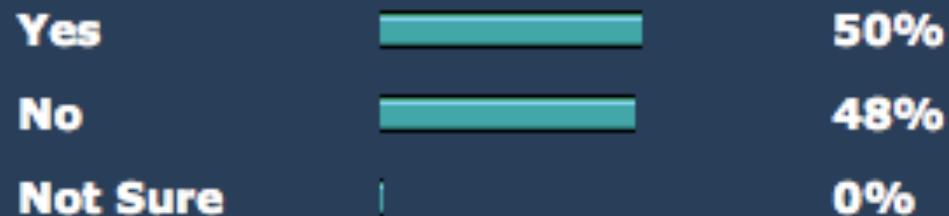
Web Exclusives

How to Win Virginia
George Allen and Doug Wilder
on what the candidates need to
do to secure this swing state.

**Virginia's Changing Political
Face**

NOW

Do you think Sarah Palin is qualified to serve as Vice President of the United States?



Your first vote for this poll has been registered. Any subsequent vote will not be counted. This is not a scientific poll.

Web survey problems

- ▶ Loss of context – what exactly are you asking about, what are they responding to?
 - ▶ Are you reaching them at the appropriate point in their interaction with site etc?
- ▶ Incomplete responses
- ▶ Multiple submissions
 - ▶ NOW (PBS) using cookies to prevent repeated voting
- ▶ Response rate problems
 - ▶ Low rate
 - ▶ Hard to calculate
- ▶ Is your sampling unit the user or the user, the interaction?



Passive: problems may include

- ▶ Response rate probably unmeasurable
- ▶ May be difficult to compare respondents to population as a whole
- ▶ Likely to be biased (systematic error)
 - ▶ Frequent users probably over-represented
 - ▶ Busy people probably under-represented
 - ▶ Disgruntled and/or happy users probably over-represented



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Questionnaire construction

- ▶ **Content**
 - ▶ Goals of study: What do you need to know?
 - ▶ What can respondents tell you?
- ▶ **Conceptualization**
- ▶ **Operationalization** – e.g., how *exactly* do you define “household with access to internet”?
- ▶ **Question design**
- ▶ **Question ordering**
- ▶ **Short, short, short!**



Topics addressed by surveys

- ▶ Respondent characteristics
- ▶ Sampling element characteristics
 - ▶ “Tell me about every member of this household...”
- ▶ Respondent/sampling element behavior
- ▶ Respondent opinions, perceptions, preferences, evaluations



Respondent characteristics

- ▶ Demographics: what do you need to know? How will you analyze data?
 - ▶ Age, sex, education, occupation, year in school, race/ethnicity, type of employer...
 - ▶ Equal intervals
- ▶ User role (e.g., buyer, browser...)
- ▶ Expertise – *hard to ask*
 - ▶ Subject domain
 - ▶ Technology
 - ▶ System/site



Behavior

- ▶ **Tasks** (e.g., what did you do today?)
- ▶ **Site usage, activity**
 - ▶ Frequency; common functions – hard to answer accurately
 - ▶ Self-reports vs observations
- ▶ **Web and internet use: Pew study**
- ▶ **Time:**
 - ▶ This event
 - ▶ Today
 - ▶ The last time you...
 - ▶ The last week
 - ▶ The last month
 - ▶ Generally...

