

Unit 2: Measuring Concepts

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Concepts and variables

- We ask survey questions because we're interested in *concepts*.
- Such concepts might relate to an individual's religiosity, their attitudes toward abortion, etc.
- As researchers, we use *variables* to tap into these *concepts*.

What are variables?

- Shockingly, they vary. (Actually super important)
- We may want to compare variance in one variable to the variance in another
- Variables can be measured using differing levels of sophistication—known as “level of measurement” (more soon)

Levels of measurement

- Categorical variables
 - Nominal (e.g., nationality)
 - Ordinal (e.g., Likert scale)
 - Dichotomous (e.g., yes/no question)
- Continuous variables
 - Interval (e.g., temperature in Fahrenheit)
 - Ratio (e.g., income in dollars)

Simple vs. complex concepts

- Unidimensional concepts are much easier to measure compared to multidimensional ones.
- For example, asking someone their age (unidimensional) is quite easy.
- But how do we account for a person's level of depression (multidimensional)?

PATIENT HEALTH QUESTIONNAIRE – 9 (PHQ 9)

Over the last 2 weeks, how often have you been bothered
by any of the following problems?
(Use "✓" to indicate your answer)

| | Not at all | Several days | More than half the days | Nearly every day |
|---|------------|-----------------|-------------------------------|------------------------|
| 1. Little interest or pleasure in doing things | 0 | 1 | 2 | 3 |
| 2. Feeling down, depressed, or hopeless | 0 | 1 | 2 | 3 |
| 3. Trouble falling or staying asleep, or sleeping too much | 0 | 1 | 2 | 3 |
| 4. Feeling tired or having little energy | 0 | 1 | 2 | 3 |
| 5. Poor appetite or overeating | 0 | 1 | 2 | 3 |
| 6. Feeling bad about yourself — or that you are a failure or have let yourself or your family down | 0 | 1 | 2 | 3 |
| 7. Trouble concentrating on things, such as reading the newspaper or watching television | 0 | 1 | 2 | 3 |
| 8. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual | 0 | 1 | 2 | 3 |
| 9. Thoughts that you would be better off dead or of hurting yourself in some way | 0 | 1 | 2 | 3 |

Developed by Pfizer, Inc.

FOR OFFICE CODING 0 + ____ + ____ + ____
= Total Score: ____

If you checked off any problems, how difficult have these problems made it for you to do your work, take
care of things at home, or get along with other people?

Not difficult at all Somewhat difficult Very difficult Extremely difficult

☐ ☐ ☐ ☐



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Constructing survey questions

- We'd like to write questions that produce unbiased outcomes—whether it's in the answer itself or even the decision to answer.
- To do so, it's best to make sure your survey questions are:
 - Concise and free of jargon
 - Specific
 - Single-barreled
 - Unbiased (no leading)

Other barriers to unbiased responses

- Assumptions about respondent knowledge
- Sensitive/private subject matter
- Social desirability of responses

| | |
|---|-----|
| 28. Are you racist? | |
| Yes | 4% |
| No | 84% |
| Not sure | 9% |
| Prefer not to say | 3% |
| 29. How many Americans do you think are racist? | |
| Most | 8% |
| Many | 53% |
| A few | 34% |
| Almost none | 4% |
| 30. Do you personally have any racial biases? | |
| Yes | 20% |
| No | 64% |
| Not sure | 16% |

Source: Morning Consult

Closed-ended questions

- Useful for uniformity and ease of analysis but need to be complete and mutually exclusive.
 - Multiple choice
 - Checklist
 - Scales

Open-ended questions

- Useful for greater depth of understanding but more laborious to code.
- Questions need to be structured enough to ensure that respondents share a similar understanding of what's being asked of them.
- Try to avoid yes/no questions or boxing your respondents into a particular type of answer such as a false dichotomy: "Were you excited or nervous to begin your degree program?"

Vignettes

- A vignette describes situations, people, events, etc. in sundry media (textual, graphic, etc.).
- Intended to elicit a response of some type often by manipulating.
- Extremely useful when working in sensitive issue areas.

Written vignette example¹

Now think about a (black/white) woman in her early thirties. She is a high school (graduate/drop out) with a ten-year-old child, and she has been on welfare for the past year.

- How likely is it that she will have more children in order to get a bigger welfare check? (1=Very likely, . . . , 7= Not at all likely)
- How likely do you think it is that she will really try to find a job in the next year? (1=Very likely, . . . , 7= Not at all likely)

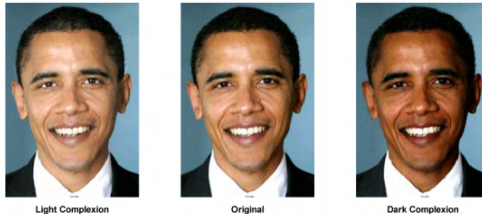
¹Gilens, Martin. 1996. "'Race Coding' and White Opposition to Welfare." *APSR*.

Visual vignette example²

DO EXPLICIT RACIAL CUES INFLUENCE CANDIDATE PREFERENCE?

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Figure 2: The Obama Complexion Conditions



Has Barack Obama, because of the kind of person he is, or because of something he has done, ever made you feel:

- Angry
- Hopeful
- Afraid
- [And so on]

²Shanto Iyengar et al. N.d. "Do Explicit Racial Cues Influence Candidate Preference? The case of Skin Complexion in the 2008 Campaign."

Other issues related to survey bias

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Roger B. Taney, Chief Justice of the Supreme Court (1777-1864)

Also a U.S. attorney general and secretary of the treasury before joining the Supreme Court, he is remembered for writing the 1857 Dred Scott decision ruling that blacks could never be American citizens. Legal scholars consider that decision to be one of the worst in the court's history.



The statue of Roger B. Taney being removed from outside the Maryland State House in Annapolis this month.
Jose Luis Magana/Associated Press

Was it right to take it down?

Yes.

No.

- Forced choice questions
- Interviewer bias
- Random error

Source: t.ly/PMrd

Discussion

- Unless we measure the concepts we intend to measure, we will not have very useful survey data.
- Specifically, question bias can lead to issues related to survey validity, reliability, and generalizability.