



Types of Mixed Mode Designs

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Terminology



- Mixed Mode
- Multi Mode
- Multiple Mode
 - Often used interchangeably
- Mixed Mode**
 - Any combination of survey data collection methods (modes)**
 - In any part of the data collection process**

Note: Term mixed methods used in qualitative studies

Why Mixed-Mode?

Choosing the Optimal Data Collection Method



- Best data collection procedure given
 - Research question
 - Population

- Reduce total survey error

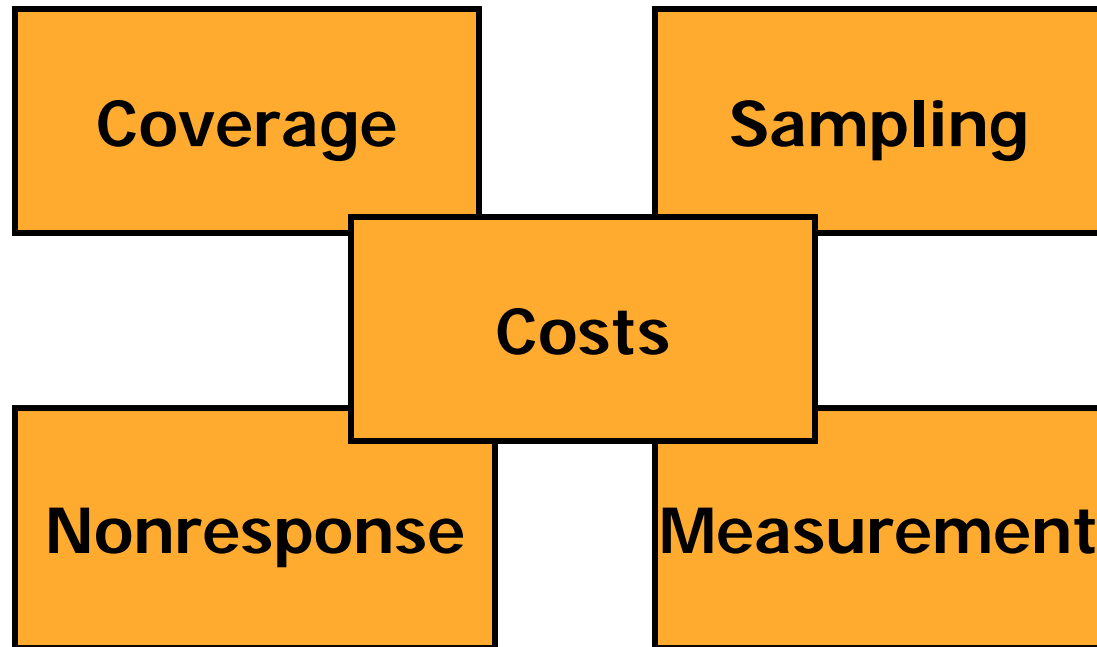
- Respect survey ethics/privacy
- Within available time
- Within available *budget*

Best *Affordable* Method



- ❑ Mixed-mode explicit trade-off
 - ❑ Survey Errors
 - ❑ Costs
- ❑ Example Nonresponse follow-up
 - ❑ Mail survey or Web survey
 - ❑ Telephone follow-up nonresponse
 - ❑ Face-to-face for sub-sample of remaining nonrespondents

Balance Costs & Errors



Cornerstones of Data Quality



Frame Coverage Errors

- Sampling frame must include *all* units of population of interest (once), if not coverage error

Sampling Error

- Occurs because only a sample of the population is invited to participate in a survey in stead of the total population:
 - Statistic of interest is computed on sample

Cornerstones of Data Quality

continued



- ❑ Nonresponse error
 - ❑ I. Nonresponse occurs
 - ❑ II. Respondents and non-respondents differ on variable of interest (key variable study)
- ❑ Measurement Error:
 - ❑ Lack of reliability and validity
 - ❑ Mode effects
 - ❑ Question effects
 - ❑ Interviewer effects, etc

Types of Mixed Mode Surveys

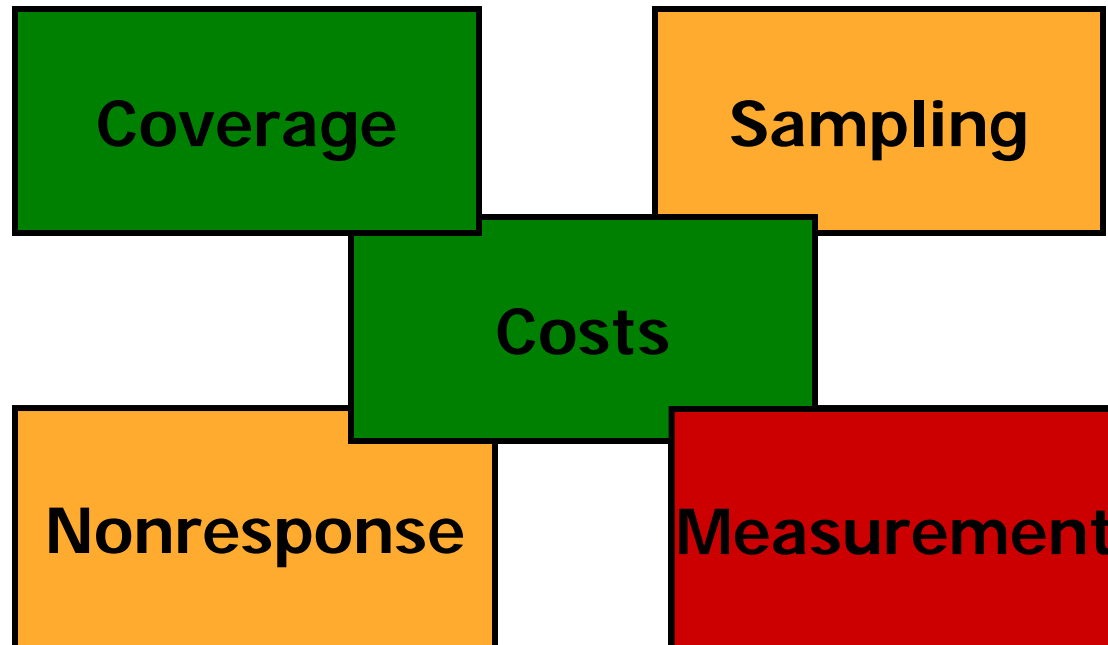


- ❑ Two major distinctions:
 - ❑ Different contact methods are used in different survey phases (e.g., recruitment, screening, questionnaire administration, etc.)
 - ❑ Mostly win-win situation, no threat to measurement if data collection is done in one single mode
 - ❑ Different methods used for data collection
 - ❑ **Concurrent** mixed mode:
 - ❑ Offer two or more modes *at same time*
 - ❑ **Sequential** mixed mode
 - ❑ Assign modes *sequentially* during life of the survey

Concurrent Mixed Mode



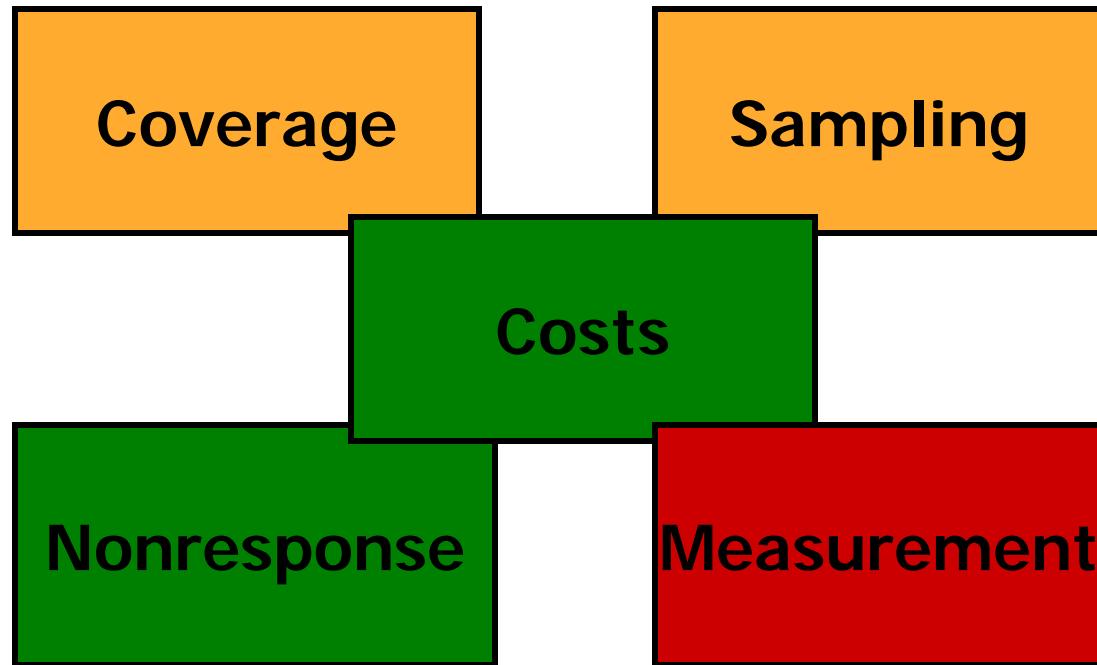
Web & Coverage



Sequential Mixed Mode



Nonresponse Study



Examples Mixed Mode



- ❑ Sequential Mixed Mode:
 - ❑ Different Modes in *Sequence* during Data Collection Phase

 - ❑ Nonresponse follow-up: ACS
 - ❑ Mail, telephone, face-to-face
 - ❑ Very successful (97%)

 - ❑ Longitudinal Surveys: LFS Sweden
 - ❑ Recruitment and first wave face-to-face
 - ❑ Next waves telephone survey
 - ❑ Cost effective, high quality

More Examples MM



- ❑ Concurrent Mixed Mode
 - ❑ Multiple Modes are used *Simultaneously* for Data Collection: implemented at same time
 - ❑ Dual frame surveys to reduce coverage problems
 - ❑ Web plus Mail or Phone
 - ❑ International surveys
 - ❑ ISSP
 - ❑ Offering Choice to respondent
 - ❑ Asthma awareness study
 - ❑ Invitation postcard offering choice
 - ❑ Establishment and business surveys

Offer A Choice?



- Form of concurrent mixed mode, two or more modes implemented at same time
 - For all questions, full questionnaire, one population
 - Respondent is offered choice of mode**
- Rationale:
 - Client centered
 - Goodwill
 - In order to reduce nonresponse**
- Sounds great, but not much evidence...

Offer A Choice, rather not!



- ❑ Sounds great, but no evidence for higher response in household surveys *at best*
 - ❑ Balden 2004, Lozar Mnafreda , 2001, Dilman, 1995
- ❑ Even worse as recent experimental research shows
 - ❑ Higher nonresponse in household surveys!!!
 - ❑ 1-9% Dillman (2009).
 - ❑ Example 3-9% lower response in ACS when offering choice
 - ❑ Perhaps, more effective in establishment surveys by official statistics (obligatory surveys!)
- ❑ Additional danger
 - ❑ Mode effects & measurement differences confounded with self-selection groups



Respondents Viewpoint:

Offering a Real Choice Makes Life More Difficult

- ❑ Researcher's viewpoint
 - ❑ Client centered to reduce nonresponse
 - ❑ Respondent friendly, establish good-will
- ❑ BUT Respondent's viewpoint is different
 - ❑ More information to read and process
 - ❑ Higher 'costs' in social exchange
 - ❑ Increased cognitive burden
 - ❑ Two decisions to make in stead of one
 - ❑ From "will I participate" to "will I participate and what method do I want to use"
 - ❑ Harder task so simplest thing is opt-out
 - ❑ May concentrate on choice, not on survey
 - ❑ Distracts from message and arguments on why to cooperate
 - ❑ Weakens saliency

To Mix or Not to Mix



- ❑ Mixing data collection modes has many advantages in reducing noncoverage and nonresponse errors, but
- ❑ How about measurement errors?
 - ❑ Will the answers provided by respondents differ by mode?
 - ❑ Can data that are collected through different modes be combined in one study?
 - ❑ Can data that are collected through different modes be compared over studies or countries?

Modes & Measurement



- ❑ Measurement error occurs when a respondent's answer to a question is inaccurate (departs from the “true” value)

- ❑ Modes vary in terms of:
 - ❑ Interviewer versus self-administered questionnaires
 - ❑ Social desirability
 - ❑ Self-pacing
 - ❑ Stimuli / manner in which survey question is conveyed to respondent (and response is recorded)
 - ❑ Aural vs Visual
 - ❑ Effect visual cues in web design: Toepoel, 2009)

How Modes Differ



Overviews: De Leeuw 1992, 2005 and Dillman & Christian, 2005

- ❑ Empirical Evidence Interviewer Impact
 - ❑ More social-desirability with interviewer
 - ❑ E.g., drinking, fraud
 - ❑ More open in self-administered modes
 - ❑ More positive in interview
 - ❑ Less lonely, better health in interview
 - ❑ More acquiescence in interview
 - ❑ Tendency to agree
 - ❑ Easier to agree than disagree with another person
 - ❑ Less missing data/more detailed answers open questions in interview
 - ❑ In general interviewer probes help to get more detail

How Modes Differ II



- ❑ Empirical Evidence Medium Impact
 - ❑ Few systematic studies (Overviews De Leeuw, 1992, 2005) indicate advantage of self-pacing
 - ❑ Self-administered more consistent answers
 - ❑ SAQ higher psychometric reliability on scales
 - ❑ BUT all Paper SAQ vs. interview!
- ❑ Internet as medium different (cf. Krug, 2006)
 - ❑ Multi-tasking
 - ❑ Scanning
 - ❑ Satisficing (close enough in stead of optimal)
 - ❑ Especially with 'bad' questionnaires
 - ❑ Meurs et al, 2009

Expect Mode Differences



- ❑ Between interviewer-administered and self-administered when sensitive questions are asked!
- ❑ Avoid mixed-mode for **complete** questionnaires when sensitive questions are asked
 - ❑ Different groups get different modes and therefore differ in answers 😞
- ❑ Exploit mixed-mode for **subset** of sensitive questions only
 - ❑ Reduce Social Desirability Bias 😊
 - ❑ Sensitive questions in more 'private' mode
 - ❑ CAPI - (A)CASI mix, etc

Expect Mode Differences II

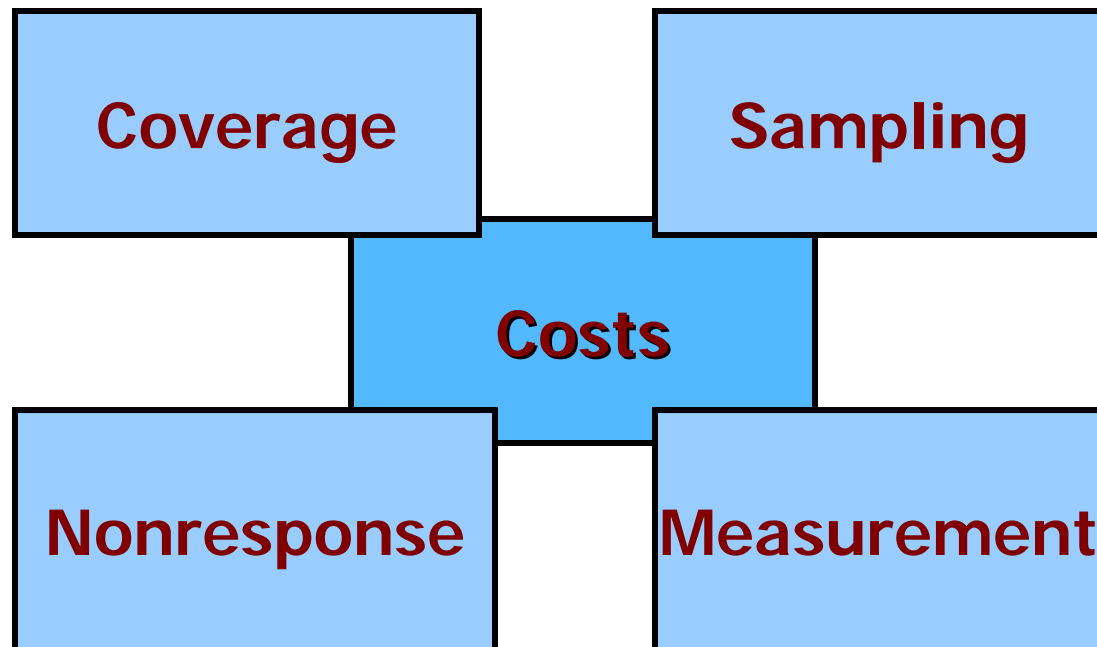


- ❑ When mixing modes try as much to stay within **one** visual or aural framework
 - ❑ Web-mail mix good choice
 - ❑ Both visual + no interviewer
 - ❑ Web-CATI may expect most measurement errors
 - ❑ Visual vs aural, no interviewer vs interviewer
- ❑ Simple demographic questions hardly any impact
 - ❑ Respondent knows answer
- ❑ Subjective questions more sensitive to mode differences and question format differences
 - ❑ Attitudinal measures, satisfaction ratings



Why Mix Modes?

Balance **Total** Error & Cost



May prefer reducing serious coverage error or nonresponse error even at the cost of slight increase in measurement error!

To Mix is to Design



- Mixing data collection modes has advantages, but mixing methods may enhance measurement errors
- So,
 - I. Design for Mixed Mode Surveys
 - Design equivalent questionnaires!
 - II. If possible, measure potential mode effects
 - Embed mode experiments
 - III. Adjust
 - Population differences/self-selection
 - Mode effects

Adding to Bill's Agenda



- ❑ Overview mode effects online surveys
- ❑ Mode experiments with online question-formats
- ❑ Development robust questions

- ❑ *Best practice guidelines for mixed-mode questionnaire design*
 - ❑ Dillman, 2006, chapter 6 (unified mode design principles)
 - ❑ US census: <http://www.census.gov/srd/mode-guidelines.pdf> (demographic questions)

Suggested Literature



- ❑ Edith de Leeuw (2005) To mix or not to mix data collection modes in surveys. *Journal of Official Statistics*, 2005, 223-255, **Freely available at www.jos.nu**
- ❑ Edith D. de Leeuw, Joop J. Hox, Don A. Dillman (2008) *Mixed-mode Surveys: When and Why*.
 - ❑ In De Leeuw, Hox & Dillman. *International Handbook of Survey Methodology*. New York: Lawrence Erlbaum/Psychology Press, Taylor and Francis Group. More details see <http://www.xs4all.nl/~edithl/surveyhandbook/index.htm>
- ❑ Don A. Dillman, Jolene D. Smyth & Leah Melanie Christian (2009). *Internet, Mail, & Mixed Mode Surveys*. New York: Wiley
- ❑ Bill Blyth (2008). Mixed mode: the only 'fitness' regime? *International Journal of Market Research*, 50, 2, pp. 241-266.
- ❑ Hiawatha Designs An Experiment
 - ❑ <http://www.columbia.edu/~to166/hiawatha.html>