

Video 6 of 21: Random-Digit Dialing Mitofsky-Waksberg method

Sampling



THE WORLD BANK

MANNHEIM
BUSINESS SCHOOL

Mitofsky-Waksberg method

- Mitofsky-Waksberg method improves efficiency of “pure” RDD (Mitofsky, 1970; Waksberg, 1978)
- Take advantage of the non-random assignment of phone numbers to users
 - Gains in efficiency depends on *how phone numbers are assigned to users* (clustered instead of haphazard)
- Selects the RDD in two stages:

Mitofsky-Waksberg method: 1st stage

- In the first stage select RDD element sample of primaries
 - Interviewers dial the primary numbers and determine residential status
 - If residential, define a cluster of 100 consecutive numbers (100-bank)
 - (AAA)PPP-SS00 – (AAA)PPP-SS99
 - Example: Primary number (999)555-0012 is dialed and confirmed residential
 - Define 100-bank: (999)555-0000 – (999)555-0099

Mitofsky-Waksberg method: 2nd stage

- In the second stage subsample of b numbers at random from within the “working clusters”
 - Interviewer dials these "secondaries" and determines residential status
 - If the number is not residential, discard and replace with new number from same cluster
 - If residential, interview attempted
 - Second stage process continues replacing numbers
 - Stop when b residential numbers obtained (not b interviews)

Sampling properties

- Probability sampling method with $f = \frac{a \times M_\alpha}{\sum M_\alpha} \times \frac{b}{M_\alpha}$
- M_α = residential numbers in α -th "100-bank"
- a = "first stage" numbers
- b = desired number of residential numbers in 100-bank
- Measure of size is unknown at the time of selection, even after selection completed

Example

Primaries		
(999)555-3223 (999)777-4817 (999)888-4410 ...	Residential	(999)555-32 <u>XX</u> : (999)555-3200 ... (999)555-3299
Secondaries		
999/555-3211 999/555-3258 999/555-3269 999/555-3272 999/555-3236 999/555-3244 999/555-3291		Residential, interviewed Residential, interviewed Nonresidential: Replace Replaced: residential, refused Residential, interviewed Business: Replace Replaced: residential, refused

Sample Design

Completed interviews desired (Response rate: 0.70)	100
Households to be contacted (100/0.70) (Secondary working rate: 0.55)	143
Secondaries to dial (143/0.55) (Cluster size: $b = 5$)	260
Working primaries needed (143/5) (Primary working rate: 0.13)	29
Primaries to screen (29/0.13)	223

Problems with Mitofsky-Waksberg method

- Exhausted clusters
 - b residential numbers not obtained, even after all 100 numbers have been called
 - Non-*epsem* design
 - Weighting is required
 - Limit $b \leq 15$
- Replacement of secondaries late in study period
 - Replacements not dialed as often
 - End of study dominated by dialing numbers

END OF VIDEO 6