Evaluating Questionnaire Issues in Mail Surveys of All Adults in a Household

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Using Mail Survey to Collect Data on All Adults

- Send multiple surveys to each household
  - Not cost effective or efficient
  - Depresses response rates
    - Multiple surveys appear burdensome
    - Usually one person distributes surveys to others
- Random selection of household respondent
  - Self-administered sampling instructions are generally unreliable (Olson et al. 2004)
  - Sampling instructions can be confusing to recipient

Using a Single Household Respondent

- Alternative: rely on single household respondent
  - No sampling or need to communicate selection instructions
  - Selection unimportant since we want data on all adults

- Concerns
  - Is household respondent willing to report on experiences of other adults?
  - Is household respondent aware of other adults' experiences?

Measuring Victimization Incidence in NCVS

- National Crime Victimization Survey (NCVS)
  - Sponsored by Bureau of Justice Statistics
  - Provides national estimates on criminal victimization in U.S. including “unreported victimization”
  - In-person panel survey conducted by Census Bureau
- Need for local area estimates
  - Current NCVS design too costly to extend to this level
- Mail survey attractive for this purpose
  - Low cost and can achieve reasonable response
  - ABS design can target large cities or specific geographic areas such as police jurisdictions

Adapting NCVS Content to Mail Mode

- Companion Survey (NCVS-CS) based on the core NCVS
  - subset of items to classify victimization and limited demos
  - NCVS-CS had 12 month reference period (core – 6 month)
  - Community and Policing Questions (CPQ) – 9 questions including fear of crime and satisfaction with police
- Questionnaire Decisions
  - Focus: victimization incident or person's experience
    - Implications for respondent burden and type of estimates possible
  - Placement of CPQ measures
    - Potential impact on response (Williams et al. 2016)
    - Potential affect on victimization recall (Shapiro 1987)

Field Test Experiments and Outcomes

- Questionnaire Version x Form Experiment
  - Goal is to identify superior questionnaire approach
    - Version: ILS (Incident Level Survey); PLS (Person Level Survey)
    - Form: (A) CPQ asked first; (B) CPQ asked last
  - Outcome measures
    - Unit response rates
    - Item nonresponse
    - Correlations with NCVS

Field Test Design

- Large scale field test to test feasibility of mail design
  - Conducted Sept. – Dec. 2015
  - Sample of ~ 230,000
  - In 40 largest core-based statistical areas (CBSAs)
  - Mailing protocol similar to Dillman and colleagues.
    - Initial mailing; postcard reminder; NR follow-up mailing; final NR follow-up via FedEx.
    - Included $2 in initial mailing
  - 2x2 factorial design (version by form) randomly assigned in each of 40 CBSA
- Second wave in late 2016 to estimate change over time

Results

Results: Response Rates

- Overall response rate
  - AAPOR RR3: 47.1 (across version & form)
- Response rate by Version (ILS vs PLS) across Forms
  - ILS: 43.6%
  - PLS: 44.2%
  - Roughly equivalent performance (small, but significant difference z = -2.75, P = 0.006)
- Results by Form (A – CPQ first/B – CPQ last)
  - Differential response by Version (ILS & PLS)

Results: Response Rates by Version & Form

- ILS: CPQ items presented last, response significantly depressed ($z = 5.83$, $P = 0.003$)
- PLS: No difference by CPQ placement

Version	Overall	Form A	Form B
ILS	43.6%	44.5%	42.7%
PLS	44.2%	44.2%	44.2%

Summary: Response Rates

- Overall response
  - Mail approach feasible and superior to similar telephone effort (see Edwards et al., 2012)
- Incident level focus or person level focus
  - No difference in response
  - No clear decision on questionnaire approach
- CPQ placement – Form A (CPQ first) preferred
  - ILS – when last (B) first questions are HH roster – may be perceived intrusive or not relevant (see Williams et al. 2016)
  - PLS – no difference due to no change in item perception

Results: Item Nonresponse – Victimization Date

- Date used to determine eligibility of incident
  - If missing, assumed ineligible
  - Acceptable if outside ref period – can determine eligibility
  - ILS: unique incidents – up to 4 violent & 4 property starting with most recent
  - PLS: any experience – most recent only for each type (physical attack, threats, sexual assault, personal theft)
- Hypothesis
  - ILS: more temporally distant have more item NR
  - PLS: adults reported later (adult 3 or 4) have more item NR

Results: ILS Date Item Nonresponse

	Both Forms			Form A			Form B		
	Outside	Missing	Valid	Outside	Missing	Valid	Outside	Missing	Valid
Violent									
Number 1	15.2%	6.0%	78.9%	17.5%	6.2%	76.3%	12.2%	5.7%	82.1%
Number 2	20.6%	14.2%	65.2%	22.6%	12.4%	65.0%	18.2%	16.4%	65.5%
Property									
Number 1	12.0%	5.1%	83.0%	13.5%	5.6%	80.8%	10.2%	4.4%	85.4%
Number 2	10.5%	10.6%	78.9%	9.9%	12.3%	77.7%	11.3%	8.1%	80.6%
Number 3	9.2%	19.4%	71.4%	9.1%	19.4%	71.4%	9.1%	40.3%	50.6%
Number 4	5.3%	73.7%	21.0%	4.6%	78.5%	16.9%	7.4%	59.3%	33.3%

- Later victimizations have increasing item nonresponse
  - More difficult to recall
  - Ambiguity about when event occurred?

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Results: PLS Date Item Nonresponse

	Both Forms			Form A			Form B		
	Outside	Missing	Valid	Outside	Missing	Valid	Outside	Missing	Valid
Property									
Break-in	14.7%	9.1%	76.1%	17.7%	9.8%	72.6%	10.5%	8.2%	81.3%
Theft	14.7%	4.8%	80.5%	17.4%	4.9%	77.6%	11.7%	4.6%	83.7%
Attack									
Person 1	10.0%	12.5%	77.5%	12.9%	14.6%	72.5%	6.7%	10.1%	83.2%
Person 2	12.2%	15.6%	72.1%	14.5%	13.1%	72.4%	9.4%	18.8%	71.8%
Person 3	12.4%	11.6%	76.0%	11.9%	10.7%	77.4%	13.3%	13.3%	73.3%

- Recall of date (victimization type & reported adult)
  - Property: thefts more salient than burglaries
  - Personal: no clear pattern – relationship? (not collected)
    - PLS item NR double ILS - (placement)

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Summary: Item Nonresponse

- Reporting/Recall of victimization date
  - ILS – older victimizations are more difficult to pinpoint
    - Consistent with hypothesis
  - PLS – asking date later collects more uncertain victimizations
    - No support for hypothesis
- CPQ placement
  - No effect on item NR of CPQ placement

Validity Test: Correlation with Core NCVS

- Correlation between NCVS-CS and core NCVS?
- Examined correlations of TBC rates for NCVS-CS
  - Version (ILS/PLS) and form (CPQ first/last) to core NCVS at the CBSA level
  - NCVS years 2013-2015 combined to estimate

Victimization Types Defined

Variable	Description
Household level	
TBC-Property	Households touched by property crime, excludes attempts
TBC-Vehicle theft	Households touched by motor vehicle theft
TBC-H violent	Households touched by violent crime, excluding threats
Person level	
TBC-P violent	Persons touched by violent crime, excluding threats
TBC-P serious violent	Persons touched by serious violent crime

Results: Correlations with NCVS

NCVS -core	NCVS-CS	ILS-both	ILS A	ILS B	PLS-both	PLS A	PLS B
TBC-Property	TBC-Property1	0.64***	0.67***	0.52***	0.65***	0.67***	0.56***
TBC-Vehicle theft	TBC-Vehicle theft	0.34*	0.34*	0.18	0.59***	0.71***	0.26
TBC-H violent	TBC-H violent1	0.54***	0.40*	0.44**	0.47**	0.33*	0.24
TBC-P violent	TBC-P violent1	0.45**	0.14	0.48**	0.50***	0.39*	0.29
TBC-P serious viol	TBC-P serious viol	0.47**	0.14	0.50***	0.51***	0.44**	0.30

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

- Correlations: all positive and nearly all significant between core NCVS and NCVS-CS
  - Questionnaire version – similar; vehicle theft higher for PLS
  - CPQ placement
    - ILS form A higher for property; form B higher for personal violent
    - PLS for A slightly higher for prop and violent victimization

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Conclusions

- NCVS-CS mail approach is feasible
  - Response rates nearly 50% (AAPOR RR3); superior to earlier telephone effort
  - High positive correlations - validity of CBSA level estimates
- Item nonresponse an issue
  - Victimization reports must have a date
  - Indication of victimization – uncertainty when
    - Unwillingness to estimate date – even when instructed

Next Steps

- ILS vs PLS
  - No definitive evidence one is better than the other
- CPQs (first vs last)
  - Placement (first) important in ILS - improving perceived relevance
  - Slightly better correlations, mostly for property victimization

- Wave 2
  - Continue test of ILS vs PLS
    - Does one do better estimating change over time
  - CPQ first only
  - Test few revisions to items to try to improve quality

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Thank you!

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