

Improving Survey Management: the Unified Tracking System & the National Survey of College Graduates

Stephanie Coffey
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Introduction

- Example of how the Unified Tracking System (UTS) is used at the Census Bureau and how it improves survey management
- Background of NSCG
- Background of Unified Tracking System (UTS)
- Examples of Reports/Uses in 2013 NSCG
- Examples of Reports/Planned Uses in 2015 NSCG

Disclaimer: The use of NSCG as a case-study for the presentation does not suggest NCSES's endorsement of UTS. While we do support the development of UTS, we feel the product in its current state does not provide the information we are hoping to eventually receive from the product.

NSCG - Overview

- Sponsored by the National Center for Science and Engineering Statistics (NCSES) at the National Science Foundation (NSF)
- Conducted every 2 -3 years
- Target population is college-educated US residents 75 years old or less
 - Focus: those with Science & Engineering degree or career
 - Small non-Science & Engineering sample included
- Sample out of the American Community Survey (ACS)
- Rotating panel design
- Sample size is approximately 140,000 cases

NSCG – Data Collection

- Multimode Survey with a Sequential Design
- Standard Data Collection Pathway
 - Weeks 1 – 6: Initial Web Invite/Reminder Phase
 - Weeks 7 – 12: Introduction Paper Questionnaire Response Option / Reminder
 - Weeks 12 – 22: Introduction of CATI
 - Weeks 23 – 26: Final Reminder

NSCG – Data Collection

- Operational Exceptions to Standard Data Collection Pathway
 - Bad addresses
 - No phone number
 - Returning sample members that state a preference for a mode
- Experiments Alter Data Collection Pathway
 - Incentives at various times
 - Group-level tailoring: Questionnaire Impact; Emails vs Mailings
 - Case-level tailoring: Adaptive Design

UTS - Overview

- Reporting system that helps field offices and survey managers track progress, quality and cost of survey operations
- Development started in 2011
- Part of an initiative led by the director, Bob Groves
- Originally developed to help monitor Field operations/progress
 - Focused on Computer Assisted Personal Interviewing (CAPI) and CATI modes
- Expanded in 2013 to monitor all modes offered at Census, including mail and internet self-response

UTS – Data & Reports

- Integrates data from multiple sources:
 - Frame and sample data
 - Contact history, outcome and status data
 - Automatically generated and interviewer-generated paradata
 - Postal tracking data
 - Official cost data
- UTS Team develops generic as well as custom reports for surveys
 - Daily updates provide current snapshots
 - Time series reports show day-to-day changes
 - Historical reports allow comparisons to past survey cycles

NSCG in the UTS

- First survey to incorporate mail and internet modes into UTS reports
- Complex data collection (2013)
 - 27 weeks of near-weekly contact with sample persons
 - Four embedded experiments
 - Over 20 unique letters
 - Email reminders
 - Phone tree reminders
 - Incoming contacts from telephone questionnaire assistance
 - Incentives mailed at four times

NSCG in the UTS

- Report examples and benefits
- 2013
 - Contact History suite
 - Full Contact History Report
 - Aggregate Contacts by Type for Subgroups
 - Aggregate Contacts by Type for Case
- 2015
 - Calls on Hold report
 - Postal Tracking report (IPTS data)
 - USPS Integrated Postal Tracking System Data

Full Contact History Report

3201 NSCG Full Contact Path History

Control Number: 11 12345678

Cohort: NEW

Experiment: INC4

	Date	Time	Operation	Contact	Result
1	02/12/2013	3:47 PM	Mail Out	Prenotice (New)	Mailed Out
2	02/21/2013	2:28 PM	Mail Out	Web Invite (New)	Mailed Out
3	03/13/2013	9:02 AM	Mail Out	Reminder Letter - No W1 Incentive	Mailed Out
4	03/26/2013	12:57 PM	Mail Out	Web Invite	Mailed Out
5	03/27/2013	4:48 PM	Phone Tree	Auto call	Ans by Person
6	04/09/2013	3:42 PM	Mail Out	Reminder Letter - No W7 Incentive	Mailed Out
7	04/16/2013	1:21 PM	Mail Out	Web Invite/Questionnaire (New)	Mailed Out
8	04/18/2013	8:33 AM	Mail Out	Undefined	Mailed Out
9	04/25/2013	4:32 PM	Phone Tree	Auto call	Ans by Person
10	05/13/2013	2:30 PM	CATI	Called: 3999	Answering machine/service (correct unit) - Message left.
11	05/22/2013	8:01 AM	Mail Out	Web/CATI Invite	Mailed Out
12	05/22/2013	8:45 AM	Mail Out	Reminder Letter - No W12 Incentive	Mailed Out
13	06/01/2013	9:19 PM	CATI	Called: 3999	Unknown answering machine/service - Message left

- Biggest need: Integrated contact history

- Benefits:

- Easily confirm contact protocol was followed for cases
- Easily confirm receipt of web submission or questionnaire

Full Contact History Report

- Biggest need: Integrated contact history
- Benefits:
 - Easily understand how specific cases move through the data collection process

8	04/18/2013	8:33 AM	Mail Out	Undefined	Mailed Out
9	04/25/2013	4:32 PM	Phone Tree	Auto call	Ans by Person
10	05/13/2013	2:30 PM	CATI	Called: 3999	Answering machine/service (correct unit) - Message left.
11	05/22/2013	8:01 AM	Mail Out	Web/CATI Invite	Mailed Out
12	05/22/2013	8:45 AM	Mail Out	Reminder Letter - No W12 Incentive	Mailed Out
13	06/01/2013	9:19 PM	CATI	Called: 3999	Unknown answering machine/service - Message left
14	06/20/2013	8:00 AM	Mail Out	Web Invite/Questionnaire (New)	Mailed Out
15	06/24/2013	4:58 PM	Internet	Web login attempt	Failed Login
16	06/24/2013	4:59 PM	Internet	Web login attempt	Failed Login
17	06/24/2013	4:59 PM	Internet	Web login attempt	Failed Login
18	06/24/2013	5:03 PM	Internet	Web login attempt	Successful Login
19	06/24/2013	5:26 PM	Internet	Form submitted	Completed Case
20	06/24/2013	6:12 PM	CATI	Called: 3999	Unknown answering machine/service - Message left
21	06/24/2013	7:15 PM	CATI	Temporary Hold	External Meta Data Change: Hold temp from Web
22	06/25/2013	11:59 PM	DSD-SSPB	Web CE	Eligible Complete

Aggregate Contacts Report (by Subgroup)

- Benefits
 - Compare contact-based effort for different groups (outgoing and incoming)
 - Could change this report to provide average types of contacts/case
 - Can customize the subgroups within the report (not fixed)

			Mailed Invites / Reminders	Total Internet Login Attempts	Successful Internet Logins	Internet Submissions	Total Trips To Locating / Research	Total Contacts In FEFU	Total Unsuccessful Phone Calls	Attempts In Phonetree Operation	Incoming TQA Contacts (all Others)	Bu Sigr
NSCG		Week 1 Incentive	73,720	12,519	10,940	7,717	1,972	88	22,929	8,913	911	
		Week 12 Incentive	77,141	12,150	10,596	7,562	2,085	93	23,898	9,964	660	
		Week 23 Incentive	77,294	12,170	10,441	7,384	2,001	101	24,602	9,912	609	
		Week 7 Incentive	76,718	11,974	10,383	7,360	1,980	125	23,768	9,995	660	

Aggregate Contacts Report (by Case)

- Previous report, at case level, delivered as a file
- Benefit
 - Better understand resource usage at a case level
 - Can easily be incorporated into models (e.g., response propensity, etc.)
- Used in 2013 adaptive design experiment
 - Directed resources away from low impact / unproductive cases:
 - In over-represented subgroups, based on an R-indicator
 - Many trips to interactive locating
 - High number of unsuccessful calls
 - Allowed us to direct resources to other, possibly more productive cases

Cases-on-Hold Report

- Telephone Center Workload Management
 - New for 2015, Under Development
 - Various reasons for CATI holds (submissions, adaptive design)
 - Some holds automatically expire, others require manual removal
- Benefit
 - Will help telephone centers manage workloads and staffing

Calendar Date		2/11/2015				
Survey ID	Hold Reason	Cases on Hold	Days on Hold	Date Off Hold	Case ID	CN#
		OD15	Temporary	1	3	2/11/2015
OD15	Temporary	1	1	2/14/2015	xx1313	4568752A124

Postal Tracking Report

- Respondent Burden Reduction
 - New for 2015 (Under Development)
 - Integrated Postal Tracking Data
- Benefits
 - Reduce respondent burden
 - Identify return questionnaires as soon as they enter the postal system
 - Stop contacts for these cases
 - Prior to this report, needed a checked in questionnaire (lag up to 7 days)
 - Save resources
 - Identify undeliverable mail pieces (UAAs) earlier
 - Send the case to locating to update contact information

Conclusion

- One example of how UTS is used at the Census Bureau
- NCSES / NSCG perspective: So far so good!
 - Focused on contact history report
 - What's next? More work needs to be done
 - Response rates / Other progress metrics
 - Propensity models / R-indicators / Other quality metrics
- UTS is improving survey management:
 - Integrate various types of data from multiple modes
 - Design and generate both generic and custom reports
 - Capabilities expand as survey needs change (e.g., adding modes, etc.)

Questions?

Thank you!

Contact Information:

Stephanie Coffey

stephanie.coffey@census.gov