

Development of a CARI Research Plan

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Outline

- A. Overview – CE and CARI
- B. Research Process
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 - 2. Final Selection
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- D. Lessons Learned



CE and CARI

Consumer Expenditure (CE) Survey involves Census collecting spending data from U.S. population, sponsored by BLS

Computer Audio Recorded Interviewing (CARI), an application originally developed by RTI to record interviews



CE and CARI



■ Initial questions:

1. Can CE staff obtain or listen to recordings (or does everything remain 'off-site')?
2. How much can be recorded?
3. Are there storage limitations?
4. What burdens does this place on interview process?

CE and CARI



■ Initial questions:

1. Can CE staff obtain or listen to recordings (or does everything remain 'off-site')? No and yes [listen not obtain, within Census Virtual Desktop Infrastructure (VDI)]
2. How much can be recorded? [limited to recording by survey item]
3. Are there storage limitations? [practically, no]
4. What burdens does this place on interview process? [few: recordings triggered automatically, invisibly by interviewers' computers; does involve respondent consent]

Initial Stages

- CE solicited ideas for survey Research Questions (RQs) from survey experts:
 - ▶ Staff in charge of data processing
 - ▶ Staff monitoring changes in interview content
- Requirements:
 - ▶ RQs can be addressed via spoken questions/responses
 - ▶ RQs involve specific survey items (not sections nor entire interviews)

Final Research Question (RQ) Selection

- Solicitation and prior research informed RQs:
 - ▶ **Items flagged by data editing**
[homeowners insurance amounts, new vehicle purchase components, private pension deductions] & record use
 - ▶ **New/revised survey items**
[new items about health insurance coverage, ‘extended recall’ purchases, ‘outlet’ location of purchases]
 - ▶ **Representative items**
[vehicle services item with ‘laundry list’ style of response options]

Item Types

■ Seven (Initial) RQs with different characteristics

RQ1 Health Insurance Coverage

What [other] kind of health insurance or health care coverage [do/does] [you/your household] have or pay for? INCLUDE those that pay for only one type of service (nursing home care, vision care, or dental care). EXCLUDE private plans that only provide extra cash while hospitalized.

1. Private health insurance, including employer and healthcare exchange plans?
2. Medicare
3. Medicare Supplemental Insurance (Medi-Gap)?
4. Medicaid
5. SCHIP
6. Military
7. HIS
8. Single service plan (e.g., dental, vision, long-term care)?
9. No coverage of any type

[if #2 not selected and respondent age 65+]

Are you [is anyone in this household] covered by Medicare?

Item Types (cont.)

RQ8 Private Pension Deductions

Does the respondent have a paper or electronic pay check record present for [Hishernames] last paycheck? [PAYSTUB]

1. Yes
2. No

Was there any money deducted from [your / name's] pay for – Private pension fund? [PRIVPENS]

1. Yes
2. No

How much? [PRIVPENX]

Item Types (cont.)

RQ8 Private Pension Deductions

Does the respondent have a paper or electronic pay check record present for [Hishernames] last paycheck? [PAYSTUB]

1. Yes
2. No

Was there any money deducted from [your / name's] pay for – Private pension fund? [PRIVPENS]

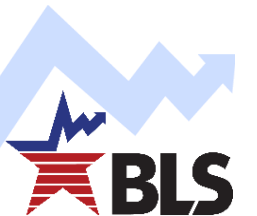
1. Yes
2. No

How much? [PRIVPENX]

RQ Evaluation Methods

- Quantitative (behavior coding)
 - ▶ Inductive coding
 - ▶ Test data, code refinement

- Qualitative



Categorizing Methods

Quantitative

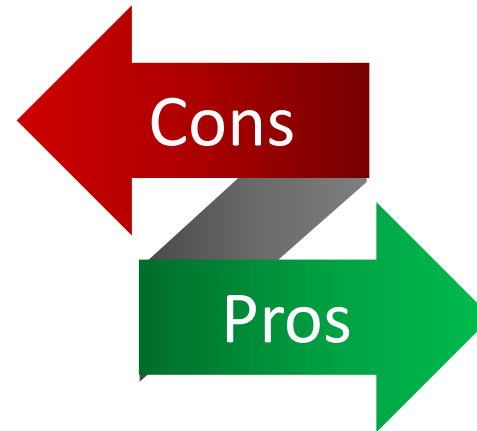
1. Analyst can identify specific, objective behaviors/comments that would address the research question.
2. Behaviors/comments can be captured by a code that is generic and could be applicable to survey items for other research questions.

Qualitative

1. Analyst is listening for more general problematic issues that might be subjective.
2. The analyst must listen and synthesize information across multiple survey items.

Quantitative Evaluation

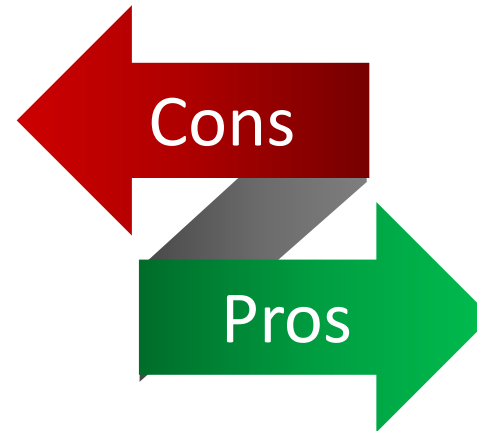
- May require double-coding or coder calibration for quality control
- Significant work needed to develop and test codes to ensure capture of needed information
- Does not automatically result in illustrative examples



- Easily output into reports (via CIDA)
- Standardized codes can pinpoint specific issues affecting response process
- Allows answering 'how often' (context for issues)

Qualitative Evaluation

- May not permit quantifying if observed issue is widespread
- Requires more user effort to interpret and summarize findings



- Does not require as much background information into response process for the question
- Allows answering 'why'
- Produces illustrative explanatory output

Quantitative: Inductive Coding

- Iterative: test data informative
 - ▶ Record use difficult subject for coding
 - ▶ Want to capture rapport-building dialogue (they digress to discussion of gas stations and prices)
 - ▶ Need to create codes informed by common behaviors (e.g., code for if interviewer represented each laundry list concept and not if they read every word of laundry list of responses as scripted)

CIDA

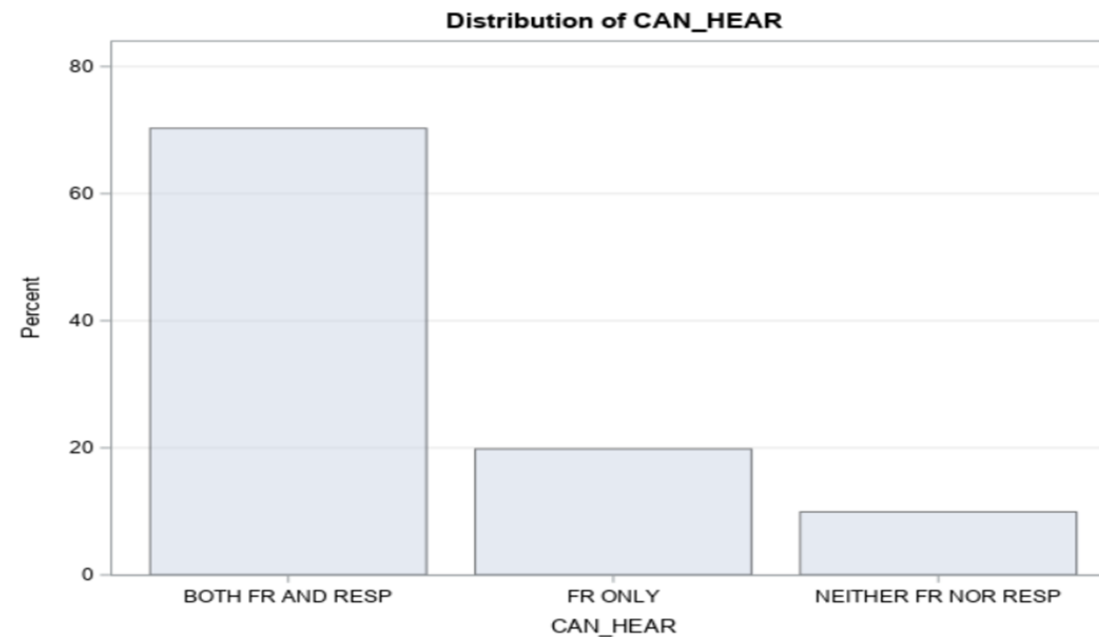
CARI Interactive Data Access System

- ✓ Pulls in survey item recordings within Census VDI application
- ✓ Accessible by multiple users simultaneously
- ✓ Functionality: Pages permit summarizing cases, subsampling cases to output, assignment of codes to survey items, display of codes and scripted survey items, filtering to specific cases or cases with certain items, managing coding workload, and reporting on code analysis
- ✗ Not accessible directly from non-Census workstations (requires Census credentials, VDI)
- ✗ Not geared for sporadic users (account deactivates after 30 days of non-access)
- ✗ Subject to the recording variabilities of the devices used by interviewers (i.e., audibility varies)



Initial Audibility Findings

- Examined how often both interviewer and respondent could be heard (n=212)



Selecting a Case to Code

CIDA CIDA CIDA Reports Coding Management Brett Edward McBride

Coding

Select Survey and Coding Type

Coding Type * Behavior Coding Survey * Consumer Expenditures - Quarterly 202302 (Cases: 727) Status Type to Search Status View Fetch New

Type to filter case by Case Id/Control Number 10 Cases/page

Case ID	Control Number	Date and Time	Interviewer ID	Status	Assigned Coder	
00001227	[REDACTED]	2/3/23, 7:30 PM	[REDACTED] 01	New	N/A	Assign to me
00002198	[REDACTED]	2/3/23, 7:30 PM	[REDACTED] 05	New	N/A	Assign to me
00002147	[REDACTED]	2/3/23, 7:30 PM	[REDACTED] 08	New	N/A	Assign to me
00001403	[REDACTED]	2/3/23, 7:30 PM	[REDACTED] 02	New	N/A	Assign to me



Recorded Survey Items and Responses

CAH CIDA Coding CIDA Reports Coding Management Brett Edward McBride

Survey Name	Case Id	Interviewer(s)	Mixed Consent	Case Control Number	Interview Case Note
Consumer Expenditures - Quarterly 202302	00001758	9	N	0	CAPI NOTE: 05:10 PM 2023/02/0...

OUTCOME	MOSTINT	INTNMBR	POPGRP	BOOK	RECSECT
201	PV	01	05	N	4,12

type to filter questions 10 Q's/page Play Next Skip Buffers [Back to Select Survey/Case](#)

Audio Question

Question Name: HIKIND (11 of 18)

00:00 00:44

Question	Date and Time	Duration	Status
HIKIND	2/18/23, 1:50:16 PM	45 sec	
HIKIND	2/18/23, 2:22:48 PM	14 sec	
INSRPM(1)	2/18/23, 1:56:40 PM	8 sec	
INSRPMXB(1)	2/18/23, 1:56:52 PM	11 sec	
INB_ITEM(1)	2/18/23, 1:56:00 PM	3 sec	
INB_ITEM(1)	2/18/23, 1:56:10 PM	9 sec	
INB_ITEM(1)	2/18/23, 2:33:38 PM	2 sec	

Health Ins Type

31...?[F1]

What kind of health insurance or health care coverage do you have or pay for? **INCLUDE** those that pay for only one type of service (nursing home care, vision care, or dental care). **EXCLUDE** private plans that only provide extra cash while hospitalized.

Read each item on list.
Enter all that apply, separate with commas.

Answer: 2-3

1. Private health insurance, including employer and healthcare exchange plans
2. **Medicare**
3. **Medicare Supplemental Insurance (Medi-Gap)**
4. Medicaid
5. SCHIP (CHIP/Children's Health Insurance Program)/Maryland Children's Health Program (MCHP)
6. Military health care (Tricare/VA/CHAMP-VA)
7. Indian Health Service
8. Single service plan (e.g. dental, vision, long-term care)
9. No coverage of any type



Entering Code Responses

CIDA Question

CIDA Reports Coding Management Brett Edward McBride

Question Name:
VEQ_ITEM(1)
(6 of 18)

00:03 01:47

Utterance 1: Interviewer

1. Did the interviewer read the question as worded? *

Yes No
 NA (if recording(s) cut/captures only part of Q) Unintelligible (if voice heard but too faint/foreign language)

2. Did the interviewer make a major change to the question wording? *

Yes No
 NA (if recording(s) cut/captures only part of Q) Unintelligible (if voice heard but too faint/foreign language)

Utterance 2: Interviewer Process

1. Did the interviewer read each item in the laundry list? *

Yes No
 NA (if recording(s) cut/captures only part of Q) Unintelligible (if voice heard but too faint/foreign language)

2. Did the interviewer refer to the Information Booklet at any time during the interaction? *

Yes No
 NA (if recording(s) cut/captures only part of Q) Unintelligible (if voice heard but too faint/foreign language)

Utterance 3: Probing Behavior

1. Did the interviewer ask a neutral non-leading probe? *

Item

29...?-[F1]

Since the first of November, have you had expenses for any of the following?
Read each item on list.

Answer: Tire purchases or mounting

1. Oil change, lubrication, or oil filter
2. Motor tune-up
3. Battery purchases or installation
4. Repairs to tires, including patches and plugs
5. **Tire purchases or mounting**
6. Front end alignment, wheel balancing, or wheel rotation
7. Shock absorber replacement
8. Body work or painting
9. Any other vehicle or engine repairs
10. Vehicle accessories or customizing
11. Other vehicle services, parts, or equipment
12. Vehicle cleaning services including car washes
99. None/No more entries
888. Delete a line



Completing Coding

This interface shows a coding task within the CARI Interactive Data Access System. The top navigation bar includes the CIDA logo, a user profile for Brett Edward McBride, and utility links for Reports and Coding Management. A table lists coding items with their status and duration.

Question	Date and Time	Duration	Status
OWNED	2/18/23, 2:24:34 PM	1 sec	
INTROA	2/18/23, 1:44:08 PM	4 sec	
VEQ_ITEM(1)	2/18/23, 1:46:00 PM	1 min 48 sec	
DESCRIPTION(1)	2/18/23, 1:46:10 PM	10 sec	
DESCRIPTION(1)	2/18/23, 2:32:06 PM	3 sec	
VEQ_ITEM(2)	2/18/23, 1:46:38 PM	2 sec	
VEQ_ITEM(2)	2/18/23, 2:32:12 PM	1 sec	
HIKIND	2/18/23, 1:50:16 PM	45 sec	
HIKIND	2/18/23, 2:22:48 PM	14 sec	






Below the table is a pagination control showing "1- 10 of 18" and navigation arrows. At the bottom of the interface are four buttons: "Save Answer" (green), "Submit Answer" (green), "Skip" (yellow), and "Complete Coding" (blue).

On the right side, the "Answer: Yes" section contains a list of options: "1. Yes" (highlighted in green) and "2. No".

U.S. Census Bureau
CARI Interactive Data Access System
Version v1.3.1




Qualitative: Filtering to a Specific Case

 CIDA  CIDA  Reports  Coding Management  Brett Edward McBride

CIDA Case View

Select Case

Survey Name: Consumer Expenditures - Quarterly 202302 (Cases: 727) Since:  Cases (filtered: 86)

Type to Search Case Id/ Control Number

Case Filter

Interview Number	Outcome	Interview Mode	Pop Group
<input type="text"/>	201 (713)	<input type="text"/>	<input type="text"/>
RO	FR	By Responses	
<input type="text"/>	<input type="text"/>	HIKIND	<input type="text"/>

[Filter Case](#)

[Review Case](#)

Lessons Learned

- Importance of having buffers (sometimes even before question asked)
- Timestamps (shed light onto interviewer progression across items)
- Listening for certain behaviors not as feasible
- Need to gain expertise in subject matter



Contact Information

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