

# Revising the CE Surveys to Collect Outlets

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# Background: Inputs to the CPI

- CE Surveys: identify what is in the market basket and how expenses should be weighted
- Telephone Point-of-Purchase Survey: build a frame of businesses where consumers shop



# Considerations of Adding Point-of-Purchase Questions to CE

- Fact: Increase in number of questions asked
- How would that affect the survey experience?
  - ▶ Will answering these questions be effortful?
  - ▶ Will these questions change the ‘survey context’?
- How will the quality and characteristics of the point-of-purchase data be affected?
  - ▶ Will the CE survey yield enough data?
  - ▶ Will the CE survey yield high quality data?



# Challenges of Integrating Two Surveys

- Different definitions of item categories
- Different reference periods
- Different sample sizes
- Different modes
- Different materials and aids



# Research Overview

- Step 1: Exploratory lab studies to evaluate feasibility (any show-stoppers?) and feedback on perceived burden for Diary and Interview
- Step 2: Limited implementation in production to evaluate data quality and objective burden
- Step 3 (ongoing): Exploratory online studies to try new questions to collect more data



# Step 1a: Feasibility in CE Diary

- n = 60 participants in the lab
- Simulated data entry from receipts
- Computer task
- Three group comparison:
  - ▶ Group 1: “item-based” data entry
  - ▶ Group 2: “transaction-based” data entry
  - ▶ Group 3: control, no outlet entry

# Item-Based Data Entry

Description

Item Cost

Food and Drink Away From Home	Food and Drink for Home Consumption
Clothes, Shoes, Jewelry, and Accessories	All Other Products/Services

Packaging

Fresh	Frozen	Bottled/ Canned	Other
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Purchased for someone outside the household

Paid Online?

Merchant Name

City, State

# Transaction-Based Data Entry

Merchant Name

Paid Online?

City, State

Total Cost

Item Summary			
	Description	Cost	Delete
<input type="button" value="Edit"/>	Milk	\$3.99	<input type="button" value="X"/>
<input type="button" value="Edit"/>	Bread	\$2.50	<input type="button" value="X"/>
<b>Total</b>		<b>\$6.49</b>	

Add More Items



# Step 1a: Feasibility in CE Diary

- Analysis focused on comprehension of data requirements, time taken to enter data, participant feedback about ease of use and preference
- No significant differences between groups though trend towards preference for transaction-based diary

# Step 1b: Feasibility in CE Interview

- n = 642 participants online
- Participants “purchased” items as part of a fictional narrative and then answered CE interview questions to recall those items
- Three group comparison:
  - ▶ Group 1: “item-based” outlet as follow-up prompt
  - ▶ Group 2: “transaction-based” prompts
  - ▶ Group 3: control, no prompts for outlets

# Item-Based Recall

Did you buy any sofas?

*If not, continue on to the next page*

	Description of the Expense	Amount (\$)	Month of the Expense	Merchant Name
1st Item	living room sofa	390	July	Sofas R Us
2nd Item				
3rd Item				
4th Item				
5th Item				
6th item				
7th item				



# Transaction-Based Recall

Now that you have finished reporting your expenses...

You mentioned that you shopped at Sofas R Us.

Please

What did you get there? Are you reminded of any other shopping that you have not yet reported?

Release

*If entering an item purchased from somewhere else, just change the merchant name.*

If no

	Description of the Expense	Amount (\$)	Month of the Expense	Merchant Name
1st Item	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="Sofas R Us"/>
2nd Item	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="Sofas R Us"/>
3rd Item	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="Sofas R Us"/>
4th Item	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="Sofas R Us"/>
5th Item	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="Sofas R Us"/>
6th item	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="Sofas R Us"/>
7th item	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="Sofas R Us"/>

# Step 1b: Feasibility in CE Interview

- Analysis focused on number of items reported, price reporting error, duplicate reporting, and participant feedback about ease of use and preference
- No significant differences between groups on number of items or price accuracy
- Participant ratings of the transaction-based group showed higher burden and behavior showed more duplicate reporting

# Conclusions on Feasibility

- Addition of point-of-purchase questions likely to have no major effect on data quality or perceived respondent burden
- Optimal format varies by survey
  - ▶ Diary: Transaction-driven format lends itself to a transaction-based diary
  - ▶ Interview: Long reference period with recall from long-term memory lends itself to an item-based interview with follow-up prompts

# Step 2: Adding Questions to CE Interview

- A handful of point-of-purchase questions were added to interviews
  - ▶ 2016 Quarter 3, 4<sup>th</sup> wave interviews
  - ▶ New questions spanned across 5 interview sections

# Step 2: Adding Questions to CE Interview

- Audit trails were used to gauge how much time it takes to collect point-of-purchase data
  - ▶ Store name: 19 seconds
  - ▶ Purchase mode: 7 seconds
  - ▶ Location: 15 seconds
  - ▶ Respondent confusion leads to more interviewer probing (e.g., point-of-purchase for gasoline)
- Expenditure data were used to assess impact on CE data quality
  - ▶ Don't knows and Refusals not changed
  - ▶ Possible data quality check for re-mapping expenses



# Conclusions from Implementation

- Addition of point-of-purchase questions leads to a non-negligible amount of time added to the interview (approximately 40 seconds per item category)
- Interviewers reported that collecting point-of-purchase information is a natural extension
- Evidence of possible improvement of CE data quality through re-mapping
- *The interview may not yield enough outlet data for CPI*



# New Design - Interview

“What is the name of the business that provided the service contract, maintenance, or repair?”

“Was this paid for online, in person, or by mail or telephone?”

In what city is (business name) located?  
In what state is (business name) located?

# New Design - Diary

## Food and Drinks for Home Consumption

What did you buy or pay for?	Is this item: Mark (X) one				Cost without tax	Mark (X) if purchased for someone not on your list	Name of Store or Website
	fresh 1	frozen 2	bottled/ canned 3	other 4			

## Meals, Snacks, and Drinks Away from Home

Mark (X) one that best describes the type of meal	Restaurant or vendor	Mark (X) one that best describes where you made this purchase				Total Cost with tax & tip	If alcoholic beverages included, mark (X) all that apply			Enter the total cost of the alcohol
		Fast Food Take-out Delivery	Full Service Places	Vending Machines or Mobile Vendors	Employer or School Cafeteria		wine	beer	other	

## All Other Products, Services, and Expenses

What did you buy or pay for?	Cost without tax	Mark (X) if purchased for someone not on your list	Store or Website where purchased
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## Clothing, Shoes, Jewelry, and Accessories

What did you buy or pay for?	Cost without tax	Was the item for:					Mark (X) if purchased for someone not on your list
		Child Under 2 1	Boy 2-15 2	Girl 2-15 3	Man 16 & Over 4	Woman 16 & over 5	



# Future Challenges

- Educating interviewers about the reasons for the questionnaire changes
- Monitoring the impact of collecting point-of-purchase in the Diary
  - ▶ Burden unknown, difficult to measure
  - ▶ New tech developments: Receipts?
- Incorporating the new point-of-purchase data into review processes to improve data quality

# Contact Information

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