

Discussion: Proxy Reporting

Nora Cate Schaeffer
University of Wisconsin-Madison

Bureau of Labor Statistics
Consumer Expenditure Survey Methods Workshop
8-9 December 2010
U.S. Census Bureau
Suitland, Maryland

© 2010. Materials may not be reproduced without permission of the author.



Questions that might be addressed

1. Key aspects of proxy reporting that CE should address during redesign
2. Tradeoffs CE will need to balance in dealing with proxy reporting
3. Designs to reduce reliance on proxy reporting
4. Best-practice methods for collecting data from all household members
5. Next research steps for a possible change in CE methods
6. How survey(s) to collect detailed monthly data on comprehensive range of expenditures



Key Aspects of Proxy Reporting

© 2010. Materials may not be reproduced without permission of the author.



Key aspects of proxy reporting: Quality of measurement

What do we know about proxy reporting?

- We use proxy reports to centralize burden in the consumer unit and save costs
- The measurement properties of proxy reports vary by topic, reference period, relationship between self and proxy
- When compared to self reports, proxy reports about expenditures appear likely to be of poor quality
 - Underreport number of purchases
 - Underreport amount of purchases
- But self reports are themselves problematic, so compared to an objective criterion, proxy reports are likely to be even poorer than we usually observe them to be



Key aspects of proxy (and self) reporting: The future

- Electronic and automatic payments reduce exposure of consumers to opportunities to observe and encode
- Medium, location, and content of records has changed since original CE design and will continue to change rapidly



Balancing Tradeoffs

© 2010. Materials may not be reproduced without permission of the author



Balancing tradeoffs

- Total survey error provides a traditional framework for thinking about tradeoffs involved in redesign
 - Unit nonresponse
 - Measurement
 - Response error
 - Item nonresponse
 - Interviewer variance
- Costs



Balancing tradeoffs (continued)

- Design alternatives affect unit nonresponse
 - But they also improve measurement – and thereby increase effective sample size
- Proxy reports have more error than self reports
 - But self reports also have error
- Managing tradeoffs in redesign requires assessing the impact of
 - redesign on reducing measurement error
 - reducing measurement error on effective sample size
- What is the impact of
 - The use of proxy reports on measurement error
 - Replacing proxy reports with self reports or records



Designs to Reduce Reliance on Proxy Reporting

© 2010. Materials may not be reproduced without permission of the author



Starting point for redesign

- Information
 - Where is the information the CE wants to collect
 - Where will it be by the time the redesign is complete
- Respondents
 - What are they able to do
 - Principle impact is on measurement error
 - What are they willing to do
 - Principle effects are on unit and item nonresponse



Locating information about expenditures

- Consumer units likely to become increasingly heterogeneous in types of records of expenditures they are exposed to and maintain
 - Organization of records may vary by income and consumption patterns
- Electronic records of transactions
 - Automatic payroll deposits and electronic pay records
 - Web banking
 - Web statements for each credit card and service account
 - Separate websites for telephone, cell, automobile payments



Negotiating records in the interview

- Web branch for mortgage information
- Web bank statement for car payments, utilities
 - Paper utility statement for gas and electric detail
- Paper check register for water, memberships
- E-mail for landline phone
- E-mail for receipts of web purchases
- Website for cell phone



Internal organization of expenditure information

- Detail and standardization of receipts heterogeneous
- Many receipts now provide diary-quality detail about purchases
- Which is of more variable quality – receipts or respondent's transcriptions onto diary



TRADER JOE'S
1810 Monroe Street
Madison WI 53711
Store #712 - (608) 257-1916
OPEN 8:00AM TO 9:00PM DAILY

BRASSERIE V
1823 Monroe St
Madison
WWW.BRASSIEREV.COM

STARBUCKS COFFEE
BELVEDERE TRAVEL PLAZA
793 BETHANY
Server ID: 4
Check No Tab Cov Time Date
22443/1 5 2 5:34:47 PM 11/11/2010

1 Frites 4.00
1 Stacked Turkey 9.00
Food Sub-Total 13.00
SUB TOTAL 13.00
Sales Tax 0.72
TOTAL 13.72

1 DOPI ESPRESSO D 2.20
SUBTOTAL 2.20
TAX 0.17
AMOUNT PAID 2.37
CASH 2.37
COMMENTS OR CONCERNS
PLEASE CALL 1-800-858-0558
OR
EMAIL TO We.Care@hshost.com

WELCOME
6356828
WILLIAMSON ST BP
1139 WILLIAMSON ST
MADISON WI
DATE 11/30/10 17:36
PUMP # 06
PRODUCT: BLUE
GALLONS 10.475
PRICE/G \$ 2.759
FUEL SALE \$ 28.90

VISA
XXXXXXXXXXXX2714
Auth # 71035C
Ref: SC807007
Resp Code: 000
Sim: 0387350993
SITE ID: 6356828
Earn a 5% rebate
with the BP Visa
Take application
and Apply Today

THANK YOU
HAVE A NICE DAY

GARLIC WISCRACKER CRACKERS. 1.99
TJ'S SAVORY MINI THIN CRACKERS 2.49
TJ'S SAVORY MINI THIN CRACKERS 2.49
TURNOVERS MUSHROOM. 2.99
TURNOVERS MUSHROOM. 2.99
TURNOVERS MUSHROOM. 2.99
TURNOVERS MUSHROOM. 2.99
SLICED HAM APPLIGATE 3.59
SALMON SMOKED WILD 16 OZ 15.99
TURNOVERS MUSHROOM. 2.99
ORIGINAL ALMONDINA COOKIE. 2.89
ORIGINAL ALMONDINA COOKIE. 2.89

SUBTOTAL \$43.89
TOTAL \$43.89
VISA \$43.89

PURCHASE
SWIPE
AUTH# S1118C
INVOICE #: 2487
.712,00.
11-11-2010 05:28PM
REFERENCE #: 548878

THANK YOU FOR SHOPPING AT
TRADER JOE'S
www.traderjoes.com

COSI #167 - State St Madison
250 State St
Madison, WI 53703-2240
Merle 11/12/2010
6:00 PM
10017
Type: To Stay

H. Kayla L- TBM Welt 6.59
Duo 7.79
tal 14.38
0.79
Stay Total 15.17

1044 Kelly M
tbl 306/1 Cnk 1344
Nov13 '10 09:52AM Gst 2

Dining In
2 Two Eggs 14.00
1 Espresso-Dbl 2.37
Food Total 14.00
N/A BevTotal 2.37
Tax Total 0.90
10:22AM Total Due 17.27

Reducing burden and facilitating reporting

- Burden of diary has several components
 - Remembering to collect receipts at point of purchase
 - Obtaining information from other household members
 - Transcribing information onto diary form
- Increasing quality of reporting requires strategies for these sources of burden



Reducing burden and facilitating reporting

- Incorporating technology into design
 - Reminders
 - Text and email reminders for all household members
 - Recording
 - Web-based diaries for recording at time of purchase
 - Audio memos
 - Photographs
 - Scanning records and receipts



Segmentation of consumer units

- Segmentation by household composition
 - Proxy reports may achieve acceptable accuracy in husband-wife consumer units
 - Proxy reporting is relevant for consumer units with children over 6 (approximately 30%?)
- Segmentation by likely spending patterns
 - Use information at initial interview to predict spending patterns and tailor reminders
- Segmentation by likely reporting errors
 - Use information at initial interview to predict difficulties in reporting and provide additional support
- Segmentation by technology available in household
 - Begin with technology and record audit



Best Practices in Proxy Studies

© 2010. Materials may not be reproduced without permission of the author



Next Research Steps

© 2010. Materials may not be reproduced without permission of the author



Error in the current design

- Estimates – even rough estimates – of error from
 - Unit nonresponse
 - Item nonresponse
 - Reporting
- Other features of current study
 - Impact of editing
 - Use of records
- Comparison to criterion – Audit study?
- Construct scenarios of possible reductions in reporting error (both variable error and bias) and estimate impact on total error and effective sample size



Field studies

- Technology profiles of consumer units of different compositions and income levels
 - What technology is owned and how is it used in spending and record keeping
- What is bought, where, and how
 - Automatic deposits and payments
 - Debit and loyalty cards
 - Web-based accounts for credit cards and vendors
 - Web purchases
- Records of transactions
 - Receipts and expenditures
 - E-mail and web statements and receipts



Concluding comments

- Using self reports as a criterion to assess proxy reports overstates success of proxy reports
- The literature suggests that the quality of proxy reports about expenditures appears to be poor.
- Ways of spending, records, and information in records have all become more varied since CE originally designed.
- The technologies available for collecting and recording consumer purchases have expanded
- The population's tolerance of burden can be expected to continue to decrease
- Redesign should consider impact on total error as well as cost



Thank You!

For copies of this presentation or more information, contact:

Please visit us at:
www.uwsc.wisc.edu

