Redesigning the Consumer Expenditure Survey: Usability and Data Quality

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The Consumer Expenditure Survey

Provides information about the spending patterns of different types of households

Provides the basis for revising the expenditure weights for the Consumer Price Index
History

1880-1891: First expenditure surveys

Done sporadically until early 1940s, then about every 10 years

1980: Continuous Consumer Expenditure Survey began
The Consumer Expenditure Survey

Designed to represent the US civilian non-institutionalized population

Collects data from Consumer Units – people living at one address who share living expenses
Data collection

Census Bureau collects data for the BLS using two different surveys with separate samples

Interview survey: Five quarterly interviews
Diary survey: Two weekly diaries

Respondents in both surveys are asked to report ALL of their spending

Business expenses are excluded
Potential measurement error

Data quality depends upon

Accuracy of respondents’ recall
Any documentation respondents keep
Respondents report ALL expenditures

All expenses

- Purchases by check, PayPal, credit or debit card
- Automatic fund transfers
- Cash purchases with or without receipts
- Purchases by money order, cashier’s check, food stamps, WIC vouchers, gift or rebate cards
- Recurrent expenses or unusual expenses
- Purchases of items labeled with barcodes
- Online purchases
- Returns and exchanges
Technology to minimize measurement error

Opportunity to improve data quality

Financial software packages
  Help users adhere to a budget

Smart phones
  Have thousands of apps

Receipt scanners
  Expense tracking

Email and texting
Financial software packages

Data downloads from financial institutions
  Banks and other financial institutions
  PayPal, investment accounts

Expense splitting

Categorization
Financial software packages and the Consumer Expenditure Survey

Data downloads from financial institutions
  Amount, date, sometimes payee

Expense splitting
  Divide overall purchase into individual items

Categorization
  Categorize as required by survey
Smart phones

Microphone

Camera

Barcode scanning

On-screen questionnaire
Smart phones and the Consumer Expenditure Survey

Microphone
- Respondents can record messages about their purchases

Camera
- Respondents can photograph place of purchase, items purchased, as memory aid

Barcode scanner
- Respondents can record identity of certain items

On-screen questionnaire
- Data about purchases
Receipt scanners

OCR to turn receipt image into text

Current applications extract total of the receipt
Do not capture individual purchases constituting the total
Receipt scanners and the Consumer Expenditure Survey

May be possible to extract all purchases from receipt

Software would have to be developed
Email and texting

Respondent messages noting an expenditure, as memory aid

Confirmation web pages or emails for online purchases
Followup CASI

Central repository would receive

- Data files downloaded from financial institutions
- Barcodes
- Audio, photo files
- Receipt image files
- Purchase confirmation emails, web pages
- Email, texts

CASI

Respondents provide needed data for each expenditure
Usability issues

• Is paper less burdensome?
• Will respondents remember to note purchases?
• Can respondents use technology reliably in actual conditions?
• How will respondents choose technology or paper?
• What instructions should respondents receive about choosing and using a technology?
• How can respondents best be helped if they encounter problems?
Demographic issues

Potential demographic bias

- Unbanked respondents
- People uncomfortable with technology
Current developments

Gemini Project
National Academy of Sciences
Expert panel
Planning and testing
“Test early and often”
Thank you

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