

Testing the Feasibility of Collecting Expenditure Data via Individual Mobile and Desktop Diaries

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I. INDIVIDUAL DIARIES OVERVIEW

Consumer Expenditure Diary (CED) Overview

- The CED currently uses 1 paper diary to collect household expenditures for a week (x2)
- Interviewers “place” the diary in-person and conduct up to two more visits
- The CED gathers more detailed expenditures than the Consumer Expenditure Interview Survey
- The Diary is divided into four sections:
 - ▶ Food Away From Home
 - ▶ Food for Home Consumption
 - ▶ Clothing, Shoes, Jewelry and Accessories
 - ▶ All Other Products, Services and Expenses

Individual Diaries Background

- The Individual Diaries Feasibility Test (IDFT) was designed to inform the operational and data quality aspects of collecting expenditures from household members using personal electronic diaries
- Since 2004, there have been various ongoing initiatives to test various forms of instruments to address the limitations of one paper diary for households with multiple members
- Two modes of electronic diaries were tested:
 - ▶ Mobile internet (via smartphone)
 - ▶ Desktop internet

Individual Diaries Logistics

- Data Collection Period – Aug - Dec 2014
- Starting Sample Addresses – 1,200
- Targeted sampling on area mobile usage, internet penetration, multi-person households, and English speaking households
- Diary placement occurs once across the 2-week recording period
- Interviewers provide username and password to Respondents

Individual Diaries Eligible Cases & Assignment Protocol

- Eligible Individual Diaries Cases
 - ▶ English only – (No Spanish Diary)
 - ▶ No Multi-CU HHs or Replacement HHs
 - ▶ Home internet access via PC, tablet, Smartphone
- Assignment Protocol
 - ▶ If a household screens in as eligible, household members are offered modes sequentially
 - ▶ Mobile mode first and, if they do not have a Smartphone, then
 - ▶ Desktop mode, including tablet

Individual Diaries Monitoring Protocol

- Interviewer Follow-up Calls
 - ▶ Reminder Calls (or visits if necessary) on Day 3 and Day 8 were encouraged for all participating households
 - ▶ Tailored follow-up calls were made to households that Census flagged for going three consecutive days without logging into the instrument

Individual Diaries Training and Materials

- Training conducted in-person for one day and was a departure from standard CE training protocols - focused more heavily on protocol changes
- Respondent Materials
 - ▶ Mobile and Desktop User Guides – Focus on logging in and entering expenses
 - ▶ Three YouTube Online Tutorials
 - ▶ Getting Started
 - ▶ What to Enter in the CE Diary
 - ▶ Entering and Editing Expenses

II. SAMPLE PERFORMANCE & CHARACTERISTICS

Characteristics of Sampled Households versus Restricted Production

- Control Group (CG) – Production cases from the same time period and regions restricted to match IDFT test sample by only including English speaking HHs with internet access who had diaries double placed.
- IDFT vs. CG
 - ▶ More homeowners (70.7% vs. 63.2%)
 - ▶ Fewer single-person HHs (16.5% vs. 23.7%)
 - ▶ Lower prevalence of converted refusals (1.2% vs. 3.7%)

Characteristics of Individual Diarists by HH Assigned Diary Type

- Diary Types – Mobile, Desktop, Mix (Mobile & Desktop) & Paper
- Compared to desktop-only HH diarists, mobile diarists were more likely to be under the age of 50, college graduates, white, of Hispanic origin, and live in larger HHs.
- Younger members were particularly receptive to the mobile diary, as 41% of mobile diarists were between the ages of 16 & 34 compared to 27% of paper diarists.

Sample Performance

- Difference in Rates – (IDFT – RP)

	ID	CG	Diff	% Diff
Screen-out rate	25%	31%	-6%	-19.4%
Contact rate	96%	95%	1%	1%
Cooperation rate	23%	28%	-5%	-17.9%
Response rate	22%	27%	-5%	-18.5%
'Non-response' rate (or non-placement rate)	59%	64%	-6%	-7.8%

- The higher non-response & screen-out rates in the RP sample may be attributed to the IDFT sample design.

III. FEASIBILITY

Adherence to Protocol

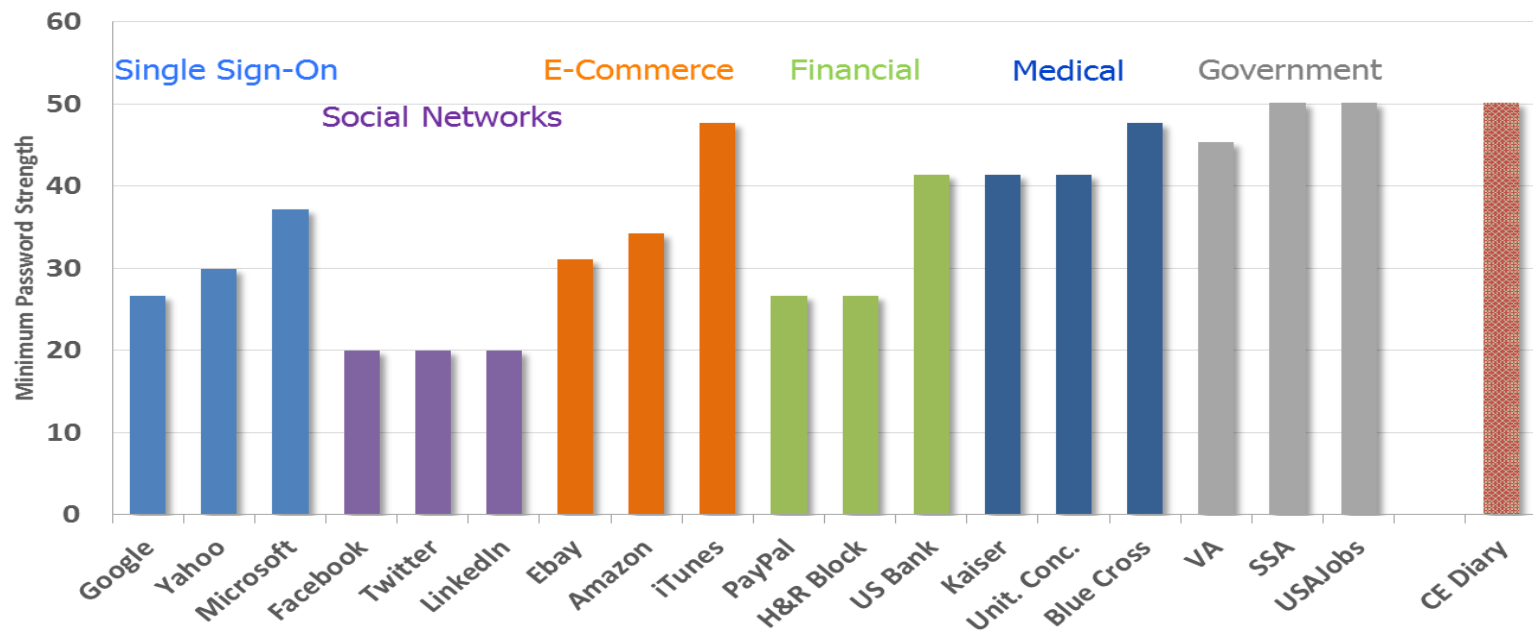
- Multi-member HHs – Interviewer reports of ‘central person’ diary recording
- Interviewer monitoring of diary logins

	N	% with follow-up attempt
PHI	88	5%
CHI	152	31%
LA	175	4%
Average:		14%

- ▶ HHs that were contacted were significantly more likely to complete their diaries than those that were not (70% vs. 49%)
- ▶ HHs that were contacted had a significantly higher average number of entries (52 vs. 25)

Obstacles to Accessing Web Diaries

- URL – <https://respond.census.gov/ced>
- Password Requirements – 8 characters, including an uppercase & lowercase letter, a number, & a special character.



IV. EXPENDITURE REPORTING

Expenditure Reporting: Individual vs. Household

- Mean and median number of HH entries by group –multiple diarists

	N	Mean	Median
ID	57	70.4	59.0
CG	139	89.4	85.0
Diff (ID-CG)	-	-19.0	-26.0
% Difference	-	-21.3%	-30.6%

- Count of HH entries by size and group

	2 diarists/age-eligible members			3+ diarists/age-eligible members		
	N	Mean	Median	N	Mean	Median
ID	47	64.8	57	10	96.8	109
CG	98	82.1	76	41	107.0	114
Diff (ID-CG)	-	-17.3	-19.0	-	-10.2	-5.0
% Difference	-	-21.1%	-25.0%	-	-9.5%	-4.4%

V. INDIVIDUAL WEB MODE DATA QUALITY

Number of Entries at the HH Level

- Mean & median number of HH entries by group – all diarists

	No. CUs	Mean	Median
ID	164	59.4	50.5
CG	190	79.5	72.0
Diff (ID-CG)	-	-20.1	-22.5
% Difference	-	-25.3%	-31.3%

- Mean & median number of entries per single-member HHs by group – all diarists

	N	Mean	Median
ID	30	36.1	37.5
CG	51	52.3	47.0
Diff (ID-CG)	-	-16.2	-9.5
% Difference	-	-30.9%	-20.2%

Number of Entries by Diary Mode

- Descriptive statistics of entries by diary mode

	No. diarists	Mean	Median	Min	Max
Mobile	87	33.5	21.0	1.0	133.0
Desktop	146	41.9	31.0	2.0	177.0
Recall	16	44.5	32.5	1.0	113.0

VI. CONCLUSION

In Summary

- There were challenges implementing the test protocol as designed.
 - ▶ Lower than expected prevalence of household members cooperating.
 - ▶ Long web site address and complex password requirements.
 - ▶ Web diary monitoring improvements.

In Summary

- No improvement in household cooperation rates.
- Contemporaneous reporting of expenses was hampered by data limitations.
- Single proxy respondents versus multi-member HHs.
- Fewer entries and lower reported expenditure totals among the ID sample.
- Positive feedback regarding the ease of recording expenses and the security of their data.

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