

Results from Testing a Web Mode for the Consumer Expenditure Diary Survey

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Web Diary Team Overview

Motivation

- ▶ To encourage contemporaneous reporting, improve accuracy through access across locations and household members, provide a platform for individual diaries, allow for a multiportal approach, and to improve response rates by offering alternative response modes to the traditional paper diary.

Objective

- ▶ To understand the operational issues regarding implementing a web mode for CE and to understand the data quality and response rates associated with web collection.

Presentation Outline

- I. Web Diary Overview
- II. Results – Sample Performance
- III. Results – Expenditure Comparisons
- IV. Results – Non-Expenditure
- V. Results – Paradata Analysis
- VI. Findings and Recommendations

I. WEB DIARY OVERVIEW

Web Diary Logistics

- Data Collection Period – Jan, Feb, Mar 2013
- Separate online WD application
- All research cases are “double placed”
- FRs provide username and password to Respondent via CAPI instrument
- New outcome codes for Web Diary (final disposition)
- New materials
 - ▶ FR Talking Points (FR)
 - ▶ User Guide (FR)
- Test Limitations
 - ▶ English only
 - ▶ No Multi-CU HHs or Replacement HHs
 - ▶ No Reinterview

Consumer Expenditure Diary Survey User Guide

Consumer Expenditure Diary Survey— User Guide

FLD/10-10284 (8/2012)

Thank you for agreeing to participate in the Consumer Expenditure Survey (CE). We understand that this task takes time; however, your information is very important to us and will be used for many purposes that affect all Americans. Among the most important, it is used to help calculate the Consumer Price Index, or CPI, which is a basic measure of the rate of inflation. For more information about the survey, visit: <http://www.bls.gov/ce> and <http://www.census.gov>.

By law (Title 13, U.S. Code), we must keep your information confidential; we use it for statistical purposes only. If you have comments regarding this survey, please send them to: *Division of Consumer Expenditure Surveys, 2 Massachusetts Avenue N.E., Room 3985, Washington, DC 20212.*

The CE Web Diary can be accessed at:
<http://respond.census.gov/ced/>.

Your **username:** _____
Your **password:** _____

On this screen you enter the names of the people in your household and your survey Start Date.

Your **Start Date** is: _____

Your **Household Members:**

United States Census Bureau
CONSUMER EXPENDITURE DIARY SURVEY

Login

• Login requires a username and password. Click the "Login" button.

Username and Password are case sensitive.

Username: Password:

[Forgot username?](#) [Forgot password?](#)

Please note: sessions will expire (requiring you to log back in) after 15 minutes of inactivity. No data will be lost.

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CONSUMER EXPENDITURE DIARY SURVEY

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Household Roster and Start Date

1. Please enter the names of the people in your household that are listed on the back of your instruction card. You will record the purchases and expenses made by ALL of these people.

1.		7.	
2.		8.	
3.		9.	
4.		10.	
5.		11.	
6.		12.	

2. Select the start date you are scheduled to begin entering expenses into your Diary.

Month: Day: Year:

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FR Talking Points

FEV-10-10284 (2/16/2012)

Logging in to the Web Diary

Username and Password

Your first login to the CE Web Diary requires a unique secure **Username** that is assigned to each household in our study.

Enter your Username in the field after "Username" located in the middle of the screen at the Web Diary welcome page. Be sure to enter the Username exactly as it is written since it is case-sensitive. Enter your Password in the field after "Password."

1. (Point out the Username field on the user guide.)
2. (Point out the Password field on the user guide.)

Note: It will be helpful to bookmark the URL for the CE Web Diary. This will make it easier to access each day as you are entering purchases.

Roster Creation

On this screen you will enter the names of all of the people in your household that don't have another residence where they usually stay. These names will then appear on the Web Diary data entry page as a reminder of the people to keep in mind when recording purchases for all household members.

Note that you only have to do this once and will not be able to change the roster once it is created.

II. RESULTS – SAMPLE PERFORMANCE

Web Diary Eligible Cases & Production Sample

- Eligible Web Diary Cases
 - ▶ English only
 - ▶ No Multi-CU HHs or Replacement HHs
 - ▶ Home internet access via PC or tablet
- Full Production Sample
 - ▶ All CE Diary cases fielded between January and March 2013
- Restricted Production Sample
 - ▶ Excluded non-English language interviews
 - ▶ Excluded Spawned HHs and Replacement HHs
 - ▶ Excluded HHs reporting no internet access or internet access only through a mobile phone

Sample Demographics & Characteristics

- Pre-tax Income Difference

- ▶ Web Diary Sample–Restricted Production = \$5,000

	Web Diary Sample (N = 456)	Restricted Production (N = 2,261)	Full Production (N = 3,251)
<i>Average Age</i>	50.1	49.6	50.1
<i>Average CU Size</i>	2.6	2.5	2.4
Race (percent)			
<i>White & Other Race</i>	87.1	86.5	85.1
<i>Black</i>	6.8	9.2	10.9
<i>Asian</i>	6.1	4.2	4.0
Ethnicity			
<i>Hispanic</i>	12.7%	9.8%	14.6%

Sample Demographics & Characteristics

	Web Diary Sample (N = 456)	Restricted Production (N = 2,261)	Full Production (N = 3,251)
Gender			
<i>Male</i>	48.5%	51.0%	49.6%
<i>Female</i>	51.5%	49.0%	50.4%
Education			
<i>Elementary</i>	0.9%	1.4%	3.6%
<i>High school</i>	21.1%	26.7%	33.2%
<i>College</i>	78.1%	71.8%	62.8%
<i>Never attended</i>	-	0.1%	0.4%
Tenure			
<i>Homeowner</i>	73.0%	72.3%	64.4%
<i>Renter</i>	27.0%	27.7%	35.6%

Overall Response Rates

- Response Rates
 - ▶ Web Diary Sample – 32.0%
 - ▶ Restricted Production – 60.8%
 - ▶ Full Production – 64.5%

Overall Response Rates									
RO	Web Diary Sample			Restricted Production			Full Production		
	Total Eligible	Diaries	Rate	Total Eligible	Diaries	Rate	Total Eligible	Diaries	Rate
New York	178	54	30.3%	536	301	56.2%	708	435	61.4%
Philadelphia	239	100	41.8%	722	410	56.8%	1,008	609	60.4%
Chicago	273	86	31.5%	560	373	66.6%	761	550	72.3%
Atlanta	286	80	28.0%	604	423	70.0%	845	598	70.8%
Denver	156	55	35.3%	584	329	56.3%	809	503	62.2%
Los Angeles	294	81	27.6%	710	425	59.9%	910	556	61.1%
Overall	1,426	456	32.0%	3,716	2,261	60.8%	5,041	3,251	64.5%

III. RESULTS – EXPENDITURE COMPARISONS

Diary Completion

- Analysis excluded non-respondents and removed diaries that FRs indicated had no entries upon pick-up
- Partial Recall – Diaries in which respondent provided entries are augmented by entries collected through the receipt/recall process

Diary Completion						
	Web Diary CUs	Restricted Production CUs	Web Diary Percent	Restricted Production Percent	Difference (Test-RP)	Change
Week 1 entries only	38	52	19.0%	5.5%	13.5	245.5%
Week 2 entries only	7	95	3.5%	10.0%	-6.5	-65.0%
Entries both weeks	155	801	77.5%	84.5%	-7.0	-8.3%
Total	200	948	100.0%	100.0%		

Number of Diary Entries

- Total Entries among CUs entering 2 weeks of data without total recall

Total Entries				
	Web Diary Sample (n=155)	Restricted Production (n=801)	Difference (Test-RP)	Change
Mean entries	66.9	75.6	-8.7	-11.5%
Median entries	61.0	69.0	-8.0	-11.6%

- Total Entries among CUs entering 2 weeks of data without total recall, compared against double placed restricted production CUs

Total Entries compared against double-placed RP CUs				
	Web Diary Sample (n=155)	Double-Placed Restricted Production (n=281)	Difference (Test- RP)	Change
Mean entries	66.9	79.4	-12.5	-15.7%
Median entries	61.0	74.0	-13.0	-17.6%

Amount of Expenditures Reported

- Total Expenditures among CUs entering 2 weeks of data without total recall

Total Expenditure Amounts		
	Difference (Test-RP)	Change
Mean difference	-\$301.82	-15.1%
Median difference	-\$228.16	-17.0%

- Total Expenditures among CUs entering 2 weeks of data without total recall, compared against double placed restricted production CUs

Expenditure Amounts compared against double-placed RP CUs		
	Difference (Test-RP)	Change
Mean difference	-\$138.26	-7.6%
Median difference	-\$196.17	-15.0%

Number of Entries per Week

- Cases were subset to include CUs not having any entries from partial recall

Entries by CUs completing both weeks (no recall)				
	Web Diary Sample (n=126)	Restricted Production (n=244)	Difference (Test- RP)	Change
Week 1 mean entries	37.8	41.7	-3.9	-9.4%
Week 1 median entries	35.0	37.0	-2.0	-5.4%
Week 2 mean entries	31.7	38.3	-6.6	-17.2%
Week 2 median entries	29.0	32.5	-3.5	-10.8%
Overall mean entries	69.5	80.0	-10.5	-13.1%
Overall median entries	62.0	75.5	-13.5	-17.9%

Within-CU proportion of entries entered in first week by CUs completing both weeks (no recall)		
	Web Diary Sample (n=126)	Restricted Production (n=244)
Proportion (Week 1)	54.8%	53.1%

Amount of Expenditures per Week

- Cases were subset to include CUs not having any entries from partial recall

Expenditure Totals for CUs completing both weeks (no recall)		
	Difference (Test-RP)	Change
Week 1 mean difference	-3.73	-0.4%
Week 1 median difference	-74.85	-12.8%
Week 2 mean difference	-244.32	-25.1%
Week 2 median difference	-93.84	-15.9%
Overall mean difference	-248.05	-13.2%
Overall median difference	-210.31	-15.5%

Within-CU proportion of expenditure amounts entered in first week of CUs completing both weeks (no recall)		
	Web Diary Sample (n=126)	Restricted Production (n=244)
Proportion (Week 1)	52.4%	52.1%

IV. RESULTS – NON- EXPENDITURE

Total Recall Rates

- Total Recall Rates
 - ▶ Web Diary Sample – 21.3%
 - ▶ Restricted Production – 9.3%
 - ▶ Full Production – 10.3%

Total Recall Rates (Week 1 and Week 2)									
RO	Web Diary Sample			Restricted Production			Full Production		
	Complete Diaries	Total Recall	Rate	Complete Diaries	Total Recall	Rate	Complete Diaries	Total Recall	Rate
New York	54	6	11.1%	301	2	0.7%	435	11	2.5%
Philadelphia	100	19	19.0%	410	30	7.3%	609	51	8.4%
Chicago	86	22	25.6%	373	63	16.9%	550	112	20.4%
Atlanta	80	21	26.3%	423	56	13.2%	598	81	13.5%
Denver	55	8	14.5%	329	19	5.8%	503	28	5.6%
Los Angeles	81	21	25.9%	425	40	9.4%	556	53	9.5%
Overall	456	97	21.3%	2,261	210	9.3%	3,251	336	10.3%

Missing Data & Partial Recall

■ Missing data

CUs with any item non-response, by response field				
	Web Diary Sample (n=200)		Production (n=1,435)	
	CUs	Percent of total	CUs	Percent of total
Cost	17	8.5%	180	12.5%
Description	0	0.0%	0	0.0%
Day	1	0.5%	255	17.8%

■ Extent of partial recall conducted

Proportion of CUs having recorded entries with some recall carried out				
	Web Diary Sample (n=200)	Restricted Production (n=948)	Difference (Test-RP)	Change
Proportion with recall	20.0%	16.1%	3.9	24.2%

V. RESULTS – PARADATA ANALYSIS

Web Diary Instances

■ Instances –

- ▶ A type of action on the part of the respondent, such as clicking on the “next” button at the bottom of the Roster page
- ▶ A type of action on the part of the instrument, such as displaying the logout hyperlink .after a respondent clicked on the “logout” button

Instances	Total	Diary Tab					Thank You	Instructions	Undefined or Other
		Roster	FDA	FDH	CSJ	OTH			
Login	1576								1576
Login failed	889								889
Logout	1033								1033
Logout Hyperlink	1018	37	315	152	52	392	68		2
Error trigger	96	94							2
Next Action	338	338							
Save	2761		680	837	169	1073			2
Submit	639		173	135	57	273			1
Hyperlink	337	24	84	56	13	63	53	36	8
Total	8687	493	1252	1180	291	1801	121	36	3513

Respondent Log-ins

■ Log-in Attempts

- ▶ 34 respondents (11%) attempted to log-in but never succeeded
- ▶ 145 respondents (55%) experienced some failed log-ins along with log-in success
- ▶ Freq. of Log-ins by Tot. Days & Instances per Day by Respondent

Respondents			Instances	
Total Days	Freq.	Percent	Freq	Avg
1	72	24.2%	528	7
2	55	18.5%	775	14
3	35	11.7%	755	22
4	30	10.1%	702	23
5	18	6.0%	628	35
6	23	7.7%	865	38
7	14	4.7%	621	44
8	13	4.4%	626	48
9	3	1.0%	166	55
10	9	3.0%	742	82
11	12	4.0%	909	76
12	6	2.0%	470	78
13	6	2.0%	582	97
14	2	0.7%	323	162
TOTAL	298	100%	8692	29

Respondent Log-ins

■ Log-in Days

- ▶ 45 respondents (17%) logged in only once
- ▶ Two respondents (<1%) logged in all 14 days

Successful Login Days	Frequency	Percent	Cumulative Percent
1	45	17.0%	17.0%
2	49	18.6%	35.6%
3	34	12.9%	48.5%
4	31	11.7%	60.2%
5	17	6.4%	66.7%
6	23	8.7%	75.4%
7	14	5.3%	80.7%
8	13	4.9%	85.6%
9	4	1.5%	87.1%
10	9	3.4%	90.5%
11	12	4.5%	95.1%
12	5	1.9%	97.0%
13	6	2.3%	99.2%
14	2	0.8%	100.0%
TOTAL	264	100%	

Access Device & Operating System

■ Access Device –

- ▶ A desktop computer was used in 96% of all log-ins
- ▶ Less than one percent of log-ins were accessed through a smartphone

OS	Device	Percent	Freq	Android	Mobile Safari	Safari	Chrome	Firefox	Internet Explorer	AOL Browser
Android	SmartPhone	0.3%	5	4			1			
	Tablet	0.6%	9	9						
iOS	iPhone	0.4%	7		7					
	iPad	2.7%	42		42					
Mac OS X	Desktop	13.7%	216			141	30	45		
Windows		82.3%	1297			1	305	259	706	26
Total			1576	13	49	142	336	304	706	26
				0.8%	3.1%	9.0%	21.3%	19.3%	44.8%	1.6%

VI. FINDINGS & RECOMMENDATIONS

Findings

- *Higher median expenditures for the following sections:*
 - ▶ Clothing, Shoes, Jewelry, and Accessories
 - ▶ Food and Drinks for Home Consumption
- *Lower item nonresponse, as defined for a diary instrument*
- *Week-to-week drop-off validates shift to one week collection period*
- *Key analysis – Expenditure reporting by log-in frequency*

Recommendations

■ *Low Response Rates*

- ▶ Create flexible, but secure, username and password requirements
- ▶ Restrict default usernames and passwords to specific characters
- ▶ Print User Guide on non-glossy paper to facilitate username/password transcription
- ▶ Change the test protocol to allow for FR collection and input of records, particularly receipts with numerous items

Recommendations

- *Higher Rate of Total Recall*
 - ▶ Allow entry, into the instrument, of in-scope expenditures after the final day of collection
 - ▶ Assess different protocols for allowing the FR access to a summary of the respondent's web diary entries
 - ▶ Set Date field to default to current day
 - ▶ Run daily analysis on the paradata to determine which respondents have not logged into the instrument as well as keeping a log of how many days have passed since the last successful logon by the respondent and, after a specific time period has lapsed, FRs will be notified to contact the respondent to remind them to enter any expenditures

Recommendations

■ *Low Placement Rates*

- ▶ Create classroom training for any feasibility test that features enormous departures from past protocols
- ▶ Implement the most recent security protocols, displaying security assurances in a prominent place within the instrument, and educate FRs on the most relevant data security concerns

■ *Higher Ineligible Rates*

- ▶ Complete future research to determine what operating systems were categorized as "Other"
- ▶ Include multiple survey modes in order to determine which modal offering is optimal and the most effective

Recommendations

- *Other*

- ▶ Employ a dialog box that opens prompting the FR that they are about to leave the password assignment screen
- ▶ Paradata should be formatted in a manner that is easily analyzed and readable

Follow-up Analyses

- Reported expenditures by respondent login pattern and frequency
- Reported expenditures by FR follow-up contact completion
- Respondent login patterns and frequency by FR follow-up contact completion
- A comparison of web diary blank days to production diary blank days
- Rate of duplicate expenditures (recalled data versus respondent entered data) in the web diary compared to the production diary

Acronym Definitions

- WD – Web Diary
- FR – Field Representative
- R – Respondent
- CU – Consumer Unit
- HH - Household
- CAPI – Computer-assisted Personal Interviewing

Contact Information

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