

# **American Community Survey Fiscal Year 2014 Content Review Approach for Generating Results**

**FINAL REPORT**

*Karen King, American Community Survey Office  
Sarah Heimel, Decennial Statistical Studies Division*

(This page intentionally blank)

## Table of Contents

1	Introduction.....	1
2	Methodology.....	1
3	Appendix: Summary of Quadrant Results.....	4

## Table of Figures

Figure 1: Spreadsheet Extract.....	1
Figure 2: Example of Mid-level Cluster Values.....	2
Figure 3: Example of Weights and Total Costs Calculations.....	2
Figure 4a: Example of Total Benefits Calculation.....	2
Figure 4b: Scatterplot Example.....	3

## 1 Introduction

The purpose of the American Community Survey (ACS) Content Review was to obtain a comprehensive understanding of the usages, justification, and merit of each question on the ACS. The goal was to minimize the reporting burden imposed on a subset of households while providing quality information to federal, state, local and tribal governments along with business decision-makers. The ACS Content Review examined multiple facets of the ACS, reviewing key survey measures and conducting meetings with the survey’s stakeholders and the general public.

This report outlines the methodology used to obtain the results and directly supports the findings described in the American Community Survey (ACS) Fiscal Year 2014 Content Review Results Final Report. For more information on the ACS Content Review, see the Content Review web page:

[http://www.census.gov/acs/www/about\\_the\\_survey/acs\\_content\\_review/](http://www.census.gov/acs/www/about_the_survey/acs_content_review/)

## 2 Methodology

Nineteen metrics were used to describe costs and benefits of each question on the ACS questionnaire. For instance, one metric that was considered as a ‘cost’ was the median length of time that respondents needed in order to answer each question. Each metric was calculated individually, in methodology described in separate documents/sections. Each question on the ACS was thus assessed, and the raw results were entered into a column of an Excel spreadsheet. An extract of the spreadsheet is shown below in Figure 1; the actual spreadsheet has rows for all 125 ACS questions included in the Content Review and columns for all nineteen metrics.

ACS Question Number	Topic	**** COST METRICS ****				....
		Int. Survey Overall Difficulty	Adjusted Median Seconds to Answer	Allocation Rates	....	
H1	Building/Structure Type and Units	8.1%	15	0.68	....	
H2	Year Built	29.3%	11	14.94	....	
H3	Date moved in	3.2%	14	2.39	....	
H4	Acreage	9.5%	5	3.76	....	
...	....	....	....	....	....	

Figure 1: Spreadsheet Extract

A subsequent spreadsheet captured the cluster values associated with the raw results. In the extract below (Figure 2), question H1 had a low overall difficulty, a mid-level length of time to answer, and a low allocation rate. Figure 1 shows how question H2 had a higher allocation rate and a higher difficulty score, compared to the other questions. Those translated into mid-level cluster values in Figure 2.

**** COST METRICS ****					
ACS Question Number	Topic	Int. Survey Overall Difficulty	Adjusted Median Seconds to Answer	Allocation Rates	....
H1	Building/Structure Type and Units	1	3	1	....
H2	Year Built	3	3	3	....
H3	Date moved in	1	3	1	....
H4	Acreage	1	1	1	....
...	....	....	....	....	....

Figure 2: Example of Mid-level Cluster Values

A third spreadsheet expanded upon the cluster values in Figure 2 by adding the weights that were to be assessed on each metric. This is shown in Figure 3. The top row identifies the weights associated with each metric (i.e., of the 100 points to be distributed among cost metrics, overall survey difficulty had 15.5 points, seconds to answer had 10 points and allocation rates had a weight of 23.5). The shaded columns then multiply the weight by the cluster value; the higher the cluster, the higher the final score for that metric. The Total Costs column sums all six cost metrics (only three are shown in Figure 3) and divides the sum by 5 in order to use a scale of 0 to 100 for the scatterplot.

ACS Question Number	Topic	Int. Survey Overall Difficulty	15.5	Seconds to Answer	10	Allocation Rates	23.5	Total Costs
H1	Building/Structure Type and Units	1	15.5	3	30	1	23.5	37.00
H2	Year Built	3	46.5	3	30	3	70.5	60.40
H3	Date moved in	1	15.5	3	30	1	23.5	37.00
H4	Acreage	1	15.5	1	10	1	23.5	33.00

Figure 3: Example of Weights and Total Costs Calculations

Similar actions were taken for all 13 benefits metrics as well, resulting in a final Total Benefits Score. The two values of Total Costs and Total Benefits were then used to create a scatterplot. Figure 4a and 4b show samples of the final cost and benefit sums, and resulting scatterplot.

ACS Question Number	Topic	Costs	Benefits
H1	Building/Structure Type and Units	37.00	78.45
H2	Year Built	60.40	80.60
H3	Date moved in	37.00	57.99
H4	Acreage	33.00	52.17

Figure 4a: Example of Total Benefits Calculation

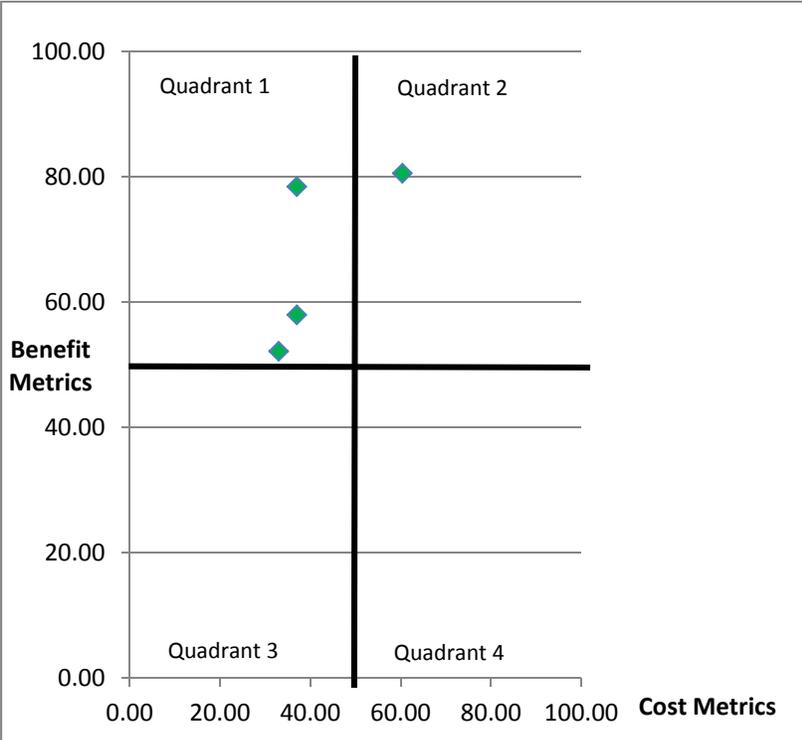


Figure 5b: Scatterplot Example

For a summary of the results of the four quadrants, see the appendix in section 3 below.

### 3 Appendix: Summary of Quadrant Results

#### Total Questions<sup>1</sup>

Total Questions			
Quadrant 1:	High Use/Low Cost	68	54%
Quadrant 2:	High Use/High Cost	33	26%
Quadrant 3:	Low Use/Low Cost	21	17%
Quadrant 4:	Low Use/High Cost	3	3%
All:		125	100%

#### Quadrant I Results

ACS Question Number	Questions in Quadrant 1 (High Use/Low Cost)	Mandatory	Required (sub-state)
H1	Building/Structure Type and Units	Y	Y
H3	Year Moved In	Y	N
H4	Acreage	N	Y
H7b	Bedrooms	Y	Y
H8a	Hot/Cold Water	Y	Y
H8b	Flush Toilet	Y	Y
H8c	Bathtub/Shower	Y	Y
H8d	Sink with Faucet	Y	Y
H8e	Stove or Range	Y	Y
H8f	Refrigerator	Y	Y
H9a	Computer Use - Desktop, laptop, etc.	Y	N
H9b	Computer Use - Handheld computer	Y	N
H9c	Computer Use - Other	Y	N
H10	Internet Use	Y	N
H14a	Cost of Utilities (Electricity)	Y	Y
H16a	Condo Status	Y	Y
H16b	Condo Fee	Y	Y
H17	Tenure	Y	Y
H18a	Rent Amount	Y	Y
H18b	Rent Include Meals	Y	Y
H22a	Mortgage	Y	Y
H23a	Second Mortgage	Y	Y
H23b	Second Mortgage Amount	Y	Y
P2	Relationship	Y	Y
P3	Sex	N	Y
P4	Age/Date of Birth	Y	Y
P5	Hispanic Origin	Y	Y

<sup>1</sup> Percentages were rounded to equal 100 percent.

ACS Question Number	Questions in Quadrant 1 (High Use/Low Cost)	Mandatory	Required (sub-state)
P7	Place of Birth	N	Y
P8	Citizenship Status	Y	Y
P11	Educational Attainment	Y	Y
P14a	Language other than English	Y	Y
P14b	Language	Y	Y
P14c	How well speak English	Y	Y
P16a	Health Insurance through a current or former employer?	Y	N
P16b	Health Insurance purchased directly from an insurance company?	Y	N
P16c	Medicare?	Y	N
P16d	Medicaid or govt-assistance plan?	Y	N
P16e	TRICARE or military plan?	Y	Y
P16f	VA Health Insurance?	Y	Y
P16g	Indian Health Services Health Insurance?	Y	Y
P17a	Deaf/Difficulty Hearing	Y	Y
P17b	Blind/Difficulty Seeing	Y	Y
P18a	Cognitive Difficulty	Y	Y
P18b	Walking/Climbing Difficulty	Y	Y
P18c	Dressing/Bathing Difficulty	Y	Y
P19	Outside Home Difficulty	Y	N
P20	Marital Status	N	Y
P24	Fertility	N	Y
P26	Veteran Status	Y	Y
P27	Period of Service	Y	N
P29a	Worked Last Week	N	Y
P29b	ANY Work?	N	Y
P31	How Get to Work	N	Y
P32	How Many in Carpool	N	Y
P34	How Many Minutes to Work	N	Y
P35a	Layoff	N	Y
P35b	Temporarily Absent	N	Y
P35c	Informed of Recall	N	Y
P36	Actively Looking for Work	N	Y
P37	Availability for Labor Force	N	Y
P38	Year Last Worked	N	Y
P41	Class of Worker	Y	Y
P42	Employer Name (Ind)	N	Y
P43	Kind of Business (Ind)	N	Y
P44	Manuf./Wholesale/Retail (Ind)	N	Y
P45	Kind of Work (Occ)	N	Y

ACS Question Number	Questions in Quadrant 1 (High Use/Low Cost)	Mandatory	Required (sub-state)
P46	Most Imp. Activities (Occ)	N	Y
P47	Income - Public Assistance	Y	Y

**Quadrant 2 Results**

ACS Question Number	Questions in Quadrant 2 (High Use/High Cost)	Mandatory	Required (sub-state)
H2	Year Built	Y	Y
H7a	Rooms	Y	Y
H11a	Internet Subscription - Dial-up	Y	N
H11b	Internet Subscription - DSL	Y	N
H11c	Internet Subscription - Cable modem	Y	N
H11d	Internet Subscription - Fiber-optic	Y	N
H11e	Internet Subscription - Mobile broadband	Y	Y
H11f	Internet Subscription - Satellite	Y	N
H11g	Internet Subscription - Other	Y	Y
H14b	Cost of Utilities (Gas)	Y	Y
H14c	Cost of Utilities (Water/Sewer)	Y	Y
H14d	Cost of Utilities (Heating Fuel)	Y	Y
H19	Home Value	Y	Y
H20	Taxes	Y	Y
H21	Insurance	Y	Y
H22b	Mortgage Amount	Y	Y
H22c	Mortgage Include Real Estate Taxes	Y	Y
H22d	Mortgage Include Insurance	Y	Y
H24	Mobile Home Costs	Y	Y
P6	Race	Y	Y
P8w	Year Naturalization Write-in	Y	Y
P9	Year of Entry	N	Y
P13	Ancestry	N	Y
P30	Place of Work	N	Y
P33	What Time Left	N	Y
P47a	Income - Wages	Y	Y
P47b	Income - Self-employment	Y	Y
P47c	Income - Interest/Dividends	Y	Y
P47d	Income - Social Security	Y	Y
P47e	Income - SSI	Y	Y
P47g	Income - Retirement	Y	Y
P47h	Income - Other	Y	Y
P48	Total Income	Y	Y

**Quadrant 3 Results**

ACS Question Number	Questions in Quadrant 3 (Low Use/Low Cost)	Mandatory	Required (sub-state)
H5	Agriculture Sales	retain	
H6	Business/Medical Office	remove	remove
H8g	Telephone Service Available	remove	retain
H12	Vehicles Available	remove	retain
H13	Home Heating Fuel	remove	retain
H15	SNAP/Food Stamp Benefit	retain	
P10a	School Enrollment	remove	retain
P10b	Grade Level	remove	retain
P12	Undergraduate Field of Degree	remove	remove
P15a	Residence 1 year ago - Person live in this house/apartment	remove	retain
P21a	Get Married?	remove	remove
P21b	Get Widowed?	remove	remove
P21c	Get Divorced?	remove	remove
P22	Times Married	remove	remove
P23	Year Last Married	remove	remove
P25a	Grandparents - Have grandchildren?	retain	
P25b	Grandparents - Responsible?	retain	
P25c	Grandparents - How long responsible?	retain	
P28a	Have VA-Service Connected Disability Rating?	retain	
P28b	What is VA-Service Connected Disability Rating?	retain	
P40	Hours Worked Last Week	remove	retain

**Quadrant 4 Results**

ACS Question Number	Questions in Quadrant 4 (Low Use/High Cost)	Mandatory	Required (sub-state)
P15b	Residence 1 year ago - Where live?	remove	retain
P39a	50+ Weeks	retain	
P39b	Number of Weeks	retain	