Are nonrespondents to the American Community Survey different from respondents?

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Reasons Study Conducted

The ACS was conducted nationally at the same time as Census 2000. Thus, we can:

- Study characteristics of ACS nonrespondents
  – by matching to Census 2000 response files
- Look at the effect of ACS noninterview adjustment procedures on the data

Ways to Study Characteristics of Nonrespondents

Some common approaches include:

- Using frame data
- Conducting survey participation surveys
- Conducting match studies

Methodology

- This study was built on the match study idea.
- Linked 3,809 ACS nonresponding addresses to Census 2000 response files.
  - For March, April, and May 2000
  - Used address identification number
- Used Census 2000 data as proxy for ACS nonrespondents
  - Data obtained for 83% of addresses
  - Data for 6,782 people.

Questions Study Answers

- Are nonrespondents to the ACS different from respondents in terms of various demographic characteristics?

- Do the ACS nonresponse adjustment procedures reflect differences?

Terminology

- **Respondents** are interviewed households in the ACS

- **Nonrespondents** are non-interviewed households in the ACS after three modes of data collection
  - Mail
  - Telephone
  - Personal Visit

Terminology (Cont.)

Noninterview adjustment –

- changes the weight of all responding occupied housing units
- accounts for responding and nonresponding housing units within weighting classes.
- uses data from responding households in same tract and month in sample as nonrespondents

Major Findings

- Nonrespondents are different than respondents to the ACS in 5 demographic characteristics examined
- Noninterview adjustments procedures do correct for most of the differences

Characteristics

Produced distributions for:

- gender,
- age,
- relationship,
- race,
- Hispanic origin

Key Measures

Differences in distributions for given response category compared:

1. Compared nonrespondents to respondents

2. Compared combined respondent and nonrespondent data to respondent data adjusted for nonresponse

Hypothesis Testing

- Testing of the tables
  - Chi-square test (See Smith and Starsinic, 2002)
- Testing of differences for each variable category
  - % category x_n = % category x_r,

    where n=nonrespondents and r=respondents

Testing of Tables—Nonrespondents vs. Respondents

Table	Test Statistic
Gender	$X^2 = 4.48$, df=1, p=0.034
Age	$X^2 = 101.30$, df=12, p=0.000
Relationship	$X^2 = 83.35$, df=4, p=0.000
Race	$X^2 = 146.53$, df=6, p=0.000
Hispanic Origin	$X^2 = 18.93$, df=4, p=0.001

Gender

(Statistically different response categories only)

	Respondents	Nonrespondents	Difference
Male	48.5%	49.9%	1.4%
Female	51.5%	50.1%	-1.4%

Age

(Statistically different response categories only)

	Respondents	Nonrespondents	Difference
25-34	14.0%	15.7%	1.7%
35-44	16.4%	18.4%	2.0%
65-74	6.8%	4.6%	-2.2%
75-84	4.4%	2.5%	-1.8%
85+	1.2%	0.7%	-0.5%

Relationship

(Statistically different response categories only)

	Respondents	Nonrespondents	Difference
Spouse	**20.0%**	**16.4%**	**-3.6%**
Other relative	**6.3%**	**7.8%**	**1.6%**

Race and Hispanic Origin

(Statistically different response categories only)

	Respondents	Nonrespondents	Difference
White	77.8%	65.2%	-12.6%
Black	11.5%	19.2%	7.7%
Other race	3.7%	6.3%	2.6%
Other Hispanic	2.9%	4.5%	1.6%

Testing of Tables— Combined vs. Weighted

Table	Test Statistic
Gender	$X^2 = 2.57$, df = 1, p = 0.109
Age	$X^2 = 23.45$, df = 12, p = 0.024
Relationship	$X^2 = 8.45$, df = 4, p = 0.077
Race	$X^2 = 2.32$, df = 6, p = 0.888
Hispanic Origin	$X^2 = 3.56$, df = 4, p = 0.468

Age and Relationship

(Statistically different response categories only)

	Combined	Weighted	Difference
35-44	16.4%	16.1%	-0.3%
Householder	38.9%	39.3%	0.5%

Significance of Findings

- More insight into who ACS nonrespondents are
- Additional data to use to evaluate noninterview adjustment procedures

Limitations

- Used address identification number to get census data as proxy for ACS nonrespondents, assuming:
  - same address visited for ACS and Census 2000
  - census household at address when ACS data collected
  - responses the same for ACS and Census 2000
- Obtained data for 83 percent of nonresponding addresses, assuming:
  - data representative of all nonrespondents

Summary

- ACS nonrespondents are different from respondents.
  - More likely to be male, black, and 25-44.
- ACS weighting to adjust for nonresponse correcting most differences.
- More research needed.

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