# Non-Response in Surveys of the College Educated, Revisited

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**Abstract**

The National Survey of College Graduates (NSCG) is one of three surveys that cover college and graduate degreed individuals in scientific fields. In 1999, the U.S. Census Bureau conducted an analysis of nonresponse in the 1993 NSCG and compared the effect that various demographic characteristics seem to have on non-response to results from other studies of the population in general. In this study, we repeated that analysis on the 2003 NSCG to see if the same effects were repeated and to take advantage of a wider array of frame variables. The results may be used to change the non-response weight adjustment and/or alter follow-up procedures.

**Keywords:** Survey, Non-response, Logistic Regression.

## 1. Introduction

### 1.1 What is Survey Non-Response?

Needless to say, survey non-response is an all-encompassing term for failure to get a useable response from a potential respondent (could be a person, household, business, etc.) selected for a survey's sample. Since these samples are carefully designed to produce unbiased estimates and to produce sampling error of a specific magnitude, every sample element that does not respond undermines that design.

### 1.2 Contact and Cooperation

A non-response can actually be one of many things, but they mostly fall into two major categories:

- Potential respondents who were never contacted due to moving, travel, or just evasiveness.
- Potential respondents who were contacted, but did not provide a response (i.e., refusals) or responses that were useable (e.g., did not answer key questions or gave obviously erroneous responses).

Our analysis will look at both of these.

### 1.3 Analyses of Non-Response

The references giving the results of non-response analyses are numerous. Some of the differences in the results of these studies can be attributed to differing populations, sample sizes, methods used in the surveys, methods of analyses, and changes in populations over time. The references we will use for comparison are given below. The complete reference for each is in the reference section. All of these references were analyses of non-response in surveys of the population in general.

- Johnson, O'Rourke, Burris, and Owens (2002) "Culture and Survey Nonresponse"
- Groves and Couper (1998) *Nonresponse in Household Interview Surveys*
- Brehm (1993) *The Phantom Respondents*
- Groves (1989) *Survey Errors and Survey Costs*
- Goyder (1987) *The Silent Minority, Nonrespondents on Sample Surveys*
- Smith (1983) "The Hidden 25 Percent: An Analysis of Nonresponse on the 1980 General Social Survey"
- Fitzgerald and Fuller (1982) "I Hear You Knocking But You Can't Come In"
- DeMaio (1980) "Refusals: Who, Where and Why"
- O'Neil (1979) "Estimating the Nonresponse Bias Due to Refusals in Telephone Surveys"
- Weaver, Holmes, and Glenn (1975) "Some Characteristics of Inaccessible Respondents in a Telephone Survey"

### 1.4 Effect of Higher Education

Numerous articles have shown higher overall response rates associated with higher educated sample persons. Groves (1989) provides a literature review. However, in contrast, Groves & Couper (1998) found higher cooperation rates among lower education groups. In Flanagan, et al. (1999), an analysis was done on the 1993 National Survey of College Graduates (NSCG), in which all sample persons were college educated. Its results were compared to the above references. This study analyses the same population ten years later via the 2003 NSCG.

### 1.5 The National Survey of College Graduates

The National Survey of College Graduates (NSCG) is a person-based sample selected from respondents to the "long form" of the Decennial Census of the Population and then followed longitudinally through the decade. The target universe of the NSCG includes people with at least a bachelors degree in a scientific field. Because the Census Long Form does not ask for field of degree but does ask for occupation, a fairly large stratified sample must be taken of people in all occupations.

The 2003 NSCG was a sample of 217,393 college graduates. 177,320 were selected from respondents to the 2000 Census Long Form and the remaining 40,073 were selected either from cases originally selected from the 1990 Census Long Form or selected for the National Survey of Recent College Graduates and followed longitudinally through the 1990s.

- The frame was stratified by gender, occupation, degree level, and group (cross among race, ethnicity, place of birth and citizenship) and selected with varying rates in each stratum.
- All 217,393 cases were initially sent a questionnaire by mail.
- If no response, a month later a second mail questionnaire was sent.
- If no response after an additional month, the sample person was contacted by telephone.
- If the interview was not complete after three months of the telephone phase, a sub-sample of the sample persons was contacted in person.

Since each of the sample persons has Census long form demographic variables as part of the frame data, distinctions between respondents and nonrespondents can be analyzed.

### 1.6 What Do We Intend to Do In This Paper?

We will examine the long form data provided by the 177,320 new sample cases in the 2003 NSCG, to determine how people with higher levels of education are different in their response characteristics. Given the frame variables and the rather large sample size, we should be able to detect the effect of the demographic variables with a considerable degree of sensitivity. Once analyzed, we will compare these results to those detected in Flanagan, et al. (1999) and the other studies of the general population. Section 2 will show results from the general population. Section 3 will show the analysis methodology. Section 4 will show the results compared to the 1999 study. Section 5 will provide the conclusions. Section 6 will discuss the limitations of the analysis.

## 2. Past Studies of the General Population

### 2.1 Age

Among the general population references, there is almost universal agreement indicating that younger sample persons and households with younger people will respond at a higher rate than older ones. Groves (1989) shows data from several references indicating that overall non-response increases with increasing age. Even though Brehm (1993), Groves & Couper (1998), and Smith (1983) found that older people had a higher contact rate, their tendency to have a much higher refusal rate seems to dominate. Almost every reference showed a strong tendency for a higher refusal rate for older people or older households in sample.

### 2.2 Gender

None of the general population references found a difference in response, contact, or cooperation by gender. This may be because the surveys upon which those studies were based were household surveys and may be less likely to detect a gender difference.

### 2.3 Children

Groves & Couper (1998) and O'Neil (1979) showed a higher response rate among households with children. Groves & Couper (1998) also referenced a number of other studies that produced similar results. All attribute it at least in part to a higher contact rate, as they are more likely to be at home.

### 2.4 Race

The effect of race for the general population was mixed. DeMaio (1980), Fitzgerald & Fuller (1982), and Smith (1983) found no effect due to race, while O'Neil (1979), Weaver, et.al. (1975), and Groves & Couper (1998) found lower refusal rates among Blacks. Johnson, et al. (2002) compared numerous studies of nonresponse and attrition in panel surveys showing mixed results.

### 2.5 Hispanic

Groves and Couper (1998) found Hispanics are more likely to cooperate. Johnson, et al. (2002) compared numerous studies of nonresponse and attrition in panel surveys showing mixed results.

### 2.6 Income

Income has some inconsistent results. DeMaio (1980) and Weaver (1975) found the lowest income levels refused less often, while O'Neil (1979) observed the opposite effect. Goyder (1987) found middle class with the lowest refusals, and higher refusals at the lower and the upper classes of socio-economic status.

### 2.7 Marital Status

Fitzgerald & Fuller (1982) found that married and separated people were more likely to refuse than widowed, divorced, or never married people. Few others commented on marital status effect, though Groves & Couper (1998) indicated single-person households are

more difficult to contact and refuse more often.

### 2.8 Occupation

Few references commented on occupations. O'Neil (1979) found that white-collar occupations as a group were less likely to refuse than blue-collar occupations.

### 2.9 Education Level

References covering the general population only make distinctions between those with little education and the college educated, indicating that the less educated are less likely to refuse, but are more difficult to contact.

### 2.10 English Ability

Most of the general population references do not address English ability. Groves and Cooper (1998) indicated no language ability effect when modeled with citizenship.

### 2.11 US Citizenship

Similarly, few general population references address citizenship. Groves and Cooper (1998) found no difference due to citizenship.

### 2.12 Disability

There were no references to the disabled in the general population references.

## 3. Analysis Methodology

### 3.1 Weighted Logistic Regression

A logistic regression model was created for each of the groups discussed below. The dependent variable was a binary variable indicating response/nonresponse, contact/noncontact, or refusal/cooperation. The model formulation was $P(\tilde{x}) = \frac{1}{1 + \exp(-\tilde{x}'\tilde{\beta})}$, where $\tilde{x}'\tilde{\beta} = \beta_0 + \beta_1 x_1 + \cdots + \beta_k x_k$, for k independent variables. The independent variables for the final models are those listed in section 3.2. Interactions among the variables of interest were checked and no interactions remained in the final model. As the NSCG is a stratified random sample, the base survey weights were used for each observation, normalized to the sample size. The program used for the analysis was SAS PROC LOGISTIC with a REFERENCE coding scheme for categorical variables.

### 3.2 Model Elements

Many variables were available from the frame. In the initial phase of the analysis, some of those variables showed no correlation with non-response and were removed from the analysis. The variables below were chosen for the primary analysis. Each of these variables was in all of the models used in the final analysis.

- *Age* - Continuous variable
- *Gender* (Two levels: male and female)
- *Children* (Five levels: men, children < 6, children between 6 and 17, children less than 6 & children between 6 & 17, and no children. Because gender is contained in this variable, all models were run with the Gender variable and this one separately)
- *Race* (Six levels: American Indian & Alaskan native, native Hawaiian & Pacific islander, Asian, black, white and other)
- *Hispanic Origin* (Two levels: Hispanic and non-Hispanic)
- *Income* - Continuous variable
- *Marital Status* (Five levels: married, widowed, divorced, separated, and never married)
- *Occupation* (Eight levels: physical sciences, mathematics/computer sciences, life sciences, social sciences, engineering, S&E-related occupations, teachers, and nonscientist.)
- *Education Level* (Four levels: bachelors, masters, professional, and doctorate)
- *English* (Two levels: speaks English well and does not speak English well)
- *Citizenship* (Five levels: U.S. born, U.S. territory born, born abroad of U.S. parents, U.S. citizen by naturalization, and non-U.S. citizen)
- *Disabled* (Two levels: No work limitation and any work limitation)
- *Employment Status* (Four levels: employed at work, employed not at work, unemployed, and not in labor force)
- *Region* (Four levels: Northeast, Midwest, South, and West)

### 3.3 Models Analyzed

- The Overall Response Model – The dependent variable was response to the survey in Mail, Telephone, or Personal Visit.
- The Mail Response Model – The dependent variable was response to the survey in Mail only.
- The Computer Aided Personal Interviewing Response Model After Non-response to Mail – The dependent variable was response to the survey by telephone or personal visit. This model was fit using only the cases that did not respond to Mail.
- The Overall Noncontact Model – The dependent

variable was noncontact with the sample person in mail, telephone, and personal interview. In the mail phase, we only used cases of confirmed noncontact, such as final Undeliverable As Addressed (UAA) cases.

- The Overall Refusal Model - The dependent variable was refusal by the sample person in mail, telephone, or personal interview.

The age and income variables were also run using categorical levels to allow comparison to the 1999 study. Also, a separate model was run isolating the gender effect without the Children variable.

### 3.4 Multiplicity

Since most of the models involved interpreting 40 or more tests on the model's parameters, our base type I error of 10% was adjusted. For example, if we were interpreting the significance of 40 parameters, we used $\alpha = 0.0025$ as a test for significance.

## 4. Results

In the discussion of relative effect, statements will be made in the form of "category one is 20 percent more likely to refuse than category two." That means that if category two had 0.05 probability of refusing, category one would have a refusal probability of 1.20*0.05 = 0.06. These comparisons are from the odds ratios. Tables 1 and 2 show model results from the three primary models.

### 4.1 Results Similar to the 1999 Study

#### *4.1.1 Age*

The 1999 study had dissimilar results to the general population in that it showed an increasing response rate with age primarily due to increasing contact rates. Also different from the general population references was the result that college educated older people (> 60 years old) had a lower tendency to refuse than all of the other age groups except the young (< 30 years old). This study produced identical results. The propensity to respond increased monotonically with age to where a person over 60 is over 2-1/2 times more likely to respond than those 30 and under. This is mostly driven by contact rate. A person under 30 is 4 times more likely to be a noncontact than a person over 60. Refusals differences are significant but not nearly as strong. As in the 1999 study, the lowest refusal rates came from the under 30 and the over 60 groups, with a bubble of higher refusal rates in the groups in between. The highest refusal rates were in the 41 through 60 groups. They were over 34 percent more likely to refuse that the over 60 and under 30 groups. (Note: This discussion came from the separate categorical analysis of age that is not illustrated in Table 2)

#### *4.1.2 Gender*

The 1999 study of the college educated found that women were easier to contact, refused less often, and thus had a higher overall propensity to respond. In this study we found, once again, that females were more likely to be contacted and less likely to refuse. As a result, females were 25 percent more likely to respond than males. The same effect was exhibited in the mail response rate. (Note: These results were determined through a separate run of the models with a gender variable and the Children variable removed, which is slightly different that the results shown in Tables 1 and 2)

#### *4.1.3 Children*

The 1999 study had somewhat limited information, but did show that women with no children were harder to contact and had a higher refusal rate, as compared to women who have had children. This matches the general population results. Once again, this study found that women with no children had a lower propensity to respond, in that women with children were more than 25 percent more likely to respond. This study did not show a higher tendency to refuse. Of course, this study was using a different variable with children present in the home vs. the 1999 study which only indicated whether or not the female respondent ever had children.

#### *4.1.4 Hispanic Origin*

The 1999 study found that Hispanics had a lower propensity to respond, but also a lower refusal rate, so their lower response rate is due to a much higher noncontact rate. Supporting the 1999 analysis, this study shows that Hispanics are less likely to refuse, but are far more likely to be difficult to contact. As a result Hispanics are 16 percent more likely to be a nonresponse.

#### *4.1.5 English Ability*

The 1999 study found a lower propensity to respond from those who did not speak English well, primarily due to a lower contact rate. Repeating the 1999 study results, we found that those who indicated that they speak English well were 36 percent more likely to respond than those who indicated that they did not speak English well, due to a higher incidence of noncontact.

#### *4.1.6 Disability*

In the 1999 study, the disabled had a lower overall response

rate, entirely due to a lower contact rate. This study duplicated the 1999 result. This study showed that college educated people with disabilities are 29 percent more likely to be a nonresponse that those without disabilities, due to a lower contact rate.

*4.1.7 Education Level*

In the 1999 study, those with bachelors and professional degrees had a lower propensity to respond than those with masters and doctorate degrees. The difference appeared to be entirely from the refusal rates. This study produced the same results, with doctorate and masters level 23 percent more likely to respond than the bachelors and professionals. The differences were mostly due to contact rates, though bachelors-degreed people also had a higher refusal rate.

**4.2 Results Differing From the 1999 Study**

*4.2.1 Race*

The 1999 study showed a higher response rate for Asian & Pacific islanders, and a lower response rate for native Americans and for blacks, all compared to white and other in the middle. All of those differences were due to contact rate, not refusals. The race categories changed some in this study, possibly leading to these results. Whites, with the highest response rate were found to be 68 percent more likely to respond than blacks, who had the lowest propensity to respond, and all other races were in between. There were no differences in refusal rates. All differences were due to contact rates.

*4.2.2 Income*

Flanagan, et al. (1999) found low & no income (< $20K) and high income (> $100K) had the lowest overall response propensity, with middle incomes ($20K to $70K) having the highest, forming a sort of curvilinear effect. Much of this effect was due to refusal rates, though low income ($1 to $20K) had a much lower contact rate combined with a somewhat reduced refusal rate giving them a lower propensity to respond. In this study, we found some differences in that those with an income under $20K were 14 percent more likely to be a nonresponse, entirely due to noncontact rate. Above that income there were only slight differences, with the $50K - $100K about 8 percent more likely to respond than the income groups above and below them. (Note: This discussion came from the separate categorical analysis that is not illustrated in Table 2)

*4.2.3 Marital Status*

The 1999 study found married people had a much higher propensity to respond fueled by both a higher contact rate and a lower refusal rate. Widowed were next highest in response, followed by divorced and never married, and Separated had the lowest overall response rate due to a lower contact rate. In this study, the results were similar with some differences. As in 1999, this study showed those who said they were married had the highest propensity to respond in that they were 30 percent more likely to respond than those who were never married. Also, those who were Separated had the lowest propensity to respond in that they were over 40 percent more likely to be a nonresponse. This time Widowed and never married were next below Married, and Divorced was in between. All of these differences were driven by both contact and refusal rates.

*4.2.4 Occupations*

The 1999 study found that engineers had the highest response propensity, social scientists the lowest, with physical scientists, math/computer scientists, and non-scientists in between. No difference was found in refusal rates across occupations, so these differences appeared to be from contact differences. As in 1999, this study found Engineers had the highest propensity to respond, but they were joined by physical scientists, life scientists, and teachers. These four groups were over 25 percent more likely to respond than social scientists and Non-S&E-occupations, with Math/Computer scientists and S&E-related occupations in between. The differences were mostly from contact rates, though teachers showed a slightly lower refusal rate. In this study we used eight categories vs. 1999's five categories, so that may account for some of the differences.

*4.2.5 US Citizenship*

The 1999 study found those born US citizens had a much higher propensity to respond, primarily due to higher contact rates. US naturalized citizens had a higher overall response rate than non-citizens, but lower than US born citizens, due to a higher refusal rate. This study produced the same results with variations in the contact and refusal tendencies. US born citizens were 70 to 90 percent more likely to respond than non-US citizens. This was because US born citizens were twice as likely to be contacted. Naturalized US citizens were 26 percent more likely than Non-US Citizens to respond, which resulted from a higher contact rate counterbalanced by a higher refusal rate.

**4.3 New Results** (These categories were not studied in 1999.)

*4.3.1 Employment Status*

Those who were employed at work had a higher propensity to respond, but only about 9 percent more likely to respond

than those not in labor force. Unemployed had the lowest propensity to respond as they were 30 percent more likely to be a nonrespondent than those not in labor force. All of those were driven by contact rate.

*4.3.2 Region*

College educated from the Mid West were over 25 percent more likely that those in the West, South, or Northeast. That was because they were more likely to be contacted and less likely to refuse. Those from the West and South were the least likely to respond.

## 5. Conclusions

This analysis reinforced the importance of a number of variables related to nonresponse, though there was some variation in the ordering of the effect of the categorical levels. The nine variables below exhibited extremely significant effects:

- Age
- Marital Status
- Race
- Citizenship
- Region
- Gender
- Occupation
- Disability
- Employment

Each of these variables should be strongly considered in the design of the unit nonresponse adjustment and the item nonresponse imputation methods. Similarly, as discussed in Flanagan, et al. (1999), groups with a higher propensity to not respond may be a cost-effective target for more aggressive location and followup methods.

## 6. Limitations

### 6.1 Decennial Census Long Form Frame

As discussed in section 1.5, the NSCG selected its sample from the 2000 Decennial Census of the Population Long Form. Since that survey had an 8.8 percent nonresponse and since the NSCG did not use the additional 7 percent that did not answer the education level, there is likely to be some nonresponse bias in the frame. For other frame variables used in this study, there was an average item nonresponse of 10.4 percent that were imputed, so additional error is likely due to that nonresponse and the imputation process. Additional frame bias is also possible due to other forms of nonsampling error.

### 6.2 Linearity Assumption

The logistic regression model assumes that the independent variables are linearly related to the log odds of dependent dichotomous variable. If that linearity is not true it could bias the results.

### 6.3 Odds Ratios vs. Relative Risk

The discussion about the degree of relationship that various variables have on the dependent dichotomous variable used the odds ratio as an approximation to the relative "risk". Since nonresponse and noncontact are somewhat rare, it is a fairly good approximation, however it does tend to overstate the effect.

*Note: This paper is released to inform interested parties of research and to encourage discussion. Any views expressed on statistical, methodological, technical, or operational issues are those of the authors and not necessarily those of the U.S. Census Bureau.*

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**Table 1**

| Overall Response Model Results | | | | | |
|---|---|---|---|---|---|
| **Variable** | **Category** | **Parameter** | **Standard Error** | **Pr > ChiSq.** | **Odds Ratio** |
| Occupation | Non-S&E Occupations | Reference | | | |
| | Physical Science | 0.3281 | 0.0590 | <.0001 | 1.388 |
| | Math/Computer Science | 0.2032 | 0.0279 | <.0001 | 1.225 |
| | Life Science | 0.3296 | 0.0773 | <.0001 | 1.390 |
| | Social Science | Not Significant | | | |
| | Engineering | 0.3225 | 0.0318 | <.0001 | 1.381 |
| | S&E Related Occupations | 0.0909 | 0.0153 | <.0001 | 1.095 |
| | Teachers | 0.2257 | 0.0278 | <.0001 | 1.253 |
| Income | Continuous (1$) | 4.941E-07 | 1.466E-07 | 0.0008 | |
| Education | Doctorate | Reference | | | |
| | Bachelors | -0.2073 | 0.0317 | <.0001 | 0.813 |
| | Masters | Not Significant | | | |
| | Professional | -0.2504 | 0.0362 | <.0001 | 0.778 |
| English | Doesn't Speak Well | Reference | | | |
| | Speaks Well | 0.3085 | 0.0470 | <.0001 | 1.361 |
| Children | No Children | Reference | | | |
| | Children < 6 | 0.2018 | 0.0257 | <.0001 | 1.287 |
| | 6<Children<17 | 0.2025 | 0.0204 | <.0001 | 1.274 |
| | <6 & 6<Children<17 | 0.2257 | 0.0310 | <.0001 | 1.253 |
| | Men | -0.1471 | 0.0129 | <.0001 | 0.863 |
| Age | Continuous (1 yr.) | 0.0286 | 0.000548 | <.0001 | |
| Race | Other | Reference | | | |
| | White | 0.1970 | 0.0441 | <.0001 | 1.218 |
| | Black | -0.4122 | 0.0481 | <.0001 | 0.662 |
| | Asian, AIAN&NHPI | Not Significant | | | |
| Hispanic | Not Hispanic | Reference | | | |
| | Hispanic | -0.1458 | 0.0291 | <.0001 | 0.864 |
| Disability | Not Disabled | Reference | | | |
| | Disabled | -0.2527 | 0.0175 | <.0001 | 0.777 |
| Marital Status | Never Married | Reference | | | |
| | Now Married | 0.2353 | 0.0149 | <.0001 | 1.265 |
| | Widowed | Not Significant | | | |
| | Divorced | -0.2214 | 0.0219 | <.0001 | 0.801 |
| | Separated | -0.4106 | 0.0475 | <.0001 | 0.663 |
| Citizenship | Not a US Citizen | Reference | | | |
| | Citizen, Born in US | 0.6882 | 0.0244 | <.0001 | 1.990 |
| | Citizen, US Territory | 0.5775 | 0.0904 | <.0001 | 1.782 |
| | Citizen, Naturalized | 0.2517 | 0.0281 | <.0001 | 1.286 |
| Region | West | Reference | | | |
| | Northeast | 0.0634 | 0.0157 | <.0001 | 1.065 |
| | Midwest | 0.2973 | 0.0162 | <.0001 | 1.346 |
| | South | Not Significant | | | |
| Employ. Status | Not in Labor Force | Reference | | | |
| | Employed, at work | 0.1689 | 0.0158 | <.0001 | 1.184 |
| | Employed, Not at work | Not Significant | | | |
| | Unemployed | -0.2216 | 0.0414 | <.0001 | 0.801 |

**Table 2**

| Noncontact & Refusal Model Results | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Variable** | **Category** | **Noncontact** | **Std. Err.** | **Pr > χ2** | **Refusal** | **Std. Err.** | **Pr > χ2** |
| Occupation | Non-S&E Occ. | Ref. | | | | | |
| | Physical Sci. | -0.3159 | 0.0639 | <.0001 | N.S. | | |
| | Math/Computer Sci. | -0.2353 | 0.0300 | <.0001 | N.S. | | |
| | Life Science | -0.3102 | 0.0838 | 0.0002 | N.S. | | |
| | Social Science | N.S. | | | N.S. | | |
| | Engineering | -0.3675 | 0.0352 | <.0001 | N.S. | | |
| | S&E Related Occ. | -0.1107 | 0.0166 | <.0001 | N.S. | | |
| | Teachers | -0.1992 | 0.0305 | <.0001 | -0.1845 | 0.0528 | 0.0005 |
| Income | Continuous (1$) | N.S. | | | N.S. | | |
| Education | Doctorate | Ref. | | | | | |
| | Bachelors | 0.1404 | 0.0350 | <.0001 | 0.2022 | 0.0585 | 0.0005 |
| | Masters | N.S. | | | N.S. | | |
| | Professional | 0.1833 | 0.0400 | <.0001 | N.S. | | |
| English | Doesn't Speak Well | Ref. | | | | | |
| | Speaks Well | -0.2852 | 0.0478 | <.0001 | N.S. | | |
| Children | No Children | Ref. | | | | | |
| | Children < 6 | -0.1834 | 0.0276 | <.0001 | N.S. | | |
| | 6<Children<17 | -0.1900 | 0.0226 | <.0001 | N.S. | | |
| | <6 & 6<Children<17 | -0.2305 | 0.0339 | <.0001 | N.S. | | |
| | Men | 0.1460 | 0.0139 | <.0001 | 0.0994 | 0.0239 | <.0001 |
| Age | Continuous (1 yr.) | -0.0385 | 0.000608 | <.0001 | 0.00417 | 0.00097 | <.0001 |
| Race | Other | Ref. | | | | | |
| | White | -0.1793 | 0.0450 | <.0001 | N.S. | | |
| | Black | 0.5164 | 0.0492 | <.0001 | N.S. | | |
| | AIAN | 0.2928 | 0.0733 | <.0001 | N.S. | | |
| | Asian & NHPI | N.S. | | | N.S. | | |
| Hispanic | Not Hispanic | Ref. | | | | | |
| | Hispanic | 0.2520 | 0.0302 | <.0001 | -0.3542 | 0.0630 | <.0001 |
| Disability | Not Disabled | Ref. | | | | | |
| | Disabled | 0.2821 | 0.0188 | <.0001 | N.S. | | |
| Marital Status | Never Married | Ref. | | | | | |
| | Now Married | -0.3416 | 0.0157 | <.0001 | 0.2828 | 0.0298 | <.0001 |
| | Widowed | N.S. | | | N.S. | | |
| | Divorced | 0.2393 | 0.0233 | <.0001 | 0.2388 | 0.0424 | <.0001 |
| | Separated | 0.4585 | 0.0487 | <.0001 | N.S. | | |
| Citizenship | Not a US Citizen | Ref. | | | | | |
| | Citizen, Born in US | -0.7283 | 0.0250 | <.0001 | 0.1576 | 0.0510 | 0.0020 |
| | Citizen, US Terr. | -0.5654 | 0.0940 | <.0001 | N.S. | | |
| | Citizen, Naturalized | -0.3244 | 0.0290 | <.0001 | 0.3190 | 0.0567 | <.0001 |
| Region | West | Ref. | | | | | |
| | Northeast | -0.1420 | 0.0171 | <.0001 | 0.1700 | 0.0278 | <.0001 |
| | Midwest | -0.3159 | 0.0178 | <.0001 | -0.1181 | 0.0297 | <.0001 |
| | South | N.S. | | | -0.0917 | 0.0269 | 0.0007 |
| Employ. Status | Not in Labor Force | Ref. | | | | | |
| | Employed, at work | -0.1276 | 0.0171 | <.0001 | N.S. | | |
| | Employed, Not at work | N.S. | | | N.S. | | |
| | Unemployed | 0.2689 | 0.0432 | <.0001 | N.S. | | |