INTERVIEWER VARIANCE IN TWO TELEPHONE SURVEYS

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Introduction

The ordinary estimate of the variance of an estimate assumes the responses of graduates in the 1993 National Survey of Recent College Graduates (NSRCG) are obtained without error. These sampling error estimates do not account for the possibility that interviewers may introduce errors in the responses and that the errors may be correlated between graduates. Since the average number of telephone interviews conducted by interviewers in the NSRCG was large, any differences in the methods used to ask questions and record responses could result in the underestimation of the variability of the estimates. In this report, we examine the interviewer effect and its impact on the underestimation of the variance of the estimates. We also relate our findings to some of the findings from a similar study conducted by the Census Bureau for the National Survey of College Graduates (NSCG).

The contribution of interviewers to error is often estimated by using an interpenetrating sample design, in which sampled graduates are randomly assigned to the interviewers. Since an interpenetrating design was not used in the NSRCG or the NSCG, an alternative approach must be used for estimating the interviewer effect. In the NSRCG, we use a model that explicitly recognizes the nonrandom assignment of the sample to the interviewers. From the model, we obtain estimates of the impact of the interviewer effect on the estimates of precision. This analytic approach is discussed in more detail below after we describe the procedures used in this study. The NSCG used a different methodology to develop their estimates, and they discuss this other approach in their report.

Design of Interviewer Effects Study

In many studies, the way interviewers ask questions, probe for responses, and record those responses could have a large impact on the error of the estimates. The impact of the interviewer contribution to error increases with the number of interviews conducted by an interviewer. Since the average number of interviews conducted by an interviewer in the NSRCG was approximateiy 185, the interviewer contribution to error is potentially very important in this survey.

The data used for our analysis of the interviewer effect in the NSRCG included interviews completed by both bachelor's and master's degree recipients for all three cohorts (graduation years 1990, 1991, and 1992). The full data set contained completed interviews for 19,426 graduates, but interviews assigned to specific interviewers or groups of interviewers with special training or skills were deleted from this analysis. The completed cases were dropped from the analysis if they were assigned to refusal conversion interviewers or they were assigned to Spanish speaking interviewers because of apparent language problems. Cases that were missing key items (such as the location of the interviewer) were also deleted from the analysis, but there were very few cases missing these data. Finally, some questions had a series of sub-questions to be answered either yes or no and included a category of 'other specify'. For these questions, we excluded the cases where the 'other specify' was back-coded to a particular response category. It is important to note that this exclusion only occurred for the response category in which the case was back-coded, and there were very few of these. The data set used in the analysis contained 17,586 completed interviews. The only other file manipulation involved dropping cases from the specific runs if the response for the particular question was missing.

The cases assigned to special interviewers were deleted for the analysis because an interpenetrating design was not used in the NSRCG. In this circumstance, it is important to both understand the method used to assign interviewers to cases and the impact of this on the analysis of interviewer effects. For the NSRCG, cases were assigned to interviewers using the Westat system of scheduling in a centralized telephone facility. Under this scheduling system, the vast majority of cases are assigned systematically to the next available interviewer according to a priority scheme that is independent of the interviewer. In other words, the scheduling may depend upon the calling history of the case (in terms of days and times it has been previously called), but the characteristics of the interviewer are not used in the assignment procedure.

There are important exceptions to this general rule. Groups of interviewers may be assigned to special categories of cases, such as refusal conversions and language problem cases. If a case is placed in one of these categories, then only interviewers who are specially trained for these types of cases will be assigned the case. Thus, to make the cases analyzed more consistent with the assumption of random assignments, the cases assigned to these categories were removed from the analysis file as described above. Limiting the cases to those that were not assigned to specialized interviewers eliminates the most serious deviations from the theoretical, random assignment model.

Another problem we encountered with our analytic approach was the inability of standard statistical packages to account for differential sampling weights. Even though accounting for weights in this type of analysis is often not critical, a scheme to reduce this problem was thought to be necessary given the highly variable weights in the NSRCG.

We considered selecting a sample of the graduates from the entire data set using probabiities of selection that would result in an approximately self-weighting file for analysis. We explored this by first selecting all of the cases with weights greater than or equal to the 90th percentile of the weight distribution and then setting the probability of selection for each of the remaining interviews to the weight of the case divided by the weight at the 90th percentile. The result of this sampling was a self-weighting analysis file, but only one-third of the cases were retained for analysis. We attempted the same procedure for bachelor's graduates only, but the retained sample still only consisted of about 40 percent of the original size of the file.

The reduction in the sample size using the self-weighting sample would have resulted in a far larger loss in statistical power than we thought acceptable. Since the loss in sample size was largely due to the differential sampling rates assigned by degree and major field, we decided to introduce these items directly into our model for estimating the interviewer effects. The specifics of the analytic method are described below.

Analysis Methods for Interviewer Effects

Most studies of interviewer effects assume that interviewers are a random sample from an infinite pool of possible interviewers. The goal is to determine if the interviewers bring specific biases or effects to the interviewing task. If they do have systematic effects, then these effects should be estimated and the impact of the effect on the estimation of the reliability of the survey estimates should be evaluated.

A model that explicitly includes the potential contribution of interviewers to error is:

$$y_{ij} = \mu_i + b_j + e_{ij} \quad (1)$$

where y_{ij} is the observed value of the characteristic for graduate i interviewed by interviewer j, μ_i is the true value of the characteristic for graduate i, b_j is the systematic error associated with interviewer j, and

e_{ij} is the residual error. The interest in this model lies in inferences to the population of interviewers, not the specific interviewers in the study. Thus, the interviewer effect (b_j) is a random effect.

We further assume that:

$$\begin{aligned} E(e_{ij}/i) &= 0 \\ \text{Cov}\,(e_{ij}, e_{i'j'} &= 0 \quad \text{if } i \neq i' \\ &= \sigma_\beta^2 \quad \text{if } i = i',\ j \neq j' \\ &= \sigma_\varepsilon^2 \quad \text{if } j = j',\ i \neq i' \end{aligned} \tag{2}$$

so that $V(y_{ij}) = s^2_m + s^2_b + s^2_e$, where $s^2_e = \sum_i \sum_j s^2_{ij}/n$ and s^2_{ij} is the variance over conceptual repetitions of the interview with the same graduate and the same interviewer. The other term in this equation, σ_β^2, is the variance of the distribution of errors of the interviewers. This model allows for a correlation between the observations conducted by the same interviewer, but assumes there is no correlation between interviewers and no correlation between the actual value and the residual error.

The variance of a mean or a proportion becomes more complex as the result of the correlation between interviews conducted by the same interviewer. Because of the model assumptions, the variance can be written as:

$$\begin{aligned} V(\bar{y}) &\cong \frac{1}{n}\left(s^2_m + s^2_b + s^2_e + (\bar{m}-1)s^2_b \right) \\ &= \frac{s^2_y}{n}\left(1 + (\bar{m}-1)r\right) \end{aligned} \tag{3}$$

where $\bar{m}$ is the average number of interviews conducted per interviewer, the total variance is approximated by $s^2_y = s^2_m + s^2_b + s^2_e$ and $r = \dfrac{s^2_b}{s^2_m + s^2_b + s^2_e}$ is the intra-interviewer correlation.

Since the intra-interviewer correlation coefficient is non-negative, the impact of any systematic error due to interviewers is to increase the variance of the mean. Note that even if the correlation is small, the impact on the variance of the mean can be large if the interviewer sample size is large. For the NSRCG, a correlation of just 0.01 could cause the variance of an estimate to increase by a factor of nearly 3, since the average interviewer load was about 185 ((1 + (185-1) .01) = 2.84). This is the reason for the concern about interviewer effects.

Kish (1962) proposed using the usual ANOVA table to estimate the intrainterviewer correlation component for an estimated mean from a survey. One of the problems with that approach for the NSRCG is the lack of randomization of the cases to the interviewers. Limiting the cases to be analyzed to those that were not assigned to specialized interviewers eliminates many of the most serious deviations from this random assignment model, however, there were other non-random factors that might make the model inappropriate. For example, some interviewers only conducted interviews during the daytime hours. If graduates that could be reached during the daytime were systematically different from other sampled graduates (e.g., all were unemployed), then this could result in confounding the estimates of the interviewer effects with the characteristics of the cases and overestimating the correlation coefficient.

One way of accounting for these non-random factors is to explicitly include them in the model as fixed effects. In this case, fixed effects are attributes of the data collection process that are specific to the survey conditions. These effects can be included by revising the model as follows:

$$y_{ijk} = \alpha_k + b_j + t_{ijk}, \quad (4)$$

where the α term is a general fixed effect, and k is a subscript for the fixed effects. The new error term (t) accounts for all the deviations from the fixed and random effects in the model.

As noted before, the weights of the graduates were highly variable and this variability was largely due to the differential selection probabilities associated with the degree and major field of study of the graduate. Since efforts to reduce the file to a self-weighting data set would have reduced the power of the study, the degree and major field were used instead as fixed effects. The goal was to recognize the main source of variability of the weights in the model explicitly, then use the unweighted data for the analysis.

As a result, the following fixed effects were included in the model:

- telephone center location (2 Westat telephone centers);
- month of interview (3 values: before July, July and August, and after August);
- time of the interview (3 values: before 5 PM, 5-8 PM, after 8 PM);
- time zone of interview (4 values: Eastern, Central, Mountain, and Pacific); and
- degree and major field (42 values).

The time of the interview and the time zone variables refer to the respondent's time, not that of the interviewer.

As noted earlier, the goal of this research was to estimate the interviewer contribution to the variance. The estimation of the significance of the fixed effects is not required, so model (4), which aggregates all the fixed effects, is appropriate for this purpose. The model is referred to as a mixed model because it involves both fixed (telephone center location, etc.,) and random (interviewer) effects. The VARCOMP procedure in SAS was used to implement the estimation of the random component of the error. A restricted maximum likelihood method of estimation of the parameters was used. Basically, the output of the procedure produced the variance component for the random interviewer effect and for the error term. The estimated correlation coefficient is the ratio of the random (interviewer) component to the sum of the random (interviewer) and error components.

Nearly all the items studied had categorical response categories. For the analysis, all of these were restructured so that they were dichotomous. The graduate either did or did not have the characteristic. However, the error structure for a dichotomous variable presents other concerns that must be addressed to ensure the mixed model provides an appropriate representation of the process. The two main considerations are the assumptions of the homogeneity of the variance and the normality of the effects.

In the assumed model, the variance of the response variable after accounting for the fixed effects is assumed to be constant across interviewers. When the response variable is dichotomous, then the homogeneity assumption may not be satisfied because the variance of a percentage is a function of the percentage. The variance of a percentage is relatively constant for percentages that range between 20 and 80 percent (the variance goes from 16 percent to 25 percent in this range). Therefore, the violation of the homogeneity assumption is most likely to result in inefficient estimates for percentages less than 10 percent or greater than 90 percent. Because of this, the estimates of interviewer effects for estimates close to 0 or 100 percent should be viewed cautiously. Estimates in this range may not be well suited to be estimated by the procedures we employed.

The same restriction also applies to the normality assumption. If we eliminate estimates close to 0 and 100 percent, then the distributional assumptions associated with tests of significance and confidence intervals are more nearly satisfied. Tests of the significance are based on the assumption that the response variables and the interviewer effects are normally distributed. These inferences are generally robust to moderate deviations from the normality assumption. If extreme percentages are not included in the analysis, the robustness of these procedures should provide protection against invalid inferences.

Findings

The estimates of the intra-interviewer correlations are given in Table A-1 in the appendix. Most of the questionnaire items were included in the analysis. Questions with multiple response categories were split into binary responses for each category. The correlations for questions about degrees were restricted to the most recent degree. The estimates for each of the created variables are given in the table.

The intra-interviewer correlations across nearly all the questions examined are very small. The median correlation is 0.002, and the mean correlation is 0.007. The mean is much larger than the median due to a few items with very large correlations. About 13 of the 215 items, or about 6 percent of the items, have estimated correlations of 0.02 or greater. However, if we delete the 13 items with correlations of 0.02 or greater, the mean drops to 0.003. Thus, the median actually is more reflective of the intra-innerviewer correlation for the average item.

To assess the statistical significance of the correlations, the estimates can be compared to critical values that depend on the number of interviewers and the number of times the questions were asked. Since the correlations are ratios of variances, the values can be compared to the tabled values of the F distribution with about 104, and infinite degrees of freedom (the numerator degrees of freedom is the number of interviewers minus one and the denominator is the sample size minus the number of interviewers which is very large in this case). For an F distribution with these degrees of freedom, the critical value for α=0.05 is about 1.24. Thus, the critical value (the value which ρ would have to exceed to be statistically significant at this level of confidence) for ρ is given by:

$$r^* = \frac{F-1}{F-1+m} \approx \frac{1.24-1}{1.24-1+m},$$

where *m* is the average number of interviews completed per interview.

All questions were not asked in every interview because of skip patterns, so the critical value of p varies with *m* from question to question. For questions that were only asked in about 700 interviews, the critical value of ρ is 0.03, while for those questions asked in all the interviews the critical value is 0.001.

Another measure of statistical significance that is relatively constant across the different sample sizes is the variance inflating multiplier given in equation (3). It can be easily shown that when the value of this factor exceeds about 1.2 (a 20 percent increase in the variance due to the interviewer effect) then the interviewer effect is statistical significant for this problem. Thus, the column titled variance inflation factor can be used to examine the statistical significance of the interviewer effects. With so many items being examined, we would expect about *5* percent of them to be statistically significant under the null hypothesis that there is no interviewer effect. However, it is clear that more than the expected number of effects are statistically significant. Below, we concentrate on the largest estimated values of the correlations and variance inflation factors to assess whether they are reflecting interviewer effects or other aspects of the interviewing process.

The most common feature of the items with higher correlations was the type of question. For most of these items, the interviewer asked an open-ended question and then coded the respondent's replies into one or more categories. The interviewer is required to record all the responses given. These types of items are more susceptible to interviewer effects since they require an unstructured dialogue with the respondent. Interviewer knowledge and conversational abiity play a larger role in these types of items. Items with larger effects are discussed in the order in which they appear in Table A- 1.

The item B11G was only asked if the graduate was working part-time, and was only asked of about 16 percent of all graduates. The graduates were asked the reasons for working part-time rather than full-time. The specific response category was "for some other reason," with an estimated correlation of 0.024 and an inflation factor of 1.64. This item is one of the items in which the response categories are not read and the interviewer is required to record all response categories that apply.

Three items (QB 14_3, QB14_4, and QB14_5) were only asked of the graduates who were employed by an educational institution (about 22%). The respondent was asked what type of institution it was. The three response categories with larger correlations were a 4-year college or university other than a medical school (QB14_3 with a correlation of 0.052), a medical school (QB14_4 with a correlation of 0.037), and a university-affiliated research institute (QB14_5 with a correlation of 0.113). The variance inflation factors for each of these items were relatively large. Again, these are items for which the response categories are not read and the interviewer is required to record all that apply. Given the similarity of the responses, the prior knowledge and skill of the interviewer could have had a significant influence on the recorded responses.

Two items, B19A and B19B, were followup questions only asked of persons who say their principal job was managing. Only about 650 respondents (less than 4 percent of sampled graduates) were asked these questions about whether their duties required technical expertise in specified fields. The estimated correlations were about 0.025 for each item, but the variance inflation factors were only about 1.15.

The item B31A was only asked for those graduates whose work was supported by a contract or grant from the U.S. government. Only about 14 percent of the graduates were asked the item. The respondent was asked to indicate which agencies supported this work, and the specific response with a large correlation was for the Department of Defense. The estimated correlation was 0.031 with a variance inflation factor of 1.68. For this item, the response categories are not read and the interviewer is required to record all that apply.

The next item with a large correlation coefficient was the overall undergraduate GPA for the graduate for the response category of between 1.75 and 2.24 (QA7_5). The estimated correlation was 0.024 with a variance inflation factor of about 5. This category was reported less than 2 percent of the time, thus the validity of the estimated correlation (in the tails of the distribution) is questionable. Another category of the overall undergraduate GPA for the graduate demonstrates this point very well. For the response

category of less than 1.25 (QA7_7), only one graduate responded in this category, so the very large estimated correlation of 0.476 and inflation factor of nearly 80 is virtually meaningless.

Three items (QD6_1, QD6_2, and QD6_91) were only asked of graduates who were of Hispanic origin or descent (less than 4% of the sampled graduates). The three response categories were Mexican/Mexican-American/Chicano (QD6_1 with a correlation of 0.033), Puerto Rican (QD6_2 with a correlation of 0.020), and some other Hispanic descent (QD6_91 with a correlation of 0.026). Despite the relatively large correlations, the estimates are not even statistically significantly different from zero due to the restricted subset of cases in which they were asked. For this question, the response categories were read.

A final item with large correlation was about when the respondent came to the United States to stay (Dl1). This question was asked of everyone except native born citizens (about 15%). The response was the year or '00' if they never came to stay. The estimated correlation was 0.114 with a variance inflation factor of nearly 4. Depending on whether the interviewer emphasized coming to the United States or coming to the United States to stay, the answers might vary widely.

In this discussion we have mentioned the estimated intra-interviewer correlations and the variance inflation factors for estimates which were done for the entire population of graduates. However, often the analysis may be restricted to domains, such as graduation year cohorts, sex, or degree. In this type of analysis, the number of interviews conducted by the interviewers may be very different than for the full population and the impact of the interviewer effect will be smaller. To help analysts, Table 1 shows the factor by which the standard error of the estimate goes up with different values of the correlation and the mean number of interviews per interviewer. This table was computed by taking the square root of $(1+(m-l)r)$. The standard error is used because it is more commonly used in inferences than the variance.

Table 1. Increase in the standard error of the estimate due to interviewer effects

Mean interviewer caseload	Intra-interviewer correlation						
	0.002	0.005	0.010	0.020	0.030	0.040	0.050
20	1.02	1.05	1.09	1.17	1.25	1.33	1.40
40	1.04	1.09	1.18	1.33	1.47	1.60	1.72
60	1.06	1.14	1.26	1.48	1.66	1.83	1.99
80	1.08	1.18	1.34	1.61	1.84	2.04	2.22
100	1.09	1.22	1.41	1.73	1.99	2.23	2.44
125	1.12	1.27	1.50	1.87	2.17	2.44	2.68
150	1.14	1.32	1.58	1.99	2.34	2.64	2.91
185	1.17	1.39	1.69	2.16	2.55	2.89	3.19

The tabled values can be used to estimate a more accurate standard error of an estimate that accounts for the interviewer effect. For example, if the standard error of an estimate is 0.05, the intra-interviewer correlation for the characteristic is 0.002, and the mean interviewer caseload is 185, then a revised standard error is 0.06 (0.05 x 1.17 = 0.06). When the correlation for an item is small (0.002 or less), then the standard error only goes up a relatively small amount even for large interviewer loads. For larger correlations, the standard error can increase by 300 percent or more.

The mean interviewer load for the survey was 185. The last row of the table gives the increase in the standard error of the table for this caseload. However, for estimates that were only asked for subsets of the

population (e.g., managers, part-time workers) the mean was smaller. For any particular question, the mean caseload can be approximated by dividing the sample size by the number of interviewers.

This approach can be applied to a variety of items used in analysis of domains. Domains of interest such as bachelor's and master's degree recipients, males and females, graduation cohorts, majors, race/ethnicity groups, will all have relatively small interviewer caseloads and small increases in the standard errors of the estimates. For example, the mean interviewer load for estimates of males would be approximately divided by two, so the interviewer effect on the standard error would be much smaller than for the entire population of graduates.

Comparison to Census Findings

As discussed earlier, the Census Bureau conducted the National Survey of College Graduates, a similar survey done at approximately the same time, and computed interviewer effects. There were differences between the studies that may have been important in the observed correlations, such as the population studied (in their study the respondents were persons who had graduated from college by the time of the 1990 Census). The results of their study, which used a different model for computing interviewer effects, is given in full in a report prepared by Ringstrom, Owens, and McGuinness. In general, the findings were very consistent with the results reported here. Their report contains summary tables of the estimated correlation coefficients for both surveys.

Conclusions

The results in Table A-1 provide a mechanism to evaluate the probable impact of the interviewers on the standard errors of the estimates. Many of the items examined have low intra-interviewer correlations. A few items with larger correlations were identified and discussed. Since items with larger correlations were often only asked of subsets of the graduates, the impact on the standard errors of the estimates are substantially reduced.

Another more important finding is that the type of question played a significant role in predicting the size of the interviewer effect. Questions that were open-ended and required the interviewer to code all the responses of the graduates had larger than average correlations. These results re-affirm the value of structuring the interview in a consistent manner to avoid the undesirable impact of interviewer effects, especially in a centralized telephone operation in which the interviewer load is relatively high. While we do not recommend the interviewer read the responses for the open-ended questions, it may be beneficial to provide additional training to interviewers on how to code the responses in a uniform fashion.

An important step that could be undertaken to improve future surveys is to review the entire questionnaire with the findings above in mind. Questions not included in the study could be evaluated from the perspective of interviewer effects. Clearly, some of the open-ended type of questions are the ones most likely to be problematic. Since the effect is dependent on how many respondents are asked the question, the effort could be concentrated on the questions that are asked of most or all the sampled graduates.

APPENDIX

Table A-1. Estimated intra-interviewer correlation.

Question Numbers NSCG	SDR	NSRCG	Question Description	Sample Size	Estimated Percent	Intra-Interviewer Correlation	Variance Inflation Factor
			LABOR FORCE STATUS				
-	-	B1	CAREER PATH JOB WITHIN 3 MONTHS OF GRADU	17585	51.8	0.003	1.53
-	-	QB2_1	WHEN STARTED WORKING: DURING DEGREE	10023	26.3	0.002	1.16
-	-	QB2_2	WHEN STARTED WORKING: PRIOR TO DEGREE	10023	15.9	0.004	1.34
-	-	QB2_3	WHEN STARTED WORKING: AFTER DEGREE	10023	57.8	0.000	1.00
-	-	B3	SEEKING A CAREER PATH JOB	7561	49.5	0.002	1.17
Al	Al	B4	WORKING FOR PAY DURING WK OF APRIL 15	17586	85.0	0.000	1.00
A2	A2	B5	LOOK FOR WORK WEEK OF APRIL 15	2275	31.2	0.000	1.00
A3	A3	B6A	NOT WORKING WK OF APR 15 RETIRED	2270	0.3	0.000	1.00
A3	A3	B6B	NOT WORKING WK OF APR 15 LAYOFF	2261	4.0	0.007	1.15
A3	A3	B6C	NOT WORKING WK OF APR 15 STUDENT	2227	63.4	0.002	1.04
A3	A3	B6D	NOT WORKING WK APR 15 FAMILY RESP	2257	6.7	0.007	1.15
A3	A3	B6E	NOT WORKING WK OF APR 15 ILLNESS/DISA	2261	0.8	0.000	1.00
A3	A3	B6F	NOT WORKING WK APR 15 NO SUITABLE JOB	2240	14.7	0.016	1.35
A3	A3	B6G	NOT WORKING WK OF APR 15 NO NEED	2250	4.9	0.010	1.21
A3	A3	B6H	NOT WORKING WK OF APR 15 OTHER	2268	10.4	0.015	1.32
A4	A4	B7MM	MONTH LAST WORKED FOR PAY	NI	NI	NI	NI
A4	A4	B7YY	YEAR LAST WORKED FOR PAY	NI	NI	NI	NI
A5	A5	B8TEX1	KIND OF WORK ON LAST JOB	NI	NI	NI	NI
A6	A6	B9_SOC	CO DING OF JOBS BY DP	NI	NI	NI	NI
			SECTION FOR CURRENTLY EMPLOYED				
A7	A7	B10	EMPLOYED FULL OR PART TIME APRIL 15 WEEK	15311	81.3	0.002	1.27
A8	A8	B11A	WORKING PARTTIME WK APR 15 RETIRED	2851	0.0	0.002	1.07
A8	A8	B11B	WORKING PARTTIME WK APR 15 STUDENT	2744	67.6	0.010	1.25
A8	A8	B11C	WORKING PARTTIME WK APR 15 FAMILY RES	2843	3.6	0.006	1.16
A8	A8	B11D	WORKING PARTTIME WK APR 15 ILLNESS/DISAB	2848	0.3	0.001	1.03
A8	A8	B11E	WORKING PARTTIME WK APR 15 NO FULL TIME	2812	15.8	0.003	1.09
A8	A8	B11F	WORKING PARTTIME WK APR 15 NO NEED FULL	2817	6.0	0.016	1.43
A8	A8	B11G	WORKING PARTTIME WK APR 15 OTHER	2848	10.9	0.024	1.64
A10	A10	B12EMPR	EMPLOYER NAME	NI	NI	NI	NI
A10	A10	B12CITY	EMPLOYER CITY OR TOWN	NI	NI	NI	NI
A10	A10	B12ST	EMPLOYER STATE	NI	NI	NI	NI
A11	A12	B13	WAS EMPLOYER AN EDUCATIONAL INSTITUTION	15306	21.9	0.001	1.16

A12	A13	QB14_1	TYPE OF EDUC INST: ELEM/SECOND	3945	24.1	0.000	1.00
A12	A13	QB14_2	TYPE OF EDUC INST: 2-YR COLLEGE	3945	3.5	0.004	1.14
A12	A13	QB14_3	TYPE OF EDUC INST: 4-YR COLLEGE	3945	51.7	0.052	2.91
A12	A13	QB14_4	TYPE OF EDUC INST: MEDICAL SCH	3945	10.3	0.037	2.35
A12	A13	QB14_5	TYPE OF EDUC INST: RESEARCH INST	3945	5.7	0.113	5.19
A12	A13	QB1491	TYPE OF EDUC INST: OTHER	3945	4.7	0.000	1.01
A13	A16	QB15_1	TYPE OF EMPLOYER: PRIVATE/PROFIT	11316	72.7	0.003	1.31
A13	A16	QB15_2	TYPE OF EMPLOYER: NOT PROFIT	11316	8.6	0.000	1.01
A13	A16	QB15_3	TYPE OF EMPLOYER: SELF-EMPLOY NOT INCORP	11316	2.7	0.001	1.10
A13	A16	QB15_4	TYPE OF EMPLOYER: SELF EMPLOY INCORP	11316	0.7	0.000	1.05
A13	A16	QB15_5	TYPE OF EMPLOYER: LOCAL GOVERNMENT	11316	3.4	0.000	1.00
A13	A16	QB15_6	TYPE OF EMPLOYER: STATE GOVERNMENT	11316	4.4	0.000	1.00
A13	A16	QB15_7	TYPE OF EMPLOYER: US MILITARY	11316	3.3	0.001	1.11
A13	A16	QB15_8	TYPE OF EMPLOYER: US GOVERNMENT	11316	4.3	0.001	1.08
A14	A17	BI6TEX1	KIND OF WORK DURING APRIL 15 PERIOD	NI	NI	NI	NI
A15	A18	SOC_CODE	CODING OF JOBS BY DP	NI	NI	NI	NI
A17	A20	B19A	JOB REQUIRE ENGINEERING, COMP SCI, MATH,	652	41.8	0.024	1.14
A17	A20	B19B	JOB REQUIRE SOCIAL SCIENCES	651	39.9	0.027	1.16
A18	A21	B2OA	LICENSING OR CERTIFICATION REQUIRED	15275	31.9	0.002	1.27
A18	A21	B2OB	WERE YOU LICENSED OR CERTIFIED	4763	45.0	0.002	1.10
A19	A22	XRELA	RELATIONSHIP BETWEEN WORK AND EDUCATION	17586	75.8	0.000	1.06
A19	A22	QB21_1	WORK AND EDUCATION: CLOSELY RELATED	15307	46.0	0.001	1.14
A19	A22	QB21_2	WORK AND EDUCATION: SOMEWHAT RELATED	15307	29.7	0.002	1.33
A19	A22	QB21_3	WORK AND EDUCATION: NOT RELATED	15307	24.2	0.000	1.05
A20	A23	B22A	FACTOR - PAY, PROMOTION OPPORTUNITIES	2485	47.0	0.002	1.06
A20	A23	B22B	FACTOR - WORKING CONDITIONS	2452	42.6	0.000	1.00
A20	A23	B22C	FACTOR - JOB LOCATION	2491	47.9	0.011	1.26
A20	A23	B22D	FACTOR - CHANGE IN CAREER OR INTERESTS	2461	25.5	0.000	1.00
A20	A23	B22E	FACTOR - FAMILY RELATED REASONS	2493	14.0	0.000	1.00
A20	A23	B22F	FACTOR - JOB IN FIELD NOT AVAILABLE	2454	53.6	0.000	1.00
A20	A23	B22G	FACTOR - OTHER - SPECIFY	2495	10.6	0.004	1.08
A21	A24	B23	MOST IMPORTANT FACTOR	NI	NI	NI	NI
A22	A25	B24A	10% ACCOUNTING, FINANCE, CONTRACTS	15294	21.3	0.001	1.09
A22	A25	B24B	10% APPLIED RESEARCH	15285	34.2	0.002	1.27
A22	A25	B24C	10% BASIC RESEARCH	15291	25.3	0.002	1.26
A22	A25	B24D	10% COMPUTER APPLICATIONS	15282	47.3	0.002	1.27
A22	A25	B24E	10% DEVELOPMENT	15275	29.3	0.003	1.42
A22	A25	B24F	10% DESIGN EQUIPMENT, PROCESSES, STRUCTURE	15270	24.6	0.004	1.52
A22	A25	B24G	10% EMPLOYEE RELATIONS	15282	32.1	0.003	1.39

A22	A25	B24H	10% MANAGEMENT & ADMINISTRATION	15266	35.4	0.000	1.00
A22	A25	B24I	10% PRODUCTION, OPERATIONS, MAINTENANCE	15274	10.1	0.017	3.42
A22	A25	B24J	10% PROFESSIONAL SERVICES	15173	18.2	0.000	1.00
A22	A25	B24K	10% SALES, PURCHASING, MARKETING	15206	20.8	0.001	1.13
A22	A25	B24L	10% QUALITY OR PRODUCTIVITY MANAGEMENT	15272	24.6	0.001	1.12
A22	A25	B24M	10% TEACHING	15294	24.3	0.001	1.13
A22	A25	B24N	10% OTHER	15307	8.5	0.012	2.72
A23	A26	B251ST	ACTIVITY WITH THE MOST HOURS	NI	NI	NI	NI
A23	A26	B252ND	ACTIVITY WITH SECOND MOST HOURS	NI	NI	NI	NI
A24	A27	B26	SUPERVISE THE WORK OF OTHERS FOR JOB	15302	31.7	0.011	2.56
A25	A28	B27A	NUMBER OF PERSONS SUPERVISE DIRECTLY	4980	8.1	0.008	1.36
A25	A28	B27B	SUPERVISE THROUGH SUPERVISORS	4970	10.1	0.000	1.00
A26	A29	QB28	PRINCIPAL JOB SALARY	11450	24,890	0.002	1.18
A27	A30	B29	SALARY EARNED BASED ON FULL-TIME?	15311	80.3	0.002	1.31
A28	A31	B30	JOB SUPPORTED BY CONTRACTS FROM US GOVT	14972	14.6	0.000	1.00
A29	A32	B31A	SUPPORTED BY DEFENSE DEPARTMENT	2374	22.0	0.031	1.68
A29	A32	B31B	SUPPORTED BY EDUCATION DEPARTMENT	2564	6.1	0.000	1.00
A29	A32	B31C	SUPPORTED BY ENERGY DEPARTMENT	2573	7.3	0.004	1.09
A29	A32	B31D	SUPPORTED BY EPA	2572	6.1	0.000	1.00
A29	A32	B31E	SUPPORTED BY NASA	2570	6.4	0.001	1.01
A29	A32	B31F	SUPPORTED BY NIH	2571	15.9	0.009	1.22
A29	A32	B31G	SUPPORTED BY NSF	2572	10.2	0.011	1.28
A29	A32	B31H	SUPPORTED BY NRC	2575	0.2	0.000	1.00
A29	A32	B31I	SUPPORTED BY OTHER FEDERAL AGENCY	2576	11.9	0.018	1.44
A29	A32	B31J	SUPPORTED BY AID	NI	NI	NI	NI
A29	A32	B31K	SUPPORTED BY AGRICULTURE DEPT	NI	NI	NI	NI
A29	A32	B31L	SUPPORTED BY COMMERCE DEPT	NI	NI	NI	NI
A29	A32	B3IM	SUPPORTED BY HEALTH AND HUMAN SERVICES	NI	NI	NI	NI
A29	A32	B31N	SUPPORTED BY HUD	NI	NI	NI	NI
A29	A32	B31O	SUPPORTED BY INTERIOR DEPT	NI	NI	NI	NI
A29	A32	B31P	SUPPORTED BY JUSTICE DEPT	NI	NI	NI	NI
A29	A32	B31QN	SUPPORTED BY LABOR DEPT	NI	NI	NI	NI
A29	A32	B31R	SUPPORTED BY STATE DEPT	NI	NI	NI	NI
A29	A32	B31S	SUPPORTED BY TRANSPORTATION DEPT	NI	NI	NI	NI
A29	A32	B31T	SUPPORTED BY VETERANS ADMINISTRATION	NI	NI	NI	NI
A30	A33	QB32_1	AREA DEVOTED MOST HOURS-ENERGY/FUEL	15278	3.7	0.000	1.00
A30	A33	QB32_2	AREA DEVOTED MOST HOURS-ENVIRONMENT	15278	7.6	0.001	1.11
A30	A33	QB32_3	AREA DEVOTED MOST HOURS-HEALTH/SAFETY	15278	13.5	0.004	1.57
A30	A33	QB32_4	AREA DEVOTED MOST HOURS-NATIONAL DEFENSE	15278	5.8	0.001	1.12

A30	A33	QB32_5	AREA DEVOTED MOST HOURS-NONE OF ABOVE	15278	69.5	0.004	1.51
A31	A34	B33	ONE ENERGY SOURCE WORK ON THE MOST	NI	NI	NI	NI
A32	A35	B34	ENERGY RELATED ACTIVITY WORKED THE MOST	NI	NI	NI	NI
A33	A36	B35	HAVE A SECOND JOB APRIL 15 WEEK	NI	NI	NI	NI
A34	A37	B36TEX1	SECOND JOB TITLE	NI	NI	NI	NI
A35	A38	B37_SOC	CODING OF JOBS BY DP	NI	NI	NI	NI
A36	A39	B38AMT	EARNINGS FROM SECOND JOB	NI	NI	NI	NI
A36	A39	B38PER	PAY PERIOD FOR SECOND JOB	NI	NI	NI	NI
A37	A40	B39	RELATION BETWEEN 2ND JOB AND EDUCATION	NI	NI	NI	NI
			PAST EMPLOYMENT - SECTION NOT ON NSRCG				
C1	C1	C1A	YEARS EXPERIENCE WORKING FULL TIME	17429	3.2	0.000	1.00
C1	C1	C1B	YEARS EXPERIENCE WORKING PART TIME	17416	1.9	0.012	3.02
C2	C2	C2	ATTEND PROFESSIONAL SOCIETY MEETINGS	17446	37.6	0.000	1.00
C3	C3	C3	BELONG TO HOW MANY SOCIETIES	17430	0.8	0.000	1.07
C4	C4	C4	ATTEND WORK RELATED WORKSHOPS	17450	54.3	0.002	1.39
C5	C5	C5A	MANAGEMENT OR SUPERVISOR TRAINING	9441	24.7	0.003	1.26
C5	C5	C5B	TECHNICAL TRAINING IN OCCUPATIONAL FIELD	9211	78.4	0.005	1.40
C5	C5	C5C	GENERAL PROFESSIONAL TRAINING	9408	30.4	0.005	1.47
C5	C5	C5D	OTHER WORK RELATED TRAINING	9699	15.9	0.006	1.55
C6	C6	C6A	TO FACILITATE A CHANGE IN OCCUPATION	9700	17.6	0.003	1.29
C6	C6	C6B	ACQUIRE FURTHER SKILLS OR KNOWLEDGE	9685	95.1	0.001	1.07
C6	C6	C6C	FOR LICENSURE/CERTIFICATION	9695	20.6	0.000	1.00
C6	C6	C6D	PROMOTION/ADVANCEMENT/HIGHER SALARY	9696	54.1	0.002	1.15
C6	C6	C6E	LEARN SKILLS OR KNOWLEDGE FOR NEW POSITI	9699	54.9	0.005	1.49
C6	C6	C6F	REQUIRED/EXPECTED BY EMPLOYER	9668	63.0	0.001	1.12
C6	C6	C6G	OTHER REASON ATTENDED TRAINING	9701	5.1	0.005	1.42
C7	C7	C7	MOST IMPORTANT REASON FROM C6	NI	NI	NI	NI
			EDUCATIONAL INFORMATION				
D1	SED	Al	YEAR RECEIVED HIGH SCHOOL DIPLOMA	NI	NI	NI	NI
D2	SED	A2ST	STATE LAST ATTENDED H. S.	NI	NI	NI	NI
D2	SED	A2CNTRY	COUNTRY LAST ATTENDED H. S.	NI	NI	NI	NI
-	-	A3	EVER TAKEN COURSES AT A COMMUNITY COLLEG	17586	36.1	0.001	1.13
-	-	A4A	WENT TO CC TO FINISH H.S.	5840	1.1	0.002	1.08
-	-	A4B	WENT TO CC FOR AP PROGRAM	5833	7.2	0.005	1.26
-	-	A4C	WENT TO CC TO PREPARE FOR COLLEGE	5836	31.3	0.002	1.11
-	-	A4D	WENT TO CC TO COMPLETE AA DEGREE	5843	25.7	0.000	1.00
-	-	A4E	WENT TO CC TO WORK TOWARD BACHELOR'S	5841	69.3	0.001	1.06

-	-	A4F	WENT TO CC TO GAIN MORE SKILLS	5843	48.5	0.001	1.03
-	-	A4G	WENT TO CC TO HELP CHANGE SITUATION	5825	28.6	0.000	1.00
-	-	A4H	WENT TO CC TO PROMOTION/HIGHER SALARY	5840	26.4	0.000	1.00
-	-	A4I	WENT TO CC FOR LEISURE/PERSONAL INTEREST	5840	43.0	0.003	1.19
-	-	A4J	WENT TO CC FOR SOME OTHER REASON	5845	11.5	0.010	1.54
D3	SED	A4X	HAVE AN ASSOCIATE'S DEGREE?	17579	11.1	0.000	1.05
-	-	A5	MAJOR WHEN FIRST WENT TO COLLEGE	NI	NI	NI	NI
-	-	A5_2	BEST CODE-MAJOR WHEN 1ST WENT TO COLLEGE	NI	NI	NI	NI
-	-	A6CODE	CODE FOR MAJOR WHEN 1ST IN COLLEGE	NI	NI	NI	NI
-	-	A6CODE2	BEST CODE-FOR MAJOR WHEN 1ST IN COLLEGE	NI	NI	NI	NI
-	-	QA7_1	UNDERGRAD GPA: 3.75-4.00	17437	11.9	0.002	1.36
-	-	QA7_2	UNDERGRAD GPA: 3.25-3.74	17437	32.5	0.004	1.67
-	-	QA7_3	UNDERGRAD GPA: 2.75-3.24	17437	41.2	0.003	1.46
-	-	QA7_4	UNDERGRAD GPA: 2.25-2.74	17437	12.4	0.003	1.42
-	-	QA7_5	UNDERGRAD GPA: 1.75-2.24	17437	1.8	0.024	4.98
-	-	QA7_6	UNDERGRAD GPA: 1.25- 1.74	17437	0.0	0.000	1.04
-	-	QA7_7	UNDERGRAD GPA: LESS THAN 1.25	17437	0.0	0.476	79.65
-	-	QA7_8	UNDERGRAD GPA: NO GRADES	17437	0.2	0.003	1.51
D4	SED	A9	HAVE DEGREE (PART OF CATI VERIFICATION)	NI	NI	NI	NI
D5	SED	A10	NUMBER OF DEGREES BACHELOR'S OR HIGHER	NI	NI	NI	NI
			EDUCATION GRID				
D6A	-	A11ASCHL	COLLEGE FROM WHICH DEGREE RECEIVED	NI	NI	NI	NI
D6A	-	A11ACITY	CITY OF COLLEGE	NI	NI	NI	NI
D6A	-	A11AST	STATE OF COLLEGE	NI	NI	NI	NI
D6B	-	A11BMM	MONTH DEGREE ATTAINED	NI	NI	NI	NI
D6B	-	A11BYY	YEAR RECEIVED DEGREE	NI	NI	NI	NI
D6C	-	A11C	TYPE OF DEGREE	NI	NI	NI	NI
D6D	-	A11DMJR2	BEST CODE-TITLE OF MAJOR	NI	NI	NI	NI
D6D	-	A11DMJC2	BEST CODE-CODE FOR MAJOR	NI	NI	NI	NI
D6D	-	A11D3	DO YOU HAVE A SECOND MAJOR OR MINOR	17586	38.1	0.002	1.38
D6D	-	A11DMNR2	BEST CODE-DEGREE MINOR	NI	NI	NI	NI
D6D	-	A11DMNC2	BEST CODE-CODE FOR MINOR	NI	NI	NI	NI
-	-	A11EA	LOANS FROM COLLEGE, BANK, GOVT	17546	40.7	0.000	1.00
-	-	A11EB	LOANS FROM PARENTS OR RELATIVES	17562	8.8	0.000	1.00
-	-	A11EC	EMPLOYER ASSISTANCE	17364	10.9	0.002	1.27
-	-	A11ED	SCHOLARSHIPS, GRANTS, FELLOWSHIPS	17492	52.1	0.001	1.15
-	-	A11EE	ASSISTANTSHIPS/WORKSTUDY	17546	28.8	0.000	1.01
-	-	A11EF	EARNINGS FROM EMPLOYMENT	17557	66.8	0.003	1.49

-	-	A11EG	GIFTS FROM PARENTS/RELATIVES	17441	65.2	0.000	1.00
-	-	A11EH	OTHER SOURCE OF FINANCIAL SUPPORT	17564	2.0	0.004	1.74
			ADDITIONAL EDUCATIONAL INFORMATION				
-	-	Al2A	TOTAL BORROWED FOR UNDERGRADUATE DEGREES	17303	11,399	0.004	1.57
-	-	A12B	MONEY OWED FOR UNDERGRADUATE DREGREES	8095	6,800	0.000	1.02
-	-	A12C	MONEY BORROWED FOR GRADUATE DEGREES	5610	13,035	0.005	1.26
-	-	Al2D	MONEY OWED FOR GRADUATE DEGREES	1792	10,856	0.009	1.16
D7	D5	A13	TAKE COURSES SINCE MOST RECENT DEGREE	17027	41.8	0.000	1.00
-	-	A13A	ENROLLED IN A WAY OTHER THAN COURSES PHD	12579	10.6	0.001	1.17
D8	D6	A17A	MORE EDUCATION BEFORE CAREER	7185	65.7	0.005	1.32
D8	D6	Al7B	PREPARE FOR GRAD SCHOOL	7448	30.5	0.015	2.06
D8	D6	Al7C	MAKE A CHANGE IN SITUATION	7443	41.7	0.000	1.00
D8	D6	A17D	ACQUIRE FURTHER SKILLS	7454	79.3	0.002	1.14
D8	D6	A17E	FOR LICENSURE/CERTIFICATION	7457	32.0	0.000	1.00
D8	D6	A17F	INCREASE OPPORTUNITIES	7456	62.7	0.001	1.10
D8	D6	A17G	REQUIRED/EXPECTED BY EMPLOYER	7456	15.9	0.003	1.19
D8	D6	A17H	PERSONAL INTEREST/LEISURE	7449	56.6	0.002	1.11
D8	D6	A17I	TOOK COURSES FOR SOME OTHER REASON	7466	3.6	0.004	1.31
D9	D7	A18_2	BEST CODE-TITLE, PRIMARY FIELD OF STUDY	NI	NI	NI	NI
D10	-	A19CODE2	BEST CODE-EDUCATION CODE/PRIMARY FIELD	NI	NI	NI	NI
D11	-	QA20_l	WORKING TOWARD: NO DEGREE	7473	23.3	0.003	1.19
D11	-	QA20_2	WORKING TOWARD: BACHELOR'S	7473	3.0	0.000	1.03
D11	-	QA20_3	WORKING TOWARD: MASTER'S	7473	37.2	0.003	1.20
D11	-	QA20_4	WORKING TOWARD: DOCTORATE	7473	17.6	0.000	1.00
D11	-	QA20_5	WORKING TOWARD: OTHER PROFESSIONAL	7473	15.3	0.002	1.11
D11	-	QA2091	WORKING TOWARD: OTHER DEGREE	7473	3.7	0.008	1.60
D12	D8	A21A	LOANS FROM SCH, BANK, GOVT	7456	27.5	0.000	1.00
D12	D8	A21B	LOANS FROM PARENTS OR RELATIVES	7456	6.1	0.001	1.05
D12	D8	A21C	FINANCIAL ASSISTANCE FROM EMPLOYER	7455	23.0	0.000	1.00
D12	D8	A21D	SCHOLARSHIPS, GRANTS, FELLOWSHIPS	7455	33.1	0.002	1.12
D12	D8	A21E	ASSISTANTSHIPS/WORK STUDY	7456	22.4	0.001	1.05
D12	D8	A21F	EARNINGS FROM EMPLOYMENT	7455	58.2	0.003	1.24
D12	D8	A21G	GIFTS FROM PARENTS/RELATIVES	7456	27.1	0.001	1.06
-	-	A22	TAKING COURSES WEEK OF APRIL 15	17586	31.8	0.000	1.06
-	-	A23SCHL	COLLEGE ATTENDED WEEK OF APRIL 15	NI	NI	NI	NI
-	-	A23CITY	CITY WHERE COLLEGE IS LOCATED	NI	NI	NI	NI
-	-	A23ST	STATE WHERE COLLEGE IS LOCATED	NI	NI	NI	NI
-	-	A24	FULL TIME OR PART TIME STUDENT	5714	29.2	0.004	1.19

-	-	A14A	ACHIEVED EDUCATIONAL GOALS	9518	73.9	0.002	1.14
-	-	A14B	WAITING FOR NEXT TERM TO START	9520	6.2	0.004	1.36
-	-	A14C	FINANCIAL REASONS	9507	38.9	0.000	1.00
-	-	A14D	HAD A JOB/NEEDED TO WORK	9444	79.9	0.007	1.67
-	-	A14E	FAMILY RESPONSIBILITIES	9490	11.9	0.003	1.29
-	-	A14F	MOVED	9520	11.1	0.004	1.33
-	-	A14G	UNCERTAIN WHICH FIELD TO PURSUE	9513	19.8	0.003	1.25
-	-	A14H	NEEDED A BREAK	9519	51.9	0.006	1.52
-	-	A14I	SOME OTHER REASON	9520	5.9	0.007	1.60
-	-	A15	TAKEN COURSES SINCE APRIL 15	9522	4.6	0.000	1.00
-	-	QA16_l	LIKELIHOOD OF TAKING COURSES: VERY LIKELY	9142	68.8	0.000	1.03
-	-	QA16_2	LIKELIHOOD OF TAKING COURSES: SOMEWHAT	9142	24.1	0.001	1.07
-	-	QA16_3	LIKELIHOOD OF TAKING COURSES: VERY UNLIKELY	9142	7.1	0.001	1.09
			BACKGROUND INFORMATION				
-	E5	D5	HISPANIC DESCENT	17556	4.3	0.000	1.01
-	E6	QD6_1	TYPE OF HISPANIC-MEXICAN	675	38.0	0.033	1.21
-	E6	QD6_2	TYPE OF HISPANIC-PUERTO RICAN	675	21.0	0.020	1.13
-	E6	QD6_3	TYPE OF HISPANIC-CUBAN	675	5.7	0.000	1.00
-	E6	QD6_91	TYPE OF HISPANIC-OTHER	675	35.2	0.026	1.16
-	E7	QD7_1	RACE- WHITE	17586	84.1	0.000	1.03
-	E7	QD7_2	RACE- BLACK	17586	6.4	0.002	1.27
-	E7	QD7_3	RACE-ASIAN	17586	9.2	0.000	1.00
-	E7	QD7_4	RACE-NATIVE AMERICAN	17586	0.3	0.000	1.01
-	E7	QD7_5	RACE-OTHER	17586	0.0	0.001	1.12
-	E8	D8	RESPONDENT GENDER	17586	57.2	0.000	1.04
D13	E13	QD13_1	MARITAL STATUS-MARRIED	17560	28.8	0.000	1.03
D13	E13	QD13_2	MARITAL STATUS-WIDOWED	17560	0.3	0.000	1.08
D13	E13	QD13_3	MARITAL STATUS-SEPARATED	17560	0.5	0.000	1.00
D13	E13	QD13_4	MARITAL STATUS-DIVORCED	17560	2.8	0.000	1.00
D13	E13	QDI3_5	MARITAL STATUS-NEVER MARRIED	17560	67.6	0.000	1.04
D14	E14	QD14_1	SPOUSE WORKING- YES, FULL-TIME	6247	67.2	0.000	1.01
D14	E14	QD14_2	SPOUSE WORKING- YES, PART-TIME	6247	11.9	0.000	1.00
D14	E14	QD14_3	SPOUSE WORKING- NO	6247	20.9	0.000	1.00
D15	E15	DI5A	SPOUSE JOB NEED DEG ENG, COMP SCI, MATH, SC	4628	33.7	0.003	1.15
D15	E15	D15B	SPOUSE JOB NEED DEG SOCIAL SCIENCE	4628	16.4	0.009	1.40
D15	E15	D15C	SPOUSES DUTIES REQUIRE BS IN OTHER FIELD	4646	28.5	0.012	1.54
D16	E16	D16	ANY CHILDREN IN HH	17568	15.0	0.002	1.27
D17	E17	Dl7A	NUMBER OF CHILDREN UNDER 6	NI	NI	NI	NI

D17	E17	D17B	NUMBER OF CHILDREN 6 TO 11	NI	NI	NI	NI
D17	E17	D17C	NUMBER OF CHILDREN 12 - 17	NI	NI	NI	NI
D17	E17	D17D	NUMBER OF CHILDREN 18 OR OLDER	NI	NI	NI	NI
D18	E9	D9A	US CITIZEN OR NOT	17586	93.4	0.002	1.38
D18	E9	D9B	SPECIFIC TYPE OF CITIZEN/NONCITIZEN	NI	NI	NI	NI
D19	E10	D10	COUNTRY OF CITIZENSHIP	NI	NI	NI	NI
-	E11	D11	YEAR CAME TO US TO STAY	2644	79	0.114	3.82
D20	E12	D12	APRIL 15 WEEK-LIVING IN THE US	NI	NI	NI	NI
-	E2	D2ST	BIRTH STATE	NI	NI	NI	NI
D21	El	D1MM	MONTH OF BIRTH	NI	NI	NI	NI
D21	El	D1YY	YEAR OF BIRTH	NI	NI	NI	NI
D22	E3	D3	EVER LIVE IN FARMING COMM BEFORE 18	17569	33.2	0.001	1.18
D23	E4	QDAD_1	DAD’S HIGHEST EDUC LEVEL-LESS THAN HS	17404	7.3	0.000	1.00
D23	E4	QDAD_2	DAD’S HIGHEST EDUC LEVEL- HS DIPLOMA	17404	26.0	0.000	1.00
D23	E4	QDAD_3	DAD’S HIGHEST EDUC LEVEL-SOME COLLEGE	17404	13.5	0.001	1.21
D23	E4	QDAD_4	DAD’S HIGHEST EDUC LEVEL-BACHELORS	17404	24.4	0.001	1.11
D23	E4	QDAD_5	DAD’S HIGHEST EDUC LEVEL-SOME GRADUATE	17404	28.8	0.000	1.06
D23	E4	QMOM_1	MOM’S HIGHEST EDUC LEVEL-LESS THAN HS	17459	6.3	0.000	1.00
D23	E4	QMOM_2	MOM’S HIGHEST EDUC LEVEL-HS DIPLOMA	17459	35.9	0.000	1.06
D23	E4	QMOM_3	MOM’S HIGHEST EDUC LEVEL-SOME COLLEGE	17459	19.7	0.001	1.20
D23	E4	QMOM_4	MOM’S HIGHEST EDUC LEVEL-BACHELORS	17459	22.6	0.000	1.00
D23	E4	QMOM_5	MOM’S HIGHEST EDUC LEVEL-SOME GRADUATE	17459	15.5	0.001	1.11
			DISABILITY SECTION				
D24A	E18A	D18A	DEGREE OF DIFFICULTY SEEING	17570	98.7	0.003	1.42
D24B	E18B	D18B	DEGREE OF DIFFICULTY HEARING	17572	99.3	0.000	1.00
D24C	E18C	D18C	DEGREE OF DIFFICULTY WALKING	17571	99.7	0.000	1.00
D24D	E18D	D18D	DEGREE OF DIFFICULTY LIFTING	17571	99.6	0.001	1.15
D25	E19	D19	AGE FIRST BEGAN EXPERIENCING DIFFICULT	NI	NI	NI	NI

*Weighted mean instead of percent given for continuous variable.

NI Intra-interviewer Correlation not included for item.