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## Attrition and the National Longitudinal Surveys of Labor Market Experience: Avoidance, Control and Correction

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Since 1966 the Center for Human Resource Research has been analysing the longitudinal surveys conducted by the Census Bureau for the Department of Labor. The main purpose of

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these surveys is to study the labor force activity of different population groups. The original groups included men who were 45-59 years old in 1966, women who were 30-44 years old in 1967, men who were 14-24 years old in 1966, and women who were 14-24 years old in 1968. In 1979, a new survey, conducted by the National Opinion Research Center (*editor's note:*) (NORC) in Chicago, was added for young men and women who were 14-21 in that year. Each of the five surveys is designed to collect information on all phases of the respondent's labor force activity and on other characteristics such as educational attainment, health, family composition, and financial status that are known to be related to such activity.

The original plan in 1965 was to interview the same respondents each year for a period of five years. Because of the usefulness of the data and the relatively small sample attrition, a decision was made at the end of the first five-year period to continue for another five years. The interview pattern was changed at that time from a face to-face yearly interview to a 2-2-1 pattern. Each respondent was contacted by phone every two years, then again in person one year after the second phone interview. This pattern was used again both during the third five-year extension obtained in 1976 and during the fourth five-year extension, obtained in December 1982. At the time of the most recent extension, a study looking specifically at attrition within the different cohorts was carried out.

Longitudinal studies in general have several advantages over the more frequent cross-sectional studies. While longitudinal studies are very expensive, the data are collected in great detail over time, with respondents reporting events and attitudes as they occur rather than retrospectively. Collecting the data in this way also enables the researcher to go beyond issues of correlations to address the more urgent issues of causality. The main advantage of a longitudinal survey, following the

same set of respondents year after year, creates two major problems, however. The first is the difficulty of relocating respondents for subsequent interviews, and the second is maintaining respondent cooperation over repeated interviews.

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### Attrition in the NLS

Table 1<sup>3</sup> shows the numbers and percentages of respondents for all interviews up to and including the 1983 questionnaire. The base year row shows only those respondents who were interviewed that first year. Between the original screening and the first interview, some of the eligible respondents were lost: 9.0 percent of the Older Men, 5.5 percent of the Older Women, 8.3 percent of the Young Men, 5.8 percent of the Young Women, and 11.5 percent of the New Youth.

While Table 1 shows the distribution of interviews between and among the five cohorts, Tables 2–5 show interview/noninterview status of the four older cohorts by reason for noninterview. While there are differences between the cohorts in the distribution of reason for noninterview, within each cohort the distribution of reason remains consistent across the years. The method of interview, whether face-to-face or by telephone, does not seem to affect the attrition rate. Some of the losses in the sample are unavoidable. In the Survey of Mature Men (Table 2), for example, an increasing percentage of sample losses are due to respondent deaths. The Mature Women's survey (Table 3) has the second highest retention rate among the four older cohorts. This high rate is probably due to the fact that this group is very stable and has low geographic

mobility.

The Young Men's cohort has the lowest rate of retention and has been the test case for new attempts to stop the gradual decline in sample size. A variety of factors account for the difficulty in locating these respondents: completion of school, acquisition of new jobs, formation of families, and movement in and out of the military services. The higher rates of attrition in the earlier years were attributed to influx into the military since the sample was drawn, and initial interviewing done during the Vietnam War. However, rates remained high even as these respondents returned from the military.

The Young Women's cohort, which is similar to the Young Men's with respect to completion of school, acquisition of new jobs, and formation of families, posed the added challenge of name changes accompanying changes in marital status, yet the overall response rate has remained high.

The New Youth cohort has benefited greatly from the lessons taught by experience with the four older cohorts. In 1983, the response rate for this group was 96.3 percent. A comparison between this cohort and the first five years of the Young Women's cohort, which had the best retention rate of the older cohorts, shows that different procedures and techniques can substantially decrease attrition.

Not only does NORC have a higher overall interview rate, but also the organization seems to be better at retrieving respondents. In 1982, 96.0 percent of the original 1979 sample were interviewed. Some of these had not been interviewed in previous years: 2.2 percent in 1980, 1.1 percent in 1981, and 0.5 percent in 1980 or 1981. Only 165 respondents (one percent) of the original sample had had only one interview after four rounds of the survey. In 1983, the number of respondents who had had only one interview dropped to 115. Over eleven thousand (90.7) respondents had been

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<sup>3</sup>Editor's note: Tables are gathered together at end of article

interviewed every year, and 5.5 percent had completed four out of the five interviews.

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### The Impact of Attrition on Representativeness

The gradual decline in sample size over time becomes very important if it results in a biased sample. While each cohort was checked at the end of the first five-year series of interviews, and smaller checks were made in the context of reports on occupational distribution, educational attainment, age distributions, and marital status with published national data, no one looked at all the cohorts systematically until 1982. At this point the issue of representativeness had to be addressed as part of the proposal to extend the cohorts for another five years.

Such a study could essentially be carried out in either of two ways. First, the remaining sample could be compared with some outside group, such as the decennial Census or the Current Population Survey. Comparison with an outside sample was difficult given time constraints and the fact that Census data were not yet ready for release. While the CPS data were available, differences between the CPS and each of the four older cohorts had already been documented in the first year. The second alternative was to compare the characteristics of the respondents who were left after ten years with the characteristics of all respondents interviewed in the initial year to see how much difference, if any, there actually was. Each cohort was checked for differences in the age distributions, educational attainment levels, employment status, industry and occupation distributions, marital status, SMSA status, annual income distribution, and wage and salary distribution. The Young Men and Young Women were also checked for differences in enrollment status.

A separate evaluation was done by race for each of the four cohorts. Table 6 is an example of the type of table constructed for each group. The ten-year sample was weighted using two methods: the entry level weight and a ten-year weight, which includes successive adjustments for each year's noninterviews. For all cohorts except the Young Men, the relevant comparison was between the entry year weighted figures and the ten-year sample using the ten-year weight. In the Young Men's cohort, the 1966 sample using the 1966 weight was compared to the 1976 sample using the 1966 weight because the 1976 weight had been adjusted to include individuals formerly in the military. Since young men already in the military had been deliberately excluded from the Young Men's sample, using the 1976 weight could have created apparent differences where none existed. For this group alone, it was more appropriate to use the 1966 weight.

Table 7 summarizes the distribution of differences by cohort and shows that for most characteristics the difference between the two samples was less than two percentage points. After the differences were identified, statistical tests of significance were computed for each of the comparisons. Table 8 shows the number of statistically significant differences at various levels for each cohort by race. While the number of differences was higher than would be expected by chance, several were based upon small sample cases in the initial year and characteristics with only two values. In the latter cases, a statistically significant result in one category means the other category will also be statistically different [sic].

After reviewing the entire set of tables, it was clear that noninterviews had not seriously distorted the representativeness of the sample. Given this finding, and the ability to apply weights to eliminate any potential bias, the decision was made to continue all four surveys for another five years.

It is unclear, however, how further erosion of the samples will affect representativeness. Concern with this issue, together with the higher noninterview rates that NORC was having with the New Youth sample, led to an evaluation of the rules that had been established in the original five-year period and an attempt to see if it was possible to retrieve some of the noninterview cases.

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### Retrieving Former Noninterview Cases

Since the Young Men's panel had lost the most respondents, it became the target for the first attempt at retrieval. Respondents from the 1975, 1976, 1978 and 1980 survey years, who normally would not have been included in the workload (i.e., attempted contacts) because of noninterview status in those years (refused, unable to contact, institutionalized, moved outside the U.S.) were sorted, and a sample of 279 selected.

Several changes were made in the procedures for contacting these special respondents. No restrictions were placed on the number of telephone calls, mileage, or time spent locating and retrieving these respondents. Each interviewing packet included the respondent's most recently completed interview and household record card, as well as the most recent questionnaire, and all record cards for any other household members participating in any of the other cohorts. In addition, an expanded list of methods of locating respondents was included. As a result of these additional steps, 104 (37.3 percent) of these respondents were interviewed. These interviews have been flagged and will be checked as soon as the data tapes are available from the Census Bureau to determine if they differ in any way from the rest of the respondents. If these respondents remain in the sample for the next round of

interviews in the latter part of 1983, a concerted effort may be made to use these procedures during the regular interviews and in similar attempts to retrieve noninterviews in the other three cohorts.

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### Differences Between Census and NORC

One of the major differences between Census and NORC is the amount of location information obtained from the respondent. NORC obtains more information, and request information on other individuals with specific relationships to the respondent, depending upon the respondent's circumstances. The interviewer begins by asking the name, relationship, address, and phone number of the person most likely to know where the respondent is. If the respondent is living in a dormitory, fraternity, sorority, hospital or other temporary situation, the interviewer is instructed to obtain the name and relationship of a householder at a permanent home address. If the respondent is married and living apart from a spouse, the spouse's address and telephone number are requested. If the respondent is not living with a parent and has not provided a parent's name, this information is obtained, including whether or not the parents live together. The name of another relative with whom the respondent is in contact, and the names of friends and places to which the respondent goes when not spending spare time at home, are also obtained. Respondents are also asked for nicknames, maiden names if they are married women, and whether or not they expect to move in the next 12 months.

This extensive list gives the NORC interviewer a real advantage when contacting someone on the list, since the ability to mention the respondent's parents, relatives, friends, hangouts or nicknames demonstrates that the interviewer



knows the respondent to some degree and may make the reference more willing to give out information about the respondent. Another major advantage that the NORC interviewer has over the Census interviewer is the existence of a centralized locating shop in Chicago. The person working at the locating shop has access to all previous questionnaires, original copies of locator documents and information about the respondent's brothers and sisters. Working with this additional data, the respondent can usually be located by phone and reassigned to the same or another interviewer. The Census interviewer starts out with less information with which to locate the respondent. S/he has a questionnaire with a label indicating the respondent's name and most recent home address. In addition, there is a household record card for each respondent which contains the telephone numbers, all addresses at which the respondent has lived since the survey began, the names of all persons who have lived with the respondent, and the names, addresses and telephone numbers of only two persons who will always know where s/he can be reached.

Besides the more extensive locating supplement that NORC builds in the interview, several other differences appear. Each respondent in the New Youth cohort is paid \$10.00 for a completed interview, since many researchers believe that even a small amount of money helps in obtaining cooperation, especially among younger respondents. The New Youth respondents also had an opportunity to take a series of tests for the Department of Defence, which needed to evaluate tests given to individuals in the military. For these tests, which take several hours, the respondents were paid \$50.00. When the four older cohorts were first interviewed, paying respondents was not as well accepted. Now there are fears that starting this procedure with the older cohorts would cause concern on the part of respondents.

Another procedural difference is that New Youth cohort respondents are told up front that

they will be interviewed each year for the next several years and are therefore aware that they will be contacted about the same time each year. The Census interviewers are told only that they may be conducting additional surveys, and should not tell the respondents that this is the last time s/he will be interviewed. The lack of an answer to give the respondent, in addition to the 2-2-1 pattern, probably leaves the respondent without a sense of when or if s/he will be contacted again. While this ambiguity may not have an impact on their cooperation in the survey, the NORC approach leaves the respondent with a greater feeling of certainty about the interviewing schedule.

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#### Revising the Rule for Dropping Respondents

After the first year, respondents in the four older cohorts who refused to participate or had died, were dropped from the Census sample. Those who were not reinterviewed for any reason for two consecutive years were also dropped. The only exception was made in the Young Men's sample with those respondents who were in the Armed Forces. Since the sample was to represent the national civilian, non-institutionalized population, young men were not interviewed while they were in the Armed Forces but were retained in the sample and reinterviewed in the first interview after they had left the services. However, NORC's success in retrieving respondents even after they had refused and the success of the Young Men retrieval effort resulted in a change in these rules. Currently, no respondent is dropped except those who have died. NORC goes back each year and attempts to interview all living respondents.

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### Maintaining Respondent Cooperation

While both Census and NORC send out advance letters about the entire survey, stressing the importance of the respondent's cooperation, NORC also sends out a newsletter that tells respondents in a very "chatty" format about some general results of the previous survey. The Census Bureau had a short, formal fact sheet that went out with the cover letter, but interviewers reported that respondents did not feel it was very useful. In the 1982 Young Women's survey, a more extensive description of the surveys and a list of the research results from the survey were sent to any respondent who filled in and returned a postcard requesting additional information. Over one-third of the respondents interviewed in that wave mailed in the postcard. A variable will be created identifying these respondents and if distribution of the handbook increases the response rate in the next round, the handbook will be offered to the respondents in all three cohorts.

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### Conclusions

The New Youth survey has, at this time, a considerably better response rate than any of the four older cohorts. Much of its success can be traced to the solution of problems that developed over time in the four older cohorts. While the necessity of maintaining the same measures over time prevented change in the handling of the four older cohorts, these problems were corrected in the first wave of the New Youth cohort. Questions that the respondents or the interviewer had difficulty with in the four older cohorts were altered so that there was no confusion from the very beginning. Perhaps most importantly, given the highly mobile nature of the younger age group, much more detail was obtained on individuals who would always know where the respondent was. In addition, more information about the survey was given to the respondent before, during and after each interview. All these factors combined have resulted in a response rate that is very good for any survey and exceptional for a longitudinal survey in its fifth year. □

Table 1

Table 1 National Longitudinal Surveys Retention Rates

Year	Ages 15-59 in 1966		Ages 16-24 in 1967		Ages 14-24 in 1966		Ages 14-24 in 1966		Ages 14-21 in 1979		Ages 14-21 in 1979	
	Total interviewed rate	Total retention rate	Total interviewed rate	Total retention rate	Total interviewed rate	Total retention rate	Total interviewed rate	Total retention rate	Total interviewed rate	Total retention rate	Total interviewed rate	Total retention rate
1966	5,094	100.0			5,225	100.0						
1967	4,751	94.4	5,083	100.0	4,790	91.7						
1968	4,661	92.6	4,910	96.6	4,318	82.6	5,159	100.0				
1969	4,388	87.2	4,712	92.7	4,033	77.2	4,330	95.6				
1970					3,993	76.4	4,766	92.4				
1971	4,182	83.1	4,575	90.0	3,987	76.3	4,714	91.4				
1972			4,471	88.0			4,625	89.6				
1973	3,951	78.5			4,014	76.8	4,424	85.8				
1974			4,322	85.0								
1975	3,732	74.1			3,977	76.1	4,243	82.2				
1976	3,487	69.3	4,172	82.1	3,696	70.7						
1977			3,966	78.0			4,071	78.9				
1978	3,219	63.9			3,538	67.7	3,923	76.1				
1979			3,812	75.0					6,398	100.0	6,288	100.0
1980	3,001	59.6			3,438	65.8	3,801	73.7	6,087	95.1	6,054	96.3
1981	2,834	56.2	3,677	72.3	3,398	64.9			6,125	95.7	6,070	96.5
1982			3,542	69.7			3,650	70.8	6,083	95.1	6,040	96.1
1983	2,634	52.3					3,545	68.7	6,143	96.0	6,078	96.7

Table 2

Year	Total interviews	Noninterview										Noninterview retention 2 consecutive years dropped <sup>3</sup> rate <sup>4</sup>					
		Total #	% <sup>1</sup>	Percented #	% <sup>2</sup>	Refused #	% <sup>2</sup>	Unable to contact #	% <sup>2</sup>	Temporarily absent #	% <sup>2</sup>		Institutionalized #	% <sup>2</sup>	Armed forces #	% <sup>2</sup>	Other #
1966	5,034	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1967	4,751	283	5.6	60	21.2	107	37.8	93	32.9	6	2.8	-	-	-	15	5.3	94.4
1968	4,661	206	4.2	75	36.4	50	24.3	66	32.0	3	1.5	1	0.5	-	11	5.3	92.6
1969	4,388	330	7.0	102	30.9	92	27.9	88	26.7	17	5.1	13	3.9	-	18	5.5	24 87.2
1970	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1971	4,182	323	7.2	169	52.3	56	17.3	56	17.3	15	4.6	17	5.3	-	10	3.1	19 83.1
1972	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1973	3,951	303	7.1	175	57.7	42	13.9	62	20.5	3	1.0	14	4.6	-	7	2.3	26 78.5
1974	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1975	3,732	281	7.0	174	61.9	43	15.3	37	13.2	3	1.1	13	4.6	-	11	3.9	24 74.1
1976	3,487	294	7.8	100	34.0	128	43.5	22	7.5	18	6.1	14	4.8	-	12	4.1	15 69.3
1977	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1978	3,219	316	6.9	163	51.6	73	23.1	38	12.0	12	3.8	26	8.2	-	4	1.3	14 63.9
1979	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1980	3,001	289	8.8	202	69.9	35	12.1	15	5.2	2	0.7	29	10.0	-	6	2.1	13 59.6
1981	2,834	202	6.6	99	49.0	59	29.2	11	5.4	5	2.5	26	12.9	0	0.0	1	0.5 56.2

<sup>1</sup>Percent of previous year number of interviews.

<sup>2</sup>Percent of total noninterviews.

<sup>3</sup>Noninterviews which are deleted from the sample.

<sup>4</sup>The retention rate in the percent of those year respondents who were interviewed.





Table 4

Table 4 Interview/Noninterview Status for Survey of Young Men

Year	Total inter-views	Noninterview										Reten- tion rate						
		Total #	% <sup>1</sup>	Deceased #	% <sup>2</sup>	Refused #	% <sup>2</sup>	Unable to contact #	% <sup>2</sup>	Temp- orarily absent #	% <sup>2</sup>		Institu- tionalized #	% <sup>2</sup>	Armed forces #	% <sup>2</sup>	Other #	% <sup>2</sup>
1966	5,225	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1967	4,790	435	8.3	14	3.2	66	15.2	83	19.0	4	0.9	-	-	263	60.5	5	1.2	91.7
1968	4,318	827	16.1	10	1.2	70	8.5	143	17.3	6	0.7	33	4.0	555	67.1	10	1.2	82.6
1969	4,033	994	19.8	11	1.1	54	5.4	181	18.2	10	1.0	43	4.3	689	69.3	6	0.6	77.2
1970	3,993	904	18.5	13	1.4	37	4.1	154	17.0	17	1.9	23	2.5	649	71.8	11	1.2	65
1971	3,982	801	16.7	11	1.4	54	6.7	160	20.0	13	1.6	36	4.5	505	63.0	22	2.7	59
1972	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1973	4,014	655	14.0	17	2.6	69	10.5	214	37.3	6	0.9	35	5.3	257	39.2	27	4.1	54
1974	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1975	3,977	552	12.2	13	2.4	88	15.9	212	38.4	1	0.2	31	5.6	180	32.8	27	4.9	54
1976	3,696	541	12.8	7	1.3	177	32.2	152	28.1	9	1.7	12	2.2	161	29.8	23	4.3	109
1977	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1978	3,538	472	11.8	21	4.4	114	24.1	164	34.7	8	1.7	18	3.1	122	25.8	25	5.3	82
1979	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1980	3,438	408	11.9	15	3.7	72	17.6	165	40.4	5	1.2	19	4.2	111	27.2	21	5.1	72
1981	3,998	391	7.5	7	1.8	107	27.4	126	32.2	8	2.0	16	4.1	111	28.4	16	4.1	0

<sup>1</sup>Percent of previous year number of interviews.<sup>2</sup>Percent of total noninterviews.<sup>3</sup>Noninterviews which are deleted from the sample.<sup>4</sup>The retention rate in the percent of base year respondents who were interviewed.

Table 5

Table 5 Interview/Noninterview Status for Survey of Young Women

Year	Total inter-views	Noninterview										Referen- 2 consecutive years dropped	Rate				
		Total #	% <sup>1</sup>	Percent of #	Refused #	% <sup>2</sup>	Unable to contact #	% <sup>2</sup>	Temporarily absent #	% <sup>2</sup>	Institu- tionalized #			% <sup>2</sup>	Armed forces #	% <sup>2</sup>	Other #
1966	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1967	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1968	5,159	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1969	4,930	229	4.4	2	0.9	98	42.8	112	48.9	3	1.3	9	3.9	-	5	2.2	
1970	4,766	293	5.8	6	2.0	74	25.3	136	46.4	21	7.2	7	2.4	-	49	16.7	
1971	4,714	217	4.4	4	1.8	54	24.9	95	43.8	12	5.5	8	3.7	-	44	20.3	
1972	4,625	203	4.2	6	3.0	74	36.5	93	45.8	5	2.5	5	2.5	-	20	9.9	
1973	4,424	285	6.1	4	1.4	116	40.7	108	37.9	4	1.4	4	1.4	-	49	17.2	
1974	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1975	4,243	307	6.7	5	1.6	114	37.1	132	43.0	5	1.6	2	0.7	-	49	16.0	
1976	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1977	4,108	274	6.3	3	1.1	113	41.2	114	41.6	5	1.8	2	0.7	-	37	13.5	
1978	3,902	319	7.5	3	0.9	180	56.4	86	26.9	14	4.4	6	1.9	10	3.1	20	6.3
1979	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1980	3,801	190	4.8	6	3.1	88	46.3	63	33.1	1	0.5	3	1.6	4	2.1	25	13.1

<sup>1</sup>Percent of previous year number of interviews.  
<sup>2</sup>Percent of total noninterviews.  
<sup>3</sup>Noninterviews which are deleted from the sample.  
<sup>4</sup>The retention rate in the percent of base year respondents who were interviewed.

Table 6

Table 6 Selected Characteristics in 1966 of Original Sample and Sample Interviewed in 1976

Characteristics in 1966	Number of respondents in 1966	# potentially eligible for interview in 1976 <sup>1</sup>		Number of respondents in 1976	Total retention rate	1966 sample				1976 sample									
		#	%			Unweighted #	Weighted using 1966 weight <sup>2</sup> %	Unweighted #	Weighted using 1966 weight %	Unweighted #	Weighted using 1966 weight %								
												(#00)	(%)	(#000)	(%)				
<b>Age</b>																			
45-49	1329	1202	39.3	983	74.0	1329	36.9	4996	36.5	983	39.0	3691	38.7	4482	38.8				
50-54	1230	1043	34.1	868	70.6	1230	34.2	4638	33.9	868	34.4	3239	34.0	3917	33.5				
55-59	1041	811	26.5	670	64.4	1041	28.9	4041	29.6	670	26.6	2610	27.4	3152	27.3				
<b>Educational attainment</b>																			
Less than 12 yrs.	2038	1679	55.3	1391	68.2	2038	57.0	7645	56.2	1391	55.3	5198	54.6	6794	54.6				
12 years	885	778	75.6	652	73.7	885	24.7	3385	24.9	652	25.9	2486	26.1	3002	26.1				
More than 12 yrs.	655	583	19.2	472	72.1	655	18.3	2561	18.8	472	18.8	1834	19.3	2277	19.3				
<b>Employment status</b>																			
Employed	3348	2897	94.9	2395	82.7	3348	93.0	12709	93.0	2395	95.0	9056	94.9	10561	94.9				
Unemployed	46	38	1.2	27	71.0	46	1.3	172	1.3	27	1.1	106	1.1	130	1.1				
Out of labor force	206	121	4.0	99	81.8	206	5.7	789	5.8	99	3.8	377	4.0	457	4.0				
<b>Industry<sup>2</sup></b>																			
Agriculture	335	293	10.1	264	90.1	335	10.0	1171	9.2	264	11.0	920	10.2	1100	10.0				
Mining	30	25	.9	23	92.0	30	0.9	118	0.9	23	1.0	91	1.0	110	1.0				
Construction	351	292	10.1	237	81.2	351	10.5	1335	10.5	237	9.9	900	10.0	1094	10.0				
Manufacturing	1000	866	29.9	702	81.1	1000	29.9	3805	30.0	702	29.3	2660	29.4	3220	29.4				
Transportation	315	263	9.1	225	85.6	315	9.4	1213	9.6	225	9.4	858	9.5	1036	9.5				
Trade	523	457	15.8	375	82.0	523	15.6	2008	15.8	375	15.7	1441	15.9	1746	15.9				
Finance	129	111	3.8	89	80.2	129	3.9	509	4.0	89	3.7	351	3.9	425	3.9				
Services	432	374	12.9	301	80.5	432	12.9	1644	13.0	301	12.6	1142	12.6	1388	12.7				
Public admin.	230	213	7.4	177	83.1	230	6.9	896	7.1	177	7.4	685	7.8	832	7.6				
<b>Marital status</b>																			
Married	3235	2775	91.0	2298	82.8	3235	90.1	12278	90.0	2298	91.3	8695	91.3	10526	91.3				
Previously married	190	141	4.6	119	84.4	190	5.3	732	5.4	119	4.7	453	4.8	551	4.8				
Never married	166	134	4.4	101	75.4	166	4.6	624	4.6	101	4.0	379	4.0	457	4.0				
<b>Occupation<sup>2</sup></b>																			
Professional	359	316	10.9	254	80.4	359	10.8	1406	11.1	254	10.8	999	11.1	1218	11.1				
Managerial	582	508	17.6	424	83.5	582	17.4	2245	17.7	424	17.7	1623	18.0	1969	18.0				
Clerical	173	147	5.1	118	80.3	173	5.2	667	5.3	118	4.9	448	5.0	542	5.0				
Sales	176	154	5.3	175	81.2	176	5.3	688	5.4	175	5.2	491	5.4	597	5.5				
Crafts	828	720	24.9	595	82.6	828	24.8	3153	24.9	595	24.9	2249	24.9	2722	24.9				
Operatives	572	497	17.2	400	80.5	572	17.1	2198	17.3	400	16.7	1544	17.1	1867	17.1				
Household services	180	149	5.2	123	82.6	180	5.4	663	5.2	123	5.1	446	4.9	541	5.0				
Farmers	255	228	7.9	206	90.4	255	7.6	889	7.0	206	8.6	718	7.9	857	7.8				
Farm laborers	60	50	1.7	46	82.0	60	1.8	212	1.7	46	1.9	159	1.8	191	1.8				
Laborers	154	119	4.1	98	82.4	154	4.6	556	4.4	98	4.1	356	3.9	429	3.9				
<b>SMEA status</b>																			
In SMEA	2487	2107	69.0	1716	81.4	2487	69.1	9506	69.5	1716	68.1	6550	68.7	7945	68.8				
Out of SMEA	1112	948	31.0	804	84.8	1112	30.9	4163	30.5	804	31.9	2988	31.3	3601	31.2				
<b>Annual income</b>																			
Equal to zero	5	5	.2	5	100.0	5	0.2	19	0.2	5	0.3	19	0.3	24	0.3				
1-2,999	249	185	7.9	157	84.9	249	9.1	916	8.7	157	8.0	569	7.6	684	7.5				
3,000-9,999	1418	1177	50.5	999	84.9	1418	51.5	5362	51.0	999	50.6	3764	50.2	4555	50.1				
10,000-14,999	712	631	77.1	534	84.6	712	25.9	2765	26.3	534	27.1	2069	27.6	2510	27.6				
15,000-19,999	211	192	8.2	153	79.7	211	7.7	845	8.1	153	7.8	604	8.1	735	8.1				
+ 20,000	156	141	6.0	125	88.6	156	5.7	596	5.7	125	6.3	477	6.4	577	6.4				
<b>Wages and salary</b>																			
Equal to zero	777	634	22.5	541	71.1	777	23.5	2876	23.0	541	22.3	2009	21.9	2420	21.8				
1-2,999	243	189	6.7	172	91.0	243	7.2	899	7.2	172	7.1	624	6.8	755	6.8				
3,000-9,999	1696	1468	52.1	1262	86.0	1696	53.3	6451	51.5	1262	52.1	4700	52.2	5801	52.2				
10,000-14,999	447	397	14.1	343	86.4	447	13.5	1732	13.8	343	14.2	1326	14.5	1614	14.5				
15,000-19,999	81	77	2.7	58	75.3	81	2.5	333	2.7	58	2.4	238	2.6	290	2.6				
+ 20,000	60	54	1.9	47	87.0	60	1.8	235	1.9	47	1.9	185	2.0	276	2.0				

<sup>1</sup>Excludes death, military and out of country.<sup>2</sup>Those employed survey week.

**Table 7**

Table 7 Number and Percentage of Differences by Panel

Panel	Absolute differences (%)			Total
	0-2	2-3	3+	
Mature men				
Black	34 (73.9)	8 (17.4)	4 (8.7)	46 (100.0)
White	43 (95.6)	2 (4.4)	0	45 (100.0)
Mature women				
Black	42 (93.3)	3 (6.7)	0	45 (100.0)
White	45 (100.0)	0	0	45 (100.0)
Young men				
Black	30 (73.2)	5 (12.2)	6 (14.6)	41 (100.0)
White	43 (97.7)	1 (2.3)	0	44 (100.0)
Young women				
Black	33 (82.5)	6 (15.0)	1 (2.5)	40 (100.0)
White	40 (95.2)	2 (4.8)	0	42 (100.0)

**Table 8**

Table 8 Number and Percentage of Statistically Significant Differences by Panel

Panel	Level of significance		
	1%	2%	3%
Mature men			
Black	4 (9.1)	7 (15.9)	12 (27.3)
White	4 (9.1)	7 (15.9)	14 (31.8)
Mature women			
Black	2 (4.5)	2 (4.5)	3 (6.8)
White	1 (2.3)	4 (9.3)	5 (11.6)
Young Men			
Black	1 (2.6)	4 (10.3)	6 (15.4)
White	2 (4.7)	4 (9.3)	6 (14.0)
Young women			
Black	1 (2.6)	3 (7.9)	4 (10.5)
White	1 (2.6)	2 (5.1)	2 (5.1)