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		<u>VALID ENTRIES</u>	
		1 FULL-TIME 2 PART-TIME	
PESCHLVL	2	WOULD THAT BE HIGH SCHOOL, COLLEGE, OR UNIVERSITY?	579 - 580
		EDITED UNIVERSE: PESCHENR = 1	
		<u>VALID ENTRIES</u>	
		1 HIGH SCHOOL 2 COLLEGE OR UNIVERSITY	
PRNLFSCH	2	NLF ACTIVITY - IN SCHOOL OR NOT IN SCHOOL	581 - 582
		EDITED UNIVERSE: PENLFACT = -1 OR 1-6 AND PEAGE = 16-24	
		<u>VALID ENTRIES</u>	
		1 IN SCHOOL 2 NOT IN SCHOOL	
		PERSON'S WEIGHTS	
PWFMWGT	10	FAMILY WEIGHT (4 IMPLIED DECIMALS) ONLY USED FOR TALLYING FAMILY CHARACTERISTICS.	583 - 592
		EDITED UNIVERSE: PRPERTYP = 1-3	
PWLGWGT	10	LONGITUDINAL WEIGHT (4 IMPLIED DECIMALS) ONLY FOUND ON ADULT RECORDS MATCHED FROM MONTH TO MONTH. (USED FOR GROSS FLOWS ANALYSIS)	593 - 602
		EDITED UNIVERSE: PRPERTYP = 2	

















NAME	SIZE	DESCRIPTION	LOCATION
		EDITED UNIVERSE: PRPERTYP = 2 AND PEAGE = 16+	
PEIO1ICD	4	INDUSTRY CODE FOR PRIMARY JOB  EDITED UNIVERSE: (PEMLR = 1-3) OR (PEMLR = 4 AND PELKLWO = 1-2) OR (PEMLR = 5 AND (PENLFJH = 1 OR PEJHWKO = 1)) OR (PEMLR = 6 AND PENLFJH = 1) OR (PEMLR = 7 AND PEJHWKO=1)  <u>VALID ENTRIES</u>  0     MIN VALUE 9999 MAX VALUE	856 - 859
PEIO1OCD	4	OCCUPATION CODE FOR PRIMARY JOB.  EDITED UNIVERSE: (PEMLR = 1-3) OR (PEMLR = 4 AND PELKLWO = 1-2) OR (PEMLR = 5 AND (PENLFJH = 1 OR PEJHWKO = 1)) OR (PEMLR = 6 AND PENLFJH = 1) OR (PEMLR = 7 AND PEJHWKO = 1)  <u>VALID ENTRIES</u>  0     MIN VALUE 9999 MAX VALUE	860 - 863
PEIO2ICD	4	INDUSTRY CODE FOR SECOND JOB.  EDITED UNIVERSE: PEMJOT = 1 AND HRMIS = 4 OR 8  <u>VALID ENTRIES</u>  0     MIN VALUE 9999 MAX VALUE	864 - 867

NAME	SIZE	DESCRIPTION	LOCATION
PEIO2OCD	4	OCCUPATION CODE FOR SECOND JOB  EDITED UNIVERSE: PEMJOT = 1 AND HRMIS = 4 OR 8  <u>VALID ENTRIES</u>  0 MIN VALUE 9999 MAX VALUE	868 - 871
PRIMIND1	2	INTERMEDIATE INDUSTRY RECODE (JOB 1)  EDITED UNIVERSE: PRIOELG = 1  <u>VALID ENTRIES</u>  1 AGRICULTURE, FORESTRY, FISHING, and HUNTING 2 MINING 3 CONSTRUCTION 4 MANUFACTURING - DURABLE GOODS 5 MANUFACTURING - NON-DURABLE GOODS 6 WHOLESALE TRADE 7 RETAIL TRADE 8 TRANSPORTATION AND WAREHOUSING 9 UTILITIES 10 INFORMATION 11 FINANCE AND INSURANCE 12 REAL ESTATE AND RENTAL AND LEASING 13 PROFESSIONAL AND TECHNICAL SERVICES 14 MANAGEMENT, ADMINISTRATIVE AND WASTE MANAGEMENT SERVICES 15 EDUCATIONAL SERVICES 16 HEALTH CARE AND SOCIAL SERVICES 17 ARTS, ENTERTAINMENT, AND RECREATION 18 ACCOMMODATION AND FOOD SERVICES 19 PRIVATE HOUSEHOLDS 20 OTHER SERVICES, EXCEPT PRIVATE HOUSEHOLDS 21 PUBLIC ADMINISTRATION 22 ARMED FORCES	872 - 873
PRIMIND2	2	INTERMEDIATE INDUSTRY RECODE (JOB 2)  EDITED UNIVERSE: PRIOELG = 1 AND PEMJOT = 1 AND HRMIS = 4 OR 8	874 - 875









NAME	SIZE	DESCRIPTION	LOCATION
		<u>VALID ENTRIES</u>	
		1 Yes 2 No	
PEDISREM	2	BECAUSE OF A PHYSICAL, MENTAL, OR EMOTIONAL CONDITION, DOES...HAVE SERIOUS DIFFICULTY CONCENTRATING, REMEMBERING, OR MAKING DECISIONS?  EDITED UNIVERSE: PRPERTYP = 2  <u>VALID ENTRIES</u>  1 Yes 2 No	910 - 911
PEDISPHY	2	DOES...HAVE SERIOUS DIFFICULTY WALKING OR CLIMBING STAIRS?  EDITED UNIVERSE: PRPERTYP = 2  <u>VALID ENTRIES</u>  1 Yes 2 No	912 - 913
PEDISDRS	2	DOES ... HAVE DIFFICULTY DRESSING OR BATHING?  EDITED UNIVERSE: PRPERTYP = 2  <u>VALID ENTRIES</u>  1 Yes 2 No	914 - 915
PEDISOUT	2	BECAUSE OF A PHYSICAL, MENTAL, OR EMOTIONAL CONDITION DOES...HAVE DIFFICULTY DOING ERRANDS ALONE SUCH AS VISITING A DOCTOR'S OFFICE OR SHOPPING?	916 - 917



## ATTACHMENT 7

Supplement Record Layout  
Current Population Survey, February 2014  
Annual Arts Benchmarking Survey Supplement

<u>NAME</u>	<u>SIZE</u>	<u>DESCRIPTION</u>	<u>LOCATION</u>
PEQ1A	2	<p>The following questions are about ((Name and you/(Name/you) and spouse/partner name/(NAME/your)) activities during the last 12 months between February (current day), 2013 and February (current day), 2014.</p> <p>During the last 12 months, did (you/Name) work with pottery, ceramics, or jewelry?</p> <p>EDITED UNIVERSE:</p> <p>PRINTFLG = 1</p> <p><u>VALID ENTRIES:</u></p> <p>1 Yes 2 No -2 Don't Know -3 Refuse -9 No Response -1 Not in Universe</p>	951-952
PEQ1B	2	<p>During the last 12 months, did (spouse/partner Name/you) work with pottery, ceramics, or jewelry?</p> <p>EDITED UNIVERSE:</p> <p>PRINTSFLG = 1</p>	953-954







<u>NAME</u>	<u>SIZE</u>	<u>DESCRIPTION</u>	<u>LOCATION</u>
PEQ5B	2	<p>During the last 12 months, did (spouse/partner Name/you) any acting?</p> <p>EDITED UNIVERSE:</p> <p>PRINTSFLG = 1</p> <p><u>VALID ENTRIES:</u></p> <p>1 Yes 2 No -2 Don't Know -3 Refuse -9 No Response -1 Not in Universe</p>	969-970
PEQ6A	2	<p>During the last 12 months, did (you/Name) perform or practice any dance?</p> <p>EDITED UNIVERSE:</p> <p>PRINTFLG = 1</p> <p><u>VALID ENTRIES:</u></p> <p>1 Yes 2 No -2 Don't Know -3 Refuse -9 No Response -1 Not in Universe</p>	971-972
PEQ6B	2	<p>During the last 12 months, did spouse/partner Name/you) perform or practice any dance?</p> <p>EDITED UNIVERSE:</p> <p>PRINTSFLG = 1</p>	973-974





















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Q6B                      During the last 12 months, did ^SPOUSE perform or practice any dance?

- (1) Yes  
(2) No

DK              Don't Know  
RF              Refuse

---

Q7A                      During the last 12 months, did ^TNAME do any social dancing, including dancing at weddings, clubs, or other social settings?

- (1) Yes  
(2) No

DK              Don't Know  
RF              Refuse

---

Q7B                      During the last 12 months, did ^SPOUSE do any social dancing, including dancing at weddings, clubs, or other social settings?

- (1) Yes  
(2) No

DK              Don't Know  
RF              Refuse

---

Q8A                      During the last 12 months, did ^TNAME perform or practice any singing?

- (1) Yes  
(2) No

DK              Don't Know  
RF              Refuse



























































































































FIPS County Code	County Name	State
<b>Pennsylvania</b>		

003	Allegheny
007	Beaver
011	Berks
013	Blair
017	Bucks
019	Butler
021	Cambria
029	Chester
043	Dauphin
045	Delaware
049	Erie
055	Franklin*
071	Lancaster
081	Lycoming
085	Mercer
089	Monroe*
091	Montgomery
101	Philadelphia
107	Schuylkill*
125	Washington
129	Westmoreland
133	York

**South Carolina**

007	Anderson
041	Florence
045	Greenville
051	Horry
063	Lexington
079	Richland
083	Spartanburg
091	York





FIPS County Code	County Name	State
101	Racine	
105	Rock	
139	Winnebago	

\* Counties marked with an asterisk (\*) are also single county Micropolitan Statistical Areas. They are not otherwise identified on the files. A list of such areas on the files is as follows:

#### 2010 Design

CBSA Code	Title	County Name	County Code
12300	Augusta-Waterville, ME	Kennebec	005
18180	Concord, NH	Merrimack	011
26090	Holland, MI	Allegan	005
31300	Lumberton, NC	Robeson	155
39060	Pottsville, PA	Schuylkill	107
45860	Torrington, CT	Litchfield	005

#### 2000 Design

10540	Albany-Lebanon, OR	Linn	043
10880	Allegan, MI	Allegan	005
16540	Chambersburg, PA	Franklin	055
19300	Daphne-Fairhope, AL	Baldwin	003
20620	East Liverpool-Salem, OH	Columbiana	029
20700	East Stroudsburg, PA	Monroe	089
25900	Hilo, HI	Hawaii	001
27460	Jamestown-Dunkirk-Fredonia, NY	Chautauqua	013
29420	Lake Havasu City-Kingman, AZ	Mohave	015
30540	Lexington-Thomasville, NC	Davidson	057
31300	Lumberton, NC	Robeson	155
42580	Seaford, DE	Sussex	005
43420	Sierra Vista-Douglas, AZ	Cochise	003
44380	Statesville-Mooresville, NC	Iredell	097
49300	Wooster, OH	Wayne	169



## ATTACHMENT 13

### Current Population Survey

#### Selected Unweighted Tallies from the February 2014 Annual Arts Benchmarking Survey Supplement

<b><u>Item</u></b>	<b><u>Value</u></b>	<b><u>Tallies</u></b>
PEQ1A	1 Yes	517
	2 No	13276
	-2 Don't Know	24
PEQ1B	1 Yes	232
	2 No	6110
	-2 Don't Know	8
	-3 Refused	5
	-9 No response	8
PEQ2A	1 Yes	982
	2 No	12794
	-2 Don't Know	19
	-3 Refused	11
	-9 No response	11
PEQ2B	1 Yes	474
	2 No	5859
	-2 Don't Know	10
	-3 Refused	7
	-9 No response	13
PEQ3A	1 Yes	1697
	2 No	12057
	-2 Don't Know	23
	-3 Refused	17
	-9 No response	23

<b><u>Item</u></b>	<b><u>Value</u></b>	<b><u>Tallies</u></b>
PEQ3B	1 Yes	780
	2 No	5549
	-2 Don't Know	6
	-3 Refused	10
	-9 No response	18
PEQ4A	1 Yes	1381
	2 No	12349
	-2 Don't Know	23
	-3 Refused	29
	-9 No response	35
PEQ4B	1 Yes	605
	2 No	5711
	-2 Don't Know	9
	-3 Refused	14
	-9 No response	24
PEQ5A	1 Yes	204
	2 No	13522
	-2 Don't Know	20
	-3 Refused	30
	-9 No response	41
PEQ5B	1 Yes	64
	2 No	6250
	-2 Don't Know	6
	-3 Refused	16
	-9 No response	27
PEQ6A	1 Yes	446
	2 No	13270
	-2 Don't Know	22
	-3 Refused	33
	-9 No response	46

<b><u>Item</u></b>	<b><u>Value</u></b>	<b><u>Tallies</u></b>
PEQ6B	1 Yes	145
	2 No	6163
	-2 Don't Know	8
	-3 Refused	18
	-9 No response	29
PEQ7A	1 Yes	3392
	2 No	10304
	-2 Don't Know	36
	-3 Refused	36
	-9 No response	49
PEQ7B	1 Yes	1698
	2 No	4605
	-2 Don't Know	11
	-3 Refused	19
	-9 No response	30
PEQ8A	1 Yes	1251
	2 No	12457
	-2 Don't Know	21
	-3 Refused	38
	-9 No response	50
PEQ8B	1 Yes	533
	2 No	5770
	-2 Don't Know	9
	-3 Refused	20
	-9 No response	31
PEQ9A	1 Yes	479
	2 No	13221
	-2 Don't Know	21
	-3 Refused	44
	-9 No response	52

<b><u>Item</u></b>	<b><u>Value</u></b>	<b><u>Tallies</u></b>
PEQ9B	1 Yes	212
	2 No	6088
	-2 Don't Know	7
	-3 Refused	20
	-9 No response	36
PEQ10A	1 Yes	1691
	2 No	12007
	-2 Don't Know	21
	-3 Refused	42
	-9 No response	56
PEQ10B	1 Yes	827
	2 No	5471
	-2 Don't Know	9
	-3 Refused	20
	-9 No response	36
PEQ11A	1 Yes	1004
	2 No	12689
	-2 Don't Know	25
	-3 Refused	43
	-9 No response	56
PEQ11B	1 Yes	393
	2 No	5899
	-2 Don't Know	13
	-3 Refused	22
	-9 No response	36
PEQ12A	1 Yes	900
	2 No	12790
	-2 Don't Know	28
	-3 Refused	42
	-9 No response	57

<u>Item</u>	<u>Value</u>	<u>Tallies</u>
PEQ12B	1 Yes	257
	2 No	6037
	-2 Don't Know	10
	-3 Refused	21
	-9 No response	38
PRINTFLG	1 Interview	13817
	1 Noninterview	2715
PRINTSFLG	1 Interview	6350
	2 Noninterview	1066

## ATTACHMENT 14

### COUNTRIES AND AREAS OF THE WORLD

Current Population Survey

Starting May 2012

Code	Name	Code	Name
057	United States	158	Armenia
060	American Samoa	159	Azerbaijan
066	Guam	160	Belarus
069	Northern Marianas	161	Georgia
073	Puerto Rico	162	Moldova
078	U. S. Virgin Islands	163	Russia
100	Albania	164	Ukraine
102	Austria	165	USSR
103	Belgium	166	Europe, not specified
104	Bulgaria	168	Montenegro
105	Czechoslovakia	200	Afghanistan
106	Denmark	202	Bangladesh
108	Finland	203	Bhutan
109	France	205	Myanmar (Burma)
110	Germany	206	Cambodia
116	Greece	207	China
117	Hungary	209	Hong Kong
118	Iceland	210	India
119	Ireland	211	Indonesia
120	Italy	212	Iran
126	Netherlands	213	Iraq
127	Norway	214	Israel
128	Poland	215	Japan
129	Portugal	216	Jordan
130	Azores	217	Korea
132	Romania	218	Kazakhstan
134	Spain	220	South Korea
136	Sweden	222	Kuwait
137	Switzerland	223	Laos
138	United Kingdom	224	Lebanon
139	England	226	Malaysia
140	Scotland	228	Mongolia
142	Northern Ireland	229	Nepal
147	Yugoslavia	231	Pakistan
148	Czech Republic	233	Philippines
149	Slovakia	235	Saudi Arabia
150	Bosnia & Herzegovina	236	Singapore
151	Croatia	238	Sri Lanka
152	Macedonia	239	Syria
154	Serbia	240	Taiwan
155	Estonia	242	Thailand
156	Latvia	243	Turkey
157	Lithuania	245	United Arab Emirates

Code	Name
246	Uzbekistan
247	Vietnam
248	Yemen
249	Asia, not specified
300	Bermuda
301	Canada
303	Mexico
310	Belize
311	Costa Rica
312	El Salvador
313	Guatemala
314	Honduras
315	Nicaragua
316	Panama
321	Antigua and Barbuda
323	Bahamas
324	Barbados
327	Cuba
328	Dominica
329	Dominican Republic
330	Grenada
332	Haiti
333	Jamaica
338	St. Kitts--Nevis
339	St. Lucia
340	St. Vincent and the Grenadines
341	Trinidad and Tobago
343	West Indies, not specified
360	Argentina
361	Bolivia
362	Brazil
363	Chile
364	Columbia
365	Ecuador
368	Guyana
369	Paraguay
370	Peru
372	Uruguay

Code	Name
373	Venezuela
374	South America, not specified
399	Americas, not specified
400	Algeria
407	Cameroon
408	Cape Verde
412	Congo
414	Egypt
416	Ethiopia
417	Eritrea
421	Ghana
423	Guinea
425	Ivory Coast
427	Kenya
429	Liberia
430	Libya
436	Morocco
440	Nigeria
444	Senegal
447	Sierra Leone
448	Somalia
449	South Africa
451	Sudan
453	Tanzania
454	Togo
457	Uganda
459	Zaire
460	Zambia
461	Zimbabwe
462	Africa, not specified
501	Australia
508	Fiji
511	Marshall Islands
512	Micronesia
515	New Zealand
523	Tonga
527	Samoa
555	Elsewhere

## ATTACHMENT 15

### ALLOCATION FLAGS

#### Current Population Survey

For every edited item, there is a corresponding allocation flag with the prefix "PX". The last six characters of the names are the same. For example, PXMLR is the allocation flag for PEMLR. All allocation flags have the following list of possible values.

00	VALUE - NO CHANGE
01	BLANK - NO CHANGE
02	DON'T KNOW - NO CHANGE
03	REFUSED - NO CHANGE
10	VALUE TO VALUE
11	BLANK TO VALUE
12	DON'T KNOW TO VALUE
13	REFUSED TO VALUE
20	VALUE TO LONGITUDINAL VALUE
21	BLANK TO LONGITUDINAL VALUE
22	DON'T KNOW TO LONGITUDINAL VALUE
23	REFUSED TO LONGITUDINAL VALUE
30	VALUE TO ALLOCATED VALUE LONG.
31	BLANK TO ALLOCATED VALUE LONG.
32	DON'T KNOW TO ALLOCATED VALUE LONG.
33	REFUSED TO ALLOCATED VALUE LONG.
40	VALUE TO ALLOCATED VALUE
41	BLANK TO ALLOCATED VALUE
42	DON'T KNOW TO ALLOCATED VALUE
43	REFUSED TO ALLOCATED VALUE
50	VALUE TO BLANK
52	DON'T KNOW TO BLANK
53	REFUSED TO BLANK

## ATTACHMENT 16

### Source and Accuracy Statement for the February 2014 CPS Microdata File on Annual Arts Benchmarking Survey

#### SOURCE OF THE DATA

The data in this microdata file are from the February 2014 Current Population Survey (CPS). The U.S. Census Bureau conducts the CPS every month, although this file has only February 2014 data. The February 2014 survey uses two sets of questions, the basic CPS and a set of supplemental questions. The CPS, sponsored jointly by the Census Bureau and the U.S. Bureau of Labor Statistics, is the country's primary source of labor force statistics for the entire population. The National Endowment of the Arts sponsored the supplemental questions for February 2014.

**Basic CPS.** The monthly CPS collects primarily labor force data about the civilian noninstitutional population living in the United States. The institutionalized population, which is excluded from the population universe, is composed primarily of the population in correctional institutions and nursing homes (98 percent of the 4 million institutionalized people in Census 2010). Interviewers ask questions concerning labor force participation about each member 15 years old and over in sample households. Typically, the week containing the nineteenth of the month is the interview week. The week containing the twelfth is the reference week (i.e., the week about which the labor force questions are asked).

The CPS uses a multistage probability sample based on the results of the decennial census, with coverage in all 50 states and the District of Columbia. The sample is continually updated to account for new residential construction. When files from the most recent decennial census become available, the Census Bureau gradually introduces a new sample design for the CPS.

In April 2004, the Census Bureau began phasing out the 1990 sample<sup>1</sup> and replacing it with the 2000 sample, creating a mixed sampling frame. Two simultaneous changes occurred during this phase-in period. First, primary sampling units (PSUs)<sup>2</sup> selected for only the 2000 design gradually replaced those selected for the 1990 design. This involved 10 percent of the sample. Second, for PSUs selected for both designs, sample households from the 2000 design gradually replaced sample households from the 1990 design. This involved about 90 percent of the sample. The new sample design was completely implemented by July 2005.

In the first stage of the sampling process, PSUs are selected for sample. The United States is divided into 2,025 PSUs. The PSUs were redefined for this design to correspond to the Office of Management and Budget definitions of Core-Based Statistical Area definitions and to improve efficiency in field operations. These PSUs are grouped into 824 strata. Within each stratum, a single PSU is chosen for the sample, with its probability of selection proportional to its population as of the most recent decennial census. This PSU represents the entire stratum from which it was selected. In the case of strata consisting of only one PSU, the PSU is chosen with certainty.

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<sup>1</sup> For detailed information on the 1990 sample redesign, please see reference [1].

<sup>2</sup> The PSUs correspond to substate areas (i.e., counties or groups of counties) that are geographically contiguous.

Approximately 73,000 housing units were selected for sample from the sampling frame in February 2014. Based on eligibility criteria, 11 percent of these housing units were sent directly to computer-assisted telephone interviewing (CATI). The remaining units were assigned to interviewers for computer-assisted personal interviewing (CAPI).<sup>3</sup> Of all housing units in sample, about 60,000 were determined to be eligible for interview. Interviewers obtained interviews at about 53,000 of these units. Noninterviews occur when the occupants are not found at home after repeated calls or are unavailable for some other reason.

**February 2014 Supplement.** The February 2014 Annual Arts Benchmarking Survey questions were asked of the CPS respondent and spouse as well as another randomly selected household member aged 18 or older and his/her spouse. About one-quarter of the sampled households were asked the supplement questions. Interview numbers 3 and 7 were asked the supplement questions. If the selected person had a spouse or partner then questions were also asked of the spouse/partner. The supplement contained questions about the sampled member's participation in various artistic activities from February 2013 through February 2014. Questions were asked about the use of pottery, ceramics, jewelry, leatherwork, metalwork and woodwork. They were also asked about weaving, crocheting, needlepoint, knitting, sewing, and whether they played a musical instrument. Questions also included doing any acting, singing or dance. Interviews were conducted during the period of February 16-22, 2014.

**CPS Estimation Procedure.** This survey's estimation procedure adjusts weighted sample results to agree with independently derived population estimates of the civilian noninstitutional population of the United States and each state (including the District of Columbia). These population estimates, used as controls for the CPS, are prepared monthly to agree with the most current set of population estimates that are released as part of the Census Bureau's population estimates and projections program.

The population controls for the nation are distributed by demographic characteristics in two ways:

- Age, sex, and race (White alone, Black alone, and all other groups combined).
- Age, sex, and Hispanic origin.

The population controls for the states are distributed by race (Black alone and all other race groups combined), age (0-15, 16-44, and 45 and over), and sex.

The independent estimates by age, sex, race, Hispanic origin and for states by selected age groups and broad race categories are developed using the basic demographic accounting formula. The population from the latest decennial data is updated using data on the components of population change (births, deaths, and net international migration) with net internal migration as an additional component in the state population estimates.

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<sup>3</sup> For further information on CATI and CAPI and the eligibility criteria, please see reference [2].

The net international migration component in the population estimates includes a combination of the following:

- Net international migration of the foreign born;
- Net migration between the United States and Puerto Rico;
- Net migration of natives to and from the United States; and
- Net movement of the Armed Forces population to and from the United States.

Because the latest available information on these components lags the survey date, it is necessary to make short-term projections of these components to develop the estimate for the survey date.

**AABS Estimation Procedure.** The AABS adjusts weighted sample results to agree with the same independently derived population estimates of the civilian noninstitutional population of the United States as the CPS. However, the age groups were modified to include only those who are 18 years old or older.

## **ACCURACY OF THE ESTIMATES**

A sample survey estimate has two types of error: sampling and nonsampling. The accuracy of an estimate depends on both types of error. The nature of the sampling error is known given the survey design; the full extent of the nonsampling error is unknown.

**Sampling Error.** Since the CPS estimates come from a sample, they may differ from figures from an enumeration of the entire population using the same questionnaires, instructions, and enumerators. For a given estimator, the difference between an estimate based on a sample and the estimate that would result if the sample were to include the entire population is known as sampling error. Standard errors, as calculated by methods described in “Standard Errors and Their Use,” are primarily measures of the magnitude of sampling error. However, they may include some nonsampling error.

**Nonsampling Error.** For a given estimator, the difference between the estimate that would result if the sample were to include the entire population and the true population value being estimated is known as nonsampling error. There are several sources of nonsampling error that may occur during the development or execution of the survey. It can occur because of circumstances created by the interviewer, the respondent, the survey instrument, or the way the data are collected and processed. For example, errors could occur because:

- The interviewer records the wrong answer, the respondent provides incorrect information, the respondent estimates the requested information, or an unclear survey question is misunderstood by the respondent (measurement error).
- Some individuals that should have been included in the survey frame were missed (coverage error).
- Responses are not collected from all those in the sample or the respondent is unwilling to provide information (nonresponse error).
- Values are estimated imprecisely for missing data (imputation error).
- Forms may be lost, data may be incorrectly keyed, coded, or recoded, etc. (processing error).

To minimize these errors, the Census Bureau applies quality control procedures during all stages of the production process including the design of the survey, the wording of questions, the review of the work of interviewers and coders, and the statistical review of reports.

Two types of nonsampling error that can be examined to a limited extent are nonresponse and undercoverage.

**Nonresponse.** The effect of nonresponse cannot be measured directly, but one indication of its potential effect is the nonresponse rate. For the February 2014 basic CPS, the household-level nonresponse rate was 10.8 percent. The person-level nonresponse rate for the Annual Arts Benchmarking Survey supplement was an additional 13.2 percent.

Since the basic CPS nonresponse rate is a household-level rate and the Annual Arts Benchmarking Survey supplement nonresponse rate is a person-level rate, we cannot combine these rates to derive an overall nonresponse rate. Nonresponding households may have fewer persons than interviewed ones, so combining these rates may lead to an overestimate of the true overall nonresponse rate for persons for the Annual Arts Benchmarking Survey supplement.

**Coverage.** The concept of coverage in the survey sampling process is the extent to which the total population that could be selected for sample “covers” the survey’s target population. Missed housing units and missed people within sample households create undercoverage in the CPS. Overall CPS undercoverage for February 2014 is estimated to be about 15 percent. CPS coverage varies with age, sex, and race. Generally, coverage is larger for females than for males and larger for non-Blacks than for Blacks. This differential coverage is a general problem for most household-based surveys.

The CPS weighting procedure partially corrects for bias from undercoverage, but biases may still be present when people who are missed by the survey differ from those interviewed in ways other than age, race, sex, Hispanic origin, and state of residence. How this weighting procedure affects other variables in the survey is not precisely known. All of these considerations affect comparisons across different surveys or data sources.

A common measure of survey coverage is the coverage ratio, calculated as the estimated population before poststratification divided by the independent population control. Table 1 shows February 2014 CPS coverage ratios by age and sex for certain race and Hispanic groups. The CPS coverage ratios can exhibit some variability from month to month.

**Comparability of Data.** Data obtained from the CPS and other sources are not entirely comparable. This results from differences in interviewer training and experience and in differing survey processes. This is an example of nonsampling variability not reflected in the standard errors. Therefore, caution should be used when comparing results from different sources.

Data users should be careful when comparing the data from this microdata file, which reflects Census 2010-based controls, with microdata files from January 2003 through December 2011, which reflect 2000 census-based controls. Ideally, the same population controls should be used when comparing any estimates. In reality, the use of the same population controls is not practical when comparing trend data over a period of 10 to 20 years. Thus, when it is necessary to combine or compare data based on different



Caution should also be used when comparing Hispanic estimates over time. No independent population control totals for people of Hispanic origin were used before 1985.

**A Nonsampling Error Warning.** Since the full extent of the nonsampling error is unknown, one should be particularly careful when interpreting results based on small differences between estimates. The Census Bureau recommends that data users incorporate information about nonsampling errors into their analyses, as nonsampling error could impact the conclusions drawn from the results. Caution should also be used when interpreting results based on a relatively small number of cases. Summary measures (such as medians and percentage distributions) probably do not reveal useful information when computed on a subpopulation smaller than 75,000.

For additional information on nonsampling error including the possible impact on CPS data when known, refer to references [2] and [3].

**Standard Errors and Their Use.** The sample estimate and its standard error enable one to construct a confidence interval. A confidence interval is a range about a given estimate that has a specified probability of containing the average result of all possible samples. For example, if all possible samples were surveyed under essentially the same general conditions and using the same sample design, and if an estimate and its standard error were calculated from each sample, then approximately 90 percent of the intervals from 1.645 standard errors below the estimate to 1.645 standard errors above the estimate would include the average result of all possible samples.

A particular confidence interval may or may not contain the average estimate derived from all possible samples, but one can say with specified confidence that the interval includes the average estimate calculated from all possible samples.

Standard errors may also be used to perform hypothesis testing, a procedure for distinguishing between population parameters using sample estimates. The most common type of hypothesis is that the population parameters are different. An example of this would be comparing the percentage of men who were part-time workers to the percentage of women who were part-time workers.

Tests may be performed at various levels of significance. A significance level is the probability of concluding that the characteristics are different when, in fact, they are the same. For example, to conclude that two characteristics are different at the 0.10 level of significance, the absolute value of the estimated difference between characteristics must be greater than or equal to 1.645 times the standard error of the difference.

The Census Bureau uses 90-percent confidence intervals and 0.10 levels of significance to determine statistical validity. Consult standard statistical textbooks for alternative criteria.

**Estimating Standard Errors.** The Census Bureau uses replication methods to estimate the standard errors of CPS estimates. These methods primarily measure the magnitude of sampling error. However, they do measure some effects of nonsampling error as well. They do not measure systematic biases in the data associated with nonsampling error. Bias is the average over all possible samples of the differences between the sample estimates and the true value.

**Generalized Variance Parameters.** While it is possible to compute and present an estimate of the standard error based on the survey data for each estimate in a report, there are a number of reasons why this is not done. A presentation of the individual standard errors would be of limited use, since one could not possibly predict all of the combinations of results that may be of interest to data users. Additionally, data users have access to CPS microdata files, and it is impossible to compute in advance the standard error for every estimate one might obtain from those data sets. Moreover, variance estimates are based on sample data and have variances of their own. Therefore, some methods of stabilizing these estimates of variance, for example, by generalizing or averaging over time, may be used to improve their reliability.

Experience has shown that certain groups of estimates have similar relationships between their variances and expected values. Modeling or generalizing may provide more stable variance estimates by taking advantage of these similarities. The generalized variance function is a simple model that expresses the variance as a function of the expected value of the survey estimate. The parameters of the generalized variance function are estimated using direct replicate variances. These generalized variance parameters provide a relatively easy method to obtain approximate standard errors for numerous characteristics. In this source and accuracy statement, Table 3 provides the generalized variance parameters for labor force estimates, and Table 4 provides generalized variance parameters for characteristics from the February 2014 Annual Arts Benchmarking Survey supplement.

The basic CPS questionnaire records the race and ethnicity of each respondent. With respect to race, a respondent can be White, Black, Asian, American Indian and Alaskan Native (AIAN), Native Hawaiian and Other Pacific Islander (NHOPI), or combinations of two or more of the preceding. A respondent's ethnicity can be Hispanic or non-Hispanic, regardless of race.

The generalized variance parameters to use in computing standard errors are dependent upon the race/ethnicity group of interest. The following table summarizes the relationship between the race/ethnicity group of interest and the generalized variance parameters to use in standard error calculations for the basic CPS. For AABS, the race/ethnicity parameters are given in Table 4.

**Table 2. Estimation Groups of Interest and Generalized Variance Parameters**

Race/ethnicity group of interest	Generalized variance parameters to use in standard error calculations
Total population	Total or White
Total White, White AOIC, or White non-Hispanic population	Total or White
Total Black, Black AOIC, or Black non-Hispanic population	Black
Asian alone, Asian AOIC, or Asian non-Hispanic population	Asian, AIAN, NHOPI
AIAN alone, AIAN AOIC, or AIAN non-Hispanic population	
NHOPI alone, NHOPI AOIC, or NHOPI non-Hispanic population	
Populations from other race groups	Asian, AIAN, NHOPI
Hispanic population	Hispanic
Two or more races – employment/unemployment and educational attainment characteristics	Black
Two or more races – all other characteristics	API, AIAN, NHOPI

- Notes: (1) API, AIAN, NHOPI are Asian and Pacific Islander, American Indian and Alaska Native, Native Hawaiian and Other Pacific Islander, respectively.
- (2) AOIC is an abbreviation for alone or in combination. The AOIC population for a race group of interest includes people reporting only the race group of interest (alone) and people reporting multiple race categories including the race group of interest (in combination).
- (3) Hispanics may be any race.
- (4) Two or more races refers to the group of cases self-classified as having two or more races.

**Standard Errors of Estimated Numbers.** The approximate standard error,  $s_x$ , of an estimated number from this microdata file can be obtained by using the formula:

$$s_x = \sqrt{ax^2 + bx} \quad (1)$$

Here  $x$  is the size of the estimate and  $a$  and  $b$  are the parameters in Table 3 or 4 associated with the particular type of characteristic. When calculating standard errors from cross-tabulations involving different characteristics, use the set of parameters for the characteristic that will give the largest standard error.

### Illustration 1

Suppose there were 6,267,000 unemployed men (ages 16 and up) in the civilian labor force. Use the appropriate parameters from Table 3 and Formula (1) to get

Illustration 1	
Number of unemployed males in the civilian labor force ( $x$ )	6,267,000
a parameter ( $a$ )	-0.000032
b parameter ( $b$ )	2,971
Standard error	132,000
90-percent confidence interval	6,050,000 to 6,484,000

The standard error is calculated as

$$s_x = \sqrt{-0.000032 * 6,267,000^2 + 2,971 * 6,267,000} = 132,000$$

The 90-percent confidence interval is calculated as  $6,267,000 \pm 1.645 \times 132,000$ .

A conclusion that the average estimate derived from all possible samples lies within a range computed in this way would be correct for roughly 90 percent of all possible samples.

**Standard Errors of Estimated Percentages and Ratios.** The reliability of an estimated percentage or ratio using sample data depends on the size of both the numerator,  $x$ , and denominator,  $y$ . This section presents two equations to calculate standard errors of estimated percentages and ratios. The first equation is simplified and can be used for most percentage estimates; the second equation can be used for all percentage and ratio estimates but is more complex. Use the following questions to determine if the simplified equation can be used to calculate the standard error of a percentage:

- 1) Do both the numerator and denominator use the same parameters from Table 3 or 4?
- 2) Is the denominator a CPS population control - a total by race/ethnicity (excluding the group self-classified as having two or more races), sex, or age group, or state? See “CPS Estimation Procedure” for more information on the specific CPS population controls.

If the answer to either question is yes, then use the following simplified formula to find the approximate standard error,  $s_{y,p}$ , of the estimated percentage  $p$ :

$$s_{y,p} = \sqrt{\frac{b}{y} p(100 - p)} \quad (2)$$

Here  $y$  is the total number of people, families, households, or unrelated individuals in the denominator of the percentage,  $p$  is the percentage, and  $b$  is the parameter in Table 3 or 4 associated with the characteristic in the numerator of the percentage.

If the answer to both questions is no, or the estimate is not a percentage, compute the standard error of the ratio using

$$s_{x/y} = \frac{x}{y} \sqrt{\left(\frac{s_x}{x}\right)^2 + \left(\frac{s_y}{y}\right)^2 - 2r \frac{s_x s_y}{xy}} \quad (3)$$

The standard error of the numerator,  $s_x$ , and that of the denominator,  $s_y$ , may be calculated using standard error formulas described in this document. In Formula (3),  $r$  represents the correlation between the numerator and the denominator of the estimate. If  $r$  has not been previously calculated for a specific estimate, consider the type of ratio being estimated. For ratios where the numerator is a subset of the denominator use

$$r = \frac{x \cdot s_y}{y \cdot s_x} \quad (4)$$

For ratios where the denominator is a count of families or households and the numerator is a count of people in those families or households with a certain characteristic and there is at least one person with the characteristic in every family or household, use 0.7 as an estimate of  $r$ . An example of this type is the average number of children per family with children. For all other types of ratios,  $r$  is assumed to be zero. Examples are the average number of children per family. If  $r$  is actually positive (negative), then this procedure will provide an overestimate (underestimate) of the standard error of the ratio.

NOTE: For estimates expressed as the ratio of  $x$  per 100  $y$  or  $x$  per 1,000  $y$ , multiply Formula (3) by 100 or 1,000, respectively, to obtain the standard error.

### Illustration 2

Suppose there were 122,767,000 women aged 18 and over, and 3.9 percent indicate they perform or practice dance. Use the appropriate parameter from Table 4 and Formula (2), since the denominator in this percentage is treated as a CPS population control, to get

Illustration 2	
Percentage of women 18+ who indicate they practice or perform dance ( $p$ )	3.9
Base ( $y$ )	122,767,000
b parameter ( $b$ )	18,477
Standard error	0.24
90-percent confidence interval	3.5 to 4.3

The standard error is calculated as

$$s_{y,p} = \sqrt{\frac{18,477}{122,767,000} * 3.9 * (100 - 3.9)} = 0.24$$

The 90-percent confidence interval for the estimated percentage of women aged 18 years old or older who attended live music, theater, or dance performance(s) is from 3.5 to 4.3 percent (i.e.,  $3.9 \pm 1.645 \times 0.24$ ).

### Illustration 3

Suppose the ratio of men to women working part-time was 10,489,000 to 19,061,000, or 59.7%. Use Formulas (1) and (3) with  $r = 0$  and the appropriate parameters from Table 3 to get

Illustration 3			
	Males (x)	Females (y)	Ratio (percent)
Number who work part-time	10,489,000	19,061,000	55.0
a parameter (a)	-0.000032	-0.000031	-
b parameter (b)	2,971	2,782	-
Standard error	166,000	204,000	1.1
90-percent confidence interval	10,216,000 to 10,762,000	18,725,000 to 19,397,000	53.3 to 56.8

The standard error is calculated as

$$s_{x/y} = \frac{10,489,000}{19,061,000} \sqrt{\left(\frac{166,000}{10,489,000}\right)^2 + \left(\frac{204,000}{19,061,000}\right)^2} = 0.011 = 1.1\%$$

and the 90-percent confidence interval is calculated as  $55.0 \pm 1.645 \times 1.1$ .

### Illustration 4

Suppose that the number of unemployed males was 6,267,000 and the total number unemployed was 10,893,000. The ratio of unemployed males to the total number unemployed would be 0.575 or 57.5 percent. The numerator and denominator in this percentage do not use the same parameters from Table 3, and the denominator is not a CPS population control. Therefore, use Formulas (3) and (4) for the standard error and correlation,  $r$ , along with Formula (1) and the appropriate parameters from Table 3 to get

Illustration 4			
	Males (x)	Total (y)	Ratio (percent)
Number Unemployed	6,267,000	10,893,000	57.5
a parameter (a)	-0.000032	-0.000016	-
b parameter (b)	2,971	3,096	-
correlation (r)	-	-	77.6
Standard error	132,000	178,000	0.8
90-percent confidence interval	6,050,000 to 6,484,000	10,600,000 to 11,186,000	56.2 to 58.8

The correlation is calculated as

$$r = \frac{6,267,000 * 178,000}{10,893,000 * 132,000} = 0.776 = 77.6\%$$

The standard error is calculated as

$$s_{x/y} = \frac{6,267,000}{10,893,000} \sqrt{\left(\frac{132,000}{6,267,000}\right)^2 + \left(\frac{178,000}{10,893,000}\right)^2 - \left(2 * 0.776 * \frac{132,000 * 178,000}{6,267,000 * 10,893,000}\right)} = 0.008$$

$$= 0.8\%$$

and the 90-percent confidence interval is calculated as  $57.5 \pm 1.645 \times 0.8$ .

**Standard Errors of Estimated Differences.** The standard error of the difference between two sample estimates is approximately equal to

$$s_{x_1-x_2} = \sqrt{s_{x_1}^2 + s_{x_2}^2} \quad (5)$$

where  $s_{x_1}$  and  $s_{x_2}$  are the standard errors of the estimates,  $x_1$  and  $x_2$ . The estimates can be numbers, percentages, ratios, etc. This will result in accurate estimates of the standard error of the same characteristic in two different areas, or for the difference between separate and uncorrelated characteristics in the same area. However, if there is a high positive (negative) correlation between the two characteristics, the formula will overestimate (underestimate) the true standard error.

#### **Illustration 5**

Suppose that of the 69,071,000 people with a high school diploma but no college, 6.0 percent take photographs as an artistic activity. In addition, of the 69,960,000 people with some college or associate degree, 12.4 percent take photographs as an artistic activity. Use the appropriate parameters from Table 4 and Formulas (2) and (3) to get

<b>Illustration 5</b>			
	High School Diploma ( $x_1$ )	Some College or Associates ( $x_2$ )	Difference
Percentage who took photographs( $p$ )	6.0	12.4	6.4
Base	69,071,000	69,960,000	-
b parameter ( $b$ )	20,513	20,513	-
Standard error	0.41	0.57	0.70
90-percent confidence interval	5.3 to 6.7	11.5 to 13.4	5.3 to 7.6

The standard error of the difference is calculated as

$$s_{x-y} = \sqrt{0.41^2 + 0.57^2} = 0.70$$

The 90-percent confidence interval around the difference is calculated as  $6.4 \pm 1.645 \times 0.70$ . Since this interval does not include zero, we can conclude with 90 percent confidence that the percentage of people with some college or associate degree who take photographs as an artistic activity is greater than the percentage of people with a high school diploma who take photographs as an artistic activity.

**Standard Errors of Quarterly or Yearly Averages.** For information on calculating standard errors for labor force data from the CPS which involve quarterly or yearly averages, please see the “Explanatory Notes and Estimates of Error: Household Data” section in *Employment and Earnings*, a monthly report published by the U.S. Bureau of Labor Statistics.

**Technical Assistance.** If you require assistance or additional information, please contact the Demographic Statistical Methods Division via e-mail at [dsmd.source.and.accuracy@census.gov](mailto:dsmd.source.and.accuracy@census.gov).

**Table 3. Parameters for Computation of Standard Errors for Labor Force Characteristics:  
February 2014**

Characteristic	a	b
<b>Total or White</b>		
<i>Civilian labor force, employed</i>	-0.000016	3,068
<i>Not in labor force</i>	-0.000009	1,833
<i>Unemployed</i>	-0.000016	3,096
<i>Civilian labor force, employed, not in labor force, and unemployed</i>		
Men	-0.000032	2,971
Women	-0.000031	2,782
Both sexes, 16 to 19 years	-0.000022	3,096
<b>Black</b>		
<i>Civilian labor force, employed, not in labor force, and unemployed</i>		
Total	-0.000151	3,455
Men	-0.000311	3,357
Women	-0.000252	3,062
Both sexes, 16 to 19 years	-0.001632	3,455
<b>Hispanic</b>		
<i>Civilian labor force, employed, not in labor force, and unemployed</i>		
Total	-0.000141	3,455
Men	-0.000253	3,357
Women	-0.000266	3,062
Both sexes, 16 to 19 years	-0.001528	3,455
<b>Asian, AIAN, NHOPI</b>		
<i>Civilian labor force, employed, not in labor force, and unemployed</i>		
Total	-0.000346	3,198
Men	-0.000729	3,198
Women	-0.000659	3,198
Both sexes, 16 to 19 years	-0.004146	3,198

- Notes: (1) These parameters are to be applied to basic CPS monthly labor force estimates.  
(2) API, AIAN, NHOPI are Asian and Pacific Islander, American Indian and Alaska Native, Native Hawaiian and Other Pacific Islander, respectively.  
(3) For foreign-born and noncitizen characteristics for Total and White, the *a* and *b* parameters should be multiplied by 1.3. No adjustment is necessary for foreign-born and noncitizen characteristics for Black, Hispanic, and Asian, AIAN, NHOPI parameters.  
(4) Hispanics may be any race. For a more detailed discussion on the use of parameters for race and ethnicity, please see the "Generalized Variance Parameters" section.  
(5) For nonmetropolitan characteristics, multiply the *a* and *b* parameters by 1.5. If the characteristic of interest is total state population, not subtotaled by race or ethnicity, the *a* and *b* parameters are zero.





- Notes: (1) These parameters are to be applied to the February 2014 Annual Arts Benchmarking Survey data.
- (2) Hispanics may be any race.
  - (3) Remainder New England includes New Hampshire and Vermont.
  - (4) Remainder S. Atlantic includes Delaware and the District of Columbia.
  - (5) Remainder E.N. Central includes Indiana and Wisconsin.
  - (6) Remainder E. S. Central includes Kentucky, Mississippi, and Tennessee.
  - (7) Remainder W.S. Central includes Arkansas, Louisiana, and Oklahoma.
  - (8) Remainder Mountain includes Arizona, Idaho, New Mexico, Montana, and Utah.
  - (9) Remainder Pacific includes Alaska and Hawaii.

## References

- [1] Bureau of Labor Statistics. 1994. *Employment and Earnings*. Volume 41 Number 5, May 1994. Washington, DC: Government Printing Office.
- [2] U.S. Census Bureau. 2006. *Current Population Survey: Design and Methodology*. Technical Paper 66. Washington, DC: Government Printing Office.  
<http://www.census.gov/prod/2006pubs/tp-66.pdf>
- [3] Brooks, C.A. and Bailer, B.A. 1978. *Statistical Policy Working Paper 3 - An Error Profile: Employment as Measured by the Current Population Survey*. Subcommittee on Nonsampling Errors, Federal Committee on Statistical Methodology, U.S. Department of Commerce, Washington, DC. (<http://www.fcsm.gov/working-papers/spp.html>)

## ATTACHMENT 17

### USER NOTES

This section will contain information relevant to the *Current Population Survey February 2014: Annual Arts Benchmarking Survey File* that becomes available after the file is released. The cover letter to the updated information should be filed behind this page.