COMPARISON OF ACS AND ASEC DATA ON HOUSEHOLDS AND FAMILIES: 2004

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INTRODUCTION

This report is one in a series that compares data from the American Community Survey (ACS) with data from the Annual Social and Economic Supplement (ASEC) to the Current Population Survey (CPS). This report focuses on comparisons of national distributions of household and family characteristics, including household size and composition, relationship, and marital status, between the 2004 ACS and the 2004 ASEC. In this analysis, we compare the 2004 ACS and the 2004 ASEC distributions and look for differences that are both statistically and substantively different, and for those found, offer possible explanations.

METHODOLOGY

The tables included in this report compare the most commonly tabulated data on households, families, and marital status from the ACS and the ASEC. Comparisons consist primarily of percentage-point differences between the two distributions. Tables display the ACS and the ASEC estimates, the margins of error from which 90-percent confidence intervals of the estimates can be derived, and the difference between the two estimates. In the case of frequency distributions, the difference is calculated as the percent difference between the two estimates. In the case of relative frequency distributions, the difference is calculated as the percentage-point difference between the two estimates. An asterisk (*) denotes statistically significant differences.

At the national level, the ACS and the ASEC variances were quite small, resulting in many statistically significant differences between the ACS and the ASEC distributions. In this report, we focus on statistically significant differences of 0.5 percentage points or more. This yardstick was developed to help focus the analysis, though it can vary based on the relative size of the category. For example, for population groups constituting a relatively large percentage of the population (for example, spouses of the householder), a 0.5 percentage point difference in the estimates might be small, while for population groups constituting a smaller percentage of the population (for example, siblings of the householder), a 0.5 percentage point difference could be quite large. This decision is subjective, however, and users can apply their own standards to interpret the data presented in this report.

The remainder of this section examines differences in methodology between the two surveys.

Sample Frame

The 2004 ACS surveyed a national sample of housing units, both occupied and vacant. Data were collected in a total of 1,235 counties out of the 3,141 counties in the United States. The sample is designed to provide estimates of housing and socio-economic characteristics for the nation, all states, most areas with a population of 250,000 or more, and selected areas of 65,000 or more.

The 2004 ASEC surveyed a national sample of households. The sample is designed primarily to produce estimates of the labor force characteristics of the civilian noninstitutionalized population 16 years of age and older for the nation and all states.

One difference between the two survey universes is that the ASEC includes a small number of individuals living at addresses that were housing units in 2000 but have since been converted into noninstitutional group quarters (e.g. emergency and transitional shelters and group homes). For the purposes of this report, all individuals with detailed household and family status of "in group quarters" (HHDFMX = 51) were excluded from the ASEC estimates.

Sample Size and Mode of Data Collection

The 2004 ACS interviewed a total of 534,383 households. Data were collected continuously throughout the year using a combination of mail-out/mail-back questionnaires, Computer-Assisted Telephone Interviewing (CATI), and Computer-Assisted Personal Interviewing (CAPI). Each month a unique national sample of addresses received an ACS questionnaire. Addresses that did not respond were telephoned during the second month of collection if a phone number for the address was available, and personal visits were conducted during the third and last month of data collection for a subsample of the remaining nonresponding units. The 2004 ACS achieved an overall survey response rate, calculated as the initially weighted estimate of interviews divided by the initially weighted estimate of cases eligible to be interviewed, of 93.1 percent.

The 2004 ASEC contained interviews from about 77,000 households and 59 noninstitutional group quarters. The ASEC interviews were collected over a three-month period in February, March, and April 2004 as a supplement to the basic monthly CPS conducted during those months, with most of the data collected in March. All ASEC data are collected via Computer-Assisted Telephone and Personal Interviews (CATI/CAPI), with interviews conducted during one week each month. The response rate for the 2004 ASEC was 91.8 percent. Response rates among eligible households were about 92 percent in February and April 2004 and 91 percent in March 2004.

Both the ACS and ASEC employ experienced permanent interviewers for CATI and CAPI data collection.

Residence Rules

The ACS and the ASEC employ different residence rules to determine which individuals in a household are eligible for interview; the ACS uses the concept of current residence, while the ASEC uses a version of usual residence. This difference may contribute to variation in the universes on which social characteristics depend.

The ACS interviews everyone in the housing unit on the day of interview who is living or staying there for more than two months, regardless of whether or not they maintain a usual residence elsewhere, or who does not have a usual residence elsewhere. If a person who usually lives in the housing unit is away for more than two months at the time of the

survey contact, he or she is not considered to be a current resident of that unit. This rule recognizes that people can have more than one place where they live or stay over the course of a year, and these people affect that estimate of the characteristics of the population for some areas.

The ASEC interviews everyone staying in the housing unit at the time of the interview who considers the housing unit as their usual residence or who has no usual residence elsewhere. In addition, the ASEC also includes temporarily absent individuals who consider the housing unit as their usual residence.

The different residence rules result in a notable difference in the universe of the two surveys. Because the 2004 ACS excluded group quarters from the sample frame and interviewed individuals at their current residence, college students living in dormitories are not included in the ACS universe. In contrast, the ASEC interviewers are instructed to include as household members any college students who are temporarily absent from the household, including those who are currently residing in college dormitories. The result is that the ASEC sample universe should include more college students than the ACS sample universe.

Question Wording

Differences between the ACS and the ASEC in presentation and wording of questions may contribute to differences in estimates.

Relationship. The current version of the 2004 American Community Survey asks the relationship item as follows:

> How is this person related to Person 1?
>
> (Person 1 is the person living or staying here in whose name this house or apartment is owned, being bought, or rented. If there is no such person, start with the name of any adult living or staying here.)
>
> Relationship of Person X to Person 1,
>
> Husband or wife
> Son or daughter
> Brother or sister
> Father or mother
> Grandchild
> In-law
> Other relative
> Roomer, boarder
> Housemate, roommate
> Unmarried partner
> Foster child
> Other nonrelative

The current version of the 2004 ASEC asks the relationship item as follows:

> (I am going to read a list of relationship categories.)
>
> How (are/is) (name/you) related to (name of reference person)?
>
> Spouse (Husband/Wife)
> Unmarried Partner
> Child
> Grandchild
> Parent (Mother/Father)
> Brother/Sister
> Other relative (Aunt, Cousin, Nephew, Mother-in-law, etc.)
> Foster child
> Housemate/Roommate
> Roomer/Boarder
> Other nonrelative

Including the category "Householder," the ACS has 13 relationship categories, and the ASEC has 12. The one extra category is "In-law." Not all categories are worded the

same way in the two surveys, and the ordering of the categories changes after the first response. These differences in wording and ordering may account for differences in reporting between the two surveys.

Marital Status. For the marital status item, the ACS asks each respondent about their current marital status, giving them 5 possible options:

> What is this person's marital status?
>
> Now married
> Widowed
> Divorced
> Separated
> Never married

The ASEC questionnaire offers 6 possible options, further specifying whether a married person has his or her spouse present or absent:

> (Are/Is) (name/you) now married, widowed, divorced, separated or never married?
>
> Married spouse present
> Married spouse absent
> Widowed
> Divorced
> Separated
> Never married

In instances where respondents indicate that they are married with their spouse present, a further question in the ASEC asks for the identification of the spouse.

Family Relationships. The level of detail collected in the relationship information differs between the two surveys, causing differences in areas such as the linkage of spouses to each other and of children to parents, routines that form the basis for

identifying different types of households. In the ACS, relationship is identified only by a person's relationship to the householder. The derivation of subfamilies (combining different people into married-couple or single-parent subfamilies) in the ACS is accomplished indirectly, using the relationship-to-householder item in conjunction with a person's marital status.[1] For example, in the ACS, if a child of the householder over 15 years old and a grandchild are living in the same household, it is assumed that the child and the grandchild are actually biologically related to each other and form a single-parent family if their age difference is appropriate.

In the ASEC, specific parent and child pointers directly ascertain if this is a parent-child subfamily group. Spouse pointers also better identify married couples in the ASEC. In addition, directly asking householders if they are currently married and living with their spouse may provide better estimates of married-couple households in ASEC data than in ACS data, where the relationship item is the sole source for identifying these households. For these reasons, distributions identifying married-couple households and married-couple subfamilies or children in subfamilies may differ depending on whether they are based on ACS or ASEC data.

Item Nonresponse

Item nonresponse is the failure of an individual to provide complete and usable information for a data item. Item allocation rates are often used as a measure of the level of item nonresponse. These rates are computed as the ratio of the number of eligible

[1] A subfamily consists of either a married couple or a single parent-child family whose members are related to the householder but are not either the householder or his/her spouse.

people or households for which a value was allocated during the editing process for a specific item to the number of people or households eligible to have responded to that item.

For the 2004 ACS, allocation rates for the relationship and marital status items were 0.8 percent and 1.1 percent, compared with 1.6 percent and 2.5 percent for the 2004 ASEC. [2]

Data Editing and Imputation Procedures

ACS and ASEC edit and imputation rules are designed to ensure that the final edited data are as consistent and complete as possible. These rules are used to identify and account for missing, incomplete, and contradictory responses. In each case where a problem is detected, pre-established edit rules govern its resolution.

The ACS and the ASEC employ two principal imputation methods: relational imputation and hot deck allocation. Relational imputation assigns values for blank or inconsistent responses on the basis of other characteristics on the person's record or within the household. Hot deck allocation supplies responses for missing or inconsistent data from similar responding housing units or people in the sample.

Both ACS and ASEC editing procedures employ logical checking routines to produce consistency among household members. For example, spouses of householders, as well as the householders themselves, must be "Now married," and there can be only one spouse of the householder. Parents must be at least 12 years older than their children and

[2] The universe for the marital status item was the population 15 years and older.

a householder cannot have both a spouse and an unmarried partner. Allocation routines using hot decks generally stratify the donors and the recipients of the hot deck by their age, sex, race, and other characteristics of the household.

Controls and Weighting

Notable differences in the selection of controls and the calculation of weights between the two surveys may lead to differences in estimates. The ACS and the ASEC are both weighted to account for the probability of selection and housing unit nonresponse.

After the initial weighting, data from the ACS and the ASEC are both controlled to be consistent with independent population estimates. Data from the 2004 ACS are controlled, at the county level, to independent estimates of the household population and housing units in July 2004. The 2004 ASEC is controlled to independent national estimates of the civilian non-institutionalized population in March 2004. The ASEC totals include this population and also members of the Armed Forces living off post or with their families on post if at least one civilian adult lives in the household. In addition, the ACS presents the average responses over a 12-month period, while the ASEC shows the living arrangements of people for the February-April time period, although the population is controlled to March estimates. Because the ACS controls to both the total population and the total number of housing units, the ACS files contain both person weights and housing unit weights. The ASEC does not control to the total number of housing units and, thus, the ASEC files do not contain an independent housing unit weight but instead use the weight of the householder as the weight of the housing unit.

After the application of the controls, the ASEC data are raked to ensure that the number of husbands and wives are equal and that the number of married couple households equals the number of married householders. The ACS employs no similar raking.

RESULTS

Households by Type and Presence and Age of Own Children

Table 1 presents data on "Households by Type and Presence and Age of Own Children." Although most of the percent differences are relatively small, three differences draw this paper's further examination: the proportion of households that are family households, the proportion that are married-couple families, and the proportion with their own children under 18 years. The ACS shows lower proportions for all categories (67.2 percent, 50.2 percent, and 22.1 percent, respectively) than the ASEC (68.1 percent, 51.5 percent, and 23.0 percent). These differences are in part due to differing levels of detail collected about relationship information. The ACS uses a single relationship item to establish the relationship of the householder to other household members. As explained earlier, the ASEC uses specific parent and child pointers to ascertain precise relationships between household members, as well as to elicit a detailed response in the marital status item to identify householders who are not only married but also living with a spouse in the household. For reasons such as these, the ACS and the ASEC differ in distributions related to married couples or children in different types of families.

The ACS data also show a relatively higher proportion of nonfamily households than the ASEC data (32.8 percent and 31.9 percent, respectively).

Number of Households. To estimate the number of occupied households, the ACS uses the housing unit weight, while the ASEC uses the individual weight of the person who is identified as the "householder" (the person in whose name the housing unit is owned or rented), thus assuring consistency in the numbers of householders and occupied households. The ACS number, although controlled to an independent estimate of the number of occupied housing units, will differ from the number of householders (109.9 million households but 113.4 million householders in 2004). Differences in average household and family sizes between the two surveys for 2004 may also be the result of these weighting procedures or differences in the way family relationships are established in the editing phase of the surveys.

Households by Type and Size

Table 2 examines "Households by Type and Size." While the percentage differences for the individual size-distribution categories between the two surveys are 0.5 percent or less, statistically significant differences are noted for the estimates of both average household size and average family size. For both estimates, the ACS records higher average household and family sizes. These differences may result from different maximum allowable sizes: the ACS allows up to 20 people, while the ASEC allows 16.

Households by Opposite Sex Unmarried Partners

Table 3 looks at "Opposite Sex Unmarried Partner Households by Sex of Householder." The proportion of opposite sex, unmarried-partner households among all households in

the ACS is 4.7 percent, compared with 4.2 percent in the ASEC. Perhaps the presence or absence of an interviewer may affect the response patterns for this question. If so, the absence of an interviewer yields the higher incidence of unmarried partner households found in the ACS.

Relationship to Householder by Household Type

Table 4, "Relationship to Householder by Household Type," shows that the proportion of people who are children of the householder is found to be lower in the ACS (29.8 percent) than in the ASEC (30.6 percent).[3] This difference is consistent with data in Table 1, which shows that the proportion of married-couple households with children is lower in the ACS (22.1 percent) than in the ASEC (23.0 percent). As previously noted, the availability of differing levels of detail about relationships most likely explains why distributions vary between the ACS and the ASEC. In addition, a higher proportion of male family householders are found in the ACS than in the ASEC (15.8 percent and 14.6 percent, respectively), and conversely, a lower proportion of female family householders (11.0 percent and 11.8 percent, respectively). Again, the ASEC interviewing structure--requiring personal or telephone contact between respondent and interviewer for all households--may produce this result. (Personal or telephone contacts in the ACS are made only for follow-up nonrespondent households). As wives are less likely than husbands to be in the labor force and more likely to be at home when the interviewer calls, one would expect married-couple households in the ASEC to evidence relatively

[3] For population tables shown in this report, the person weights of individuals are used in both the ACS and the ASEC. While the number of family householders on the ASEC is the same in Tables 1 and 4 (76.2 million), the number of family householders in the ASEC is 73.9 million when using the housing weight in Table 1 and 76.5 million when using the person weight in Table 4.

more female family householders due to the wife answering for the household and the interviewer recording her as the householder in the case of jointly owned or rented housing. ASEC interviewers are instructed to place as "Person One" (the householder) the person to whom they are speaking in the case of jointly owned or rented housing.

Estimates of Own and Related Children

The ACS and the ASEC differ in their estimates of "own child" in Table 5 for the population under 18 years. While the overall difference for the "Own child" category between the two surveys is -0.7 percentage points, the ASEC shows a higher percentage of own children in married-couple families than does the ACS (66.2 percent and 63.9 percent, respectively). Conversely, the ACS shows a higher percentage of own children residing in other family types than the ASEC (25.0 percent and 23.4 percent, respectively). These differences may reflect differing levels of detail in collecting marital status and relationship information and different methods of classifying families as married. The ACS uses a single relationship item to establish the relationship of the householder to other household members. The ASEC uses specific parent and child pointers to ascertain more precise relationships between household members. In addition, more detailed marital status categories identifying spouses as being present and spouse pointers that better identify married couples in the ASEC may account for this difference. Also noted in Table 5 is a larger percentage of children in the ACS listed as grandchildren of the householder (6.5 percent) than in the ASEC (5.5 percent).

Subfamilies

In Table 6, "Subfamily Type by Presence and Age of Own Children Under 18," 31.1 percent of all subfamilies in the ACS are married-couple subfamilies, compared with 39.4 percent in the ASEC. The ACS has lower percentages than the ASEC of married-couple subfamilies either with their own children (14.0 percent and 17.3 percent, respectively) or without their own children (17.1 percent and 22.1 percent, respectively). As a result, the ACS has a higher percentage of single-parent, father-child subfamilies than does the ASEC (17.1 percent and 8.9 percent, respectively). These differences may be due to the differing levels of detail in collecting relationship information, as explained above.

Marital Status

Overall, most differences in the percentage distribution of males and females by marital status in Table 7 are 0.5 percentage points or less. One exception is the lower proportion of never-married men in the ACS (14.8 percent) than in the ASEC (15.8 percent). In 2003, the difference was 0.8 percentage point (14.7 percent for the ACS compared with 15.5 percent for the ASEC). This disparity may be due to the inclusion in ASEC households of people who live in college dormitories but are also reported as household members by householders who maintain a room for them in their absence. As the majority of college-age people have never married, this reporting could potentially increase the difference between the proportion of never-married people in the ASEC and that in the ACS. In addition, differences may also be due to the presence or absence of an interviewer to aid respondents. The majority of responses from ACS households are from mail-out/mail-back forms whereby respondents are able to see a list of possible

responses to the marital status item (Now married, Widowed, Divorced, Separated, or Never married). On the other hand, data collection for ASEC is done via interviewer/respondent mode, either in-person or by telephone, so respondents are not able to see possible response categories. The ASEC's mode of data collection could cause a response of "single" to be recorded as "never married," when in reality it could mean living alone.

SUMMARY

Data from the American Community Survey (ACS) on families, households, and the marital status of the population are consistent with those from the Annual Social and Economic Supplement to the Current Population Survey (ASEC). The principal differences noted in this paper are the larger proportion of married couples and own children of the householders in the ASEC and the larger proportion of nonfamily households in the ACS. Some of these differences can be traced to the different collection and editing procedures used to identify and link spouses and children with parents. In addition, the different weighting procedures used in the two surveys to estimate the number of households must be considered in any analysis of the household data and living arrangements tabulations.