

# LAC COVID-19 HIGH-FREQUENCY PHONE SURVEYS - PHASE II 2021

## TECHNICAL NOTE \*

November 2022

Latin America and the Caribbean (LAC) were among the regions most affected by the COVID-19 pandemic in 2020 –despite being home to only 8.5 percent of the world's population, over 47 million people were infected by the virus by the end of November 2021, representing almost 18 percent of global cases–, and the socio-economic and human capital effects will be felt for many years to come. While in 2021 the region experimented an important economic recovery, with mobility almost fully restored to pre-pandemic levels and a remarkable progress in vaccination campaigns<sup>1</sup>, positive spillovers on households' welfare have proved elusive in some countries and for some segments of the population. In an effort to continue monitoring how the COVID-19 pandemic has affected the livelihoods of households in the region<sup>2</sup>, the World Bank and the United Nations Development Programme (UNDP) joined forces to implement a second phase of High-Frequency Phone Surveys (HFPS) in over 20 LAC countries in 2021. A first wave (Wave 1) was collected between May and July, with a second (Wave 2) following between October and December 2021-January 2022 for Peru- (Figure 1).

The HFPS Phase II adds 11 countries to those originally included in phase one (2020). A total of 24 countries were surveyed in Wave 1, including: Antigua and Barbuda, Argentina, Belize, Brazil, Bolivia, Chile, Colombia, Costa Rica, Dominica, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, St. Lucia, and Uruguay. Wave 2 surveyed the same set of countries with two exceptions: Antigua and Barbuda, and Brazil.

The 2021 HFPS collected information on changes in employment and income (including government transfers), the prevalence of food insecurity, and the access to health, education, and financial services. In this way, it permits an analysis of how the living conditions and situations of households have evolved since phase one (2020 HFPS) for several countries. Additionally, the 2021 HFPS collected information on a series of novel modules. Information was obtained about a variety of other themes, including: the presence of persons with disabilities; access to, and the use of, internet and digital banking services; gender issues; vaccination; mental health; coping mechanisms; and childcare for children up to 5 years old. Finally, in Wave 2, a representative sample of minorities was obtained in seven countries.<sup>3</sup>

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1 By the end of November 2021, on average, 60.2 percent of the population in 15 of the 24 HFPS countries had received at least one dose of the vaccine, and 50.8 percent were fully vaccinated (ranging from a low of 23.2 percent in Guatemala to a high of 82.9 percent in Chile). Source: <https://ourworldindata.org/covid-vaccinations>. Countries with data comprise: Argentina, Bolivia, Brazil, Chile, Colombia, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Jamaica, Mexico, Peru, Saint Lucia, and Uruguay.

2 In 2020, Phase I of HFPS was collected in 13 countries of the region. See: Mejía-Mantilla, C.; Olivieri, S.; Rivadeneira, A.; Lara Ibarra, G.; Romero, J. 2021. COVID-19 in LAC: High Frequency Phone Surveys - Technical Note. World Bank, Washington, DC. © World Bank. <https://openknowledge.worldbank.org/handle/10986/35902>.

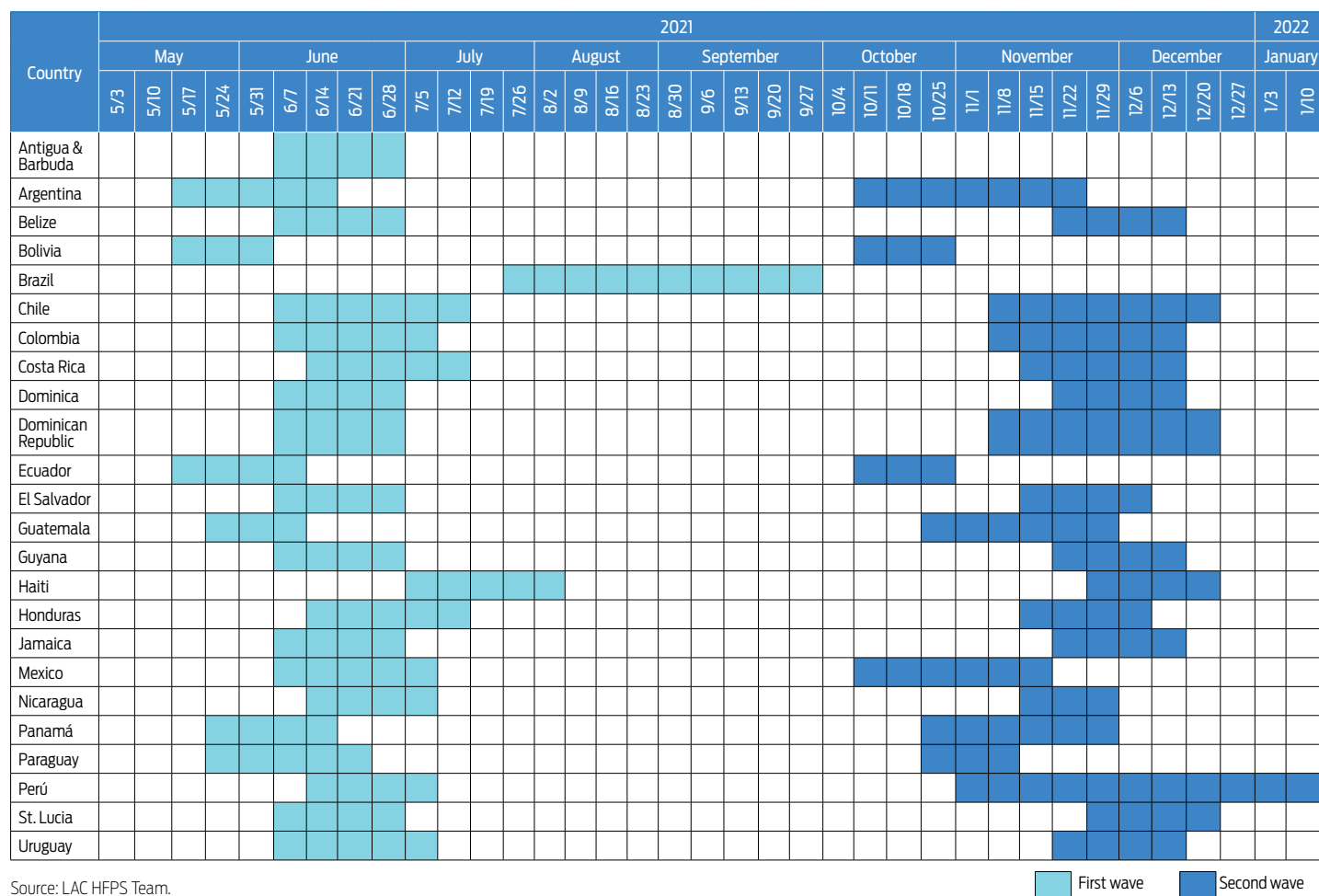
3 More specifically, in Bolivia, Guatemala, Mexico and Peru indigenous populations were sampled, and in Panama, Dominican Republic, and Colombia, afrodescendants.

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**Figure 1. Data collection dates of Phase II of HFPS**



Source: LAC HFPS Team.

First wave Second wave

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### General information

As in Phase I, eligible respondents for the phone surveys were adults aged 18 years old and above. Only one respondent per household was interviewed, and he/she answered both individual and household-level questions. For the panel part of the sample<sup>4</sup>, the same respondent was contacted and interviewed. Over 28,000 interviews were completed across the region in each wave. An average of 1,192 interviews per country were completed in Wave 1 and 1,275 in Wave 2 (see Table 1). The panel cases –those coming from the Phase I HFPS– represented 13 percent of the total cases in Wave 1 (27 percent among the countries that were in Phase I) and 43 percent in Wave 2 (40 percent among countries that were in Phase I).

**Table 1. Number of completed interviews per wave and percentage by sample type**

| Country            | W1          |                                      |         | W2          |                                       |         |
|--------------------|-------------|--------------------------------------|---------|-------------|---------------------------------------|---------|
|                    | Total cases | Panel with respect to Phase I W1 (%) | New (%) | Total cases | Panel with respect to Phase II W1 (%) | New (%) |
| Antigua & Barbuda  | 790         | 0%                                   | 100%    | N.A.        | N.A.                                  | N.A.    |
| Argentina          | 1,216       | 24%                                  | 76%     | 1,321       | 45%                                   | 55%     |
| Belize             | 816         | 0%                                   | 100%    | 898         | 48%                                   | 52%     |
| Bolivia            | 1,272       | 40%                                  | 60%     | 1,312       | 47%                                   | 53%     |
| Brazil             | 2,166       | 0%                                   | 100%    | N.A.        | N.A.                                  | N.A.    |
| Chile              | 1,212       | 33%                                  | 67%     | 1,329       | 36%                                   | 64%     |
| Colombia           | 1,221       | 39%                                  | 61%     | 1,688       | 40%                                   | 60%     |
| Costa Rica         | 805         | 26%                                  | 74%     | 905         | 39%                                   | 61%     |
| Dominica           | 861         | 0%                                   | 100%    | 879         | 51%                                   | 49%     |
| Dominican Republic | 1,205       | 19%                                  | 81%     | 1,364       | 39%                                   | 61%     |
| Ecuador            | 951         | 0%                                   | 100%    | 1,032       | 52%                                   | 48%     |
| El Salvador        | 818         | 28%                                  | 72%     | 812         | 35%                                   | 65%     |
| Guatemala          | 1,207       | 22%                                  | 78%     | 1,521       | 39%                                   | 61%     |
| Guyana             | 785         | 0%                                   | 100%    | 875         | 49%                                   | 51%     |
| Haiti              | 2,814       | 0%                                   | 100%    | 2,361       | 63%                                   | 37%     |
| Honduras           | 1,021       | 24%                                  | 76%     | 1,004       | 35%                                   | 65%     |
| Jamaica            | 829         | 0%                                   | 100%    | 871         | 43%                                   | 57%     |
| Mexico             | 2,625       | 17%                                  | 83%     | 2,511       | 34%                                   | 66%     |
| Nicaragua          | 833         | 0%                                   | 100%    | 865         | 42%                                   | 58%     |
| Panama             | 815         | 0%                                   | 100%    | 1,335       | 31%                                   | 69%     |
| Paraguay           | 1,076       | 16%                                  | 84%     | 1,061       | 56%                                   | 44%     |
| Peru               | 1,212       | 30%                                  | 70%     | 1,724       | 34%                                   | 66%     |
| St. Lucia          | 835         | 0%                                   | 100%    | 860         | 48%                                   | 52%     |
| Uruguay            | 816         | 0%                                   | 100%    | 930         | 40%                                   | 60%     |

Source: LAC HFPS Team.

Note: N.A. is not applicable.

<sup>4</sup> For 12 countries, Phase 2 Wave 1 tried to recontact households and individuals who had responded in Phase 1 Wave 1 in 2020 and added a fresh supplement sample to compensate for attrition nonresponse. For all countries, Phase 2 Wave 2 tried to recontact all respondents to Phase 2 Wave 1 (for countries present in Phase I, some panel cases remained from Phase I) and also incorporated a supplement sample. More detail in the Sampling section below.

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As in Phase I, the surveys are representative of households with a landline or for which at least one member has a cellphone. They are also representative of individuals aged 18 years or above who have an active cellphone number or a landline at home. Thanks to an additional effort in the sampling methodology, the surveys are also representative (among the universe of households with access to a telephone) of school-age children and adolescents for education indicators (and for infants and children less than 5 years old in Wave 2). Additionally, as mentioned, in Bolivia, Colombia, Dominican Republic, Guatemala, Mexico, Panama, and Peru, surveys are representative of ethnic minority groups (i.e., Indigenous and Afro-descendant populations) in Wave 2.

### Topics covered in the LAC HFPS

The questionnaires followed closely those of Phase I for the main topics, thus maintaining comparability between the 2020 and 2021 core indicators. Certain modules and questions were removed to reflect the changing reality of countries, such as the evolution of containment measures and a widespread knowledge of the COVID-19 virus and how to minimize contagion risk. Instead, new modules and questions on vaccination, gender, digital finances and migration were introduced to satisfy new data needs. This was particularly true of the unexplored effects of the pandemic on well-being (including mental health, gender roles within households, working arrangements, etc.). See Table 2 for a detailed account.

**Table 2. Topics covered in the 2021 LAC HFPS**

| No. | Topics            | Description  | W1           | W2  | Included in Phase I (2020 HFPS)              |
|-----|-------------------|--|--------------|---|--|
| 1   | Basic information | General household characteristics, such as: size, location, and area. Respondent characteristics, such as: gender, education level, age, and marital status. In 6 countries: affiliation to ethnic minorities (self-declared). | 11 questions | 19 questions<br>Additional questions about household head's age, education, and gender. | Yes (no questions on ethnic minorities)      |
| 2   | Health            | Information on access to medical services and disability at the household level. Individual information on COVID-19 testing, knowledge about vaccine access and willingness to get the vaccine, and mental health issues.      | 13 questions | 13 questions  | Yes (no vaccine and mental health questions) |
| 3   | Food insecurity   | Questions about food insecurity at the household level, 1 about the quality of food and 1 retrospective question (before the pandemic).  | 4 questions  | 4 questions   | Yes (no retrospective questions)             |

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| No. | Topics      | Description  | W1           | W2   | Included in Phase I (2020 HFPS)                                     |
|-----|-------------|--|--------------|--|---|
| 4   | Employment  | Questions about the respondent's current and pre-pandemic employment status, type, industry, teleworking, job formality, and other characteristics.  | 28 questions | 27 questions<br>No relevant changes.   | Yes (no questions to separate unemployment from out of labor force) |
| 5   | Income loss | Questions to assess changes (with respect to pre pandemic) in total income and income from different sources: labor (wage, business, and agricultural work) and non-labor (remittances, government regular transfers, and COVID-19-related transfers, others). | 17 questions | 13 questions<br>Important changes: no questions by income source, only total income, government transfers and remittances with more detail for 6 countries. Changes in income are with respect to previous wave. Additional questions about household's ability to meet basic needs. | Yes (questions are similar to Wave 1)                               |
| 6   | Roster      | Questions about household composition (number of members by age and sex), demographic changes, and complete list of children and adolescents age 0-17 years old.   | 22 questions | 23 questions<br>Additional questions about number of household members who worked before the pandemic and at the time of the survey, by gender.  | No (household composition was part of basic information)            |
| 7   | Education   | For households with school-age children, questions about one randomly selected child on enrollment, attendance at school (face-to-face classes), and homeschooling activities.   | 11 questions | 22 questions<br>Important changes: Additional questions for young children (age 0-5) about attending childcare/development centers and responsibility of childcare at home.  | Partially (only questions about homeschooling at household level)   |
| 8   | Gender      | Individual questions about changes in the time dedicated to housework and children's care and education, as well as couple dynamics at home.   | 10 questions | 10 questions<br>No relevant changes.   | No  |

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| No. | Topics               | Description  | W1           | W2   | Included in Phase I (2020 HFPS) |
|-----|----------------------|--|--------------|--|---------------------------------|
| 9   | Migration            | Questions applied only in four countries about nationals' perceptions on immigrants in their country.  | 11 questions | 15 questions<br>Additional perception questions on general issues.                               | No                              |
| 10  | Digital technologies | Questions about telephone and internet access, uses, and challenges. Questions about access to, and use of, digital financial services.                        | 25 questions | 7 questions about phone and internet access and 4 questions on digital finances for 9 countries. | Partially                       |
| 11  | Dwelling             | Questions about dwelling characteristics and household assets.   | 4 questions  | 4 questions  | Yes                             |
| 12  | Coping               | Added in Wave 2. Questions about households' strategies to cover basic expenses during 2021, and individuals' perceptions on insecurity and domestic violence. | No.          | 6 questions  | Partially                       |

Source: LAC HFPS Team

Phase II questionnaires were designed in Spanish and later translated into English, French, and Portuguese; and conducted according to the main language spoken in each country.<sup>5</sup> Some of the changes with respect to the Phase I questionnaire are the following:

- *Changes to the data collection on children's education:* One of the main differences between modules appearing in both Phase I and II is the way the education questions were implemented. During the 2020 HFPS, education questions were asked about all school-age children in the household. Estimation was done using household weights and indicators were interpreted at the household level (e.g., percentage of households with school-age children engaged in learning activities at home). For the 2021 HFPS, one school-age child was randomly selected in each household and all questions were about the selected child / adolescent.
- *New module for children 0-5:* Wave 2 introduced questions for younger children, ages 0 to 5 years old. Again, one child in this age bracket was selected in each household and new questions on education and childcare were asked about this child.

<sup>5</sup> The Brazil COVID-19 Phone Survey was developed and implemented when the LAC HFPS Phase II Wave 1 was about to conclude. Inspired by this activity, the survey collected information along multiple dimensions relevant to the welfare of the population (e.g., changes in employment and income, access to health and education services, gender inequalities, and food insecurity). However, it incorporated more detailed questions on the social protection system, coping mechanisms among households, and subjective poverty. The survey followed a Random Digit Dialing sampling methodology using a dual sampling frame of cellphone and landline numbers. However, given the availability of state calling codes, the sampling frame was also stratified by type of phone and state. Results are nationally representative for households with a landline or at least one cell phone and of individuals of ages 18 years and above who have an active cell phone number or a landline at home. For more information, see World Bank and UNDP (2021): <https://microdata.worldbank.org/index.php/catalog/4533>.



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- *Focus on different age groups:* For households with both young (0 to 5 years old) and school-age children, two children were selected in Wave 2; one for each corresponding age bracket. In the case of panel households with more than one school-age child, a different child was selected for Wave 2. Therefore, the education results are estimated using specific weights and the indicators are interpreted for school-age or young children, respectively (e.g., share of school-age children attending school in person; share of 0-to-5-year-olds attending childcare centers).

### Sampling<sup>6</sup>

For 12 of the 13 countries included in Phase I, the samples for Phase II Wave 1 included two components: (i) a panel formed by respondents to Phase I Wave 1, and (ii) a fresh, supplementary sample of phone numbers to compensate for attrition between Phase I Wave 1 and Phase II Wave 1, and to slightly increase the overall sample size. Phase II aimed to achieve between 800 and 3,000 completed interviews per country. Meanwhile, the samples for the 10 additional countries and Ecuador<sup>7</sup> were completely new. Similarly, for Wave 2, the samples included two components in all countries: (i) a panel of respondents to the previous wave (some of which came from Phase I); and (ii) a fresh supplementary sample of phone numbers to compensate for attrition between waves.

The fresh samples in all countries and in both waves were obtained through the same Random Digit Dialing (RDD) dual-frame methodology as in Phase I.<sup>8</sup> The RDD methodology produces all possible phone numbers in the country under the national phone numbering plan and draws a random sample of numbers. Telephone numbers belong to either the landline frame or the cellphone frame. First, for each country, a large sample was selected in both frames, with an allocation ranging from 0 percent landlines and 100 percent cellphones to 20 percent landlines and 80 percent cellphones. Second, these large samples went through an automated process to identify the active numbers, before then being cross-checked with business registries to identify and remove business numbers not eligible for the survey. Thus, a smaller second-instance sample was selected from the active residential numbers and was delivered to the country teams. In the cases of Argentina, Bolivia, and Mexico, the cell phone frame in each country was geographically stratified by department, province, or state. In addition, the sample of landlines was selected with a proportionate allocation among strata.

A summary of the steps followed for the estimation of weights by type of countries and wave is presented in Table 3.

Taken together, the Phase II surveys have several units of analysis. In Wave 1, the units of analysis are households, adult individuals (age 18 and older), and children age 6-17. In Wave 2, the units of analysis are households, adult individuals (age 18 years and older), children age 6-17, and children age 0-5. Weights were computed for each sample unit and should be used accordingly to obtain the statistical estimates of interest.<sup>9</sup>

<sup>6</sup> A detailed description of sampling and weighing is presented in: Flores Cruz, Ramiro. 2022. *High-Frequency Phone Survey (HFPS) - Phase 2: Sampling design, weighting, and estimation*.

<sup>7</sup> Ecuador is the only country from Phase I where a fully fresh sample of phone numbers is used.

<sup>8</sup> For a full description of Phase I sampling design, see: *HFPS Phase I Technical Note on Sampling, Weighting and Estimation*, available at: <https://documents.worldbank.org/curated/en/336371631859678760/pdf/COVID-19-High-Frequency-Phone-Surveys-in-Latin-America-Technical-Note-on-Sampling-Design-Weighting-and-Estimation.pdf>

<sup>9</sup> As mentioned, in Wave 2, certain countries have a specific sample of minorities (i.e., self-reported Indigenous people in Mexico). However, these samples do not have a specific set of sampling weights. Indicators for these groups should be obtained by using the appropriate sampling weight of the unit of analysis while restricting the set of observations of analysis to the sub-group of interest.

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**Table 3. Steps for weight estimation of the Phase II surveys (2021 HFPS)**

|               |   |  |
|---------------|---|--|
| <b>Wave 1</b> | Countries in both phases  | <ol style="list-style-type: none"> <li>1. Calculation of the inclusion probabilities of landline and cellphone numbers.</li> <li>2. Computation of design weights for households and individuals.</li> <li>3. Attrition non-response weighting adjustment for the panel sample component, and first-time, non-response adjustment for the supplement sample component.</li> <li>4. Calibration of household, adult, and child/adolescent weights, using external ancillary data from official sources (adjusted by national phone coverage).</li> <li>5. Weight trimming and recalibration.</li> </ol>   |
|               | Phase II new countries + Ecuador  | In step 3, design weights are adjusted for first-time non-response only.   |
| <b>Wave 2</b> | Countries in both phases  | <p>In step 3, non-response weighting adjustments accounted for the different response mechanisms observed in the three components of the overall sample. For each country, overall sample size (before fieldwork activities) comprises:</p> <ol style="list-style-type: none"> <li>I. Phase I Wave 1 overall selected sample of phone numbers, which was affected by first-time non-response in Phase I W1, plus attrition non-response in Phase II Wave 1 and attrition non-response in Phase II W2.</li> <li>II. Phase II Wave 1 overall supplement fresh sample, which was subject to first-time non-response in Phase II Wave 1 and attrition non-response in Phase II Wave 2.</li> <li>III. Phase II Wave 2 overall supplement fresh sample of phone numbers, which was only subject to first-time non-response.</li> </ol>   |
|               | Phase II new countries + Ecuador  | <p>In step 3, non-response weighting adjustments accounted for the different response mechanisms observed in the two components of the overall sample for each country:</p> <ol style="list-style-type: none"> <li>I. Phase II Wave 1 overall selected sample of phone numbers, which was affected by first-time non-response in Phase II Wave 1 and attrition non-response in Phase II Wave 2.</li> <li>II. Phase II Wave 2 overall fresh supplement sample, which was subject to first-time non-response only.</li> </ol>  |
|               | Countries with ethnic minority group representation: Bolivia, Colombia, Dominican Republic, Guatemala, Mexico, Panama, and Peru | <ul style="list-style-type: none"> <li>• Minority populations (Indigenous and Afro-descendants) had to be sampled at higher rates than primary samples in all countries except for Guatemala and Mexico. This was achieved by executing a screening operation in each country.</li> <li>• Total sample of minority respondents in the five countries is formed by two components: minority cases already present in the primary sample; and minority cases interviewed in the screening operation.</li> <li>• Base weights of the first minority component were adjusted for attrition non-response between Waves 1 and 2, whereas the base weights of the second minority component were adjusted for first-time non-response.</li> <li>• Adjusted weights of the combined sample of minority respondents were calibrated to minority totals by gender, age, and educational attainment.</li> </ul> |