VANDERBILT® LAPOP AmericasBarometer Barómetro de las Américas

# AmericasBarometer 2021: Costa Rica

## Technical Information

| Country | Year | Sample Size | Weighted/Unweighted | Fieldwork dates |
|---|---|---|---|---|
| Costa Rica | 2021 | 2,977 | Weighted | March 10th – June 12th, 2021 |

### LAPOP LAB AmericasBarometer 2021 Survey Round

LAPOP Lab is a pioneer in survey research methods in the Latin America and Caribbean (LAC) region. LAPOP Lab's AmericasBarometer is a unique tool for assessing the public's experiences with democratic governance. The AmericasBarometer permits valid comparisons across individuals, regions, countries, and time, via a common core questionnaire and standardized methods.

The 2021 AmericasBarometer represents the 9th round of this comparative project. In 2020 and through 2021, for surveys in the LAC region, LAPOP Lab switched from its conventional data collection mode (Face-to-Face household surveys) to Computer-assisted Telephone Interviewing (CATI). We made this change in order to minimize risks associated with the COVID-19 pandemic.

This change affected our sampling strategy. LAPOP Lab has traditionally designed complex, area probability samples using censuses as sampling frames to select survey respondents[1]. With the adoption of CATI, LAPOP Lab transitioned to Random-Digit Dialing (RDD) using mobile phone numbers as sampling frames. This sampling method has the advantage of covering a more dispersed sample of the population relative to Face-to-Face (FtF), although it only includes individuals who have access to functioning mobile phones. In addition, RDD can more easily incorporate certain hard-to-reach populations.

Classic sampling methods in the U.S. for telephone survey research have typically involved list-assisted landline RDD (AAPOR Cell Phone Task Force 2010).[2] More recently, however, survey methodologists have incorporated mobile phone numbers into sampling frames. In some cases, such as the U.S., dual sampling frames that include landline and mobile phone numbers are

[1] In some cases, such as Mexico, voter registry information is combined with census data to create the sampling frame.

[2] AAPOR. 2010. "Cell Phone Task Force Report: New Considerations for Survey Researchers When Planning and Conducting RDD Telephone Surveys in the U.S. With Respondents Reached via Cell Phone Numbers." AAPOR.org.

considered best practice in CATI studies. While this has been the case in the U.S., there is comparatively lower landline coverage in the LAC region. Data from the AmericasBarometer show that from 2004 to 2018/19, landline coverage in LAC households declined from 42 to 28%. In contrast, mobile phone coverage increased from 33 to 90% in the same period.

A World Bank report[3] corroborates the high rate of mobile phone penetration found in the AmericasBarometer. The report shows that as early as 2012, nearly 98% of the region's population had access to mobile phones, and 84% of LAC households had a subscription with some type of mobile service. A more recent report by the International Telecommunication Union (UTI) shows that in 2018, mobile penetration reached 104% in Latin America, just below East and Central Europe, where this metric reaches 154%, and Western Europe, where it reaches 129%. After a cost/benefit analysis, LAPOP Lab determined that using a single frame of mobile phone numbers is relatively more efficient than using dual frames.[4]

With the exception of the U.S. and Canada AmericasBarometer surveys (that are carried out through self-administered online surveys), LAPOP Lab carried out single frame mobile phone interviews in partnership with local survey firms throughout the Americas. All data in the LAC region were collected with SurveyToGo© (STG), a data collection and management software that runs on Windows, and Android and iOS tablets and phones. Survey firms utilized predictive, automatic, or manual dialing systems to make the calls. For quality control purposes, firms recorded and stored in a secured cloud domain the audio of the 100% of the interviews.[5,6] In the 2021 AmericasBarometer, LAPOP Lab has continued a tradition of innovation, with improvements in monitoring interview quality on a daily basis during the course of fieldwork.[7]

The target sample size for LAC region countries in the 2021 AmericasBarometer was 3,000 interviews with an overall length of about 25 minutes. To achieve this goal the questionnaire was a split-design, with approximately half the respondents randomly assigned to "Core A" and about half randomly assigned to "Core B". Users are advised to consult the questionnaires for more information. Variables names starting with CA and CB in the questionnaire refers to Core A and Core B respectively. Also, each dataset contains a variable called "***core_a_core_b***" that distinguish questions included in each core.

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[3] World Bank. 2012. Information and Communications for Development 2012: Maximizing Mobile. Washington, DC: World Bank. DOI: 10.1596/978-0-8213-8991-1; website: http://www.worldbank.org/ict/IC4D2012.

[4] For more information, see "Sampling in the 2021 Round of the AmericasBarometer: Transitioning from Face-to-face to Telephone Sample Design." (forthcoming)

[5] LAPOP Lab does not make available any direct identifiers. During datasets processing, LAPOP Lab ensures anonymity and minimizes the risk of breaches of confidentiality.

[6] Due to the increasingly sensitive situation in Nicaragua, LAPOP lab decided not to record the interviews in that country in order to offer survey participants an additional layer of privacy.

[7] For additional information on quality control, see LAPOP's Methodological Note: "Improving Quality in Phone Surveys via LAPOP's Multi-Faceted FACLCON-CATI Approach" By Sebastián Larrea, Valerie Schweizer, and Elizabeth J. Zechmeister (May 2021). Available at: https://www.vanderbilt.edu/lapop/insights/IMN008en.pdf

For the 2021 AmericasBarometer, LAPOP Lab collected data in 22 countries in the Americas, from January to August 2021. All country datasets and reports available for download for free at www.LapopSurveys.org.

## 2021 AmericasBarometer: Costa Rica

This survey was carried out between March 10th and June 12th 2021, as part of LAPOP's 2021 AmericasBarometer. It is a follow on to LAPOP's AmericasBarometer Costa Rica surveys of 2004, 2006, 2008, 2010, 2012, 2014, 2016, and 2018. The 2021 survey fieldwork was carried out by CIEP-UCR (Centro de Investigación y Estudios Políticos – Universidad de Costa Rica) on behalf of LAPOP. Key funding came from Vanderbilt University, the National Science Foundation, and the Inter-American Development Bank.

Questionnaire pretesting took place on February 22nd and 23rd, 2021 and interviewer training took place from March 3rd to March 4th, 2021. Pilot surveys were conducted between March 5th to March 9th. A full copy of the 2021 AmericasBarometer Costa Rica questionnaire can be found at LAPOP's website at www.LapopSurveys.org.

The survey collects information from a nationally representative sample of voting-age respondents, who are 18 years of age or older, are citizens or permanent residents of Costa Rica and have access to a functioning mobile phone. The study excludes individuals with no access to mobile phones or with only landline phones. Participation in the AmericasBarometer survey is voluntary.[8] Eligible respondents who agree to participate in the survey are administered the questionnaire after giving their consent to interviewers.[9]

The sampling frame corresponds to all possible mobile phone numbers available in the country, drawn from the National Telephone Numbering System. A sample with 608,385 mobile phone numbers was generated by the firm. A third party pre-validated the telephone numbers in order to identify active numbers.[10] The survey firm used an automatic dialing system to call the pre-validated mobile phone numbers. LAPOP Lab approved a final dataset of 2,977 complete interviews. All calls were conducted in Spanish and data was collected with STG.

With a confidence level for the national unweighted sample at 95 percent, the estimated margin of error is 1.8 percent, assuming a 50/50 response distribution on dichotomous variables.

[8] No incentives (cash or in-kind) are provided to respondents for participating in the survey.
[9] For the purpose of an informed consent process, interviewers are required to read a letter containing details about the study and participation before starting the interview.
[10] The third party conducted 3 and up to six calls before classifying the numbers into three different categories: (1) Connected-Call answered, (2) Connected -Call not answered, (3) Not connected.

The mobile phone number is the final unit of selection. In other words, the survey is conducted with any eligible individual who answers the call. Interviewers calling mobile phone numbers screen informants who answer the call to determine their eligibility. The study excludes business-only mobile phones.[11]

LAPOP Lab instructed interviewers to call during business hours and on weekends, except when the potential respondent requested an appointment outside that timeframe. Callbacks after unsuccessful attempts were staggered over times of day and days of the week to maximize the chance of contacting informants and to minimize nonresponse. If no one was available to answer our call, we instructed interviewers to call back at least 4 times before a final disposition was made for that number.

Mobile phone coverage and response rates vary across socio-demographic groups, introducing survey errors that can potentially lead to biased estimations. To mitigate these sources of error, LAPOP Lab used a "responsive design" strategy.[12] In this strategy, our team continuously monitors both collected data and para-data with the goal of reducing bias in survey estimates without significantly increasing the costs of the survey. More specifically, we pre-identify elements that can affect costs and errors of survey estimates, monitor those elements during the initial data collection stages, and adjust those elements while data collection is in progress. With the purpose of balancing our samples to mirror the distributions of high-quality benchmarks, we screen out individuals when necessary from overrepresented population group(s) during the final stages of data collection. Our goal in this approach is to keep the weighting effect below 1.5.

## Weighting of the Costa Rica datasets

The dataset contains a variable called "wt" which is the "country weight" variable. Since in the case of 2021 Americas Barometer Survey in Costa Rica is weighted, the variable "wt" must be used in the estimations. Table 1 shows the unweighted sample size in each of the seven regions (strata) and by demographic characteristics.

**Table 1: Weighted and Unweighted Distributions**
**2021 AmericasBarometer Survey in Costa Rica**

| | Unweighted Distribution | Weighted Distribution[13] |
|---|---|---|
| ***Strata*** | | |
| AMSJ | 720 | 849 |
| Central | 1,014 | 935 |
| Bajura | 1,133 | 1,064 |
| ***Age groups*** | | |

[11] A screening question was included in the questionnaire to identify business-only mobile phones.
[12] For more information about "responsive design" strategy, see Groves and Heeringa (2006) here: https://deepblue.lib.umich.edu/bitstream/handle/2027.42/71787/j.1467-985X.2006.00423.x.pdf;sequence=1
[13] Weighted distribution estimated using the ***fre*** command in STATA16

| | | |
|---|---|---|
| 18-25 | 589 | 676 |
| 26-35 | 691 | 645 |
| 36-45 | 608 | 573 |
| 46-55 | 472 | 474 |
| 56-65 | 378 | 365 |
| 66+ | 239 | 244 |
| ***Gender*** | | |
| Male | 1,481 | 1,481 |
| Female and Non-binary | 1,494 | 1,496 |
| ***Education*** | | |
| No education | 70 | 81 |
| Primary | 706 | 879 |
| Secondary | 1,069 | 1,421 |
| University | 1,122 | 587 |

When using this dataset for cross-country comparisons, LAPOP reweights each country data set in the merged files so that each country has an N of 1,500. The weight variable for cross-country comparisons is called "weight1500." In SPSS, this is done via the "weight" command. Weights are already activated in SPSS datasets. In Stata, the svyset command to weight the data and declare the sampling information to correctly compute standard errors that take into account the design effects is as follows: for single country, single year studies, the command is **svyset upm [pw=wt], strata(strata)**; for cross-country and/or cross-time studies, the command is **svyset upm [pw=weight1500], strata(strata)**. Stata datasets are preset; however, users must use the svy prefix with estimation commands to compute the weighted statistics and correct standard errors (see **help svy_estimation** within Stata for more information).

## Quality Control in Costa Rica

In the 2021 AmericasBarometer, Quality Control was based on FALCON-CATI© (Fieldwork Algorithm for LAPOP's Control over Survey Operations and Norms). It includes, but is not limited to, an interviewer identity monitoring check, time checks, a reading control check, and data fabrication and falsification audits. The system also includes a quality control score that assigns penalties (or demerits) to interviews during the audit. In this system, higher scores indicate more serious errors, and we refuse to accept (that is, we require the cancelation of) low quality interviews.

The local firm audited 100% of interviews. All interviews were also run through LAPOP's automatic flagging system, and then LAPOP's team manually audited a subset of the interviews. A total of 827 interviews were canceled in Costa Rica in the 2021 round of the Americas Barometer. The most predominant reason (97% of canceled cases) for canceling an interview was incomplete/early termination cases. Other reasons for cancelling interviews were reading issues on the study information sheet (formerly known as "informed consent"), poor reading of multiple questions, and interviewers offering an interpretation of questions.

## Response Rates in Costa Rica

In this section we present the survey response rates.[14] The AmericasBarometer response rates are based on AAPOR's Standard Definitions. The response rate is the number of complete interviews with reporting units divided by the number of eligible reporting units in the sample. LAPOP Lab has programmed in STG a module that permits the accurate recording of the number of refusals, ineligible respondents, or non-contact. This in turn allows for estimating the response rates in each country. Two definitions of response rates are provided below, ranging from the definition that yields the lowest rate to the definition that yields the highest rate, depending on how partial interviews are considered and how cases of unknown eligibility are handled.

Response rates reported below are:

Response Rate 1 (RR1) $=\frac{C}{C+P+R+N+O+UH+UO}$

Response Rate 3 (RR3) $=\frac{C}{C+P+R+N+O+e(UH+UO)}$

Where: where C refers to completed interviews, P to partial interviews, R to refusals, N for non-contacts, O for others, UH for unknown if household, UO to unknown others, and e is the eligibility rate calculated using the CASRO method: e=Eligible/(Eligible + Ineligible).

**Table 2: Response Rates in the 2021 Americas Barometer Survey by Country**

| Country | RR1 (%) | RR3 (%) |
|---|---|---|
| Argentina | 0.7 | 1.0 |
| Bolivia | 7.9 | 1.0 |
| Brazil | 22.1 | 22.5 |
| Chile | 7.9 | 14.8 |
| Colombia | 10.3 | 10.7 |
| Costa Rica | 5.3 | 6.1 |
| Dominican Republic | 16.6 | 19.7 |
| Ecuador | 11.2 | 17.1 |
| Guatemala | 9.7 | 14.9 |
| Guyana | 20.4 | 23.5 |
| Honduras | 0.8 | 7.9 |
| Haiti | 12.4 | 13.2 |
| Jamaica | 7.3 | 9.8 |
| Mexico | 0.7 | 0.8 |
| Nicaragua | 1.0 | 1.4 |
| Panama | 5.0 | 5.4 |

[14] For additional information on how response rates are estimated, see LAPOP's Methodological Note: "How Does LAPOP Calculate Response Rates? By Zachary Warner and Gabriel Camargo-Toledo (June 2019). Available at: https://www.vanderbilt.edu/lapop/methods-005rev.pdf

| | | |
|---|---|---|
| Peru | 1.8 | 2.8 |
| Paraguay | 1.2 | 1.4 |
| El Salvador | 4.2 | 5.8 |
| Uruguay | 1.4 | 1.4 |
| **LAC REGION** | **2.3** | **4.0** |

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