VANDERBILT

LAPOP

AmericasBarometer
Barómetro de las Américas

AmericasBarometer, 2016/17

Technical Information

LAPOP AmericasBarometer 2016/17 round of surveys

The 2016/17 AmericasBarometer study is based on interviews with 43,454 respondents in 29 countries. Nationally representative surveys of voting age adults were conducted in all major languages, using face-to-face interviews in Latin America and the Caribbean and web surveys in the United States and Canada. Samples in each country were developed using a multi-stage probabilistic design (with quotas at the household level for most countries), and were stratified by major regions of the country, size of municipality and by urban and rural areas within municipalities.

Table 1: Sample sizes and Sampling errors in the 2016/17 AmericasBarometer

Country	Sample Size	Sampling Error[1]
Mexico/Central America		
Mexico	1,563	2.5%
Guatemala	1,546	2.5%
El Salvador	1,551	2.5%
Honduras	1,560	2.5%
Nicaragua	1,560	2.5%
Costa Rica	1,514	2.5%
Panama	1,521	2.5%
Andean/Southern Cone		
Colombia	1,563	2.5%
Ecuador	1,545	1.9%
Peru	2,647	2.4%
Bolivia	1,691	2.5%
Paraguay	1,528	2.4%
Chile	1,625	2.5%
Uruguay	1,515	2.5%
Brazil	1,532	2.5%
Venezuela	1,558	2.5%
Argentina	1,528	2.5%

[1] Confidence intervals based on unweighted sample sizes. For cross-national analysis purposes, LAPOP weights each sample to 1,500. These sampling errors are based on SRS and not adjusted for stratification and clustering. For information on the impact of the complex sample design on confidence intervals, see section VII of this document.

Caribbean		
Antigua and Barbuda	1,002	3.1%
Dominica	1,016	3.1%
Grenada	1,004	3.1%
Dominican Republic	1,518	2.5%
Guyana	1,576	2.5%
Haiti	2,221	2.1%
Jamaica	1,515	2.5%
St. Kitts and Nevis	1,008	3.1%
St. Vincent and the Grenadines	1,017	3.1%
St. Lucia	1,019	3.1%
United States and Canada		
Canada	1,511	2.5%
United States	1,500	2.5%

The Latin American Public Opinion Project (LAPOP) is a pioneer in innovations in survey research. In the 2016/17 round of the AmericasBarometer, LAPOP has continued this tradition of innovation, with heretofore unprecedented improvements in monitoring interview quality on a daily basis during the course of fieldwork. This was done by making significant advances in the use of handheld and expansion of electronic devices for data collection, coupled with a wide variety of new quality control techniques utilizing LAPOP's FALCON© system (see details below).

In the 2016/17 round of the AmericasBarometer, handheld devices for data collection were used in 100% of the countries surveyed, for all interviews. The sole exception is Haiti, where approximately 50% of interviews were conducted using paper questionnaires, a choice dictated by scarcity in data signals, internet connections and power to recharge devices. As in prior rounds of the AmericasBarometer, the U.S. and Canada studies were conducted online while all other interviews were conducted face-to-face. In the 2016/17 round, we used the SurveyToGo© (STG) software, running on Android tablets and phones, to conduct field interviews. LAPOP has found this software to be very reliable and flexible. Importantly, the adaptable platform and accessible programming language has allowed LAPOP to program in customizations to enable our quality control protocols.

The use of electronic devices for interviews helps us improve efficiency in data collection in several ways. First, it eliminates data entry errors that occur when handwritten responses are transferred to digital formats by coders and data entry clerks. Second, it supports user-friendly switching among multiple languages, especially important in countries like Paraguay, in which large proportions of respondents code-switch between Spanish and Guaraní. Third, it provides quality control teams the ability to audit and track the progress of fieldwork on a daily basis. The LAPOP auditing and tracking process includes verifying that interviews are being carried out in the pre-selected sampling locations, ensuring the correct and precise reading of the full wording of questions and response choices, checking the identity of interviewers for each survey to protect against outsourcing work to untrained interviewers, and assessing the timing of the interviews.

As per the sample design, the 2016/17 round of the AmericasBarometer continues to use the sample strategy introduced for the first time in the 2012 round of the surveys and that was also employed in 2014. This sample design continues to use, in almost all cases, the same stratification employed since 2004, making adjustments where necessary when census information is updated. The samples are all representative at the stratum level. The new design, however, stabilized the PSU and cluster sizes, with the selection of each PSU based on PPS (Probability Proportional to Size). Within PSUs, clusters are also standardized (typically 6 interviews) to minimize intra-class correlation while taking advantage of economies of fieldwork that simple random selection of interviews within the entire PSU would not make possible.

The tradeoff continues to make the sample design very efficient with very low intra-class correlations. With the cluster and PSU sample size uniformity, the LAPOP samples are now also representative within each selected municipality, to enable the use of the municipality as a unit of analysis for multilevel statistical analysis. However, with the small sample sizes at the PSU level that our design produces, confidence intervals at the level of each PSU are, by definition, wide. Users of the data should note that while the stratification incorporates all major regions of the country (exceptions include islands, such as the Galapagos in Ecuador or San Andrés in Colombia, but they do include the Bay Islands of Honduras), and therefore can be reliably used to analyze differences among strata, the PSUs selected normally represent only a small fraction of the total PSUs in the country (typically 50-65). Details of the sample design revisions are found in the description of the 2012 AmericasBarometer surveys.

The remaining pages of this technical note describe the sample design of the AmericasBarometer 2016/17 survey.

2016/17 AmericasBarometer Sample Design

Universe, Population, Unit of Observation

Universe: The surveys provide national coverage of voting age adults. The universe is comprised of the population living in urban and rural areas and it is representative at the national and regional level.

Population: The survey is designed to collect information from a nationally representative sample of the entire voting age population. Only non-institutionalized voting age adults are eligible to participate in the survey. Therefore, the sample excludes people in boarding schools, hospitals, police academies, military barracks, and inmates of the country's jails.

Unit of Observation: Only one respondent is interviewed per household. The questionnaire almost exclusively includes topics focused on that single respondent, but also does include some questions related to other members of the household and the condition of the household itself.

Thus, the statistical unit of observation is the household. However, some respondents live in dwellings that are shared with other households. For this reason, it is more appropriate to consider the dwelling as the final unit of analysis. Additionally, the dwelling is an easily identifiable unit in the field, with relative permanence over time, a characteristic that allows it to be considered as the final unit of selection.

Sample frame

The sampling frame covers 100% of the eligible voting age population in the surveyed country. This means that every eligible person in the country has an equal and known chance of being included in the survey sample. It also means that no particular ethnic group or geographical areas are excluded from the sampling frame unless the country sample design indicates otherwise. For example, certain Island areas and territories might be excluded. See the country study sample descriptions for such exceptions.

Sampling Method

The sampling method chosen takes into consideration a series of elements pre-established by LAPOP.

On the basis of these requirements, the method that is used corresponds to a stratified multi-**stage cluster sampling.** The sample is stratified based on three factors:

1) Size of the Municipalities
2) Urban/Rural areas
3) Regions

The stratified sampling ensures a greater reliability in our sample by reducing the variance of the estimates. Stratification improves the quality of estimates, with the sole condition that the whole sample unit belongs to only one stratum, and the strata in combination cover the total population. Stratification also enables us to ensure the inclusion in the sample of the most important geographic regions in the country while requiring geographic sample dispersion.

Stratification

Stratification is the process by which the population is divided into subgroups. Sampling is then conducted separately in each subgroup. Stratification allows subgroups of interest to be included in the sample whereas in a non-stratified sample some key subgroups may have been left out due to the random nature of the selection process. In an extreme case, samples that are not stratified can, by chance, exclude the nation's capital or largest city. Stratification helps us increase the precision of the sample. It reduces the sampling error. In a stratified sample, the sampling error depends on population variance within strata and not between them.

Selection of Respondents

A single respondent was selected in each household, following the frequency matching distribution programmed into the sample design, by gender and age as mentioned above. Respondents are limited to household members who reside permanently in that household (thus excluding visiting relatives), who fit the age and residency requirements (limited to adult citizens and permanent residents). If two or more people of the same sex and age group were present in the household at the moment of the visit of our interviewer, the questionnaire was applied to the person who most recently celebrated a birthday (i.e., the "the last birthday" system) in order to avoid selection bias.

2016/17 AmericasBarometer Survey: Weighting of country datasets

Most of the 2016/17 AmericasBarometer samples are self-weighted except for Bolivia, Guyana, Haiti, Peru, United State and Canada. Each country data set contains a variable called WT which is the "country weight" variable. In countries in which the sample is self-weighted, the value of each case = 1. When using this dataset for cross-country comparisons, in order to give each country in the study an identical weight in the pooled sample, 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, one should use the svyset command to weight the data and declare the sampling information to correctly compute standard errors that take into account the design effects. The command for single country, single year studies is**: svyset upm [pw=wt], strata(estratopri)**. For cross-country and/or cross-time studies, the command is: **svyset upm [pw=weight1500], strata(strata)**. These declarations have been made in Stata datasets. However, you 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).

2016/17 AmericasBarometer Fieldwork dates

Fieldwork dates for each country for the 2016/17 round are reported in Table 2.

Table 2: Fieldwork dates by country 2016/17 AmericasBarometer

Country	Fieldwork Start Date	Fieldwork End Date
	Mexico/Central America	
Mexico	January 28th, 2017	March 23th, 2017
Guatemala	February 16th, 2017	May 20th, 2017
El Salvador	October 26th, 2016	December 1st, 2016
Honduras	October 14th, 2016	November 20th, 2016
Nicaragua	September 13th, 2016	October 19th, 2016
Costa Rica	August 22th, 2016	September 21st, 2016
Panama	March 1st, 2017	May 21st, 2017

Andean/Southern Cone		
Colombia	August 3rd, 2016	October 29th, 2016
Ecuador	November 8th, 2016	January 5th, 2017
Peru	February 7th, 2017	April 10th, 2017
Bolivia	March 16th, 2017	May 3rd, 2017
Paraguay	October 19th, 2016	November 24th, 2016
Chile	March 17th, 2017	May 30th, 2017
Uruguay	March 11th, 2017	May 29th, 2017
Brazil	April 5th, 2017	May 11th, 2017
Venezuela	October 3rd, 2016	January 28th, 2017
Argentina	March 10th, 2017	May 28th, 2017
Caribbean		
Antigua and Barbuda	January 9th, 2016	February 8th, 2016
Dominica	February 3rd, 2016	March 20th, 2016
Grenada	January 25th, 2016	February 18th, 2016
Dominican Republic	October 22nd, 2016	December 3rd, 2016
Guyana	February 17th, 2016	March 23rd, 2016
Haiti	April 18th, 2017	June 2nd, 2017
Jamaica	February 14th, 2017	April 15th, 2017
St. Kitts and Nevis	January 9th, 2016	March 14th, 2016
St. Vincent and the Grenadines	January 19th, 2016	February 14th, 2016
St. Lucia	February 22nd, 2016	March 20th, 2016
United States and Canada		
Canada	March 24th, 2017	April 5th, 2017
United States	May 12th, 2017	May 22nd, 2017

2016/17 AmericasBarometer Survey Design Effects

Accuracy of the Findings

Two types of errors affect all surveys: non-sampling and sampling errors. Non-sampling errors are usually made during questionnaire design, data collection, and processing. These errors can be mitigated by using a valid and reliable measuring instrument, adequately training fieldwork personnel, supervising and monitoring fieldwork, and using appropriate software for data collection and processing. Non-sampling errors are difficult to quantify, although comparing the sample results with those of the population is one way to assess whether these errors have generated biases that might reduce or even invalidate the representativeness of the sample. The use of electronic handheld devices in AmericasBarometer fieldwork helps reduce non-sampling errors by providing the capacity to monitor the implementation of the survey in real and quasi-real time. Through geo-fencing, for example, we are able to determine whether interviews are conducted in the correct geographic area. Additionally, by eliminating the separate process of data entry (necessary when interviews are recorded on paper and then are transferred to an electronic medium), we eliminate the inevitable errors that this activity generates. Perhaps most importantly, with paper questionnaires computer-based consistency checks can only be run

several weeks after the data are collected. Correcting errors post hoc is difficult or impossible given the separation in time and space between the moment an interview is conducted on paper and the later time at which the problem is detected.

Sampling errors, on the other hand, are a product of the design itself, a product of chance, and the inevitable result of the process of surveying a sample and not the entire population. All modern survey research relies on drawing a sample from the population and therefore all such surveys suffer from sampling errors. When a sample is drawn, this sample is actually one of many possible samples that could have been selected from the population. The variability that exists across all these possible samples is the sampling error, which we could measure if all these samples were available. However, that is impossible, since short of interviewing the entire national sample (for example, some 200 million Brazilians), the number of samples that could be drawn is infinite. In practice, sampling error is estimated over the variance obtained from the sample itself. To estimate the sampling error of a statistic (average, percentage, or ratio), we calculate the standard error, which is the square root of the population variance of the statistic. This allows us to measure how close the statistic is to the result that would have been obtained if the entire population were interviewed under the same conditions.

To calculate this error, it is important to consider the specific (complex) design through which the sample was drawn. The design effect (DEFT) in the formula below indicates the efficiency of the design used in relation to an unrestricted random sampling design (URS). A value of 1 indicates that the standard error (SE) obtained for both designs (the complex and the URS) is equal; that is, in this case the complex sampling is as efficient as the URS with the same-sized sample. If the value is greater than 1, the complex sampling produces a SE greater than that obtained with a URS.

$$DEFT = SE_{complex} / SE_{URS}$$

Table 3 shows, for each of 6 measures from the survey instrument, the value of the statistic in question (average or percentage) and the design effect (DEFT) that we calculate for the 2016/17 round of the AmericasBarometer. The table also reports the design effects of the 2014 round for the same variables. The SEs were estimated using Stata 12 software. Extreme values, when they are encountered, come from a high degree of homogeneity within each cluster. In other words, in these cases there is an important spatial segregation of people according to their socioeconomic condition, which reduces the efficiency of cluster sampling (one aspect of the complex design) to measure these characteristics/attitudes.

It is worth noting that, in the case of a standard survey in which a complex design is applied to draw the sample, the sampling error is usually 10% to 40% greater than that which would have been obtained with unrestricted (and extremely costly) random sampling. In general, for a well-designed study, the design effect usually ranges from 1 to 3. In the case of the 2016/17 AmericasBarometer, the typical sampling error is lower. For example, in the case of Costa Rica, the Support for Democracy (Ing4r) has a sampling error of 1.18. This means that the 95% confidence interval (1.96 times the SE) for the average of this variable (74.19) goes from 72.56 to 75.86. According to the DEFT of the table, this interval is 18% greater than that which would have

been obtained with a URS (see Table DE.1). In short, we are pleased to report that the design effects in our 29-country, hemisphere-wide survey are very low. Only rarely do we find (in the table below) design effects above 1.5. Further, in most cases the design effects in the 2016/17 round of surveys are systematically lower than the prior (2014) round.

Table 3. Design effects, 2016/17 AmericasBarometer Survey

Country	Ing4r				it1r			
	2016/2017			2014 Round	2016/2017			2014 Round
	Average	Std. Error	DEFT	DEFT	Average	Std. Error	DEFT	DEFT
Mexico	56.60	0.91	1.20	1.66	53.34	1.14	1.46	1.55
Guatemala	56.68	0.71	1.00	1.47	59.44	1.02	1.20	1.27
El Salvador	60.02	0.76	1.09	0.99	60.18	1.06	1.21	1.28
Honduras	57.25	0.75	0.92	1.37	63.25	0.94	1.07	1.41
Nicaragua	62.19	0.77	1.04	0.97	60.38	0.87	0.99	1.30
Costa Rica	71.92	0.83	1.18	1.63	65.79	1.34	1.68	1.75
Panama	62.71	0.87	1.13	1.51	54.10	0.94	1.15	1.56
Colombia	59.88	0.76	1.04	1.46	59.70	1.25	1.54	1.61
Ecuador	58.63	0.87	1.25	1.93	55.17	0.90	1.10	1.62
Bolivia	61.01	0.72	1.09	1.68	47.50	0.85	1.16	2.21
Peru	59.16	0.72	1.40	1.63	48.31	0.82	1.43	1.33
Paraguay	56.33	0.75	0.99	1.08	63.03	1.11	1.36	1.17
Chile	64.65	0.82	1.11	1.81	59.88	0.94	1.25	1.91
Uruguay	81.44	0.92	1.43	1.30	66.42	1.03	1.45	1.54
Brazil	58.45	0.77	0.95	1.69	46.71	0.91	1.12	1.45
Venezuela	64.47	0.91	1.04	2.49	52.95	0.93	1.15	1.68
Argentina	77.65	0.79	1.13	1.33	64.02	0.95	1.28	1.69
Dominican Rep.	64.30	0.89	1.13	1.21	56.51	0.90	1.00	1.28
Haiti	57.60	1.14	1.53	1.49	40.73	1.02	1.43	1.86
Jamaica	61.06	0.79	0.96	1.63	53.65	0.99	1.25	1.36
Guyana	61.54	1.03	1.15	1.54	64.54	0.97	1.30	1.66
Grenada	67.58	1.48	1.62	-	62.27	1.25	1.53	-
St. Lucia	60.46	1.18	1.25	-	56.28	0.90	1.04	-
Dominica	69.14	1.60	1.54	-	55.77	1.24	1.43	-
Antigua and Barbuda	65.53	1.20	1.44	-	69.41	0.97	1.32	-
St. Vincent and the Grenadines	69.56	1.46	1.55	-	58.92	1.09	1.26	-
St. Kitts and Nevis	72.11	1.33	1.46	-	67.16	1.00	1.30	-
United States	73.74	0.91	1.32	1.35	62.92	0.74	1.30	1.38
Canada	75.54	0.63	1.09	1.06	68.93	0.58	1.09	1.09

Table 3. Design effects, 2016/17 AmericasBarometer Survey (cont.)

Country	corvic				PSA5			
	2016/2017			2014 Round	2016/2017			2014 Round
	Average	Std. Error	DEFT	DEFT	Average	Std. Error	DEFT	DEFT
Mexico	29.76	1.26	1.09	1.24	45.51	0.82	1.34	1.60
Guatemala	25.13	1.49	1.35	1.18	53.57	0.55	1.01	1.45
El Salvador	9.76	0.84	1.11	1.05	51.20	0.69	1.17	1.05
Honduras	27.54	1.15	1.02	1.44	47.95	0.77	1.26	1.38
Nicaragua	20.14	1.03	1.02	1.07	62.84	0.64	1.11	1.29
Costa Rica	9.18	0.78	1.05	1.41	62.23	0.64	1.14	1.28
Panama	13.55	0.90	1.02	1.83	49.87	0.68	1.16	1.65
Colombia	17.40	1.05	1.09	1.42	47.57	0.68	1.20	1.44
Ecuador	27.78	1.24	1.09	1.62	55.30	0.65	1.18	1.68
Bolivia	40.37	1.25	1.05	2.02	49.69	0.81	1.49	2.26
Peru	29.57	1.25	1.40	1.33	43.93	0.53	1.34	1.76
Paraguay	30.96	1.46	1.24	1.29	42.38	0.86	1.48	1.43
Chile	7.27	0.67	1.04	1.58	42.66	0.55	1.00	1.89
Uruguay	6.27	0.65	1.05	1.04	56.65	0.64	1.06	1.19
Brazil	11.23	0.82	1.01	1.55	34.05	0.69	1.21	1.74
Venezuela	28.57	1.24	1.08	1.70	39.92	0.88	1.25	1.72
Argentina	16.12	0.98	1.04	1.51	49.95	0.63	1.11	1.54
Dominican Rep.	23.15	1.30	1.20	1.08	48.96	0.78	1.22	1.25
Haiti	35.83	1.16	1.14	1.47	37.71	0.75	1.44	2.13
Jamaica	9.97	0.84	1.09	1.09	48.37	0.63	1.01	1.13
Guyana	13.26	1.06	1.22	1.28	65.46	0.70	1.20	1.72
Grenada	3.69	0.58	0.97	-	58.16	0.95	1.50	-
St. Lucia	5.99	0.85	1.14	-	44.90	0.75	1.05	-
Dominica	8.86	1.13	1.27	-	43.93	1.40	1.66	-
Antigua and Barbuda	6.59	0.84	1.06	-	56.31	0.99	1.45	-
St. Vincent and the Grenadines	4.72	0.78	1.18	-	54.97	1.13	1.44	-
St. Kitts and Nevis	5.26	0.80	1.13	-	57.39	1.06	1.40	-
United States	-	-	-	1.54	53.68	0.76	1.31	1.40
Canada	-	-	-	1.05	62.27	0.58	1.08	1.07

Table 3. Design effects, 2016/17 AmericasBarometer Survey (cont.)

Country	tol				m1r			
	2016/2017			2014 Round	2016/2017			2014 Round
	Average	Std. Error	DEFT	DEFT	Average	Std. Error	DEFT	DEFT
Mexico	54.25	0.72	1.16	1.62	31.02	0.96	1.49	1.44
Guatemala	50.75	0.67	1.22	1.28	49.49	0.82	1.29	1.60
El Salvador	47.66	0.51	0.95	0.98	48.00	0.83	1.17	0.83
Honduras	50.92	0.62	1.02	1.25	57.76	0.85	1.16	1.02
Nicaragua	53.11	0.66	1.12	1.41	68.88	0.69	1.18	1.04
Costa Rica	54.34	0.82	1.32	1.99	40.10	0.88	1.38	1.13
Panama	52.79	0.63	1.16	1.82	40.11	0.75	1.07	1.46
Colombia	45.41	0.85	1.33	1.41	43.07	1.10	1.55	1.43
Ecuador	49.36	0.52	0.96	1.92	62.94	0.81	1.27	1.45
Bolivia	49.38	0.51	1.00	2.78	59.02	0.87	1.58	1.99
Peru	47.60	0.46	1.18	1.85	49.56	0.51	1.26	1.20
Paraguay	53.47	0.59	0.98	1.57	47.42	0.94	1.25	1.42
Chile	51.20	0.73	1.14	1.94	46.00	0.67	1.15	1.68
Uruguay	56.73	1.07	1.50	1.62	55.29	0.66	1.05	0.93
Brazil	57.35	0.64	1.01	1.89	29.91	0.78	1.11	1.45
Venezuela	55.15	0.77	1.18	2.02	31.22	1.03	1.36	1.54
Argentina	49.29	0.81	1.15	1.65	44.39	0.80	1.09	1.25
Dominican Rep.	56.43	0.63	1.03	1.08	69.23	0.74	1.19	1.34
Haiti	53.99	0.84	1.41	1.76	55.11	0.57	0.98	1.65
Jamaica	60.25	0.60	1.03	2.04	58.09	0.89	1.24	1.47
Guyana	56.12	0.60	0.96	2.24	72.76	1.25	1.78	1.95
Grenada	60.74	1.22	1.59	-	59.49	1.15	1.43	-
St. Lucia	58.08	1.11	1.43	-	47.82	1.13	1.20	-
Dominica	63.35	1.33	1.62	-	46.41	1.91	1.81	-
Antigua and Barbuda	55.41	1.33	1.68	-	58.75	1.21	1.39	-
St. Vincent and the Grenadines	61.07	1.12	1.52	-	60.36	1.42	1.46	-
St. Kitts and Nevis	68.40	1.25	1.54	-	59.09	1.55	1.65	-
United States	69.20	0.91	1.34	1.36	40.59	1.22	1.27	1.34
Canada	69.85	0.58	1.07	1.08	54.56	0.80	1.08	1.09

For more information on the sample within each country, please see the country reports and technical information sheets on the LAPOP website, www.LapopSurveys.org.