



## AmericasBarometer, 2012

### *Technical Information*

<i>Country</i>	<i>Year</i>	<i>Sample Size</i>	<i>Weighted/Unweighted</i>	<i>Fieldwork dates</i>
Bolivia	2012	3,029	Weighted	March 3 <sup>rd</sup> to April 22 <sup>nd</sup>

### ***LAPOP AmericasBarometer 2012 round of surveys***

In its effort to collect the highest quality data possible, the Latin American Public Opinion Project (LAPOP) decided to adopt a new sample design for the AmericasBarometer 2012 round of surveys. The two main reasons for this decision were: (1) updating the sample designs to reflect the population changes as revealed by recent census information, and (2) standardizing the sample sizes at the level of the municipality in order to both reduce the variance and provide an initial basis for using multi-level analysis drawing on municipal data. This change in the sample design makes the sample representative by municipality size<sup>1</sup> for all countries, to enable the use of the municipality as a unit of analysis for multilevel statistical analysis.

1. Prior LAPOP surveys were based on the 2000 round of national census data. Since new censuses have been carried out in many countries in Latin America and the Caribbean over the last few years, the samples were updated in order to take into account population shifts, so that sample designs are based on the most current population distributions available (by sex and age and also across geographical units within each country). Unfortunately, not all nations in our sample had updated census data available at the time LAPOP designed the 2012 AmericasBarometer. We plan to integrate new census information for future rounds as they become available.

<sup>1</sup> The new sample design included three different strata of municipalities classified according to their size. Municipalities were grouped in sizes appropriate for the country. One common grouping was (1) Municipalities with less than 25,000 inhabitants, (2) Municipalities with between 25,000 and 100,000 inhabitants, (3) Municipalities with more than 100,000 inhabitants.

2. With the objective of making it possible to perform subnational multi-level analyses and therefore assess the impact of both contextual and individual level characteristics at the subnational level, LAPOP adopted a new strategy for designing survey samples that allocate a somewhat larger number of cases to smaller municipalities within each country. Recent studies have demonstrated the importance of considering both the effects of municipal as well as regional characteristics on citizens' attitudes and behaviors; however, multilevel analyses are only feasible if a reasonable number of interviews are carried out in each municipality, and if those interviews are reasonably well distributed throughout each municipality. Prior LAPOP samples were PPS2 adjusted to the municipal level, but this meant that some municipalities had a very small number of interviews, while others were quite large. A single large municipality, e.g., the capital of the country, could have drawn a very larger number of interviews. For the 2012 round, we continued to use PPS in the selection of the municipalities themselves, but established a target minimum sample size for each municipality of 12 respondents for larger countries and 24 respondents in smaller countries, in both cases divided into clusters of six respondents each. The clusters were distributed in direct proportion to the urban/rural breakdown of a given municipality<sup>3</sup>. Thus, by increasing the number of interviews per municipality in the smallest municipalities, LAPOP seeks to facilitate investigating subnational patterns using multilevel modeling techniques. For the larger municipalities, we also retained the PPS approach, but would often subdivide the large cities into districts (or equivalent units) whenever possible so that a large city might have 4 or even 6 PSUs. Our rationale there was to treat the district as a unit for the purposes of calculating the intra-class correlations (rho statistic). The largest gains from this new sample design will come in subsequent rounds of surveys, as aggregated data across time will provide users with larger municipal sample sizes. The 2012 round established the basis for collecting useful data at the municipal level that can be merged with future round of surveys using the same sample design.

Simulations were carried out using the 2010 data set in order to determine the impact of revising the sample designs. Those simulations demonstrated the efficacy of the new design proposal, but required some modification for the largest countries in the sample. At the same time, the 2012 round sample design continue to utilize the very same strata as in prior years in order to maintain the reporting continuity of prior studies.

The remaining pages of this technical note describe the sample design of the Bolivian AmericasBarometer 2012 survey.

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<sup>2</sup> Probability Proportional to Size

<sup>3</sup> It should be noted that in some countries particular circumstances forced some deviation from this norm of 12 and 24 respondents per municipality. Users of the database should examine the variable PSU included in the UNWEIGHTED dataset to find sample sizes per municipality (or subunits of municipalities when the population size of the municipality was very large).

## ***Bolivia 2012 AmericasBarometer Round***

This survey was carried out between March 3<sup>rd</sup> and April 22<sup>nd</sup>, 2012 as part of the LAPOP AmericasBarometer 2012 round of surveys.

The 2012 survey was conducted by Vanderbilt University, and Ciudadania, Comunidad de Estudios Sociales y Acción Pública. The 2012 AmericasBarometer survey in Bolivia received generous support from Swedish Embassy in Bolivia, IDEA International, Vanderbilt University and UNDP.

The project used a national probability sample design of voting-age adults, with a total N of 3,029 people, maintaining the sample size adopted in all previews LAPOP studies in Bolivia since 1998. It involved face-to-face interviews conducted in Spanish, with some interviews in Quechua and Aymara for monolingual speakers of those languages.

The survey used a complex sample design, taking into account stratification and clustering, and weighting. The sample is composed of nine strata representing the departments of the country: La Paz, Santa Cruz, Cochabamba, Oruro, Chuquisaca, Potosí, Pando, Tarija and Beni. Each department was further sub-stratified by municipality size and by urban and rural areas.

The sample consists of 150 primary sampling units and 600 final sampling units (or clusters) including all 9 Departments. A total of 1,908 respondents were surveyed in urban areas and 1,121 in rural areas. The estimated margin of error for the survey is  $\pm 1.78$ .

Table 1 shows the unweighted sample size in each of the nine strata and by municipality size.

**Table 1: Sample sizes by Strata and Municipality Size in the 2012 AmericasBarometer Survey in Bolivia**

<b>Strata</b>	<b>Unweighted Sample Size</b>
La Paz	408
Santa cruz	403
Cochabamba	407
Oruro	305
Chuquisaca	304
Potosí	302
Pando	297
Tarija	301
Beni	302
<b>Total</b>	<b>3,029</b>
<b>Size of Municipality</b>	

More than 100.000 inhabitants	1,113
Between 25.000 and 99.99 inhabitants	421
Between 2.000 and 24.999 inhabitants	1,495
<b>Total</b>	<b>3,029</b>

A total of 300 interviews were conducted in each of the 6 least populated departments, while 400 interviews were conducted in the three departments with large populations. The sample is weighted at the strata level, correcting for the oversampling in smaller departments and giving each Department the correct proportional weight according to their population size.

Quotas for gender and age were adopted since multiple recalls in a national sample such as this are impractical from a cost standpoint. Our experience shows that even three recalls leave the sample with a notable gender imbalance (more women than men). Rather than have to include post-hoc weights to adjust for this sample error, we resolve the problem in the field via quotas.

### ***Weighting of the Bolivia datasets***

The AmericasBarometer samples of Bolivia are not self-weighted. The dataset contains a variable called WT which is the “country weight” variable. The variable “WEIGHT1500” should be activated to produce representative national results. 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. In SPSS this is done via the “weight” command.

The country report was written by Daniel Moreno, Educardo Córdova Eguívar, Vivian Schwarz-Blum, Gonzalo Vargas Villazón, and Miguel Villarroel Nikitenko. Readers can access the publication as well as the questionnaire through a link on the LAPOP website: [www.AmericasBarometer.org](http://www.AmericasBarometer.org). Further details of the sample design are contained in the country report.