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Belgium Methodology Report

Phase 1 Baseline Harmful Alcohol Use Survey

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Project Background

Research Objective

The research objective for the Baseline Harmful Alcohol Use Survey is to develop a Global Harmful Use of Alcohol Module and collect baseline data for AB InBev's initiative to reduce the harmful use of alcohol in pilot cities in seven countries. These seven countries include Belgium, Bolivia, Brazil, China, Mexico, South Africa and the U.S. Gallup selected control cities in each of the seven countries to allow for a comparison between program and control cities in each country. This technical report covers methodological details for the fieldwork conducted in Leuven and Antwerp (Belgium) during the Phase 1 Baseline Harmful Alcohol Use Survey

Research Impact

AB InBev aims to improve the health and well-being of its consumers and their communities by meaningfully reducing alcohol-related harm and its effects on individuals and society. The Global Harmful Use of Alcohol Module will assist AB InBev in achieving its Global Smart Drinking Goals, which include reducing the harmful use of alcohol in nine cities by 2020, creating global best practices by 2025, increasing alcohol health literacy by 2025 and creating social marketing campaigns by 2025. The Global Harmful Use of Alcohol Module will assist AB InBev in achieving its Global Smart Drinking Goals because it measures harmful alcohol use and knowledge about the harms of excessive alcohol use. As a result, AB InBev will be able to better target specific at-risk populations, along with their respective alcohol-related behaviors and attitudes, to design interventions that inform the public about harmful alcohol use and reduce the harmful use of alcohol in various cities around the world.

Belgium Methodology

Program City: Leuven
Control City: Antwerp
Dates of Interviewing: Nov. 16–Dec. 17, 2016
Mode of Interviewing: Phone — CATI (landline and mobile)
Languages: Dutch, French

AB InBev decided to implement its program in the city of Leuven, a relatively small city with a disproportionate student population. Only three cities in Flanders have similarly high numbers of college students: Ghent and Antwerp. For cultural and linguistic reasons, Gallup recommended restricting the search of a control city to the Dutch-speaking Flanders region. Antwerp District (old city) was, therefore, selected as a control city.

Table 1. Socio-demographic characteristics of Leuven and Antwerp

City name	Region	Population size	% Muslim	Average household income	Unemploy-ment rates	Number of college students
Leuven	Flanders	92,704	7%	26,500 €	3.20%	40,000
Antwerp	Flanders	517,042	18%	36,300 €	6.10%	21,100

Sampling

The target population was the non-institutionalized adult population aged 18 and older living in the territory of Leuven and Antwerp. Researchers completed all sampling at the city level – separate sample files were used for each city. Due to the high mobile phone penetration in the country and especially in urban areas, researchers used a dual sampling frame — landline and mobile. Researchers used a random digit dialing (RDD) landline sample and a listed mobile sample for this study. The distribution of the total sample and completed interviews appears below.

Leuven	Total Records in the Sample	%	Completes	%
Total Leuven	24,169	100	1,504	100
Landline Leuven	14,153	59	519	35
Mobile Leuven	10,016	41	985	65

Antwerp	Total Records in the Sample	%	Completes	%
Total Antwerp	31,868	100	1,589	100
Landline Antwerp	21,806	68	566	36
Mobile Antwerp	10,062	32	1,023	64

Researchers created the landline sample by identifying all different phone number blocks provided by the phone operator. A telephone number in Belgium is a sequence of nine or 10 digits (Phone Format: Area Code + Exchange Code + Random Number). For residents of Leuven and Antwerp to be selected, researchers confined the sample to city-specific area codes.

Leuven

Area Code	Sample	%
+3216	14,167	100

Antwerp

Area Code	Sample	%
+3232	13,020	60
+3233	2,325	11
+3234	427	2
+3235	3,084	14
+3236	1,798	8
+3237	483	2
+3238	698	3

The last step in creating a landline RDD sample is the selection of the seeds. Once selected, a random number with length N=2 to N=4 is added. For an individual country the length of N does not differ. The random numbers are generated using the Mersenne Twister. The Mersenne Twister is a pseudo-random number generator based on the Mersenne prime $2^{19937}-1$. The seed and the generated random number then create the RDD number which is screened against business phone numbers and Do-Not-Call registries.

For the mobile sample, researchers used a listed sample from the Bisnode Consu-Matrix, which is the largest consumer database in Belgium. This database was created using official population sources (Belgian Post, National Institute for Statistics) and commercial sources (Yellow Pages). It currently contains 95,654 mobile phone numbers.
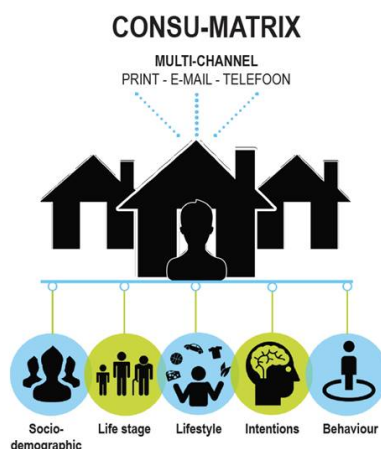
- **Has the sample been verified?**
  Every selection made in Consu-Matrix is subject to quality control.

- **Would transient populations (like students) be included in the sample?**
  The age group 18-34 is likely to include students, but the listed mobile sample includes only Leuven phone exchanges. Students with mobile phone exchanges from another area were, therefore, not included in the sample. Different sampling

strategies will be required to specifically target or oversample the student population if needed in future fieldwork.

- **How frequently is the sample updated/cleaned?**
  The sample selection is up-to-date. There is weekly integration of Do Not Call numbers. Prisons and other institutionalized persons are also excluded.

- **Are there any segments of the population that are excluded from the sample frame?**
  Do Not Call numbers, exclusion of prisons, and institutionalized persons.

- **How many cases exist within the sample for each city?**
  The potential of available mobile phone numbers in Leuven and Antwerp is:

	Gender	Age	Mobile phone numbers
Antwerp	Female	18-34	10,440
		35-54	14,016
		55-75	9,384
	Female Total		33,840
	Male	18-34	10,691
		35-54	20,317
		55-75	13,784
	Male Total		44,792
Antwerp Total			78.632
Leuven	Female	18-34	2,273
		35-54	2,770
		55-75	1,817
	Female Total		6,860
	Male	18-34	2,759
		35-54	4,604
		55-75	2,799
	Male Total		10,162
Leuven Total			17,022
Grand Total			95,654

From the total database, researchers drew and used a representative sample of 10,000 numbers for Leuven and 10,000 numbers for Antwerp for this survey.

Completed interviews per sample frame

City	Landline Frame	Mobile Frame	Total
Leuven	528	976	1504
Antwerp	586	1003	1589
	1114	1979	3093

Upon dialing the selected phone number, interviewers performed random selection of the respondent by using the next birthday method. Because mobile phones are personal devices, the person answering the phone is the interviewee (pending meeting age and residency requirements). Once the randomly selected respondent is on the phone, they were asked to confirm their age. Only respondents over 18 years of age were eligible to participate in the survey. For both landline and mobile phone samples, interviewers also screened respondents based on current place of residence. Respondents not living in these locations were dropped from the sample.

Fieldwork

All interviewers went through a rigorous training protocol that covered topics such as interview protocol, screening, probing, remaining neutral, expressing appreciation, and handling refusals appropriately.

Fieldwork Stats	
Average total interviews/interviewer	47
Number of interviewers	66
Number of days	28
Min interviews/day	9
Max interviews/day	325
Average interviews/day/interviewer	5.8
One attempt	851
Two attempts	947
Three or more attempts	1295

Interviewers made at least three attempts to reach a person in each household, spread over different days and times of the day. When needed, interviewers made appointments for callbacks that fell within the survey data collection period. Fieldwork took place over the course of one month between November 16, 2016 and December 17, 2016.

Distribution of completed interviews by date

Date	Leuven	Antwerp	Total
11/16/2016	34	30	64
11/17/2016	44	38	82
11/18/2016	4	26	30
11/19/2016	0	26	26
11/21/2016	51	35	86
11/22/2016	62	35	97
11/23/2016	53	33	86
11/24/2016	67	29	96
11/25/2016	35	16	51
11/26/2016	17	14	31
11/28/2016	25	58	83

11/29/2016	19	47	66
11/30/2016	58	33	91
12/1/2016	61	0	61
12/2/2016	21	37	58
12/3/2016	4	5	9
12/5/2016	11	84	95
12/6/2016	90	103	193
12/7/2016	86	90	176
12/8/2016	31	103	134
12/9/2016	80	74	154
12/10/2016	11	49	60
12/12/2016	146	119	265
12/13/2016	80	124	204
12/14/2016	186	139	325
12/15/2016	65	187	252
12/16/2016	106	55	161
12/17/2016	57	0	57

Interviewers fluent in both Dutch and French were available but the overwhelming majority of interviews in each city were conducted in Dutch. The average length of a completed interview was 13 minutes and 49 seconds in Leuven; 13 minutes and 48 seconds in Antwerp. Length of interview provided by phone interviewing centers excludes the screening portion of the interview (respondent selection, age and city residence verification, obtaining respondent consent). Interview start time is recorded when an eligible respondent has been located and has consented to participate. Thus, the total length of the phone call may be slightly longer for each respondent.

Languages used per city

	Leuven	Antwerp	Total
Dutch	1504	1586	3090
French	0	3	3
	1504	1589	3093

Interview lengths per city

	Leuven	Antwerp
Mean	0:13:49	0:13:48
Median	0:13:24	0:13:10

Interviewers reported that initially some respondents seemed confused by the reference to "Antwerp." Some thought it referred to the entire province. Researchers amended the text of the screening question to specify that "Antwerp" implied the *city of Antwerp*.

Response Rates

Gallup calculates response rates according to the most recent AAPOR guidelines.
The *Ninth Edition of* Standard *Definitions*: *Final Dispositions of Case Codes and Outcome*

Rates[1] for Surveys clearly distinguishes between the response rate and the cooperation rate, covers household, telephone, mail, and Internet modes of administration, discusses the criteria for ineligibility, and specifies methods for calculating refusal and noncontact rates.

As per AAPOR guidelines, Gallup uses the following formula to calculate response rates for dual-frame studies (landline and mobile):

Combined response rate = $[(RR_{LL}*K_{LL}) + (RR_{CP}*(1-K_{LL}))]/100$

Where RR_{LL} is the landline response rate, K_{LL} is the proportion of the total number of completed interviews coming from the landline frame, and RR_{CP} is the cell phone response rate. The landline and cell phone response rates are calculated as follows:

$$RR3_{LL} = \frac{I}{(I + P) + (R + NR + O) + [(UH)e_2] \, e1 + [(UO)e_1]}$$

$$RR3_{CP} = \frac{I}{(I + P) + (R + NR + O) + [(UH)e_2] \, e1 + [(UO)e_1]}$$

Where: e_1 = Estimated Percentage of Screener Eligibility (i.e., the proportion of households known to be eligible at the household-level that are estimated to have an eligible respondent residing there) and e_2 = Estimated Percentage of Household Eligibility (i.e., the proportion of cases that are of unknown eligibility at the household-level and it is unknown if an eligible respondent resides there) In short, e_2 is for all known units (i.e., all known households / [all known households + all known non-households]) and e_1 is for all known households whose eligibility status at the household-level is known (all known households eligible to do the full survey / [all known households eligible to do the full survey plus all known households not eligible to do the survey]).

Final response rates for the cities of Leuven and Antwerp were very similar:

	Leuven	Antwerp
Response Rate	13.7%	13.9%

Weighting

To ensure that the two samples are representative of the adult population of Leuven and Antwerp, Gallup staff prepared weights separately for each city based on available population demographics. The weighting process of the two-city samples was as follows:

- Gallup constructed base sampling weights to take household size into account. Researchers capped the household size at four residents aged 18 and older for respondents contacted on a landline. Gallup used this step to adjust for unequal probability

[1] The most recent Standard Definitions Report is available here: http://www.aapor.org/Standards-Ethics/Standard-Definitions-(1).aspx

of selection as residents of relatively large households have a lower probability of selection for the survey.
- Respondents who were in households with both landline and cellphone were given a weight of 0.5 while those with landline or cellphone were given a weight of one (1).
- Gallup constructed post-stratification weights to correct for age, gender and education of each city due to non-response.

Researchers used 2013 data from the population source Eurostat – the statistical office of the European Union - for constructing the weights.

Leuven

Age	Sample %	Population %	Weighted %
18 to 29	16	18	18
30 to 49	36	35	36
50 to 64	31	25	25
65+	17	22	20

Gender	Sample %	Population %	Weighted %
Male	47	49	49
Female	53	51	51

Education[2]	Sample %	Population %	Weighted %
Lower secondary or less	5	28	19
Upper or postsecondary	22	39	43
Higher education or more	73	33	38

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[2] The Belgium-specific education categories used for creating weights were:

(No formal education)
Preschool
Incomplete primary school
Primary
Secondary general lower
Secondary general higher
Professional
Technical
Higher education (bachelor's degree)
Higher education/University (master's degree)
Doctorate/Post-university

Antwerp

Age	Sample %	Population %	Weighted %
18 to 29	16	19	19
30 to 49	38	34	35
50 to 64	27	24	24
65+	19	22	22

Gender	Sample %	Population %	Weighted %
Male	47	49	48
Female	53	51	52

Education	Sample %	Population %	Weighted %
Lower secondary or less	13	28	27
Upper or postsecondary	34	39	40
Higher education or more	52	33	34

Margin of Error

The design effect calculation reflects the influence of data weighting and includes the effect of stratification and clustering.

The margins of error (MOEs) presented in this report are calculated based on reported proportions for each program/control area, assuming a 95% confidence level. The MOE also includes the approximate design effect (DEFF) due to weighting for the total program/control sample. The DEFF is a measure that compares the ratios of sampling variance from the actual survey sample to a simple random sample of the same overall sample size. For example, a DEFF of two (2) indicates that the survey estimate has twice as much sampling variance as a simple random sample (SRS) of the same size. Since MOEs and design effects are different for different variables and depend on the level of clustering (ICC) exhibited by each variable, the MOEs and DEFFs for key demographic variables by city appear below.

The first table shows the weighted percentage estimates for each demographic variable by city, along with the design-adjusted 95% confidence interval for the estimate. For example, in the case of Leuven, the survey estimate is that 49.0% of the population aged 18 and older is male. The MOE shows the range around which the estimate can be expected to vary from the true value in the population, taking into account the standard error. Researchers compute the MOE by adding and subtracting twice the standard error (for 95% level of confidence) to the indicator estimate. For example, the MOE for the estimated male population ranges from a lower end of 45.5% to an upper end of 52.5% in Leuven. This means that we can be confident with 95% assurance that the true value of the indicator in the population is between 45.5% and 52.5%.

			Leuven	Antwerp
Gender	Male	Estimate	49.0%	48.3%
		Lower	45.5%	45.4%
		Upper	52.5%	51.2%
Age	18 to 29	Estimate	18.2%	18.7%
		Lower	15.6%	16.5%
		Upper	21.1%	21.2%
	30 to 49	Estimate	36.4%	35.1%
		Lower	33.1%	32.4%
		Upper	39.8%	37.8%
	50 to 64	Estimate	25.4%	24.1%
		Lower	22.5%	21.8%
		Upper	28.5%	26.6%
	65+	Estimate	20.1%	22.1%
		Lower	17.3%	19.7%
		Upper	23.2%	24.7%
Years of Education	0 to 8 years	Estimate	3.2%	6.7%
		Lower	1.9%	5.1%
		Upper	5.4%	8.7%
	9 to 15 years	Estimate	56.5%	57.0%
		Lower	53.2%	54.2%
		Upper	59.8%	59.7%
	16+ years	Estimate	38.0%	33.9%
		Lower	35.1%	31.6%
		Upper	41.0%	36.4%
Wealth Quintiles	Poorest 20%	Estimate	15.4%	24.3%
		Lower	12.8%	21.7%
		Upper	18.4%	27.1%
	Second 20%	Estimate	19.9%	20.1%
		Lower	17.1%	17.8%
		Upper	23.0%	22.6%
	Middle 20%	Estimate	20.1%	19.9%
		Lower	17.4%	17.7%
		Upper	23.2%	22.2%
	Fourth 20%	Estimate	22.0%	18.0%
		Lower	19.3%	16.0%

			Leuven	Antwerp
		Upper	24.9%	20.2%
	Richest 20%	Estimate	22.6%	17.7%
		Lower	20.1%	15.9%
		Upper	25.4%	19.7%
	Single/Never married	Estimate	36.2%	30.5%
		Lower	32.8%	27.9%
		Upper	39.7%	33.2%
	Married/ Domestic partner	Estimate	47.0%	51.6%
Marital Status		Lower	43.5%	48.7%
		Upper	50.5%	54.5%
	Separated/ Divorced/ Widowed	Estimate	16.8%	17.9%
		Lower	14.2%	15.8%
		Upper	19.8%	20.2%

The second table shows the DEFFs for each variable by city, along with the average. Researchers calculate the average DEFF over the 16 values presented for each area. For example, in the case of Leuven the DEFF is 2.04, suggesting that the average variance of the Leuven sample is twice as high as the variance from an SRS.

		Leuven	Antwerp
Gender	Male	1.93	1.38
Age	18 to 29	2.00	1.48
	30 to 49	1.88	1.29
	50 to 64	1.85	1.31
	65+	2.09	1.49
Years of Education	0 to 8 years	3.66	2.07
	9 to 15 years	1.73	1.28
	16+ years	1.44	1.04
Income Quintile	Poorest 20%	2.39	1.60
	Second 20%	2.15	1.49
	Middle 20%	2.04	1.33
	Fourth 20%	1.78	1.25
	Richest 20%	1.57	1.06
Marital Status	Single/Never married	2.01	1.36
	Married/Domestic partner	1.92	1.38

	Leuven	Antwerp
Separated/Divorced/Widowed	2.15	1.37
Average DEFF	2.04	1.39