DESCRIPTION OF THE METHODOLOGY AND RESEARCH PROCEDURE

A STUDY ON ALCOHOL CONSUMPTION BETWEEN YOUTH AND ADULTS OF THE FEDERAL DISTRICT

SEPTEMBER, 2017

1. INTRODUCTION

Instituto Olhar is a company specialized in opinion polls and has been active in Latin America since 2003. In its conception, the company was formatted to attend projects by customization, and flexibilizing to meet specific demands, from low complexity projects to projects with a high level of methodological rigor, among which we can highlight probabilistic studies in the areas of public safety, health, epidemiology, employment, intra-structure and transportation, education in the social and political sphere.

Among the special projects (probabilistic research) and with a high level of rigor, the following stand out:

:: UNODC - United Nations Office on Drugs an Crime - Public security research;

:: CRISP - Center for the Study of Crime and Public Security - Research on Victimization, Fear and Citizen Culture;

:: FIOCRUZ - Health research;

:: UFMG - Federal University of Minas Gerais - Research on epidemiology, corruption, education, public policies, economics and others;

:: ILO - International Labor Organization - Survey on forced labor;

:: Federal Government - Research on airport infrastructure, energy, institutional image, public services, among others;

:: The University of Texas as Austin - Zica Virus Study;

:: Government of Minas Gerais - Public security studies (lethality of police action, resolution, evaluation of police services, among others), evaluation of public services (health, education, farm, among others);

THE PROJECT

The proposed research project has the purpose of methodologically addressing the scope of probabilistic research on alcohol consumption, together with the young population (13 to 18 years) and adult (18 years or more) residing in control municipalities in the Federal District, Brazil , characterizing the habit of consumption (frequency, quantity, type of consumption, etc.), consumer profile (age, gender, socioeconomic classification, etc.), as well as to investigate the social, cultural and family influences of consumer propensity.

2. METHODOLOGY

The purpose of this study is to present quantitative research techniques through personal interviews with the adult population and self-applied by electronic means to the youngsters, to collect information on the volume, quantity of consumption and profile of alcohol consumers, generating results that are statistically representative of the students of the Federal District.

3. QUANTITATIVE RESEARCH – ADULTS

This research stage will be carried out with adults (18 years and over) with fixed residence in the municipalities of *Taguatinga, Ceilândia, Brasília* (Federal District) and *Valparaiso* in *Goiânia*. The interviews will be individual and face-to-face in the households according to the sampling procedures.

The sample is defined according to the table below:

Table 1 - Sample distribution

County	Population	Sample	Sample	Confidence
Taguatinga	361,063	1,500	2.5%	95%
Ceilândia	402,729	1,500	2.5%	95%
Brasília (Pilot plan)	209,855	500	4.4%	95%
Distrito Federal*	2,570,160	3,500	**2.22%	95%
Valparaíso de Goiás	132,982	1,500	2.5%	95%

Source: IBGE - Brazilian Institute of Geography and Statistics (2010).
* Record of the sum of the municipalities of Taguatinga, Ceilândia and Brasilia (Pilot plan).
** Error adjusted for sample by conglomerates in multiple stages. Compensation rate 50%. Sample adjusted for 1,944 interviews

It is important to note that the research areas were listed and not drawn, as the definition of the sample is not proportional to the population size, but a representative analysis (by expansion) is expected for the Federal District. In this sense a reverse procedure, based on the procedures of a by conglomerates with multiple stages of selection, in order to estimate the probability of selection of the individuals, adjust the sample error and proceed with calculation of the expansion factor, with weight adjustment proportional to the population representativeness of the selected areas.

The use of cluster sampling, in which the sampling unit is a set of population elements, is frequently and quite useful due to ease and cost reduction, however, there is an increase in imprecision caused by the possible correlation within and between clusters. Some good references in cluster sampling plans are: Pessoa and Nascimento Silva (1998), Skinner, Holt & Smith (1989). To correct for this increased variability, it is necessary to increase the sample size using a known correction value with *deff* (design effect), ratio between the inaccuracies associated with the estimation using simple random sampling as a reference. In practice, 1.4 or 1.5 (correction in the sample size between 40% and 50%) is considered to safeguard the accuracy, regarding the appropriate treatment of the data for analysis, due to the different probabilities of inclusion of each cluster, object of study and discussion in national and international literature. (Martins et al., 2012).

For the final calculation, another correction factor to be considered is the non-response rate. The maximum rate considered was 20%, since the study is subject to different data losses, which include unoccupied households, non-existent households, refusals, incomplete interviews, among other situations.

Considering these two increases in the sample: 50% due to the design effect and 20% due to non-response, the initial sample would be 3,500 / (1,5 * 1,2) = 1,944, resulting in a margin of error of at most 2.22%, which is the most appropriate value for reference.

The weighting can be used in order to balance the proportionality of the *Taguatinga, Ceilândia* and *Brasilia* (Pilot Plan) regions within this universe and to expand the results for the Federal District. Different weighting methods and their importance for statistical inference are discussed by Potthoff et. al. (1992).

The sample will be conducted in a random process until the selection of the census tracts and domiciles. The individuals will be interviewed according to a proportional quota, in order to guarantee participation in characteristics equal to the universe, with control of gender and age.

3.1 Sampling

In order to guarantee a probabilistic study until the selection of the domiciles and representative of the characteristics of the adult population, we describe the procedures of selection, giving a known and different chance of 0 of all the elements of the universe being part of the research.

The sampling process will be carried out based on data from the 2010 IBGE Census reference, according to the following steps:

Step 1 - In each municipality / region (Ceilândia, Taguatinga and Valparaíso) the census tracts (PSUs) will be collected and randomly selected 75 sectors (PSUs), with probability of proportional selection of the resident population in the selected sectors, in 20 selected households, with adults with a profile determined to the research focus. For the region of Brasilia (Pilot Plan) will be drawn 25 sectors (PSUs) contemplating 20 domiciles in each sector (PSU). All sectors selected will have urban characteristics.

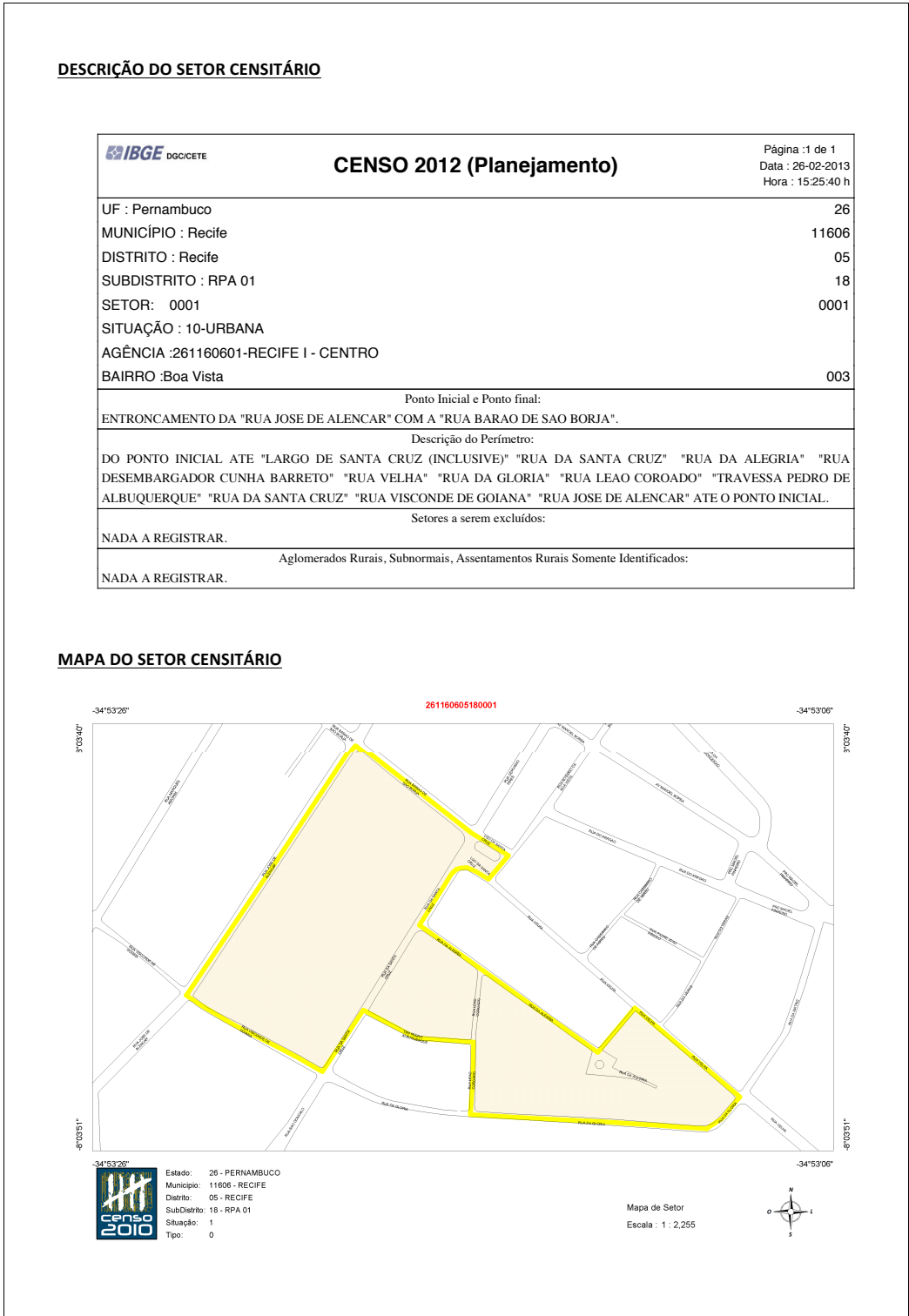Table 2 - Characteristics of research areas and census tracts (PSUs)

County	UF	Total population	Permanent and collective private households	Permanent private households	Total census tracts	Sectors with 50 or more permanent households
BRASÍLIA *	DF	209,855	79,812	78,797	440	423
CEILÂNDIA **	DF	402,729	119,126	118,829	605	601
TAGUATINGA **	DF	361,063	113,779	113,308	699	653
VALPARAÍSO DE GOIÁS	GO	132,982	39,570	39,405	177	166

Source: IBGE - Brazilian Institute of Geography and Statistics (2010).
*Pilot plane
** Satellite City

Figure 1 - Descriptive model of census tracts (PSUs)

DESCRIÇÃO DO SETOR CENSITÁRIO

IBGE DGC/CETE

CENSO 2012 (Planejamento)

Página :1 de 1
Data : 26-02-2013
Hora : 15:25:40 h

UF : Pernambuco	26
MUNICÍPIO : Recife	11606
DISTRITO : Recife	05
SUBDISTRITO : RPA 01	18
SETOR: 0001	0001
SITUAÇÃO : 10-URBANA	
AGÊNCIA :261160601-RECIFE I - CENTRO	
BAIRRO :Boa Vista	003

Ponto Inicial e Ponto final:

ENTRONCAMENTO DA "RUA JOSE DE ALENCAR" COM A "RUA BARAO DE SAO BORJA".

Descrição do Perímetro:

DO PONTO INICIAL ATE "LARGO DE SANTA CRUZ (INCLUSIVE)" "RUA DA SANTA CRUZ" "RUA DA ALEGRIA" "RUA DESEMBARGADOR CUNHA BARRETO" "RUA VELHA" "RUA DA GLORIA" "RUA LEAO COROADO" "TRAVESSA PEDRO DE ALBUQUERQUE" "RUA DA SANTA CRUZ" "RUA VISCONDE DE GOIANA" "RUA JOSE DE ALENCAR" ATE O PONTO INICIAL.

Setores a serem excluídos:

NADA A REGISTRAR.

Aglomerados Rurais, Subnormais, Assentamentos Rurais Somente Identificados:

NADA A REGISTRAR.

MAPA DO SETOR CENSITÁRIO

Estado: 26 - PERNAMBUCO
Municipio: 11606 - RECIFE
Distrito: 05 - RECIFE
SubDistrito: 18 - RPA 01
Situação: 1
Tipo: 0

Mapa de Setor
Escala : 1 : 2,255

Step 2 - Knowing the sectors (PSUs), will be randomly selected an address as starting point in each sector (PSU), based on the household register for statistical purposes of the IBGE / 2010. Defining the starting point will be applied the systematic jump system proportional to the number of households in each sector (the jump system allows the researcher to circulate the entire research area, ensuring randomness and coverage of the research area). Format: At each interview the researcher will jump N households to start the selection of another home, being valid is the approach and attempt to interview, in case of success the high procedure is repeated and in case of failure visit the address immediately to the lake - first the one immediately to the left and later to its right and the jump procedure is resumed).

Step 3 - Selecting the address, the approach and characterization of the sex and age of the residents is carried out and selecting a representative that is in the search profile. There will be an insistence of another 2 rounds to the address before proceeding with the replacement.

Control of Census Sectors (PSUs) - Each census tract (PSU) will be controlled by a listing form, where all the addresses addressed by the survey will be registered and the occurrences controlled, in order to estimate more accurately the probability of selection of the individuals residing in the areas of research, as well as ensure the correct application of the rules of jumping and selection of households. This document will also control the refusals for later estimation. In projects like this one has the expectation of a rate of refusals between 20% and 30%. All households covered by the survey will be controlled as follows: (1) Respondent, (2) Residents outside the age group, (3) House empty, (4) Not answering (3 attempts), (5) Denial, (6) Inaccessibility (doorman, security, etc.), (7) Class domicile, (8) Incapacitation and no informant.

Figure 2 - Sample file and sample

STARTUP AND SAMPLE

CENSORSHIP CODE	261160605180001
REGION	Nordeste
ESTATE	Pernambuco
COUNTY	Recife
DATE OF INITIATION OF THE	_____ / _____ / _____
DATE OF SECTOR TERMINATION	_____ / _____ / _____
QUANTITY OF DOMAINS OF THE CENSITIVE SECTOR	292
SAMPLE	21

FIELD FOR OBSERVATIONS:

Name of the interviewer: _____

CONTROL OF INTERVIEWS HELD IN THE SECTOR

CENSORSHIP CODE

	House drawn	Address (street, number)	Number of residents	Number of persons aged 18 years and over	Names of respondents
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					

CENSORSHIP CODE

			OCCURRENCES / REPLACEMENT:			
Nº HOUSE	BLOCK	DATE TIME	JRO (STREET, AVENUE, ETC.)	Nº LOG.	OCCURRENCE (1st and 2nd TRIALS)	STATUS
		__/__/____ :				
		__/__/____ :				
		__/__/____ :				
		__/__/____ :				
		__/__/____ :				
		__/__/____ :				
		__/__/____ :				
		__/__/____ :				
		__/__/____ :				
		__/__/____ :				
		__/__/____ :				
		__/__/____ :				
		__/__/____ :				
		__/__/____ :				
		__/__/____ :				
		__/__/____ :				
		__/__/____ :				
		__/__/____ :				

FIELD SITUATION: (1) Respondent, (2) Residents outside the age group, (3) Empty house, (4) Not answering (3 attempts), (5) Denial, (6) security, etc.), (7) collective domicile, (8) incapacitation and no informant.

3.2 Control Procedures

In order to ensure greater control and quality of the interviews, the following procedures will be adopted:

Procedure 1 - There will be audio recording of 100% of interviews. The recording is fundamental to certify the correct application of the research questionnaire, as well as confirming the correct marking of the response options.

Procedure 2 - The geographic location of the interviews will be captured, measuring the location, date, time and time of interviewing.

Procedure 3 - Audio audits of 20% of the questionnaires will be performed randomly, as well as verification of the cases not approved in the consistency analysis. Should any professional fraud be detected, their questionnaires will be 100% verified, with telephone contact made to the interviewees. Inconsistent questionnaires will be canceled and returned to the field at no additional cost to the contractor.

Procedure 4 - The route in the field of the interviewers will be monitored in the field, in order to verify if they fulfilled the search route in order as directed in order to ensure greater control and quality of the interviews, the following procedures will be adopted:

3.3 Procedures for Data Collection

Research System and Equipment: All research will be conducted electronically through the survey system SurveyTogo and use of 7-inch tablets Samsung brand. All tablets will be equipped with data chip, for transmission of the files of interviews in real time. If the interviews happen in areas without 3G mobile coverage, the files will be stored on the tablets and synchronized automatically, once they have access to 3G or Wi-Fi network.

The search system allows the configuration of any type of questions (univariables, multivariables, matrix, list, etc.), as well as advanced features for question jumps, logic assignments, calculations, checks / confirmations, information consistency, control of time, audio recording, video, photo record and multimedia features.

Team:

• 01 Project Manager: Responsible for the planning of research, staff training, organization, control of research (execution, quality and schedule) and budget management, customer relationship and resolving barriers.

• 01 Research Assistant: Support the organization of research documents and procedures, support to coordinators, interviewers and checkers, transfer and distribution of materials and project information flow.

• 02 Coordinators: Responsible for directing, controlling and supervising the data collection team and checking the interviews.

• 20 Interviewers: Responsible for the selection of households, presentation of the research, sensitization of interviewees and conducting interviews.

• 04 Checkers: Responsible for verification and certification of interviews, alerting to errors made and improvement of the investigation procedures.

02 • Statistics: Responsible for sample design, procedures and rules of selection interviews, control and handling of the database, data consistency analysis, application of

statistical tests and configuration of the electronic search system.

Execution: The research will be carried out in xx days, being applied questionnaires in all the days of the week, even if there are holidays.

4. QUANTITATIVE RESEARCH - STUDENTS

This stage of research will be carried out with youngsters (aged between 13 and 18 years), students of public or private education in the municipalities / regions of *Taguatinga, Ceilândia, Brasilia* (Pilot plan) in the Federal District and Valparaiso in Goiânia. The interviews will be individual and self-filled electronically in the classroom, in the selected schools.

There will be random selection of 1 class per teaching phase (8th and 9th grade of elementary and 1st, 2nd and 3rd year of high school), in the selected schools.

Table 3 - Source: Micro data from the MEC School Census (2016) – Federal District

Federal District	Number of schools		Sample Schools		Estimation of interviews	
Class	Private	Public	Private	Public	Private	Public
Fundamental to high	115	52	11	5	671	305
Only Fundamental	63	154	6	14	366	854
Only High	10	39	1	4	61	244
Total	188	245	18	23	1,098	1,403
General total	433		41		2,501*	

* The number of interviews was estimated taking into account that 80% of the students will have the consent of the parents and the average number of students per high school (30 students) and elementary (25 students).

Table 4 - Source: Micro data from the MEC School Census (2016) – Survey Region

Federal District	Sample Schools		Estimation of interviews		Total
Region	Private	Public	Private	Public	
Taguatinga	5	10	305	610	915
Ceilândia	5	10	305	610	915
Plano Piloto	6	5	366	305	671
Total	16	25	976	1,525	
General total	41		2,501		2,501*

* The number of interviews was estimated taking into account that 80% of the students will have the consent of the parents and the average number of students per high school (30 students) and elementary (25 students).

Table 5 - Source: Micro data from the MEC School Census (2016) - Valparaíso de Goiás

Valparaíso de Goiás	Number of schools		Sample Schools		Estimation of interviews	
Class	Private	Public	Private	Public	Private	Public
Fundamental to high	13	7	12	7	732	427
Only Fundamental	4	0	3	0	183	0
Only High school	0	4	0	3	0	183
Total	17	11	15	10	915	610
General total	28		25		1,525*	

* The number of interviews was estimated taking into account that 80% of the students will have the consent of the parents and the average number of students per high school (30 students) and elementary (25 students).

4.1 Sampling

In order to guarantee a probabilistic study the schools will be randomly selected, according to the quantity stratified in the sample description, from the list of accredited institutions and in activity according to the data of the Census School of Mec (2016).

After the selection of the schools, the number of classes per school year will be raised and ordered alphabetically or numerically, in order to cross with some reference of management of the classes in each educational institution, example: In a school with 05 classes of 8th grade, the sorting order will be: 1 (A); 2 (B); 3 (C); 4 (D); 5 (E). And subsequently randomly selected 01 class of each school year, following the same rule.

4.2 Control Procedures

In order to ensure greater control and quality of the interviews, the following procedures will be adopted:

Procedure 1 - All participants must submit a signed consent form by someone responsible, for effective participation in the research. The terms of consent will be digitized and stored on server, with internal and external backup procedures, for up to 03 years.

Procedure 2 - It will be captured the geo-positioning of the interviews, with date, time and time of response of the interviews.

Procedure 3 - In order to certify the participation, connections will be made to all participating schools, in order to ensure correct conduct and effectiveness of the work of data collection professionals.

4.3 Procedures for Data Collection

Research System and Equipment: All research will be conducted electronically through the survey system SurveyTogo and use of 7-inch tablets Samsung brand. All tablets will be equipped with data chip, for transmission of the files of interviews in real time. If the interviews occur in areas without 3G mobile coverage, files will be stored on tablets and automatically synchronized as soon as they have access to 3G or Wi-Fi network.

The search system allows the configuration of any type of questions (univariables, multivariables, matrix, list, etc.), as well as advanced features for question jumps, logic assignments, calculations, checks / confirmations, information consistency, control of time, audio recording, video, photo record and multimedia features.

Team:
• 01 Project Manager: Responsible for the planning of research, staff training, organization, control of research (execution, quality and schedule) and budget management, customer relationship and resolving barriers.
• 01 Research Assistant: Support the organization of research documents and procedures, support to the coordinator, interviewers and consultant, transfer and distribution of materials and project information flow.
• 01 Coordinators: Responsible for directing, controlling and supervising the team of data collection and interview checking.
• 04 Interviewers: Responsible for visiting the schools, distributing the tablets, training the participating students and support.
• 01 Checker: Responsible for verification and certification of interviews and conduct of professionals, alerting for errors and improvement of research procedures.
• 02 Statisticians: Responsible for sample design, interview procedures and rules, database control and handling, data consistency analysis, application of statistical tests and configuration of the electronic search system.

Execution: The research will be carried out in 60 days, being applied questionnaires in the days / hours of operation of the school (Morning, Afternoon and Night).

5 INVESTMENT IN THE PROJECT

The values were calculated according to all the methodological assumptions, equipment, people, costs (transportation, lodging, food, etc.) and services needed to carry out the project.

The analysis of the results and trips for participation in meetings or presentation of the results is not contemplated. The research data will be delivered to databases in the SPSS and / or Excel format, with the code map and other guidelines for identifying the search variables.

Payment terms will be negotiated later.

5.1 Quantitative Research – Adults
:: $ 157,844.00 (including taxes)

5.2 Quantitative Research - Students
:: $ 71.746,00 (including taxes)

6. Alternative research – Adults

County	Population	Sample	Sample error	Confidence Interval
Taguatinga	361,063	750	3.57%	95%
Ceilândia	402,729	750	3.57%	95%
Brasília (Pilot plan)	209,855	500	4.4%	95%
Distrito Federal*	2,570,160	2,000	**2.94%	95%
Valparaíso de Goiás	132,982	1,500	2.5%	95%

Source: IBGE - Brazilian Institute of Geography and Statistics (2010).
* Record of the sum of the municipalities of Taguatinga, Ceilândia and Brasilia (Pilot plan).
** Error adjusted for sample by conglomerates in multiple stages. Compensation rate 50%. Sample adjusted for 1,111 interviews

6.1 Quantitative Research – Adults
:: $ 130,420.00 (including taxes)