

**Customizing Survey Methods to the Target Population -  
Innovative Approaches to Improving Response Rates and Data Quality  
among Hispanics**

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**Abstract**

The explosive growth of the Hispanic/Latino US population has an ever-increasing impact on survey estimates. Additionally, new interviewing challenges are encountered when contacting Hispanic populations compared to non-Hispanic populations due to language, cultural, and immigration issues. These concerns necessitate a review of the current survey methods with regard to the Hispanic population. Traditionally in national studies, survey methodology adaptations to accommodate members of the Hispanic/Latino population have been limited to translating an English instrument into Spanish and to employing Spanish-speaking interviewers. Small-scale surveys targeted at Hispanic/Latino areas and populations have been testing innovative approaches to customize standard methodologies in order to achieve higher response rates and data quality.

One such survey is the Hispanic/Latino Adult Tobacco Survey (H/L ATS) sponsored by the Centers for Disease Control and Prevention (CDC). This in person survey collected data from household members in the colonias, unincorporated and often poor areas that house many immigrants on the Texas-Mexico border just outside of El Paso, Texas. This survey faced numerous challenges in achieving quality data and high response rates among Hispanics in a border community. These obstacles included reluctance to participate due to distrust of outsiders, communication barriers due to linguistic differences, the level of education and acculturation of potential respondents, potential respondents' experience with surveys, and potential fears of participating in a survey in the United States.

This paper describes procedures taken to overcome the challenges faced in conducting the H/L ATS study: specialized development of the questionnaire, innovative approaches to interviewer recruitment and training, and methods used to gain the confidence of participants. The paper also presents lessons learned and suggestions of how these methods could be applied to future studies involving Hispanic populations.

Key Words: Hispanic, culture, response rates, methods, Spanish

## 1. Introduction

The Hispanic population in the United States has changed dramatically over the last 30 years. In 1970, the Census Bureau reported that 9.6 million Hispanics resided in the United States, which accounted for 4.7% of the entire population. That number has more than quadrupled, reaching 44.3 million Hispanics as of July, 2006, 14.8% of the total population (299 million people). The increase in the Hispanic population accounted for 50% of the growth in the U.S. between 2000 and 2006. Also, the growth rate of Hispanics was over three times the growth rate of the entire U.S. population between 2000 and 2006. Based on recent population trends, the Census Bureau estimates that by the year 2050, over 100 million Hispanics will reside in the U.S.<sup>1</sup>

With this increase in the Hispanic population, more and more Hispanics are being sampled and selected to participate in surveys, and surveys must reliably include data from Hispanic residents to be considered representative of the United States, state or local populations. While the Hispanic culture is different than the American culture, many times they are surveyed following the same procedures. However, as an industry, we must review current practices followed in the administration of surveys when Hispanic populations are included in the sample due to their increased representation in the population. This paper identifies potential challenges when interviewing Hispanic populations. Based on our experience with the Hispanic/Latino Adult Tobacco Survey, sponsored by the Centers for Disease Control and Prevention (CDC), we present solutions to these challenges to ensure high response rates and data quality. We also propose ideas of how these procedures may be improved in the future and applied to other studies.

## 2. Current Survey Methods with Hispanic Populations

We must first review current practices followed when interviewing Hispanic populations to understand how these practices can be improved. Dean et. al. summarized concerns and general interviewing practices with Hispanics by stating:

In the U.S., standard practices for conducting Spanish interviews have evolved along with our understanding of cross-cultural methodology. Attending to cultural and linguistic differences among populations when developing a new instrument is costly and time consuming, therefore, using existing questionnaires, of mono-cultural context, is the most frequently used approach in questionnaire development. Although relatively inexpensive, the use of an existing instrument often fails to address semantic, conceptual and normative equivalence. Neglecting to address the comparability of questions can decrease the validity and reliability of measures. Finding sound but inexpensive methods of addressing cultural and linguistic issues during instrument design is a goal that survey research has not yet met. The many approaches developed so far require trade offs between cost (both in terms of money and time) and instrument quality.<sup>2</sup>

This trade off between cost and instrument quality have allowed for a number of translation techniques to be utilized when preparing a questionnaire for non-English speaking populations. Again, according to Dean et. al., the most common are a simple direct translation, translation with back translation, and translation by committee:

- 1) Simple direct translation, the translation of a document by a single individual from its original version to another language, is the easiest and cheapest method used. The most obvious drawback of this approach is that it does not offer ways to verify that the translation is true to the original and that different aspects of the language used are the most appropriate.

- 2) Translation with back translation is a technique that requires at least two individuals. In this method, a bilingual individual translates the instrument from the original or source language to the target language. A second individual, without knowledge of the contents of the original document, translates the document back to the source language. The original and back translations are compared and differences between the documents are addressed. The translation/back translation approach allows the researcher to better assess that the translation is true to the original. The cost of this method rises considerably due to multiple steps and time needed for the process to be finalized.
- 3) Translation by committee requires a group of individuals to arrive at a consensus about the best translation of an instrument after a series of steps.<sup>3</sup>

These translation steps are basic procedures taken to assist in interviewing Hispanic populations. Additionally, it is recommended pre-testing questionnaire items in cognitive interviews situations as a method for improving the quality. It is possible for questions or answer categories to be grammatically correct, use common or literal translations, and not be functionally equivalent. Applying known pre-testing methodologies, such as cognitive interviews, to questionnaire translations before they are fielded is an effective way to improve the quality of data obtained from respondents.<sup>4</sup>

The question we propose in this paper is if translation and pre-testing questionnaire items are enough to effectively interview Hispanic populations. The rest of the paper describes our experience with the Hispanic/Latino Adult Tobacco Survey and the procedures utilized to ensure high response rates and high quality data.

### **3. Hispanic/Latino Adult Tobacco Survey**

RTI conducted the Hispanic/Latino Adult Tobacco Survey (H/LATS) for the Office of Smoking and Health (OSH) at the Centers for Disease Control (CDC). This survey represented the first field use of the H/LATS instrument, which was designed as a standard tool to be tailored to state and local need to understand tobacco use behaviors of specific Hispanic/Latino communities, comparable to other national and state adult tobacco surveys. The H/LATS questionnaire is made up of six core sections which include cigarette smoking, cessation, second-hand smoke, risk perception and social influences, and demographic items. Considerable care was taken in the creation of both the English and Spanish versions of the instrument to help ensure cultural competency in either language. Other questions are available to be added to the core for specific purposes, relating to other tobacco use, cessation, secondhand smoke exposure, health and social influences, policy issues, parental involvement, media exposure, and additional demographic items.

The H/LATS data collection took place in a sample of colonias in El Paso, Texas. Colonias are unincorporated and often undeveloped areas on the Texas-Mexico border that are home to many immigrants from Latin America. Many dwelling units in the colonias lack public utilities and telephone land lines. One of the considerable challenges of the H/LATS was to complete interviews in this community whose residents were notoriously suspicious of outsiders<sup>1</sup>. The questionnaire administered in the El Paso H/LATS included the core set of questions, along with a short set of items of interest to the Texas State Department of Health such as length of tenure in the colonias, venue from which tobacco products were purchased and whether these were located in the United States or Mexico. It also contained a short series of questions to collect statistics on how many households had landline telephones. The survey pretest took place in July 2007, and

the main data collection was conducted in October 2007 through April 2008. The survey was administered in-person in PAPI format.

#### **4. Challenges to the H/LATS**

Having never administered surveys in the colonias of El Paso, the data collection team anticipated a number of challenges that might be encountered throughout the life of the survey. There were four main challenges that were anticipated, which included:

- Sample Creation
- Communication Barriers
- Respondent Experience with Surveys
- Respondent Reluctance to Participate

In this section of the paper we describe these challenges and more fully present the solutions developed to overcome them.

##### **4.1 Sample Creation**

The first challenge encountered for the H/LATS was the creation of an area probability sample. The colonias are unincorporated areas along the Texas/Mexico border and are the home to many immigrants from Latin America. Many of the households lack public resources such as running water and electricity. However, some of the colonias have grown into more established neighborhoods than others, resulting in a wide variety of dwelling units consisting of trailers and one-room sheds to affluent homes. Another interesting aspect of the colonias is that many housing lots contain multiple dwelling units where families live.

In communication with the local health department and other agencies, it was determined that most residents of the colonias receive their mail via P.O. Box. This ruled out the possibility of using postal lists for the creation of our sample. Additionally, it was believed that telephone coverage in the colonias was poor, ruling out the possibility of a telephone survey. Traditionally in these situations, a field enumeration effort is utilized to create the sample frame, also known as counting and listing. This consists of field staff creating a full list of all dwelling units within a selected area. Essentially, they count and then list on hardcopy forms the addresses and/or descriptions of each potential dwelling unit in a given area. This effort can become very expensive and time consuming depending on the size of the sample frame and the difficulties some areas present. Given the time and budget constraints, and also given the difficulty of listing in the colonias due to multiple dwelling units on household lots and the lack of street names and addresses, field enumeration was ruled out as a possibility as well. The project team needed to come up with a way of creating an entire sample frame in a short period of time that would be statistically sound.

Geoframe™ was created as a solution to overcoming the time and cost concerns. Geoframe™ consists of photographing each dwelling unit with a digital camera, while at the same time recording GPS coordinates of the spot from which the picture was taken. This process allowed the project team to create the entire sample frame of 8,990 dwelling units in just over 1 week's time.

There are numerous advantages to this process as compared to “traditional” field enumeration. The use of a digital camera and the recording of the GPS coordinates replaces hardcopy addresses and descriptions of houses, eliminating the need for data keying of the hardcopy forms. Instead

of receiving these descriptions, the interviewer actually receives a form with a picture of the selected dwelling unit, maps that show where the dwelling unit is located, and pictures of the two houses to the right of the selected household, and pictures of the two houses to the left of the selected household that provide context for the interviewer. Additionally, Geoframe™ is quicker and more cost effective than field enumeration. One can list households as quickly as they can take a picture, eliminating the need to draw extra maps and write down descriptions of households.

Geoframe™ allowed the project team to create an entire sample frame in a short period of time and within budget constraints. Additionally information about Geoframe™ and the creation of this sample frame can be found in “*Geoframe™: A New Method of Field Enumeration*” Leslie Athey, Joe McMichael, Brian Evans, Vicky Albright, AAPOR 2008.

## **4.2 Communication Barriers**

A common communication issue encountered with respondents is that research is not conducted in the language of the potential participant’s choice, and this should be allowed for. It seems reasonable that the quality of the data collected by interviewers will be higher when the research personnel having contact with participants are fully fluent in the preferred language of those participants. The use of same-ethnicity interviewers may enhance the quality of the data and the rates of participation in the study.<sup>5</sup>

Another issue in the design of questionnaires for Hispanic populations is the educational level amongst Hispanics. The educational achievement of Hispanics has not kept pace with their increasing share of the population and the labor force. According to the 1990 U.S. Census, high school completion for Hispanics aged 22-24 was only 64 percent, compared with 91 and 84 percent for whites and blacks, respectively. Even more alarming, the growth rate for Hispanic high school completion lags that for blacks and has been only slightly higher than that for whites.<sup>6</sup>

Therefore, it is likely that poorly educated individuals may find it difficult to deal with written survey materials, especially complex response scales or multiple choice questions. Therefore, researchers should become fully aware of the educational characteristics of the population to be studied.

The linguistic and educational characteristic of a population are just two aspects that need to be taken into consideration when designing the instrument to be utilized in a given study. It is most important that participants have adequate knowledge to utilize the response formats used in the instrument.

Researchers should not assume that recently migrated ethnic minorities will be able to properly manage scaling approaches such as those commonly used in survey research (e.g., Likert-type scales) without proper training. Instruments that utilize complex scaling techniques or response categories that may be unfamiliar to less educated respondents also present a barrier in communication. These types of instruments should be carefully pretested and properly explained to the respondents.

Marin et. al. suggests researchers should immerse themselves in all aspects of the culture so that they’re able to perceive the world from the perspective of the individuals being studied. They also should become familiar with basic writings in the social sciences concerning the group being studied.<sup>7</sup>

In attempts to overcome these potential communication barriers, the Office on Smoking and Health at the Centers for Disease Control and Prevention (CDC) convened a meeting of leading researchers, communication specialists and health program administrators who worked with Hispanic/Latino populations in August 2002. The purpose of this meeting was to address tobacco control issues specifically related to program, policy, communication, surveillance and evaluation with regard to various Hispanic/Latino populations. One of these surveillance needs was for the development of a survey that would evaluate tobacco use behaviors of specific Hispanic/Latino communities.

The decision was made to tailor the OSH General Population State Adult Tobacco Telephone survey. With the support and approval of CDC and input provided by 10 researchers the Hispanic/Latino Adult Tobacco Survey (H/L ATS) was developed. The 10 researchers who assisted OSH in developing the H/L ATS were selected because of their expertise in tobacco control and their research experience with Hispanic/Latino subpopulations (e.g., Mexican American, Puerto Rican, Cuban, Central and South American etc.). Some important issues that were considered when tailoring the survey were variations in Spanish spoken, variations in educational system between Spanish speaking countries, acculturation, and experience with survey participation. New questions specific to Hispanic and Latino populations were added to the survey. For example, “In the past 12 months, have you seen a medicine man (curandero), santero, spiritist (espiritista), herbalist (yerbero), religious leaders (priest, pastor, rabbi, etc.), or other non-health professionals to help you quit smoking?” New demographic questions also included country of birth, educational and income levels, and language preference. The survey was translated into Spanish by three professional translators who were native Spanish speakers. Following translation, the survey was cognitively tested in Chicago, Los Angeles, Miami, New York, San Antonio, El Paso, and Washington DC between June 2004 and April 2005. Sixty-eight interviews were conducted in total (19 in English, and 49 in Spanish).

### **4.3 Respondent Experience with Surveys**

Given that the colonias are home to many recent immigrants to the United States, we assumed many residents were not familiar with completing surveys. Additionally, our knowledge about the colonias was very limited. In discussions with the state health department and other agencies, it became clear that the residents of the colonias represented multiple nationalities and cultures from Latin America. Concerns were raised about whether or not standard interviewing practices would be successful in the administration of the H/LATS in the colonias. Through research, it was discovered that even the Census Bureau had difficulty completing interviews in this area. In fact, the difficulties encountered caused them to recommend major changes to their protocol, such as changing their training method and materials and employing the use of cultural facilitators.

Another concern with this population is that respondents and interviewers would have difficulty answering and administering “standard” questionnaire items. As noted above by Marin et. al., it should not be assumed that Hispanics would easily understand skip patterns, response options, or other standard questionnaire practices.

Numerous measures were used to overcome this challenge. First, we employed the Texas A&M Colonias Program to assist us in gaining access and interviewing in the colonias because of their intimate knowledge of the colonias and its culture, and their standing as a politically neutral, helpful agency in the colonias communities.. The Texas A&M Colonias Program is an outreach program that provides assistance and services to those in need in the colonias. RTI employed the Texas A&M Colonias Program to hire interviewers and complete the data collection effort. They

were able to hire 10 native Spanish-speaking Hispanic interviewers to complete the data collection effort.

The next challenge was to effectively train the interviewing staff. Outreach workers from the Texas A&M Colonias Program usually go door-to-door to provide assistance and care to the residents of the colonias, not to collect a standard set of information from the residents. There were some concerns that the outreach workers could be effectively trained in standard survey practices to effectively complete the data collection effort. The following steps were taken to ensure the training adequately prepared the staff for the data collection effort.

First, the entire training was conducted in Spanish. The fact that the trainers were willing to conduct the training in Spanish created an initial relationship of trust between the trainers and the interviewers. The training was tailored to focus on standard interviewing practices, such as instruction on skip patterns and scales, how to assist respondents in understanding how we want them to answer questions without introducing bias, and very specific training on the multiple skip patterns in the questionnaire. Multiple practice sessions and role plays were utilized during the training to provide the interviewers with practice of these methods. Additionally, each interviewer had to complete a certification that assessed their knowledge of the standard survey practices.

Another key feature to the training was discussion about working in the colonias. The trainers led a discussion about “standard” potential refusal situations and how to overcome them. They then allowed the interviewers to provide insight into what potential refusal situations might be encountered in the colonias, since many of the interviewers were familiar with the area. This allowed for the creation of new responses to frequently asked questions as well as other interviewer materials that could assist them in gaining cooperation.

#### **4.4 Respondent Reluctance to Participate**

In their book Marin et. al. describe many refusal challenges faced by research investigators when trying to access Hispanic respondents and have them participate in survey research. The following are some examples of the issues encountered and suggested solutions<sup>8</sup>:

**Suspicion of government involvement:** Most Hispanic individuals are afraid that agents of the Immigration and Naturalization Services may be the ones at their door or calling them trying to find out their immigration status. While this is irrelevant for the purposes of research studies, it is important to establish rapport with the respondent and answer questions accurately about the study as much as possible. We assumed this would be a major concern in this colonias due to the large number of immigrants.

**Research topic:** It is very clear that the individuals’ desire for participation may vary depending on the topic of the questions being asked. For example, they may be more willing to participate if they are asked for opinions on general issues about their community as opposed to answer questions about their sexual preference or practices. Again, establishing rapport with the respondent and offer explanation about why and who needs this information may help the person think more positively about participating in the study.

**Low level of self disclosure:** Hispanics are very reluctant to speak to strangers, particularly amongst Hispanic men. This has been documented by some researchers (Franco, Malloy, and Gonzalez 1984; Levine & Franco, 1981; Levine & Padilla, 1980). This may be less problematic if the research visits or calls are handled by bilingual interviewers who are more likely to be seen as

part of the community and not personally threatening. At the same time, these bilingual interviewers should have a clear understanding of the demographic information about Hispanics in general.

**Legitimacy of the study:** Individuals may have doubts about whether the study is a legitimate one, which may have an impact on their answers, if they decide to participate. Again, it is important for the bilingual interviewers to explain accurately about what the study is about, in clear and precise language as well as confirmation of privacy protection.

**Type of benefit to be received:** Individuals may hesitate about participating until they are given some solid information about how they will benefit from it. They may be more inclined to participate knowing what type of personal or community benefit will be offered by participating in the study.

**Dress code:** Individuals may be reluctant to participate if the person knocking on their door is not properly dressed or groomed. It is important for the interviewer to dress according to the area he/she is visiting. It is also important for them to have an identification badge and letter(s) in connection with legitimate local institutions such as outreach organizations, clinics, schools, or churches.

For the H/LATS, numerous steps were taken to overcome these potential respondent concerns. Many of these issues were addressed in the training session through discussion points and role play exercises. These training methods focused specifically on the first two concerns listed about, suspicion about the government and the research topic. Interviewers were trained to use door approaches that eased these concerns. Specifically in the colonias, we discovered through discussions with the State health department and the Texas A&M Colonias Program that many residents were concerned about the Border Patrol and tax collectors. This information was shared during the training session and interviewers practiced overcoming these concerns. Interviewers were also allowed freedom in that they did not have a scripted introduction or door approach. They were given bulleted lists of main topics and ideas, but they were allowed the freedom to use what worked best for them. This procedure allowed the interviewers to personalize messages to respondents and help the individual respondent understand the importance of his/her participation.

Additionally, respondents were provided with two key benefits for their participation in the study. First, because we worked so closely with the State health department and the Texas A&M Colonias Program, residents were presented with how the survey might affect them personally in the colonias. The data would be used to assist in the creation and modification of services and programs in the area in regards to tobacco use and smoking. This allowed residents to feel like they were actually making a difference in something that applied to them and their community directly. Second, each participant received a \$15 gift card as a token of appreciation for their participation and completion of the survey.

Another key factor in obtaining cooperation in the colonias was the Texas A&M Colonias Program. The program is well recognized in the colonias because of the work and services they provide. The interviewers were equipped with uniforms (polo shirt, jacket, etc.) that contained the Texas A&M Colonias Program logo. In some instances, the interviewers were allowed to use the office's vehicles, which contain the logo as well, to travel to certain areas. Residents of the colonias recognized the logo of the Program and this eased the concern of having outsiders wandering around their community. Many participants indicated they felt at ease in opening the door because they recognized the logo.

Also, the interviewers worked in teams of 2 throughout the data collection period. This not only provided safety for the interviewers, but it showed respondents the importance of the study. It also allowed for interviewers to QC each other's work on the spot. They were able to correct any mistakes in recording responses or following skip patterns, for example, as they were completing the survey.

## **5.0 Results**

Given the numerous challenges and our lack of knowledge of the colonias, the results of the survey were somewhat surprising. As data collection ended in mid-April 2008, a provisional response rate of 74% was achieved for the study, with a 92% provisional eligibility rate and an 84% provisional screening rate. What's even more impressive is that in the entire sample of 2,100 cases, only 26 cases were coded as refusals for a 1.2% refusal rate. This rate is astounding given the difficulties encountered by the Census Bureau, as indicated above. One concern with the use of Geoframe™ was whether or not interviewers would be able to successfully find the selected dwelling unit. Of the entire sample, interviewers were able to find all selected dwelling units, except 1. Quality Control visits were completed and during those visits it was determined that the interviewers completed interviews at the correct, selected households. The quality of the data collected was also very high, especially since we had concerns about the interviewers and respondents understanding things such as skip patterns and response options.

The numerous steps taken in advance and in preparation for this study produced these positive results. Below we describe how we think the solutions to these data collection challenges might be of assistance in other studies.

## **6.0 Future Work**

The solutions to the numerous data collection challenges encountered on the H/LATS can be applied to other studies. In this section we discuss each type of solution and how it might be applied.

Geoframe™ was developed to assist in the creation of an area probability sample where there was little or no telephone coverage and a lack of postal listings. This was a cost-effective and timely solution to the creation of the sample. There are many areas in the U.S. that do not have postal listings or telephone coverage where this method could be applied. Additionally, this method could be used in international surveys, multi-national surveys, or even in the aftermath of natural or man-made disasters. For more information about the potential uses of Geoframe™, please refer to the paper by Athey, et. al. referenced above.

To address the communication barriers, a great deal of effort was taken to ensure a questionnaire was developed with high-quality and that it could be understood by most Hispanics. Numerous researchers were employed to assist in this effort. While this may not be a viable option for some surveys, we suggest great care should be taken in the development and translation of the questionnaire, taking into account cultural considerations as well as educational and speaking levels when interviewing Hispanics.

At the beginning of the study, we assumed that the residents of the colonias did not have much experience in completing surveys. To overcome this challenge, we hired native Spanish-speaking interviewers who were familiar with the area where the interviews would be completed. A tailored training was developed and conducted all in Spanish to help the interviewers understand

the importance of the training. Training methods were used that allowed the interviewers to gain experience and practice to ensure standard interviewing procedures were followed and to avoid interviewer bias. This extra time and effort proved an effective method of ensuring high quality data.

Finally, numerous measures were taken to assist interviewers in overcoming potential objections of respondents. The employment of the Texas A&M Colonias Program proved vital to the success of the study, as they had insight and understanding of the colonias and their residents that RTI did not. Together we were able to develop data collection procedures that effectively allowed interviewers to communicate with respondents and gain cooperation. The use of uniforms and other Colonias Program materials helped ease concerns for respondents about strangers in their community. Also, respondents were able to feel like they were making a difference for their community and services residents could receive. By understanding our sample population, we gained advantages that led to higher cooperation rates.

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