

Surveying International Travelers -- An Argument for Intercept Interviewing

Brian Evans, Chris Ellis, Giselle Santiago, Leticia Reed
RTI International

Introduction

Intercept surveys (sometimes referred to “street” surveys) have traditionally been used to measure consumer attitudes in settings such as shopping malls due to the convenience of being able to poll a large number of people in one setting at lower costs. Indeed, the use of the street intercept survey as a data collection method peaked in the 1980s and 1990s, particularly in market research (TaxGloss.com, 2005). Additionally, traffic engineers designing revisions to roadways will often use intercept surveys as a method to collect data from commuters (see, for example, WS Atkins Consultants Limited). This methodology has not been as broadly accepted, however, within the survey research industry (as opposed to the market research field). This has primarily been attributed to some widely recognized disadvantages commonly associated with intercept surveys – most notably, low response rates and the associated high potential for non-response bias in the data. These challenges and constraints to intercept interviewing tend to make this method of data collection a less favored methodology among survey researchers.

While acknowledging these challenges and constraints, this paper presents methods by which researchers can obtain high response rates and high quality data from a dispersed and mobile population via intercept survey methodology. These methods are discussed in the context of how intercept interviewing can be a viable – if not preferred – option for researchers when collecting data from certain populations and/or regarding specific point-in-time experiences. Specifically, we identify causative factors that contributed to response rates in excess of 85% in the nationally implemented Welcome to the United States (Welcome) Survey. Finally, we discuss how intercept interviewing may actually be the method of choice when attempting to evaluate public-impact programs or international issues with a highly mobile, multi-cultural, and/or difficult to trace study population.

1.0 Response Rates and Data Quality Limitations

One of the strongest arguments against intercept interviewing in the survey research field is the generally low response rates achieved through intercept interviewing. A review of the

survey research literature reveals that response rates in intercept studies seldom exceed 50% (TaxGloss.com, 2005; TSN Canadian Facts, 2005; Denstadli, 2000). In fact, most studies with published results report response rates as low as 25% and typically no greater than 50%. The validity of the data collected via intercept survey methodology can be questioned due to ineffective sample designs and data collection methods. In this section of the paper we review these challenges.

1.1 Examples of other surveys

Examples of intercept surveys found in the literature include a Transportation Security Administration (TSA) customer satisfaction survey that interviewed air travelers via an intercept method at the gate (while awaying their flight), asking respondents to provide opinions regarding TSA's performance. Questionnaires were completed via self-administration while still in the airport area. The TSA survey achieved a national response rate of 27%, indicating that this response rate "exceeded industry standards and expectations" (Transportation Security Administration, 2005). An intercept survey conducted across four Delaware DMV locations, which asked about environmental and agricultural services, achieved an overall 44.8% response rate (Duke, 2005). The general expectations of response rates associated with intercept surveys is evidenced via the following. TSN Canadian Facts prepared a best practices document for the Ontario Ministry of Tourism describing how to design and implement visitor surveys. In general, the document indicates one might expect response rates as low as 15%, but not higher than 60% (TSN Canadian Facts, 2005).

1.2 Challenges for obtaining high response rates

There are numerous challenges to achieving high response rates inherent to the intercept survey methodology. Some of these challenges are obstacles encountered during the recruitment process, such as distractions when approaching the respondent. Implicit to intercept surveying is the presumption that sample members are in the process of doing something, or going somewhere, else at the time of initial contact. This creates added burden (whether real or perceived) for the respondent as compared to other survey methods – by intercepting the respondent and asking them to answer a few questions, the interviewer creates unexpected burden and time the respondent wasn't counting on to complete their task.. Throughout the

remainder of this paper, we discuss these challenges and how they were addressed in the Welcome Survey.

1.3 Intercept Interviewing Challenges

As mentioned earlier, there are multiple challenges inherent to the intercept survey approach. The following sections go into further detail about the most prominent of these.

1.3.1 Interviewer Selection

Intercept surveys can present unique challenges to recruitment and interviewing activities, as conducted by interviewers. First, selecting the best interviewers is especially important in intercept surveying due to the need to be prepared to meet field challenges immediately, given the lack of opportunity for follow-up attempts. Additionally, in intercept surveying, recruitment of potential sample members must occur without the benefit of a customary lead mailing, as is typical in all other data collection modes. Research shows that in hiring interviewers for intercept surveying careful consideration should be given to the demographic characteristics of applicants (Spooner, C. et. al, 1997). Specifically, the literature indicates that sample members often perceive interviewers as less trustworthy if they are very different from them in gender, age, and race. Moreover, they may (conscientiously or not) feel threatened by the possibility of communication barriers when interacting with someone very dissimilar from them. Some research also indicates that both men and women are less likely to participate in an intercept survey with a male interviewer than with a female one (Hornik, J. et. al, 1988). This requires that the recruitment plan for hiring intercept survey interviewers be carefully implemented to ensure that characteristics such as age, gender, and race are taken into account.

1.3.2 The Length of the Interview

In addition to selecting the best interviewers for intercept surveying, interviewers must be trained to recruit and engage the respondent, as well as execute the interview, in a short amount of time. The length of the questionnaire is a key criterion to the success of intercept surveys because potential sample members are in transit and generally less inclined to participate in a survey. Interviewers do not have the luxury of ancillary mailings or taking much time in order to

provide background study information, question administration, and respondent recall – all of which often serve as rapport-building and respondent-training items in a more traditional interview. If, for example, the interviewer fumbles through pages to stay on track or needs to look up answers to the respondent's questions, he/she runs the risk of quickly losing the respondent's interest (TaxGloss.com, 2005; Bush, A. & Hair, J., 1985). This risk is compounded in intercept surveying because, as mentioned above, the respondent is intercepted in the middle of some other activity (or transit to something else) and, therefore, a) perceives it as a greater intrusion, and b) feels less invested in the survey.

1.3.3 Nonverbal Communication

Another important interviewing challenge in intercept surveys is the effect that nonverbal communication – e.g., the distance between the respondent's personal space and the interviewer's, the use and placement of the interviewer's hands, eye contact, and head nods – can have on participation. In more traditional face-to-face interview settings, nonverbal communication is emphasized primarily insofar as it affects the respondent's answers (e.g., conveying neutrality and smiling yields more candid responses from the respondent and builds rapport). However, in intercept interviewing, the impact of nonverbal communication is more ubiquitous across all phases of contact, including the initial point of contact. Immediately upon approaching a sample member, the interviewer's stance, tone of voice, and confidence level are assessed by the respondent. If the sample member perceives ambivalence or incompetence from the interviewer's behavior, he or she may be quickly dissuaded. Consequently, the interviewer loses the opportunity to even screen the sample member, let alone gather complete interview data. When this area of training is not fully developed, interviewers may go out into the field and rely on the scripts and incentives alone to increase participation rates (Hornik, J. et. al, 1988; Dresser, N., 1996).

1.4 Cultural challenges

Within the United States, demographic changes in minority populations have brought about cultural diversity that is often accompanied by linguistic gaps. Over 75% of the foreign-born U.S. population is either of Latin American or Asian decent. The need for understanding other cultures and languages is so pervasive that, to respond to such needs, institutions of higher

education have instituted diversity trainings in most fields of study. Meeting linguistic demands is a challenge in many industries including health and social service agencies, educators, policy planners and researchers. As the need for information from a multicultural population increases, survey research is charged with finding ways to bridge linguistic and cultural gaps and ensuring accurate representation in research studies (Flores et. al, 2002; Li et. al, 2001).

Early studies on cross-cultural congruence revealed that wording issues related to translation were considered as “the weakest link” in attaining comparable tools for inferential estimates (Kumata & Schramm, 1956). Multinational survey projects appeared during the late 1960’s and early 1970’s; most cross-cultural researchers dealing with human behavior favored investigations across the globe. The benefits derived from cross-cultural research, such as increasing range of variables and increasing sensitivity to context, would have been impossible to attain in mono-cultural research (Brislin, 1993). The needs of cross-cultural survey research, coupled with the desire to reap the benefits of it, have pushed the field towards establishing sound practices in instrument adaptation and translation. In this section, we discuss some of the linguistic and cultural challenges anticipated for the Welcome Survey.

1.4.1 Linguistic Challenges

Because the target population for the Welcome Survey was made up entirely of non-U.S. citizens, the study demanded that the interviewing protocol carefully consider linguistic challenges and cultural differences in social interactions. Data collection was planned for 3 northern land ports, 4 southern land ports, and 4 international airports (Section 2.0 provides more detailed information about the ports of entry). We predicted that the majority of respondents in the southern land ports would be of Hispanic ethnicity and that nationalities would vary widely across all other ports. Likewise, we expected the majority of respondents in southern land ports to have very limited English-speaking abilities and the respondents in all other ports to have basic to moderate English-speaking abilities.

Because we anticipated great variation in the languages spoken at airports, we planned on meeting language requirements on what was considered the We Globalization tendencies and other demographic shifts. These tendencies and shifts contend that cultural and linguistic considerations must be taken into account in order to reach other cultures effectively (Cronin, 2003). Only when the target population understands and is able and willing to answer a

question should other methodological issues be addressed (Fowler, 1995; Peterson, 2000). Basic understanding of the languages used is crucial to succeeding in reaching sample members from a variety of countries. Not meeting these requirements could result in greater item non-response, thus compromising the quality of the data received. Additional challenges faced with the sample for the Welcome Survey included meeting the educational levels of the Hispanic population, which according to research (Weech –Maldonado et al, 1999) can be very low, and meeting the vocabulary needs of the potentially diverse Hispanic population given the numerous dialects.

1.4.2 Interviewer-respondent matching

Another challenge we faced was achieving interviewer-respondent matching in order to increase the willingness of participation among respondents from a vast set of different cultures. As mentioned in Section 1.4.1 of this paper, research shows that sample members often perceive interviewers as less trustworthy if they are very different from them in gender, age, and race. They may also feel more threatened by the possibility of communication barriers when interacting with someone who is very dissimilar from them. Given that our target population consisted of individuals from so many different cultures, this seemed especially hard to achieve. Our hypothesis was that respondents would be more likely to participate if they were approached by a multiethnic individual than a seemingly Caucasian individual. If cultural considerations were not taken into account in the data collection procedures and interviewer selection process, then response rates and data quality could potentially suffer.

2.0 Background of the Welcome to the United States Survey

The primary purpose of the Welcome Survey was to collect information regarding how “welcome” foreign visitors felt upon processing into the US by DHS Customs and Border Protection (CBP) officers and Border Patrol agents. This data will be valuable for enhancing customer service training of DHS personnel, as well as further the efforts by Secretaries Condoleezza Rice and Michael Chertoff in their initiative to make the US more attractive to foreign visitors as a place to visit, study, and do business.

RTI was subcontracted to collect the data for the Welcome Survey using an intercept method of sampling, recruiting, and interviewing international travelers at both Land and Airport ports of entry (POEs).

2.1 Sampling Methods

The sampled Ports of Entry (POEs) were selected primarily as a result of considering factors such as stratification (Northern Land Border POEs, Southern Land Border POEs, and airports), passenger flow (volume), DHS personnel and interviewer safety, and logistical concerns. With significant input from DHS and CBP, the eventual sample included a total of 11 selected POEs for data collection. Listed by strata, the 11 selected POEs were:

- 3 Northern Land POEs;
- 4 Southern Land POEs; and
- 4 Airport POEs.

This sampling scheme was intended to provide six distinct groups of estimates based upon the number of interviews needed for analysis: Northern land border (3 POEs), Southern land border (4 POEs), and each of the 4 sampled airports. A total of 939 completed interviews were required to meet the assumed levels of precision for this study. Completion of data collection resulted in a final respondent sample size of 960.

2.2 Data Collection Preparations

Preparations for the Welcome Survey data collection effort resembled those of most field data collection projects. Careful attention was given to the areas of materials development and interviewer training.

Materials Development. The questionnaire to be administered to sampled respondents was carefully developed in concert with the DHS and CBP project managers. Given the study population (i.e., international travelers who may or may not have a strong command on the English language), every effort was made to use wording and response options that were easy to comprehend, efficiently answered, and absent of strong cultural references. In addition to

English, the questionnaire was also translated and made available in Spanish¹. Numerous ancillary materials were necessary for the Field Interviewers (FIs) to conduct the interviews at each port.

Interviewer Training. We developed and conducted an effective training program which ensured FIs were provided with all information and materials necessary to effectively conduct interviews (e.g., recruiting instructions and aids, specific information about each port, copies of the questionnaire, and anticipated frequently asked questions from respondents). In correlation with DHS, RTI also developed and presented numerous slides describing CBP procedures and specific logistical details about each port.

2.3 Interviewing Procedures

The administration of interviews was influenced by numerous factors, including the location of interviewing, sampling, recruiting, and eligibility protocols.

Location. An important aspect to successful data collection was the location, which varied by POE, for recruiting and screening selected sample members. At the land POEs, FIs approached and recruited vehicles and pedestrians after they passed through the Primary Inspection process to be interviewed. At the airports, the FIs approached and recruited passengers after they passed through the Primary Inspection process and were waiting to retrieve their luggage.

Sampling. Based on the survey precision requirements and the port-specific information provided by DHS, RTI initially proposed a POE-specific 1-in-N sampling rate. Aspects that were considered in developing these paradigms included, but were not limited to, expected number of visitors per day, peak times of visitors, number of CBP processing areas, number of interviewer staff per location, expected time per interview, and number of feasible work hours per data collection day. The sampling procedures which applied this approach differed by port type, as described below:

- *Airports* – RTI initially anticipated utilizing a 1 in Nth sampling rate at airports.

However, the logistics of where data was collected precluded us from establishing a pre-

¹ DHS and CBP recommended, based on their own experience with procedures and interactions with international visitors, that these two translations would sufficiently serve the vast majority of potential respondents. This proved to be true, as only 8.9% of the sample were coded nonrespondents due to language barrier.

visit rate. The FIs began sampling by approaching, recruiting, and screening the 3rd person they observed clearing CBP's Primary Inspection. Once that initial recruitment was completed, the FI then followed a simple "turn and select" approach to identify the next sampled person. The FI turned, selected, and approached the next person she saw to be sampled into the study. The turn and select approach was still random in that the FIs did not control or manipulate the flow of passengers.

- *Land POEs* – Sample selection at the Land POEs involved CBP officers and Border Patrol agents identifying at the point of the Primary Inspection booth any vehicle for which the driver was a non-US Citizen. Upon identifying such a vehicle, and determining the vehicle had cleared Primary Inspection, the CBP officer and Border Patrol agent would direct the driver to go to the designated Welcome Survey recruiting area. Given limited traffic flow on the actual data collection days, RTI set the selection rate to 1-in-1 (i.e., the CBP officers and Border Patrol agents working in the Primary Inspection booths directed every vehicle clearing Primary inspection, in which the driver was a non-US Citizen, to the recruiting area).

Recruiting. Upon being sampled for inclusion in the survey, the FI would attempt to recruit the passenger. Recruiting procedures involved determining eligibility (see Eligibility, below); explaining the sponsorship, purpose and voluntary nature of the study; and obtaining respondent cooperation to complete the brief interview.

Eligibility. Not everyone selected was eligible to participate in the survey. In order to be eligible to complete the interview, a sample member had to be:

- a Non-US Citizen;
- an English or Spanish speaker; and
- someone not sent to Secondary Inspection².

Administering the Questionnaire. The FIs used a handheld electronic data collection device to conduct the 5-minute interview (an HP iPAQ). The iPAQ provided functionality to manage all cases and provide questionnaire functionality to ensure the interview was

² This 3rd criterion was only applied at the Land Border POEs via the CBP officers and Border Patrol agent's involvement with the recruiting process. If a vehicle was identified as needing Secondary Inspection, the driver would be directed to that area, thus foregoing the Welcome Survey recruitment area at the POE. Conversely, at airport POEs, neither the passenger nor the FI would have knowledge of whether or not the passenger was being routed to Secondary Inspection (at the time of intercept at the baggage claim area). Therefore, this 3rd criteria was difficult, if not impossible, to apply when sampling and recruiting airport passengers.

administered effectively and efficiently. The iPAQ was programmed in both English and Spanish; the FIs had an option to toggle between languages on each question. The FIs used the iPAQ and read the question to each respondent. The FIs also used a laminated questionnaire as a type of showcard booklet to assist in the flow of the questionnaire, which provided additional understanding.

2.4 Response Rates

A total of 960 total interviews were completed, which resulted in an overall response rate of 85.7%. *Table2-1* shows the overall results by port.

3.0 Welcome Survey Results

The Welcome Survey produced much higher response rates than initially anticipated by both the data collectors and the client based on research done prior to data collection. Additionally, the data was collected quicker than budgeted, thus creating some cost savings in the data collection effort. These results contrast those found in the current survey research literature regarding intercept and traveler surveys. In this section of the paper, we will review procedures used in the Welcome Survey to show how they led to the achievement of an 86% response rate.

3.1 High Quality

The methods used to achieve the high response rates were developed from commencement of the project. The project team conducted initial research into best intercept survey practices and developed numerous drafts of methods that would might prove successful. The project team also researched the characteristics of the population to be interviewed to identify potential barriers to the survey. Additionally, site visits were made to specific ports to identify logistical interviewing challenges such as where to intercept the respondents, where to stand as to not interfere with CBP processes, and identify safety concerns. This pre-data collection research led to specific data collection procedures and methods that the project team felt comfortable with and which allowed for the resolution of anticipated data collection challenges. These specific data collection solutions are discussed in *Section 3.2*.

Table 2-1. Overall Results

Port	Total sample	Ineligible	Eligible	Language Barrier	Refusal	Breakoff	Complete	RR%
Northern Land POE #1	68	3	65	0	3	0	62	95.4%
Northern Land POE #2	61	0	61	0	3	0	58	95.1%
Northern Land POE #3	55	1	54	2	2	0	50	92.6%
Southern Land POE #1	54	3	51	0	1	0	50	98.0%
Southern Land POE #2	50	0	50	0	0	0	50	100.0%
Southern Land POE #3	58	5	53	0	3	0	50	94.3%
Southern Land POE #4	58	5	53	0	3	0	50	94.3%
Airport POE #1	338	146	192	26	13	3	150	78.1%
Airport POE #1	260	92	168	10	11	0	147	87.5%
Airport POE #1	304	123	181	26	10	0	145	80.1%
Airport POE #1	312	120	192	31	7	6	148	77.1%
Total	1618	498	1120	95	56	9	960	85.7%

3.2 Intercept Interviewing Solutions

The Welcome Survey experience indicates that one may, indeed, achieve desirable outcomes using an intercept survey approach. More specifically, we suggest that effectively addressing the aforementioned key challenges associated with this method, as was done in the Welcome Survey, may “exonerate” this method as a viable and even preferred one in particular

research efforts. The following sections document the solutions employed on the Welcome Survey that led to such positive outcomes for the data collection effort.

3.2.1 Interviewer Selection

The Welcome Survey team applied several strategies to ensure effective interviewer selection. The team considered three important components of the study in selecting interviewers: 1) the potentially sensitive nature of the study, 2) the target population, and 3) the proportion of likely highly Hispanic POEs selected from along the Southern Land Border and airports. Because of the sensitivity associated with assessing the professionalism of CBP Officers and Border Agents and doing so in close proximity to said visitors' entry to the country, it was especially important to gather reliable, high quality data. To that end, we sought to hire only experienced interviewers. The ideal candidates also had to be capable of building rapport with foreigners to the U.S., many of which we predicted would have limited English-speaking abilities. Because all the southern land ports cross into Mexico and the number of Hispanic visitors that travel through major airports is so high, we decided to hire bilingual, Spanish-speaking interviewers. In keeping with the findings in the literature, we also sought to hire women. We theorized that this combination of inherent and professional attributes would maximize each interviewer's ability to gain cooperation, maintain interest, and obtain unbiased responses. Each of the interviewers selected was a bilingual Hispanic woman with at least three years of interviewing experience.

3.2.2 The Length of the Interview

Several topics were covered during training to ensure the interviewers were prepared to administer the survey as swiftly as possible. First, the steps of the CBP security process were reviewed with the interviewers in detail. Having a solid understanding of the entire process helped them anticipate questions and concerns respondents would likely raise. Those questions and the most appropriate answers to them were then discussed in detail. Second, the interviewers conducted mock interviews with trainers and each other to familiarize themselves with the interview, as well as the functions of the iPAQ. By learning the fine points of the iPAQ in advance, the interviewers were able maneuver quickly through the instrument during actual

interviews. This allowed the interviewers, for example, to more efficiently key answers to open-ended questions into the iPAQ.

One other feature of our interviewing protocol that proved to be very effective in minimizing the length of the interview was the show card booklet (see *Section 2.3*). The show card booklet was a laminated paper copy of the questionnaire used by respondents to ease the flow of the interview and enhance understanding of the questions. One side of the booklet contained the questions in English and the other side contained the questions in Spanish. We found that this handout helped expedite question administration, given respondents were able to follow along with every question and did not have to memorize some of the standard or scaled response options. Moreover, the booklet proved useful to those respondents with limited English-speaking abilities when their reading comprehension skills were superior to their verbal comprehension ones.

3.2.3 Nonverbal Communication

For the Welcome Survey, nonverbal communication was exceptionally important given that the target population was in-transit and thus highly mobile; the survey included some potentially forward (or sensitive) questions about their reasons for visiting the U.S.; and the target population was multi-cultural (thus reducing the opportunity for elaborate verbal communication). As mentioned in *Section 1.3.3*, nonverbal cues can largely affect a respondent's willingness to participate in intercept surveys. Because our target population was in-transit, the interviewers had even less time to make a good impression and obtain cooperation. From the moment the interviewer approached the potential respondent, her eye contact, poise, and confidence all were determining factors of the recruiting outcome. The interviewers were trained to convey professionalism, confidence, and politeness. This was largely accomplished by having interviewers role play scenarios in which respondents, or the trainers, were skeptical and inquisitive.

It was also important that the interviewers be perceived as trustworthy and credible since they would be asking questions about frequency of travel into the U.S and reasons for visiting the U.S. – questions that would sound similar to those asked by CBP officers and Border Patrol agents. We wanted to avoid refusals or unfinished surveys due to nervousness or lack of trust on the part of the respondent. To that end, the interviewers were also instructed to wear uniformed

polo shirts and khaki pants to further emphasize credibility and professionalism. They also displayed picture identification badges on the outside of their shirts. The overall goal was to send the message to the respondents that this survey was important and that this was a safe way to provide valuable feedback. We believe these tactics helped us achieve that and directly contributed to our exceptionally high response rate.

Finally, the interviewers also had to remain attuned to cultural differences in social interactions among the many different nationalities represented. Cultural solutions are discussed in more detail in Section 3.3.

3.2.4 Recruitment and Introductory Approach

Another unanticipated area in which we believe our specialized strategies directly contributed to a higher response rate is our recruitment approach. As mentioned in Section 2.0, the plan was for the interviewers to stand just beyond the primary checkpoints at airports and just beyond either the pedestrian or auto primary checkpoints at land ports, depending on traffic flow. As airline passengers passed through the checkpoints, the interviewers were to approach them and deliver the introductory pitch for screening. We worked closely with CBP and DHS officials at each POE to identify the locations that would yield us the most opportunities for interviews. This meant we had to remain flexible and adapt our strategies to the layout of each POE. For example, at airports we adjusted the plan to accommodate for the fact that the biggest reservoir of travelers actually developed at baggage claim. The pool of travelers in this area grew as passengers waited for sometimes up to 35 minutes to retrieve their luggage. The team took advantage of this time and conducted recruitment and interviewing activities there. This also meant that the interviewers had to remain flexible, which further emphasizes the need to select ideal interviewers.

The interviewers also adapted their introductory approach and greetings, according to the traffic flow and operations of each POE. For example, at airports the interviewers considered the immediate concerns of the respondents and often approached them with a greeting such as, “Excuse me, my name is Mary. Would you mind if I asked you a few questions while you wait for your bags?” This seemed to be a fair proposition from the perspective of the respondent, since it acknowledged that their availability and time would be compromised once their luggage arrived. Respondents often replied by saying, “Sure, but I have to run once my bags arrive” and

the interviewers immediately continued with the questions. In all airports and land ports, once the respondent provided consent and was screened, the interview immediately followed in the same location.

3.4 Overcoming Cultural Challenges

As noted previously, overcoming the cultural challenges of intercept surveying is a key to the successes experienced on the Welcome Survey. The below sections detail those challenges and the approaches taken by the project team to overcome them.

3.4.1 Linguistic Challenges

The respondent's ability to understand the questionnaire was the primary cultural challenge facing the project team. We anticipated that the majority of those crossing the Southern Land border would be Spanish-speaking visitors. We also anticipated a large contingent of Spanish-speaking visitors at the airports, as well as visitors from many other countries. Given the resources of the project and associated analysis which indicated approximately 90% of these visitors could comprehend either English or Spanish, the only alternate translation of the questionnaire was Spanish. The translation was completed by DHS language specialists and back translated by RTI's language specialists. This ensured the wording of the questions would be a) appropriate for most Spanish-speaking visitors and b) basic enough so that the majority of the Hispanic population would be able to understand the questions.

We also created a flipchart (i.e., laminated paper) version of the questionnaire in both English and Spanish to aid those less proficient with their verbal English skills. We assumed that if respondents understood any English, they'd be able to better follow along using the flipchart. The flipchart was used at all of the ports and was especially helpful with Asian and Middle Eastern visitors passing through the airports.

An unanticipated challenge for the interviewers was the large contingent of French-speaking respondents at the northern land ports. The project team did not anticipate so many French-speaking visitors passing through the Northern Land POEs. Many of the French-speaking respondents understood English well enough to read it, so the interviewers handed them the flipcharts to use as well. Those who could not do so were treated as nonrespondents due to language barrier.

3.4.2 Interviewer-Respondent Matching

In the design stage, the project team discussed the numerous cultures that the interviewers would be contacting and the potential for offending visitors through their approaches. It was decided to hire two Hispanic women to conduct the interviews. It was necessary to have Spanish-speaking interviewers given the anticipated large contingent of Spanish-speaking respondents. However, the project team also thought about the impressions the interviewers would have on visitors to the U.S. For some respondents, the interviewers would be the first non-authoritarian (i.e., non-CBP) people they would come in contact with. Additionally, women were selected as interviewers under the assumption that visitors from other cultures, especially male dominated cultures from Asia and the Middle East for example, would be more willing to cooperate with female interviewers than with males.

The conclusions we come to in this section are completely anecdotal as we did not collect any data or experiments on how respondents reacted to Hispanic women as interviewers. However, the results are worth noting for future studies. As indicated in *Section 2.4*, the overall response rates were extremely high relative to examples found in the intercept survey literature. Additionally, we found that respondents at the Southern Land POEs were more open with the interviewers than at the Northern Land POEs. For example, more Southern Land border respondents provided comments to “other-specify” questions than at the Northern Land POEs. We attribute this to the fact that the Hispanic respondents felt more comfortable speaking with the interviewers of their same ethnicity.

At the airports we noticed two key results. First, many people were willing to at least engage in conversation with the interviewers. We believe the ethnicity of the interviewers was key to gaining cooperation from the visitors. The fact that the first contact in the U.S. was with a woman of a non-white ethnicity seemed to help visitors feel more comfortable in answering questions about their entry experience. Additionally, the interviewers noticed unanticipated challenges and then applied certain culturally-sensitive approaches that eased the recruiting process. For example, the interviewers noticed that when they bowed to Asian visitors before they began speaking, they became more engaging. When speaking with Middle Eastern women, they noticed the women would sometimes have a look of concern or fear in their eyes. The interviewers realized it was because the women didn’t want to speak without permission from their husbands. In some cases, the interviewers were able to briefly explain the study to the

husbands and essentially gain their permission to speak to their wives. In other cases, the husbands would not allow the interviewers to speak to their wives. While the project team did not anticipate all of these cultural challenges, the interviewers' awareness and adaptability resulted in responses and practices that eased the recruiting process.

4.0 Summary

As was mentioned at the onset, the challenges and constraints to intercept interviewing tend to make this method of data collection a less favored methodology among survey researchers. However, as demonstrated through the example of the Welcome Survey, this method certainly has its value – and is even the preferred approach – when utilized for certain study populations, assuming the deployment of a statistically sound sample design and professional, consistent data collection protocol.

The outcomes of the Welcome Survey serve as a useful contrast to much of what the literature has offered concerning intercept interviews:

- Whereas most published surveys have obtained 50% or worse unit response rates, the Welcome Survey demonstrated the capability of a much higher 85.7% response rate.
- Whereas traditional intercept interview sample designs tend to equate to convenience sampling, thus introducing much bias into the findings, the Welcome Survey demonstrates the feasibility of a random selection process which allows for stratification and subsequent estimation.
- Interviewer selection – namely, similarity to the intended study population – has proven to be very important in all intercept survey designs. The Welcome Survey experience suggests that interviewer similarity remains an important factor in obtaining acceptable response rates; additionally, language flexibility, availability of printed/readable materials, and use of a highly professional cadre of staff are important variables.

Finally, for intercept interviewing to truly receive acceptance and credibility among survey research professionals, more experimentation and documentation of findings is needed.

Embed methodological experiments, such as testing across modes (e.g., intercept vs. in-person recruiting with telephone follow-up), would further assess the above assertion that data quality of an optimal level can be obtained. The application of increasingly rigorous sampling designs, tested via intercept interviewing, would also be fertile ground for further research. One final area worthy of further exploration has to do with purported length-based bias. Length-based bias is a potential bias that can be introduced due to the increased likelihood of recruiting respondents who are present in the interviewing areas for a disproportionately longer period of time. The sampling scheme for the Welcome Survey introduced safeguards against this, but other studies may want to experiment with means for reducing or altogether eliminating this potential source of bias.

Sources Cited

1. Bush, Alan J. & Joseph F. Hair, Jr. (1985) *An Assessment of the Mall Intercept as a Data Collection Method*. Journal of Marketing Research, Volume 22 (May), pp. 158 – 167.
2. Denstadli, Jon Martin. (2000). *Analyzing Air Travel: A Comparison of Different Survey Methods and Data Collection Procedures*. Journal of Travel Research, Vol 39, No 1, pp. 4 – 10.
3. Dresser, N. (1996) *Multicultural Manners. New Rules of Etiquette for a Changing Society*. John Wiley & Sons, Inc. U.S.A.
4. Duke, Joshua M., Ilvento, Thomas W. (2005) *A Conjoint Analysis of Public Preferences for Agricultural Land Preservation*. Agricultural and Resource Economics Review. http://www.findarticles.com/p/articles/mi_qa4046/is_200410/ai_n9470000/pg_7.
5. Evans, M., Mejía-Maya, L., Zayas, L., Boothroyd, R. and Rodríguez, O. (2001). *Conducting Research in Culturally Diverse Inner City Neighborhoods: Some Lessons Learned*. Journal of Transcultural Nursing, Vol. 12, No. 1, 6-14. SAGE Publications.
6. Fowler, F. (1995) *Improving Survey Questions: Design and Evaluation*. Applied Social Research Methods Series Volume 38, Thousand Oaks, CA: Sage.
7. Giles, H., Taylor, D.M. & Bourhis R.Y.(1973) *Toward a Theory of Interpersonal Accommodations: Some Canadian Data*. Language and Society, August 2, 177-192.
8. Groves. R.; Cialdani, R.& Couper, M.(1992). *Understanding the Decision to Participate in Survey*. Public Opinion Quarterly Vol. 56- 475-495. American Association for Public Research 00330-362X/92/5604-0003.

9. Hornik, Jacob, Ramat-Aviv, & Israel Ellis. (1988) *Strategies to secure compliance for a mall intercept interview*. Public Opinion Quarterly, Volume 52(4), pp. 539 – 551.
10. Marin, G. and Marin, B. (1991). *Research with Hispanic Populations*. Applied Social Research Methods Series 23.
11. Spooner, Catherine, Janet Bishop, & Jan Parr. (1997) *Research methods for studying injecting drug users in a rural centre*. Drug and Alcohol Review, Volume 16(4), pp. 349 – 355.
12. TaxGloss.com_statistical surveys. (2005). TaxGloss.com. http://www.taxgloss.com/Tax-Marketing_Topics_Sp_-_Z-/statistical_surveys.html.
13. Transportation Security Administration – Briefing Room. (2005). Transportation Security Administration. http://www.tsa.gov/public/interapp/editorial/editorial_1833.xml.
14. TSN Canadian Facts. (2005). “*Visitor Exit Surveys: Design and Other Considerations in their Use*”. <http://www.tourism.gov.on.ca/english/tourdiv/research/Visitor%20Exit%20Surveys-design%20&%20other%20considerations%20in%20their%20use-E.pdf>.
15. Weech-Maldonado, Weidmer Beverly O., Morales, Leo S. and Hays, D. (1999). *Cross Cultural Adaptation of Survey Instruments: The CAHPS Experience*.
16. WS Atkins Consultants Limited (http://www.go-em.gov.uk/transport/mmrbs-studies/m1-eastmids/reports/word_docs/Incepv2.doc)