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**A Quality Assessment of Data Collected  
in the American Community Survey (ACS)  
from Households with Low English Proficiency**

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This paper is released to inform interested parties of ongoing research and to encourage discussion of work in progress. The views expressed are those of the author and not necessarily those of the U.S. Census Bureau. The author thanks Manuel de la Puente and Deborah Griffin for their insights and comments.

## **ABSTRACT**

According to the results from the Census 2000 Supplementary Survey (C2SS), the foreign born population grew by 57 percent since 1990 and approximately 45 million people aged five years and older spoke a language other than English at home. Currently, there is little research investigating differences in data quality between English and non-English speaking households in the American Community Survey (ACS). To better understand if differences exist, this paper reports results from quantitative assessments of data collected from English and non-English speaking households in the ACS. This research addresses key questions about whether existing methods are resulting in the collection of incomplete data in the ACS due to language barriers.

The ACS is a new household survey that is being designed to produce timely demographic, socioeconomic, and housing data for the Nation. Survey data are collected by mail, telephone, and personal visit methodologies providing varying degrees of language assistance. This research was undertaken to assess data quality for non-English speaking household by analyzing levels of item nonresponse. The research focuses on households that speak a language other than English with the lowest levels of English-speaking proficiency because we expect that these households face the greatest challenges in understanding and answering survey questions. Where appropriate, other related factors such as the demographic characteristics of the respondents are also examined.

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## EXECUTIVE SUMMARY

The purpose of this study was to conduct a quantitative assessment of data quality between non-English and English-speaking households in the American Community Survey (ACS). The Census Bureau is interested in developing research strategies and measures of data quality that can be used to assess and improve the quality of demographic survey data obtained from people whose primary language is not English and who have little or no knowledge of English (called non-English speaking households for simplicity). This research is part of the U.S. Census Bureau's blueprint for obtaining high quality data from non-English speaking households (de la Puente and Gerber, 2001). The blueprint or plan consists of the following four interrelated components:

- (1) Translation guidelines: The development of guidelines for the conduct and monitoring of the translation of English language data collection instruments and supporting survey materials into selected non-English languages.
- (2) Pretesting standards: The revision of the current questionnaire pretesting policy for demographic surveys to ensure that the same rigorous pretesting requirements applied to English language data collection instruments and supporting materials is also applied to their non-English counterparts.
- (3) Quantitative and qualitative research: The conduct of evaluative research on the quality of data obtained from non-English speaking households.
- (4) Sociolinguistic research on multiple language use: The development and execution of sociolinguistic research on language use.

These four components will help ensure that data collected from non-English speaking households is of high quality. These research efforts will provide useful and practical recommendations for improving the design and development of non-English language questionnaires. These efforts can also help with the development of field procedures for the conduct of interviews with household members who have a limited knowledge of English. This report begins to fill the need for quantitative research outlined in the aforementioned blueprint.

This research was undertaken to gain an understanding of which language groups in the United States have the greatest numbers of households with the lowest levels of English proficiency. In addition, the research determined how these households are interviewed in the ACS, and how complete the data collected from these households are. Other related factors, such as the demographic characteristics of the respondents, were also examined.

The research focuses on households who speak a language other than English and have the lowest levels of English-speaking proficiency (called linguistically isolated households) because

we expect that these households face the greatest challenges in understanding and answering survey questions. A linguistically isolated household is one in which no household member age 14 years or over reports speaking English “very well”. The construct of a linguistically isolated household has been used by the Census Bureau in previous evaluations of data quality from Spanish-speaking households (de la Puente and Wobus, 1994).

This study evaluated the completeness of data collected from non-English speaking households using traditional measures of item nonresponse. Item nonresponse occurs when a respondent fails to answer one or more questionnaire items or fails to provide valid responses for questions. Item allocation rates were used to measure item nonresponse. Allocations are performed when a response to a data item is either missing or not consistent with the other responses and an item value cannot be determined based on the information provided for that person. An allocation is performed using a response from another person within the household or from a person in a nearby household.

While the quantitative measures of data quality provided in this report provide a valuable assessment of data completeness, it is only a partial assessment of data quality. Other assessments from a qualitative standpoint, such as cognitive interviews, are necessary to provide a more complete picture of the quality of data obtained from non-English speaking households.

The key findings and recommendations follow.

- Spanish represents the largest non-English language group in the U.S. with an estimated 9.2 million households (compared to less than 700,000 households for the other language groups) of which an estimated 2.3 million are considered to be linguistically isolated. Spanish linguistically isolated households represent 60 percent of the total estimated number of linguistically isolated households, 3.8 million.
- Households with low levels of English proficiency are primarily foreign born and were more likely to be living below the poverty level than households with high levels of English proficiency. Spanish and Vietnamese linguistically isolated households tend to have less education and larger households.
- The percent of reference persons in linguistically isolated households reporting speaking English “well” range from 54 percent for Chinese households to slightly less than 40 percent for Spanish-speaking households. Conversely, more than 20 percent of reference persons in linguistically isolated Spanish-speaking households reported no ability to speak English at all, compared to seven to 15 percent for the other linguistically isolated households in the study.
- Data show that linguistically isolated households have lower percentages of response by mail in the ACS than households speaking English only. This is particularly true for

Spanish linguistically isolated households who have an especially low percentage of households interviewed by mail, 26.3 percent, versus 62.7 for households speaking English only. Consequently, Spanish linguistically isolated households had the highest percentage interviewed by Computer Assisted Personal Interviewing (CAPI) at 62.8 percent versus only 28.7 for households speaking English only. This finding coupled with existing preliminary research indicating that improvements are needed in the Spanish language automated instrument suggests that more attention should be devoted to evaluating and improving the Spanish language instrument (Carrasco, 2002b).

- Overall housing and overall population allocation rates across all modes for linguistically isolated households were only slightly higher than the overall allocation rates for households speaking English only.
- In general, data collected via Computer Assisted Telephone Interviewing (CATI) and CAPI were more complete than data collected via mail for all language groups.
- For the population questions, Spanish linguistically isolated households had among the least complete data in mail. However, in CAPI, Spanish linguistically isolated households had among the most complete data and, in many cases, more complete data than households which speak English only.
- Among the non-linguistically isolated households, Vietnamese non-linguistically isolated households had among the highest population allocation rates for mail and CATI and, in many cases, these rates were higher than the allocation rates for Vietnamese linguistically isolated households. Further research is needed to determine the cause behind this result.
- Analysis for individual housing and population items showed there were questions – on mortgages, education, mobility and migration, industry and occupation, physical housing characteristics, and questions requiring write-in response – that were problematic for households that speak a language other than English.
- In general, questions requiring check-box response generate better data quality (i.e. more complete data) than questions requiring write-in response for all language groups.



# **1. INTRODUCTION**

## **1.1 Overview and Purpose**

According to the results from the Census 2000 Supplementary Survey (C2SS), approximately 45 million people aged five years and older spoke a language other than English at home. Currently, there is little research investigating differences in data quality between households speaking English only and households that speak a language other than English at home in the American Community Survey (ACS). To better understand if differences exist, this paper reports results from a quantitative assessment of data collected from English and non-English speaking households in the ACS. This research addresses key questions about whether existing methods are resulting in the collection of incomplete data in the ACS due to language barriers.

The ACS, a survey proposed by the Census Bureau to replace the decennial census long form sample, collects social, demographic, economic, and housing data about the nation throughout the decade rather than once every ten years. Data are collected using mail, telephone, and personal visit methodologies providing varying degrees of language assistance. It is critical that high quality data be collected for all geographic areas and all population groups. The Census Bureau is interested in developing research strategies and measures of data quality that can be used to assess and improve the quality of survey data obtained from people whose primary language is not English and who have little or no knowledge of English.

This research was undertaken to gain an understanding of which language groups in the United States have the greatest numbers of households with the lowest levels of English proficiency. In addition, the research determined how these households are interviewed in the ACS, and how complete the data collected from these households are. The research focuses on households that speak a language other than English with the lowest levels of English-speaking proficiency because we expect that these households face the greatest challenges in understanding and answering survey questions. Where appropriate, other related factors such as the demographic characteristics of the respondents are also examined.

## **1.2 Background**

The Census 2000 Supplementary Survey (C2SS) and the 2001 Supplementary Survey (SS01) were tests of operational feasibility using the ACS methodology. The supplementary surveys were large-scale surveys of between 850,000 and 900,000 addresses each across the United States and were conducted using the procedures and questionnaire planned in the full scale ACS.

The surveys were conducted using three modes of data collection to contact households. The first mode uses self-enumeration. The self-enumeration procedure involves the mailing of a pre-notice letter, a survey questionnaire package, and a reminder card. The questionnaire mailing packages include general information about the ACS, and an instruction guide explaining how to complete the questionnaire.

Questionnaires and instruction guides are currently mailed out in English only, but a Spanish mailout questionnaire is available upon request. The questionnaire provides a telephone number to call if assistance is needed regarding completing the form, including Spanish language assistance. If the original questionnaire is not returned within the specified time frame, a replacement questionnaire package is mailed to all non-responding sample addresses.

Mail questionnaires are checked-in, keyed, and then sent for telephone follow-up if necessary. The questionnaire collects housing data and socioeconomic and demographic information for up to five residents of a household. If a household has more than five persons, the questionnaire asks the respondent to list their names in the spaces provided and informs them that they may be called to provide additional information regarding these persons. Telephone follow-up is conducted on cases with missing or inconsistent information and for households with more than five members in the household. Interviewers located in centralized telephone centers contact these households to obtain all information not present on the mail-returned questionnaire.

For addresses that do not respond by mail and for which a phone number is available, Computer Assisted Telephone Interviewing (CATI) is used to try to reach households in order to complete an interview. The CATI operation is conducted approximately six weeks after the initial questionnaire was mailed. The CATI operation currently is conducted in English and Spanish, but provides limited support for those speaking other non-English languages.

Following the CATI operation, a one-in-three sample is selected of the remaining, nonresponding addresses to be sent to the field for Computer Assisted Personal Interviewing (CAPI). Field representatives visit the sub-sampled addresses to conduct a personal interview. In areas having non-English language needs, interviewers usually are bilingual. CAPI is the last nonresponse follow-up effort.

## **2. METHODOLOGY**

### **2.1 Data Quality Measures**

This research was undertaken to assess data quality, focusing on item nonresponse. Item nonresponse occurs when a respondent fails to answer one or more questionnaire items or fails to provide valid responses for questions.

In the ACS, missing data items are compensated for by using imputation procedures. The data from items that were answered are used to impute values for those that are missing or inconsistent. Imputed values can be assigned or allocated. Assignments involve logical imputation where, for example, an answer to another question implies the answer to the missing data item on the same data record. Allocation, on the other hand, involves the use of hot-deck matrices or nearest neighbor households to impute missing data items. Item allocation rates are final measures of completeness that quantify how frequently allocation was the source of data in the production of a specific tabulation. For this reason, we measured item nonresponse by item

allocation rates. Allocation rates for questionnaire items are computed as a ratio of the number of housing units or people for which a value for a specific item was allocated to the number of housing units or people for which a response to the item was required.

We calculated item allocation rates by mode of data collection (mail, telephone, and personal visit) for households that speak English only, for households that speak a language other than English, and for households that are considered to be linguistically isolated (LI). A linguistically isolated household is one in which no household member age 14 years or over reports speaking English “very well”. All members of a linguistically isolated household are classified as linguistically isolated, including members under age 14 years who may speak only English.

We calculated a combined allocation rate across all population items and across all housing items. The combined allocation rate for all population (housing) items is the ratio of the total number of population (housing) items for which a value was allocated to the total number of population (housing) items for which a response was required. This combined measure was used, instead of simply averaging all item allocation rates, to ensure that the resulting rate indicated the total amount of required data allocation. If we had simply averaged the item allocation rates, each question would have been given the same weight, regardless of the size of the question’s coverage. We also produced combined allocation rates for sets of similar items or topics, such as “all mortgage items” and “all income-related items”.

## **2.2 Data and Weighting**

This research used data from the C2SS and the SS01 after all edits and allocations had been made. We pooled two years of data and produced two-year average allocation rates in order to produce more reliable estimates. The data are weighted to reflect the C2SS and SS01 sample design, but do not include weighting to adjust for noninterviews and coverage errors. The estimates in this report are based on response from a sample of the population. As with all surveys, estimates may vary from the actual values because of sampling variation and other factors. We produced standard errors for the allocation rates and compared the rates for non-linguistically isolated and linguistically isolated households to the rates for households speaking English only to detect differences at the 90 percent confidence level.

## **2.3 Demographic Analysis**

In order to have a better understanding of linguistically isolated households, we looked at several demographic characteristics associated with linguistically isolated households and compared them to non-linguistically isolated and English only households. For each household, the characteristics of the reference person (that is, the person listed first on the questionnaire) were analyzed since that person is the respondent in most cases. In the ACS, the respondent answers questions for everyone in the household.

### 3. LIMITATIONS

The traditional data quality measures used in this analysis provide a useful, but partial, assessment of data quality. Low item nonresponse rates do not necessarily ensure high quality data. Other assessments from a quantitative and qualitative standpoint would be necessary to provide a more complete understanding of the quality of data obtained from households with limited English proficiency. For example, preliminary findings from recent focus groups and cognitive interviews indicate that the way ACS interviews are conducted by Spanish-speaking interviewers and the way in which Spanish-speaking respondents interpret and respond to questions in the ACS Spanish CAPI instrument have an impact on data quality (Carrasco, 2002a and Carrasco, 2002b).

A question on the ACS questionnaire regarding English-speaking ability is used to determine whether or not a household was linguistically isolated. This question is asked of each person in the household who speaks a language other than English at home and reads: “How well does this person speak English?”. The response categories range from “very well” to “not at all”. The level of English proficiency collected by this question is based on people’s perceptions of their ability. Historically, this opinion-type question has shown high response variance. (Singer and Ennis 2002)

### 4. RESULTS

This section discusses results for the questions posed in this research. Results include answers to research questions on which language groups have the largest numbers of linguistically isolated households, characteristics of linguistically isolated households, the mode of interview, and the completeness of data.

#### 4.1 Which languages have the greatest numbers of linguistically isolated households?

According to data from the C2SS, Spanish represents the largest non-English language group in the U.S. with an estimated 9.2 million households of which an estimated 2.3 million are considered to be linguistically isolated. Spanish linguistically isolated households represented 60 percent of the estimated 3.8 million linguistically isolated households in the U.S.

Table 1 summarizes results on the number of linguistically isolated households, by household language<sup>1</sup>. The data are weighted to reflect the C2SS sample design, but do not include weighting to adjust for noninterviews and coverage errors. Estimates are provided of the total households reporting speaking each of these languages and the proportion of those that were

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<sup>1</sup> Household Language--In households where one or more people (age 5 years old or over) speak a language other than English, the household language assigned to all household members is the non-English language spoken by the first person with a non-English language in the following order: householder, spouse, parent, sibling, child, grandchild, other relative, stepchild, unmarried partner, housemate or roommate, and other nonrelatives. Thus, a person who speaks only English may have a non-English household language assigned to him/her in tabulations of individuals by household language.

determined to be linguistically isolated. For example, 25.0 percent of the households speaking Spanish were determined to be linguistically isolated. Vietnamese households have the higher level of linguistic isolation – 43.5 percent. The table is sorted based on the language group with the highest numbers of linguistically isolated households. The percentage and cumulative percentage of all linguistically isolated households are also provided. The top five language groups with an estimated count of 100,000 or more linguistically isolated households are shown in Table 1. The remainder of this paper will focus on these five language groups. Refer to the table in Appendix A to view the percentages for all forty language groups.

**Table 1: Summary of Linguistically Isolated Households by Household Language (C2SS)**

Household Language Group	Number of Households		% Speaking Language That are LI	% of Total LI Households	Cumulative % of Total LI Households
	Speaking Listed Language	Linguistically Isolated			
All occupied households	96,846,181	3,839,047	4.0	-----	-----
English only	79,744,658	0	0.0	0.0	-----
Spanish	9,225,869	2,303,883	25.0	60.0	60.0
Chinese	690,032	242,996	35.2	6.3	66.3
Vietnamese	281,895	122,669	43.5	3.2	69.5
Korean	342,616	118,936	34.7	3.1	72.6
Russian	282,301	115,420	40.9	3.0	75.6

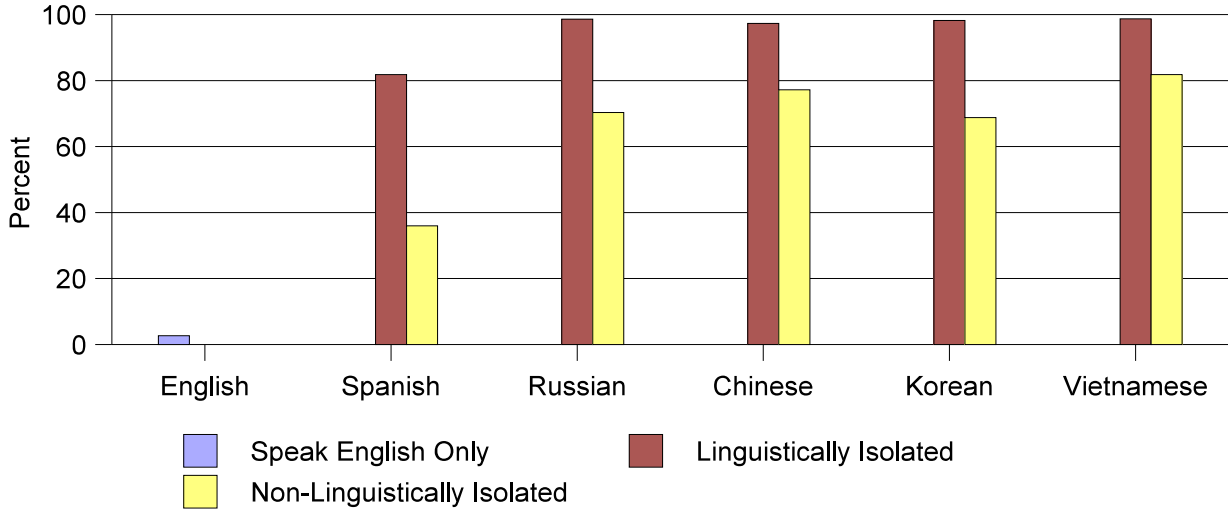
## 4.2 What are the characteristics of these linguistically isolated households?

To gain a better understanding of our study universe, we looked at various demographic characteristics for the reference person (i.e. place of birth, educational attainment, poverty status, etc.) for the linguistically isolated households and the non-linguistically isolated households in the top five language groups. Similar demographics for the households speaking English only were compared to each of the households in the five language groups. The data are from the SS01.

### 4.2.1 What percent of linguistically isolated households are foreign born?

Figure 1 shows the percent foreign born for the reference person in the top five linguistically isolated language groups and in households speaking English only. Over 80 percent of Spanish and almost all of the Russian, Chinese, Korean, and Vietnamese linguistically isolated households were foreign born as compared to only three percent of English only speaking households. For the non-LI households, just over one third of Spanish and between 68 and 82 percent of the other non-LI households were foreign born.

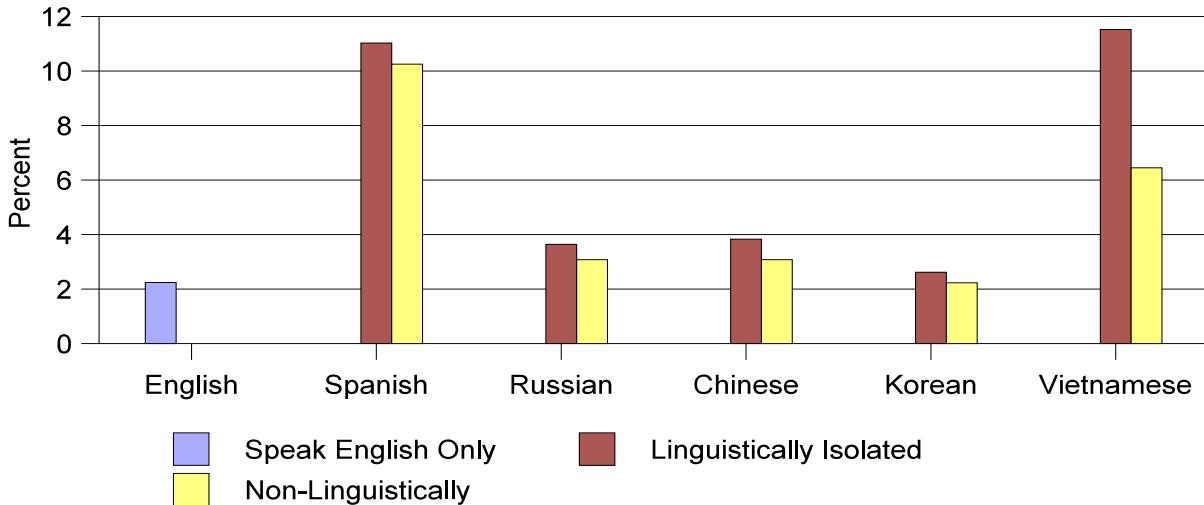
Figure 1: Percent Foreign Born by Language Group (SS01)



**4.2.2 What percent of linguistically isolated households have “large” households?**

Since population data are collected for up to five persons on the ACS questionnaire, we wanted to get a sense of the size of the LI households. We defined “large” households as six or more people. The data in Figure 2 show that Spanish and Vietnamese LI households tend to have larger households. The LI households had a higher percentage of six or more members compared to households speaking English only. The LI households for each language group also showed a higher percentage of six or more members as compared to the non-LI households in the same language group.

Figure 2: Percent of Households with Six or More People (SS01)

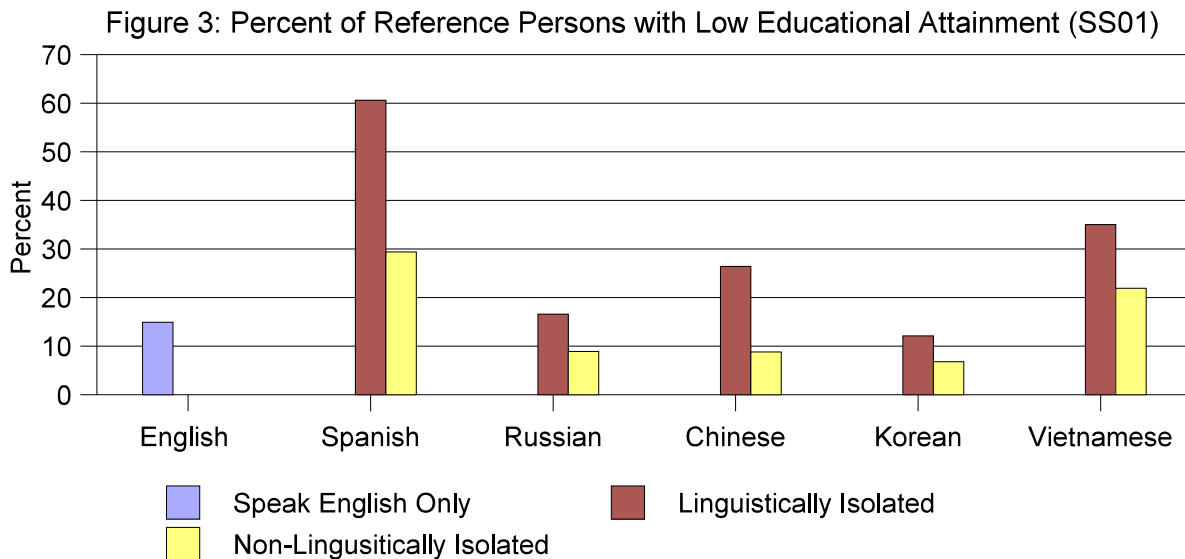


### 4.2.3 What percent of linguistically isolated households have “low” levels of educational attainment?

Figure 3 shows the percentage of reference persons with “low” levels of educational attainment (i.e. no high school diploma) by language group. Linguistically isolated households had among the highest percentages of reference persons with “low” educational levels. About 60 percent of Spanish linguistically isolated households had a level of educational attainment of less than high school graduate. The data show more than 17 percent of Spanish linguistically isolated households with an educational attainment of 5<sup>th</sup> grade or 6<sup>th</sup> grade. However, there is evidence that this number may be over-estimated. Other linguistically isolated households show only between one and six percent with an educational attainment of 5<sup>th</sup> or 6<sup>th</sup> grade.

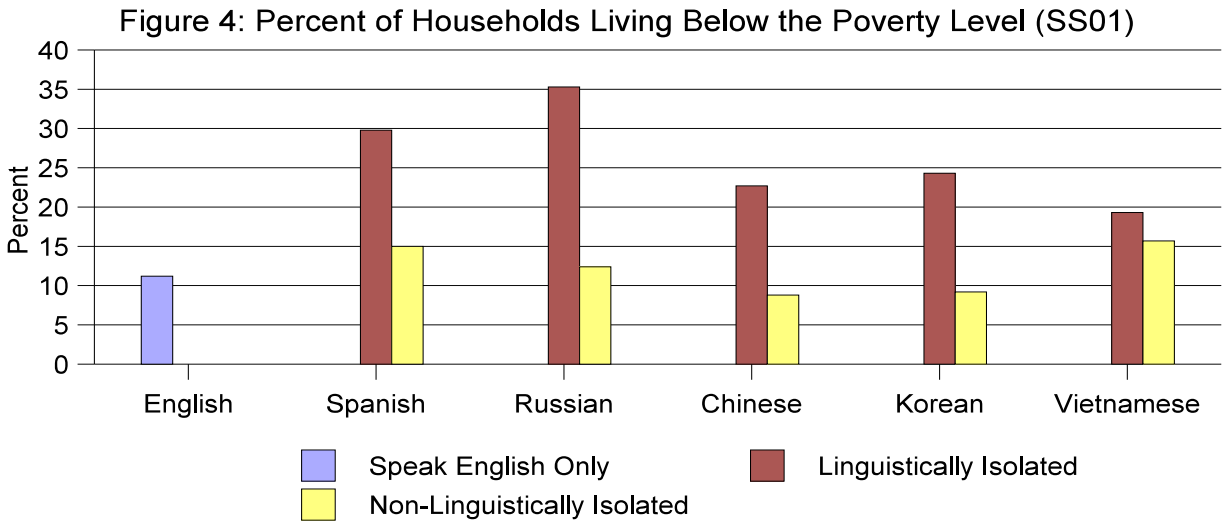
Cognitive interviews conducted by Carrasco (2002a) with monolingual Spanish speakers using the CAPI Spanish language ACS instrument showed that some respondents interpret grade level differently from what was intended in the educational attainment question. In Carrasco's research respondents answering an educational attainment of 5<sup>th</sup> or 6<sup>th</sup> grade to this question actually meant a year or two of college. Carrasco believes this occurred because of the differences in defining levels of education between the U.S. and some Latin American countries.

Despite the possible misinterpretation of the meaning of the term “grade” for Spanish linguistically isolated households, we still believe that these households have lower levels of educational attainment than households speaking English only. However, with the exception of Spanish and Vietnamese households, linguistically households were not necessarily less educated. In fact, around 20 percent of LI households speaking Russian, Chinese, or Korean had an advanced degree compared to only 10 percent for English-only speaking households.



#### 4.2.4 What percent of linguistically isolated households are living below the poverty level?

Figure 4 shows the percent of households living below the poverty level by language group. The data show that around a third of the Spanish and Russian LI households were in poverty. Chinese, Korean, and Vietnamese LI households had lower “in poverty” percentages ranging from around 20 to 25 percent. However, non-LI households had “in poverty” percentages that were similar to English only households, around 10 percent.



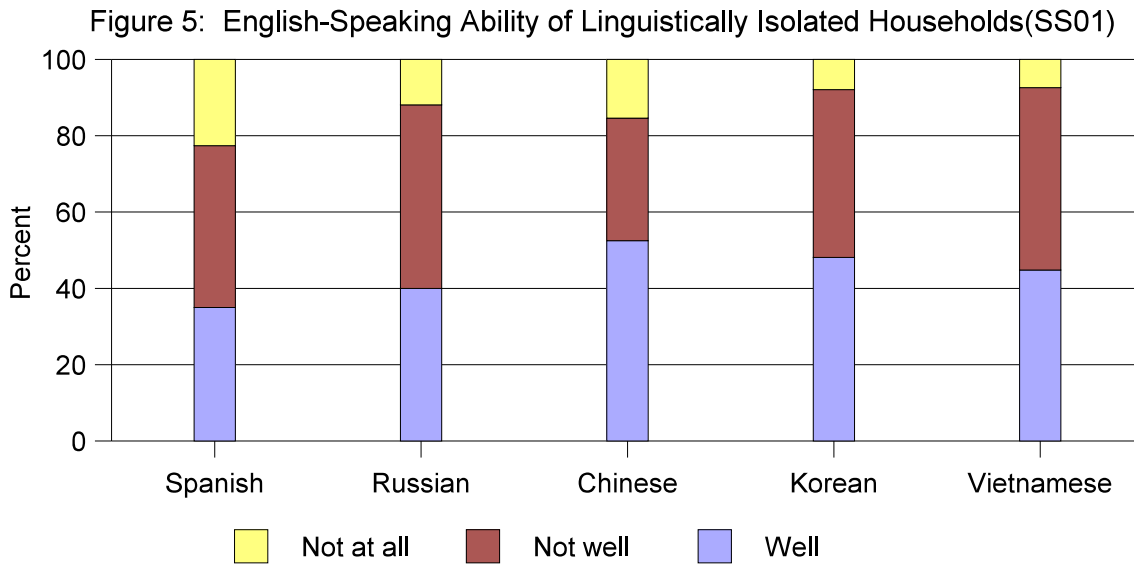
#### 4.2.5 How well do linguistically isolated households speak English?

Those who speak a language other than English at home are asked about their English speaking ability. The response categories are “very well”, “well”, “not well”, and “not at all”. By definition, a household is linguistically isolated if no adult member reports speaking English “very well”. This level of English proficiency is highly subjective, based entirely on people’s perceptions of their English-speaking ability.

Figure 5 shows the responses to this question for the reference persons living in linguistically isolated households. For instance, the graph indicates in Vietnamese LI households, over 40 percent of the households indicated they spoke English “well”. About 90 percent indicated they spoke English “well” or “not well” and 10 percent indicated “not at all”.

Spanish linguistically isolated households had the highest percentage of reference persons who did not speak English at all when compared to the other language groups and the lowest percentage who reported speaking English “well”.





### 4.3 How were linguistically isolated households interviewed in the ACS?

Table 2 shows the distribution of interviews across the three data collection modes (Mail, CATI, and CAPI) for all occupied households in the C2SS speaking English only and for LI households that fall into each of the five household language groups with an estimated 100,000 or more LI households.

These data show that linguistically isolated households had lower percentages of response by mail than households speaking English only. Spanish linguistically isolated households had an especially low percentage of households interviewed by mail, 26.3 percent, and a much higher percentage interviewed by CATI, 10.9 percent, and CAPI, 62.8 percent, as compared to households speaking English only. The lower rates of CATI for non-Spanish linguistically isolated households might be due to the fact that the CATI operation provides limited support for those speaking non-English languages, except Spanish.

The low percentage of interviews by mail for Spanish-speaking households is certainly of concern and some improvements have been implemented in the mail collection operations for Spanish speakers. As of May 2004, a Spanish questionnaire is available and can be mailed out upon request to households. In addition, the ACS now has the capability to conduct Spanish interviews over the phone upon request when a respondent calls the Spanish assistance line.

**Table 2: Distribution of ACS Modes of Data Collection for English-Speaking and LI Households (C2SS)**

Household Language Group	Percent Mail	Percent CATI	Percent CAPI	Total
All occupied households	60.8	8.4	30.7	96,846,181
English Only	62.7	8.6	28.7	79,744,658
Spanish LI	26.3	10.9	62.8	2,303,883
Chinese LI	61.8	4.8	33.4	242,996
Vietnamese LI	51.5	5.9	42.6	122,669
Korean LI	48.4	3.9	47.6	118,936
Russian LI	56.6	6.7	36.7	115,420

#### 4.4 How complete were the data collected from linguistically isolated households?

##### 4.4.1 Combined allocation rates across all housing and all population questions

Using the C2SS and the SS01 data, we calculated allocation rates to see if there was any evidence that we are collecting less complete data from households with lower levels of English proficiency. The rates were calculated by mode of data collection to determine if mode has an effect on completeness.

Tables 3 and 4 list the combined allocation rates and standard errors for all housing items and all population items by mode. These summary tables give us an overall picture of the completeness of the data by language group. Significant differences in the mail housing and population allocation rates were found for virtually all five non-English language groups for both linguistically isolated and non-linguistically isolated households when compared to households speaking English only. This result is not surprising given that the questionnaire was available in English only.

Table 3 shows that, with the exception of Russian non-linguistically isolated households, the mail housing allocation rates for all language groups were significantly higher than English-speaking households. In addition, the mail allocation rates for linguistically isolated households were higher than those for non-linguistically isolated households.

The CATI housing allocation rates for the non-English language groups were mostly similar to those for English only households. The two exceptions were Spanish LI and Russian LI households which had significantly higher allocation rates when compared to English only households. For CAPI some language groups (Spanish and Vietnamese non-LI) had significantly lower allocation rates than households speaking English only.

Nearly all groups had significantly higher overall allocation rates for the housing items when compared with English only households. The Asian languages, in particular, had lower levels of completeness when compared to English only households. However, while the rates were mostly

higher for the non-English language groups, there is no evidence of a dramatic loss in completeness.

**Table 3: Two-Year Average Combined Allocation Rates for All Housing Items**

Language	All Modes (%)	Mail (%)	CATI (%)	CAPI (%)
All occupied households	5.25 ±0.02	4.66 ±0.01	5.94 ±0.03	6.18 ±0.04
English Only	5.17 ±0.02	4.53 ±0.01	5.89 ±0.04	6.32 ±0.05
<b>Linguistically Isolated</b>				
Spanish	* 6.15 ±0.09	* 7.88 ±0.17	* 6.49 ±0.17	* 5.38 ±0.13
Russian	* 7.14 ±0.39	* 7.42 ±0.52	* 8.87 ±1.04	6.28 ±0.74
Chinese	* 7.57 ±0.30	* 7.15 ±0.27	6.84 ±0.65	* 8.28 ±0.73
Korean	* 7.82 ±0.45	* 7.87 ±0.45	7.03 ±1.06	* 7.84 ±0.85
Vietnamese	* 7.45 ±0.36	* 8.20 ±0.42	7.27 ±0.98	6.41 ±0.72
<b>Not Linguistically Isolated</b>				
Spanish	5.24 ±0.07	* 5.04 ±0.05	5.81 ±0.13	* 5.31 ±0.10
Russian	5.33 ±0.27	4.42 ±0.24	5.23 ±0.48	7.17 ±0.69
Chinese	* 5.76 ±0.19	* 5.03 ±0.16	6.79 ±0.66	* 7.39 ±0.57
Korean	* 6.11 ±0.30	* 5.50 ±0.25	6.36 ±0.64	7.04 ±0.79
Vietnamese	* 6.24 ±0.29	* 6.65 ±0.38	7.92 ±1.29	* 5.37 ±0.51

\* – Significantly difference from English Only at the  $\alpha=.10$  level.

Source: Census 2000 Supplementary Survey and the 2001 Supplementary Survey

Table 4 shows the allocation rates by mode for the ACS population questions. The mail allocation rates for all language groups were significantly higher than the mail allocation rates for households speaking English only. Spanish and Vietnamese households had some of the highest mail allocation rates. Further research is needed to determine what is happening given that a Spanish telephone follow-up operation is in place for mail returns.

The table also shows that we get more complete population data from CATI and CAPI than from mail-returned questionnaires. The main reason why CATI and CAPI data are more complete than mail-returned data may be because CATI and CAPI instruments have built-in edits and skip patterns. Also, telephone and field interviewers (who are usually bilingual) ensure that they collect the most complete data possible from respondents.

However, two exceptions where the CAPI data collected were less complete than that of English only households was for Chinese and Korean households. Further research would be needed to determine why this is the case.

The overall allocation rates across all modes were significantly higher for virtually all language groups compared to households that speak English only. The one exception was Spanish linguistically isolated households which had a significantly lower overall allocation rate compared to English only households.

**Table 4: Two-Year Average Combined Allocation Rates for All Population Items**

Language	All Modes (%)	Mail (%)	CATI (%)	CAPI (%)
All occupied households	5.87 ±0.02	6.80 ±0.02	4.33 ±0.04	4.71 ±0.05
English Only	5.66 ±0.02	6.35 ±0.02	4.01 ±0.03	4.81 ±0.05
<b>Linguistically Isolated</b>				
Spanish	* 5.44 ±0.11	* 11.57 ±0.23	3.93 ±0.20	* 4.02 ±0.14
Russian	* 6.90 ±0.46	* 9.54 ±0.61	4.56 ±1.12	4.39 ±0.83
Chinese	* 7.35 ±0.47	* 7.55 ±0.34	4.90 ±1.19	* 7.35 ±1.16
Korean	* 7.77 ±0.60	* 9.07 ±0.55	4.30 ±0.96	* 6.88 ±1.16
Vietnamese	* 7.11 ±0.39	* 9.39 ±0.49	4.28 ±0.90	4.66 ±0.67
<b>Not Linguistically Isolated</b>				
Spanish	* 6.38 ±0.07	* 8.92 ±0.10	* 6.01 ±0.22	* 4.04 ±0.12
Russian	* 6.46 ±0.46	* 7.51 ±0.52	3.99 ±0.74	5.34 ±1.05
Chinese	* 7.38 ±0.32	* 7.18 ±0.28	* 5.96 ±0.83	* 7.96 ±0.88
Korean	* 7.17 ±0.38	* 7.72 ±0.45	* 6.31 ±1.18	* 6.50 ±0.91
Vietnamese	* 9.05 ±0.56	* 11.36 ±0.66	* 9.50 ±2.61	5.91 ±1.05

\* – Significantly difference from English Only at the  $\alpha=.10$  level.

Source: Census 2000 Supplementary Survey and the 2001 Supplementary Survey

#### 4.4.2 Combined allocation rates by housing question topic

In order to gain a closer look at the completeness of data for the housing items and the populations items by mode, we chose to calculate allocation rates for similar groups of housing and population questions.

We produced combined measures for sets of similar housing items by mode. These combined allocation rates give a measure of completeness for each housing question topic. We combined the questions on physical characteristics of the housing unit, utilities, special programs, mortgage, and other financial characteristics. Tables containing the allocation rates by housing topic can be found in Appendix B.

#### Housing Unit Physical Characteristics

The first twelve housing questions on the ACS questionnaire ask about the physical characteristics of the housing unit. For example, questions are asked about the type of building, year built, number of rooms, and plumbing and kitchen facilities. The data show that, in the physical characteristics category, linguistically isolated households have significantly higher allocation rates than households speaking English across all modes. With a few exceptions, the rates for non-linguistically isolated households are significantly higher as well.

To better assess which questions on the physical characteristics might be problematic for those with low English proficiency, we calculated allocation rates for each question separately by mode. The questions on year built, lot size, business on property, number of

rooms, and the number of bedrooms have significantly higher mail allocation rates for the linguistically isolated households versus households speaking English only.

Except for the question on year built, the CAPI allocation rates for linguistically isolated households for these questions were actually much lower and similar to the rates for households speaking English only. While these data are less complete for LI households in mail, the field representatives are obtaining more complete data via CAPI. The CATI and CAPI allocation rates for the year built question were higher than the mail rates for all language groups, including English. Interviewers may be accepting don't know as a response for the year built question too easily.

### Utilities

The questions on utilities involve asking about the type of fuel most used for heating, and the cost of electricity, gas, water and sewer, and other fuel. For this set of questions, the only significant differences between the linguistically isolated households and the English only households in the all modes allocation rates occurred for Vietnamese linguistically isolated and Spanish linguistically isolated households. The all modes allocation rate for Vietnamese linguistically isolated households was significantly higher than the rate for English only households while the all modes rate for Spanish linguistically isolated households was significantly lower. The all modes allocation rate for Spanish non-linguistically isolated households was also significantly lower than the rate for English only households. No other significant differences were found for the allocation rates at the all modes level.

### Special Programs

Questions on special programs (Food Stamps, National School Lunch Program, Section 8, etc.) had allocation rates which were lower than what we expected for those with low English proficiency. While all LI households had mail allocation rates which were significantly higher than English only, the rates seem quite low given that these concepts may be unfamiliar to those who don't speak English very well. Results from cognitive interviews with Spanish-speaking households indicate that some respondents do not understand the intent of some of the special programs questions in the ACS instrument and provide an inappropriate response to the field representative (Carrasco 2002a).

### Other Financial Characteristics

The questions on other financial characteristics includes questions on condominium fees, tenure, rent, and property value. The allocation rates for linguistically isolated and non-linguistically households were similar to the rates for households speaking English only. A few of the all modes allocation rates for linguistically isolated households were significantly higher than the English only households.

## Mortgage

Of all the housing questions, the mortgage questions had the highest rates of allocation for all modes combined regardless of language spoken. The allocation rates for mail were lower than the rates for either CATI or CAPI for all language groups. We suspect that households do not have their mortgage information readily available when completing the interview via CATI or CAPI or that they prefer not to provide that information in person.

With the exception of Vietnamese LI households, the mail mortgage allocation rates for the LI households were significantly higher than the rates for households speaking English only. However, data collected from non-linguistically isolated households had similar levels of completeness for the mortgage items as households speaking English only. We suspect that the term mortgage may be unfamiliar to those with low English proficiency.

### ***4.4.3 Combined allocation rates by population question topic***

For the populations items, we combined questions into 11 categories: basic demographics, origin and language, education, mobility and migration, disabilities, grandparent and fertility, military, labor force, journey to work, industry and occupation, and income. We calculated allocation rates for these categories to obtain measures of completeness by population topic. Tables containing the allocation rates for these population topics can be found in Appendix C.

In many instances, we found that the Spanish and Vietnamese mail population allocation rates exceeded the mail rates for the other languages. This occurred in both LI and non-LI Spanish and Vietnamese households. One explanation for this pattern may be that Spanish and Vietnamese were more likely to have “larger” households (Refer to section 4.2.2). Those with large households can enter demographic information for only five members of their household. If there are more than five members of a household, interviewers are supposed to contact households during edit follow-up to gather information on the additional members. We do know that the edit follow-up operation didn’t have the same amount of resources in 2000 due to the Census as it did in 2001. Consequently, less complete data was collected from larger households in 2000 than in 2001.

Only question categories where we found issues we believed were important to discuss are addressed separately in this section.

## Basic Demographics

The first six questions on the questionnaire involve questions on the demographics (sex, age, relationship to reference person, marital status, Hispanic origin, race) of the household residents. Most of the allocation rates for the combined demographic questions were under five percent for all language groups. However, for linguistically isolated and non-

linguistically isolated households in all five language groups, the all modes and mail allocation rates showed significant differences between the rates for households speaking English only. In looking at the allocation rates separately for the basic questions, we found that the date of birth question had the highest allocation rates for all three modes regardless of language spoken.

### Origin and Language

The origin and language questions include questions on place of birth, citizenship, year of entry, language spoken, and English speaking ability. There were only a few instances where the allocation rates for linguistically isolated households were significantly higher than the rates for households speaking English only. However, for the non-linguistically isolated households all of the mail allocation rates were significantly higher than the rates for households speaking English only. More research is needed to understand why this is the case.

### Education

The questions on education included questions on school enrollment, grade attending, and educational attainment. The data show that the overall and mail allocation rates for linguistically isolated and non-linguistically isolated households are significantly higher than households speaking English only. Cognitive studies have found that cultural differences in defining levels of education can cause confusion for respondents that speak little or no English (Carrasco 2002a).

### Mobility and Migration

The questions on mobility and migration include questions on the housing residence of each household member. These questions had mail allocation rates for LI and non-LI households which were significantly higher than the rates for English only households. In several instances, the rates for the non-English language groups were more than double those for English only households. One possible explanation for the high mail allocation rates is that respondents may not be following the skip pattern correctly for this question. These questions require further investigation as to what might be happening. The questions elicit much more complete data when collected in CATI and CAPI for all language groups.

### Industry and Occupation

For the questions on industry and occupation, the mail allocation rates for the LI and non-LI households are significantly higher than English only households. For the LI households, the rates are more than double those of households speaking English only. Much more complete data is collected in CATI and CAPI for all language groups for the industry and occupation questions. Further investigation is needed for these questions to determine why the mail

allocation rates are so high for the households that speak a language other than English.

It is interesting to note that four of the six questions in the industry and occupation grouping are questions requiring a write-in response. Hypothesizing that the questions requiring a write-in response would have higher allocation rates for those with low English proficiency, we decided to calculate allocation rates for questions requiring a write-in response versus questions requiring a check-box response.

#### ***4.4.4 Combined allocation rates for questions requiring write-in vs. check-box responses***

We calculated allocation rates for questions requiring a write-in response and a check-box response separately to see if questions requiring write-in response were less complete for non-English speakers. In general, the allocation rates for the questions requiring a write-in response were higher than the questions requiring a check-box response, as we suspected. This could be due to not only the format of the question, but also the sensitivity that can be associated with questions requiring a write-in response. For example, some of the questions on the ACS questionnaire requiring write-in responses involve the collection of data on income, mortgages, and tax information.

#### **Housing Questions**

Tables 5 and 6 show the housing allocation rates for the questions requiring write-in response and the questions requiring check-box response, respectively. In general, the overall allocation rates for the questions requiring write-in responses for each language group were similar to those for households speaking English only. For questions requiring a check-box response, the allocation rates for the non-English LI language groups were significantly higher than those for households that spoke English only.

The data in Tables 5 and 6 show that the overall rates for the questions requiring a write-in response are higher than those requiring a check-box response. Table 5 shows the overall allocation rate for all language groups is 8.4 percent versus 3.5 percent in Table 6. Again, this difference can be due to the format of the question, as well as, the sensitivity that can be associated with questions requiring a write-in response.



**Table 5: Two-Year Average Allocation Rates for Housing Questions Requiring Write-in Response**

Language	All Modes (%)	Mail (%)	CATI (%)	CAPI (%)
All occupied households	8.35 ±0.02	7.42 ±0.02	10.03 ±0.05	9.68 ±0.07
English Only	8.44 ±0.03	7.40 ±0.02	10.21 ±0.06	10.17 ±0.08
<b>Linguistically Isolated</b>				
Spanish	* 7.09 ±0.13	* 9.03 ±0.22	* 7.53 ±0.30	* 6.19 ±0.20
Russian	* 7.47 ±0.49	8.09 ±0.61	11.12 ±1.74	* 5.79 ±1.02
Chinese	* 9.43 ±0.40	* 8.55 ±0.34	8.54 ±1.18	10.97 ±0.99
Korean	8.71 ±0.61	7.13 ±0.55	9.43 ±1.71	10.40 ±1.22
Vietnamese	8.77 ±0.55	* 8.85 ±0.51	8.50 ±1.47	8.85 ±1.24
<b>Not Linguistically Isolated</b>				
Spanish	* 7.67 ±0.08	* 7.24 ±0.06	* 8.98 ±0.18	* 7.82 ±0.17
Russian	8.09 ±0.45	* 6.63 ±0.36	* 8.05 ±0.88	11.02 ±1.17
Chinese	8.36 ±0.29	7.13 ±0.21	9.80 ±0.98	11.17 ±0.88
Korean	8.64 ±0.44	7.31 ±0.33	11.35 ±1.25	10.21 ±1.12
Vietnamese	8.58 ±0.43	* 8.18 ±0.45	11.92 ±1.65	* 8.61 ±0.90

\* – Significantly difference from English Only at the  $\alpha=0.10$  level.

Source: Census 2000 Supplementary Survey and the 2001 Supplementary Survey

**Table 6: Two-Year Average Allocation Rates for Housing Questions Requiring Check-Box Response**

Language	All Modes (%)	Mail (%)	CATI (%)	CAPI (%)
All occupied households	3.46 ±0.01	3.04 ±0.01	3.60 ±0.03	4.23 ±0.03
English Only	3.28 ±0.02	2.84 ±0.01	3.41 ±0.03	4.17 ±0.04
<b>Linguistically Isolated</b>				
Spanish	* 5.64 ±0.08	* 7.22 ±0.17	* 5.93 ±0.15	* 4.94 ±0.11
Russian	* 6.96 ±0.38	* 7.04 ±0.51	* 7.60 ±0.91	* 6.55 ±0.71
Chinese	* 6.50 ±0.28	* 6.34 ±0.28	* 5.89 ±0.54	* 6.77 ±0.64
Korean	* 7.32 ±0.41	* 8.29 ±0.46	* 5.70 ±0.85	* 6.41 ±0.74
Vietnamese	* 6.71 ±0.32	* 7.84 ±0.43	* 6.59 ±0.87	5.07 ±0.58
<b>Not Linguistically Isolated</b>				
Spanish	* 3.88 ±0.04	* 3.78 ±0.05	* 4.04 ±0.12	* 3.93 ±0.08
Russian	* 3.75 ±0.25	3.15 ±0.23	3.63 ±0.42	5.00 ±0.63
Chinese	* 4.26 ±0.17	* 3.80 ±0.15	* 5.07 ±0.56	* 5.24 ±0.47
Korean	* 4.68 ±0.26	* 4.47 ±0.25	3.56 ±0.45	5.26 ±0.69
Vietnamese	* 4.92 ±0.27	* 5.79 ±0.39	* 5.69 ±1.27	3.59 ±0.42

\* – Significantly difference from English Only at the  $\alpha=0.10$  level.

Source: Census 2000 Supplementary Survey and the 2001 Supplementary Survey

### Population Questions

The mail allocation rates for the population questions which require a write-in response for LI and non-LI households were significantly higher than households speaking English only for all the language groups. These questions elicit much more complete data when collected in CATI and CAPI for most language groups.

Households that speak a language other than English might not be comfortable translating their response into English so they may just leave it blank. However, if responses are given in Spanish, for example, these would be translated since entries in the coding master files are in Spanish. Special characters that are outside the A-Z and 0-9 code set are not captured and coded. Tables 7 and 8 show the population allocation rates for the questions requiring write-in and check box response, respectively.

**Table 7: Two-Year Average Allocation Rates for Population Questions Requiring Write-in Response**

Language	All Modes (%)		Mail (%)		CATI (%)		CAPI (%)	
All occupied households	9.67	±0.03	10.52	±0.03	7.85	±0.05	8.71	±0.08
English	9.40	±0.03	9.90	±0.03	7.55	±0.05	9.01	±0.09
<b>Linguistically Isolated</b>								
Spanish	9.25	±0.17	* 17.67	±0.33	* 6.78	±0.27	* 7.46	±0.23
Russian	* 11.25	±0.71	* 14.38	±0.94	8.22	±1.70	8.04	±1.24
Chinese	* 12.32	±0.67	* 12.39	±0.50	8.43	±1.64	* 12.69	±1.61
Korean	* 13.75	±0.96	* 15.45	±0.90	7.72	±1.35	* 12.77	±1.93
Vietnamese	* 11.74	±0.64	* 14.66	±0.67	7.54	±1.47	8.76	±1.28
<b>Not Linguistically Isolated</b>								
Spanish	* 10.08	±0.10	* 13.24	±0.13	* 9.32	±0.28	* 7.21	±0.18
Russian	10.08	±0.63	* 11.00	±0.67	7.01	±1.11	9.49	±1.51
Chinese	* 11.44	±0.44	* 10.89	±0.36	* 9.78	±1.15	* 12.78	±1.24
Korean	* 11.60	±0.56	* 12.00	±0.64	* 10.6	±1.69	11.19	±1.35
Vietnamese	* 13.43	±0.74	* 16.10	±0.80	* 13.0	±3.06	9.84	±1.45

\* – Significantly difference from English Only at the  $\alpha=.10$  level.

Source: Census 2000 Supplementary Survey and the 2001 Supplementary Survey

**Table 8: Two-Year Average Allocation Rates for Population Questions Requiring Check-Box Response**

Language	All Modes (%)		Mail (%)		CATI (%)		CAPI (%)	
All occupied households	2.96	±0.01	3.94	±0.02	1.70	±0.03	1.62	±0.03
English	2.79	±0.02	3.63	±0.02	1.35	±0.03	1.56	±0.04
<b>Linguistically Isolated</b>								
Spanish	* 2.51	±0.07	* 7.12	±0.18	* 1.88	±0.17	* 1.30	±0.09
Russian	* 3.70	±0.37	* 5.90	±0.46	1.65	±0.76	1.80	±0.76
Chinese	* 3.40	±0.35	3.72	±0.30	2.09	±0.86	* 3.10	±0.86
Korean	3.14	±0.37	3.97	±0.37	1.82	±0.82	2.43	±0.65
Vietnamese	* 3.49	±0.27	* 5.25	±0.41	1.71	±0.57	1.47	±0.33
<b>Not Linguistically Isolated</b>								
Spanish	* 3.55	±0.06	* 5.59	±0.08	* 3.55	±0.19	1.63	±0.09
Russian	* 3.50	±0.36	* 4.64	±0.44	1.53	±0.49	1.99	±0.75
Chinese	* 4.03	±0.25	* 4.13	±0.24	* 2.88	±0.61	* 3.92	±0.68
Korean	* 3.58	±0.28	* 4.24	±0.36	* 2.83	±0.77	* 2.71	±0.63
Vietnamese	* 5.52	±0.45	* 7.45	±0.56	* 6.58	±2.32	2.81	±0.82

\* – Significantly difference from English Only at the  $\alpha=.10$  level.

Source: Census 2000 Supplementary Survey and the 2001 Supplementary Survey

## 5. CONCLUSIONS AND RECOMMENDATIONS

Spanish is the largest non-English language group in the United States and has the greatest number of linguistically isolated households with an estimated 9.2 million households. The other non-English language groups have far fewer numbers of linguistically isolated households.

Households with low English proficiency were primarily foreign born and were more likely to be living below the poverty level than households with high English proficiency. Spanish and Vietnamese linguistically isolated households tended to have less education and larger households. Spanish linguistically isolated households had the highest percentage of reference persons who reported no ability to speak English.

The ACS interviews more linguistically isolated households by personal visit. Households with the lowest levels of English proficiency might not return the mail questionnaire because they did not understand it. For these households, it is logical that it would be easier for them to give information to a personal visit interviewer versus trying to navigate through an English questionnaire. This seems particularly true for Spanish linguistically isolated households, which showed the lowest percentage of response by mail and had the highest percentage of reference persons who reported no ability to speak English.

The ACS is successful in obtaining complete data from linguistically isolated households using three modes of data collection. These data show that the overall (when all modes are combined) housing and population allocation rates for linguistically isolated households were only slightly higher than the overall allocation rates for households speaking English only.

Analysis for individual housing and population items showed there were questions – on mortgages, education, mobility and migration, industry and occupation, physical housing characteristics, and questions requiring write-in response – which were problematic for households that speak a language other than English.

Some improvements have been made to existing data collection methods for households that speak a language other than English. A Spanish questionnaire is available and can be mailed out upon request. In addition, call center capability has been expanded to allow cases needing language assistance to be transferred among centers. Finally, the ACS now has the capability to conduct Spanish interviews over the phone upon request when a respondent calls the Spanish assistance line. Future plans include expanding this reverse CATI capability to other languages.

More research is still needed to determine how we can improve existing methods, such as telephone follow-up operations and language questionnaire assistance, to achieve more complete data from mail-return questionnaires.

Finally, more research is needed to tap into other dimensions that can have an impact on data quality. These other factors include the extent to which linguistically isolated respondents—especially those responding by mail—understand questions in the survey, and the amount and content of training provided to interviewers for conducting interviews with non-English speaking households.

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**Appendix A. SUMMARY OF LINGUISTICALLY ISOLATED HOUSEHOLDS  
BY HOUSEHOLD LANGUAGE**

Household Language Group	Households			LIHouseholds	
	Linguistically Isolated	Speaking Language	% Speaking That are LI	% of Total	Cumulative % of Total
All occupied households	3,839,047	96,846,181	4.0%	-----	-----
Spanish	2,303,883	9,225,869	25.0%	60.0%	60.0%
Chinese	242,996	690,032	35.2%	6.3%	66.3%
Vietnamese	122,669	281,895	43.5%	3.2%	69.5%
Korean	118,936	342,616	34.7%	3.1%	72.6%
Russian	115,420	282,301	40.9%	3.0%	75.6%
Polish	80,401	339,612	23.7%	2.1%	77.7%
French (Including Patois and Cajun)	79,832	898,346	8.9%	2.1%	79.8%
Japanese	70,867	253,161	28.0%	1.8%	81.7%
Italian	64,797	544,390	11.9%	1.7%	83.3%
German	55,169	792,586	7.0%	1.4%	84.8%
Portuguese	52,812	233,339	22.6%	1.4%	86.2%
Tagalog	50,185	454,040	11.1%	1.3%	87.5%
Arabic	43,269	219,474	19.7%	1.1%	88.6%
French Creole	34,697	147,003	23.6%	0.9%	89.5%
Other Slavic	34,534	142,156	24.3%	0.9%	90.4%
Other Indic	34,513	159,494	21.6%	0.9%	91.3%
Other IndoEuropean	33,432	137,814	24.3%	0.9%	92.2%
Serbo-Croatian	29,982	94,005	31.9%	0.8%	92.9%
African languages	27,814	146,076	19.0%	0.7%	93.7%
Other Asian	27,420	139,944	19.6%	0.7%	94.4%
Persian	21,615	114,149	18.9%	0.6%	95.0%
Greek	19,816	154,912	12.8%	0.5%	95.5%
Armenian	18,169	65,295	27.8%	0.5%	95.9%
Other Pacific Islands	16,659	116,355	14.3%	0.4%	96.4%
Other languages & not reported	15,611	122,368	12.8%	0.4%	96.8%
Hungarian	13,949	67,048	20.8%	0.4%	97.1%
Other West Germanic	12,856	134,884	9.5%	0.3%	97.5%
Laotian	10,939	41,079	26.6%	0.3%	97.8%
Miao, Hmong	10,891	28,556	38.1%	0.3%	98.0%
Hindi	10,479	119,508	8.8%	0.3%	98.3%

Household Language Group	Households			LIHouseholds	
	Linguistically Isolated	Speaking Language	% Speaking That are LI	% of Total	Cumulative % of Total
Mon-Khmer, Cambodian	9,658	50,547	19.1%	0.3%	98.6%
Navajo	8,220	49,047	16.8%	0.2%	98.8%
Yiddish	8,031	57,687	13.9%	0.2%	99.0%
Thai	8,003	54,055	14.8%	0.2%	99.2%
Hebrew	7,800	87,945	8.9%	0.2%	99.4%
Other Native North American langs	6,867	81,922	8.4%	0.2%	99.6%
Urdu	6,253	79,368	7.9%	0.2%	99.7%
Scandinavian	5,938	90,532	6.6%	0.2%	99.9%
Gujarathi	3,665	62,110	5.9%	0.1%	100.0%
Speak English only	0	79,744,658	0.0%	0.0%	-----

\*Source: Census 2000 Supplementary Survey

**Appendix B. TWO-YEAR AVERAGE COMBINED ALLOCATION  
RATES BY HOUSING TOPIC**

**Table B.1: Physical Characteristics (Questions 1-12)**

<b>Language</b>	<b>All Modes (%)</b>		<b>Mail (%)</b>		<b>CATI (%)</b>		<b>CAPI (%)</b>	
All occupied households	2.95	±0.01	2.88	±0.01	2.56	±0.02	3.20	±0.03
Speak English Only	2.69	±0.01	2.61	±0.01	2.27	±0.02	3.00	±0.03
<b>Linguistically Isolated</b>								
Spanish	* 5.74	±0.07	* 7.67	±0.16	* 6.26	±0.14	* 4.87	±0.09
Russian	* 6.73	±0.32	* 6.93	±0.47	* 6.06	±0.69	* 6.38	±0.48
Chinese	* 6.36	±0.23	* 6.91	±0.25	* 5.62	±0.50	* 5.45	±0.48
Korean	* 7.26	±0.34	* 8.98	±0.39	* 4.72	±0.89	* 5.67	±0.58
Vietnamese	* 7.42	±0.33	* 9.84	±0.45	* 5.64	±0.80	* 4.29	±0.50
<b>Not Linguistically Isolated</b>								
Spanish	* 3.78	±0.04	* 4.10	±0.05	* 3.50	±0.10	* 3.49	±0.07
Russian	* 3.60	±0.21	* 3.32	±0.27	2.55	±0.37	* 4.47	±0.53
Chinese	* 4.25	±0.16	* 4.50	±0.16	* 3.48	±0.36	* 3.79	±0.37
Korean	* 4.42	±0.22	* 4.92	±0.24	2.72	±0.42	* 4.03	±0.57
Vietnamese	* 5.22	±0.27	* 6.81	±0.40	* 4.73	±1.07	3.11	±0.38

\* – Significantly different from English Only at the  $\alpha=.10$  level.

Source: Census 2000 Supplementary Survey and the 2001 Supplementary Survey

**Table B.2: Utilities (Questions 13-14)**

<b>Language</b>	<b>All Modes (%)</b>		<b>Mail (%)</b>		<b>CATI (%)</b>		<b>CAPI (%)</b>	
All occupied households	7.97	±0.03	8.23	±0.02	7.27	±0.06	7.67	±0.07
Speak English Only	8.11	±0.03	8.22	±0.03	7.44	±0.07	8.06	±0.08
<b>Linguistically Isolated</b>								
Spanish	* 6.08	±0.15	* 9.54	±0.26	* 4.53	±0.25	* 5.05	±0.21
Russian	7.73	±0.60	8.92	±0.79	* 13.02	±2.26	* 5.37	±1.15
Chinese	8.40	±0.49	* 7.41	±0.43	8.18	±1.44	* 9.94	±1.11
Korean	8.22	±0.72	* 6.03	±0.62	7.76	±1.64	* 10.63	±1.42
Vietnamese	* 9.33	±0.64	* 10.60	±0.69	6.49	±1.40	8.23	±1.33
<b>Not Linguistically Isolated</b>								
Spanish	* 6.72	±0.09	* 7.83	±0.09	* 5.74	±0.22	* 5.77	±0.18
Russian	7.76	±0.55	* 7.10	±0.48	8.24	±1.28	8.83	±1.34
Chinese	8.17	±0.34	* 7.32	±0.30	7.88	±1.06	* 10.19	±0.96
Korean	7.99	±0.52	7.54	±0.42	8.95	±1.49	8.47	±1.27
Vietnamese	8.54	±0.50	* 9.74	±0.57	9.70	±1.93	6.76	±1.08

\* – Significantly different from English Only at the  $\alpha=.10$  level.

Source: Census 2000 Supplementary Survey and the 2001 Supplementary Survey



**Table B.3: Special Programs (Questions 15-16, 20-21)**

Language	All Modes (%)		Mail (%)		CATI (%)		CAPI (%)	
All occupied households	2.91	±0.02	2.82	±0.02	1.96	±0.03	3.27	±0.05
Speak English Only	2.82	±0.02	2.72	±0.02	1.78	±0.04	3.27	±0.06
<b>Linguistically Isolated</b>								
Spanish	*	4.47 ±0.13	*	6.25 ±0.24	*	3.26 ±0.24	*	4.12 ±0.18
Russian	*	5.88 ±0.52	*	6.92 ±0.71	*	6.85 ±1.45		4.32 ±0.85
Chinese		3.22 ±0.40	*	3.40 ±0.37	*	3.57 ±0.83		2.91 ±0.77
Korean	*	4.34 ±0.59	*	5.35 ±0.62		1.93 ±1.09		3.58 ±0.97
Vietnamese	*	3.97 ±0.47	*	4.61 ±0.54	*	6.50 ±1.46		2.75 ±0.88
<b>Not Linguistically Isolated</b>								
Spanish	*	3.01 ±0.06	*	3.12 ±0.07	*	2.60 ±0.14	*	2.97 ±0.11
Russian		2.79 ±0.42		2.70 ±0.36		2.23 ±0.60		3.13 ±0.98
Chinese		2.63 ±0.28	*	2.13 ±0.20		1.96 ±0.45		3.74 ±0.74
Korean		2.81 ±0.33		2.38 ±0.28		2.62 ±0.78		3.41 ±0.82
Vietnamese		2.95 ±0.32		3.17 ±0.50		1.97 ±0.90		2.83 ±0.53

\* – Significantly different from English Only at the  $\alpha=.10$  level.

Source: Census 2000 Supplementary Survey and the 2001 Supplementary Survey

**Table B.4: Other Financial Characteristics (Questions 17-19, 22)**

Language	All Modes (%)		Mail (%)		CATI (%)		CAPI (%)	
All occupied households	3.65	±0.02	2.45	±0.02	5.32	±0.05	5.45	±0.07
Speak English Only	3.72	±0.03	2.45	±0.02	5.48	±0.06	5.86	±0.08
<b>Linguistically Isolated</b>								
Spanish		3.56 ±0.13	*	3.58 ±0.18	*	3.98 ±0.26	*	3.46 ±0.20
Russian		4.33 ±0.51	*	4.32 ±0.65		6.95 ±2.03	*	3.82 ±0.92
Chinese	*	5.31 ±0.47		2.73 ±0.31		4.32 ±0.97	*	9.55 ±1.19
Korean	*	5.82 ±0.80	*	3.38 ±0.48	*	3.15 ±1.30	*	8.71 ±1.66
Vietnamese		3.94 ±0.58		2.65 ±0.45		6.33 ±1.66		5.35 ±1.25
<b>Not Linguistically Isolated</b>								
Spanish	*	2.86 ±0.07	*	2.05 ±0.06	*	3.96 ±0.18	*	3.44 ±0.15
Russian	*	2.84 ±0.44	*	1.90 ±0.24	*	3.02 ±0.86		4.64 ±1.15
Chinese		3.46 ±0.28	*	1.75 ±0.16		6.26 ±1.03		7.01 ±0.89
Korean		3.33 ±0.40	*	1.89 ±0.27		4.23 ±0.98		5.30 ±1.00
Vietnamese		3.64 ±0.43		2.74 ±0.42		5.33 ±1.41		4.61 ±0.94

\* – Significantly different from English Only at the  $\alpha=.10$  level.

Source: Census 2000 Supplementary Survey and the 2001 Supplementary Survey

**Table B.5: Mortgage Items (Questions 23-26)**

Language	All Modes		Mail (%)		CATI (%)		CAPI (%)	
All occupied households	11.10	±0.04	7.82	±0.03	15.43	±0.09	18.05	±0.13
English Only	10.99	±0.04	7.74	±0.03	15.41	±0.09	18.23	±0.16
<b>Linguistically Isolated</b>								
Spanish	*	15.98 ±0.38	*	12.16 ±0.48	*	17.54 ±0.54		18.33 ±0.72
Russian	*	18.18 ±2.27	*	12.74 ±1.87		17.00 ±4.49	*	34.73 ±8.78
Chinese	*	17.80 ±1.06	*	14.71 ±0.90		14.76 ±2.25	*	26.41 ±3.25
Korean	*	18.41 ±1.93	*	15.14 ±1.78	*	25.16 ±5.05		21.88 ±4.15
Vietnamese		11.89 ±1.35		7.79 ±0.90		13.49 ±2.73		21.70 ±4.20
<b>Not Linguistically Isolated</b>								
Spanish	*	11.31 ±0.15		7.58 ±0.12	*	14.71 ±0.31	*	16.02 ±0.38
Russian		10.97 ±0.79		7.07 ±0.57	*	12.13 ±1.65		21.33 ±2.60
Chinese		10.54 ±0.51		7.60 ±0.35		16.60 ±2.21		19.17 ±1.88
Korean	*	12.56 ±0.85		8.97 ±0.75		15.70 ±1.55		18.88 ±2.15
Vietnamese		10.53 ±0.80		7.73 ±0.75		19.28 ±3.17	*	14.08 ±2.05

\* – Significantly different from English Only at the  $\alpha=.10$  level.

Source: Census 2000 Supplementary Survey and the 2001 Supplementary Survey

## Appendix C. TWO-YEAR AVERAGE COMBINED ALLOCATION RATES BY POPULATION TOPIC

**Table C.1: Basic Demographics(Questions 1-6)**

Language	All Modes (%)	Mail (%)	CATI (%)	CAPI (%)
All occupied households	2.83 ±0.01	2.98 ±0.01	2.44 ±0.02	2.66 ±0.03
Speak English Only	2.53 ±0.01	2.60 ±0.01	2.22 ±0.02	2.48 ±0.03
<b>Linguistically Isolated</b>				
Spanish	* 3.91 ±0.06	* 5.63 ±0.13	* 3.66 ±0.13	* 3.44 ±0.09
Russian	* 3.08 ±0.24	* 3.28 ±0.26	2.73 ±0.55	2.99 ±0.53
Chinese	* 4.86 ±0.22	* 4.87 ±0.24	* 3.55 ±0.55	* 4.97 ±0.44
Korean	* 3.90 ±0.33	* 3.87 ±0.29	1.86 ±0.48	* 4.31 ±0.68
Vietnamese	* 5.46 ±0.30	* 6.43 ±0.41	* 3.73 ±0.52	* 4.79 ±0.50
<b>Not Linguistically Isolated</b>				
Spanish	* 3.90 ±0.05	* 5.17 ±0.06	* 3.22 ±0.09	* 2.84 ±0.06
Russian	* 2.94 ±0.21	* 3.43 ±0.30	1.73 ±0.32	2.44 ±0.39
Chinese	* 4.59 ±0.16	* 4.59 ±0.18	* 3.55 ±0.35	* 4.72 ±0.39
Korean	* 3.59 ±0.19	* 3.63 ±0.20	2.68 ±0.31	* 3.68 ±0.44
Vietnamese	* 5.02 ±0.27	* 6.45 ±0.37	* 5.48 ±1.53	3.09 ±0.39

\* – Significantly different from English Only at the  $\alpha=.10$  level.

Source: Census 2000 Supplementary Survey and the 2001 Supplementary Survey

**Table C.2: Origin and Language (Questions 7-9, 14a-c)**

Language	All Modes (%)	Mail (%)	CATI (%)	CAPI (%)
All occupied households	3.57 ±0.02	4.61 ±0.02	2.21 ±0.04	2.33 ±0.05
English Only	3.05 ±0.02	3.80 ±0.02	1.48 ±0.03	2.11 ±0.06
<b>Linguistically Isolated</b>				
Spanish	2.90 ±0.10	* 6.42 ±0.20	* 2.41 ±0.23	1.99 ±0.13
Russian	2.59 ±0.32	3.55 ±0.43	1.66 ±0.99	1.76 ±0.55
Chinese	3.91 ±0.56	3.51 ±0.31	2.85 ±1.12	* 4.64 ±1.45
Korean	3.14 ±0.44	3.18 ±0.39	2.83 ±1.32	3.10 ±0.78
Vietnamese	2.76 ±0.30	3.52 ±0.39	1.72 ±0.84	1.96 ±0.55
<b>Not Linguistically Isolated</b>				
Spanish	* 4.69 ±0.08	* 7.43 ±0.09	* 4.62 ±0.27	* 2.42 ±0.12
Russian	* 4.58 ±0.41	* 6.06 ±0.47	1.79 ±0.62	3.02 ±0.93
Chinese	* 5.31 ±0.36	* 4.96 ±0.28	* 4.24 ±0.87	* 6.19 ±1.03
Korean	* 4.53 ±0.39	* 5.13 ±0.44	* 4.51 ±1.16	* 3.69 ±0.81
Vietnamese	* 6.22 ±0.66	* 7.91 ±0.69	* 7.91 ±2.90	3.84 ±1.28

\* – Significantly different from English Only at the  $\alpha=.10$  level.

Source: Census 2000 Supplementary Survey and the 2001 Supplementary Survey

**Table C.3: Education (Questions 10a-b,11)**

Language	All Modes (%)		Mail (%)		CATI (%)		CAPI (%)	
All occupied households	3.93	±0.02	4.20	±0.02	3.38	±0.05	3.63	±0.06
English Only	3.54	±0.03	3.76	±0.02	2.70	±0.05	3.38	±0.07
<b>Linguistically Isolated</b>								
Spanish	*	5.22 ±0.15	*	9.07 ±0.25	*	4.22 ±0.29	*	4.30 ±0.21
Russian	*	6.00 ±0.66	*	7.78 ±0.70		5.35 ±1.70		4.52 ±1.45
Chinese	*	6.14 ±0.74	*	4.67 ±0.41	*	4.99 ±1.22	*	8.63 ±1.88
Korean	*	6.62 ±0.96	*	5.55 ±0.60		4.05 ±1.77	*	8.04 ±1.94
Vietnamese	*	6.82 ±0.58	*	7.95 ±0.69	*	5.75 ±1.17	*	5.63 ±1.09
<b>Not Linguistically Isolated</b>								
Spanish	*	5.04 ±0.09	*	6.20 ±0.09	*	6.58 ±0.32		3.60 ±0.18
Russian	*	5.58 ±0.70	*	6.28 ±0.61		3.34 ±0.89		4.99 ±1.78
Chinese	*	5.75 ±0.39	*	4.83 ±0.29	*	5.88 ±1.11	*	7.74 ±1.14
Korean	*	5.46 ±0.51	*	5.07 ±0.46	*	4.98 ±1.19	*	6.13 ±1.27
Vietnamese	*	8.28 ±0.70	*	9.64 ±0.76	*	12.83 ±3.35	*	5.78 ±1.40

\* – Significantly different from English Only at the  $\alpha=.10$  level.

Source: Census 2000 Supplementary Survey and the 2001 Supplementary Survey

**Table C.4: Mobility and Migration (Questions 13a-c)**

Language	All Modes (%)		Mail (%)		CATI (%)		CAPI (%)	
All occupied households	6.09	±0.04	8.94	±0.05	3.09	±0.07	2.88	±0.08
Speak English Only	5.67	±0.04	8.02	±0.05	2.40	±0.07	2.82	±0.09
<b>Linguistically Isolated</b>								
Spanish		5.31 ±0.24	*	18.56 ±0.66	*	3.69 ±0.46		2.40 ±0.26
Russian	*	11.79 ±1.73	*	22.47 ±2.61	*	0.86 ±0.76		2.22 ±1.58
Chinese	*	9.49 ±1.02	*	11.82 ±1.02		3.84 ±1.74	*	6.54 ±2.09
Korean	*	8.74 ±1.10	*	15.35 ±1.64		5.52 ±3.97		2.01 ±1.20
Vietnamese	*	8.70 ±1.08	*	14.19 ±1.47		2.61 ±1.16		3.74 ±1.71
<b>Not Linguistically Isolated</b>								
Spanish	*	7.36 ±0.15	*	13.48 ±0.19	*	6.62 ±0.49		2.74 ±0.21
Russian	*	7.70 ±0.92	*	10.76 ±1.20		2.56 ±1.07		3.72 ±1.89
Chinese	*	9.96 ±0.67	*	11.25 ±0.72	*	7.53 ±2.08	*	7.48 ±1.60
Korean	*	9.87 ±0.97	*	14.81 ±1.44		3.70 ±1.42		3.78 ±1.17
Vietnamese	*	12.56 ±1.33	*	16.85 ±1.48	*	13.35 ±5.60	*	7.10 ±2.43

\* – Significantly different from English Only at the  $\alpha=.10$  level.

Source: Census 2000 Supplementary Survey and the 2001 Supplementary Survey

**Table C.5: Disability (Questions 15a-b, 16a-d)**

Language	All Modes (%)		Mail (%)		CATI (%)		CAPI (%)	
All occupied households	4.21	±0.02	5.80	±0.03	2.28	±0.05	1.96	±0.04
English Only	4.15	±0.02	5.59	±0.03	1.84	±0.04	1.98	±0.05
<b>Linguistically Isolated</b>								
Spanish	*	2.80 ±0.11	*	9.00 ±0.27		2.04 ±0.25	*	1.10 ±0.15
Russian	*	5.72 ±0.88	*	8.83 ±0.82		2.63 ±1.33		3.15 ±2.08
Chinese		4.05 ±0.50		5.01 ±0.51		2.64 ±1.38		2.79 ±1.15
Korean		3.68 ±0.65		5.20 ±0.66		2.27 ±1.22		2.16 ±1.06
Vietnamese		3.83 ±0.41		6.45 ±0.69		1.20 ±0.89	*	0.69 ±0.49
<b>Not Linguistically Isolated</b>								
Spanish	*	4.35 ±0.09	*	6.85 ±0.11	*	4.81 ±0.30		1.83 ±0.13
Russian		4.69 ±0.59		6.34 ±0.66		1.82 ±0.77		2.39 ±1.32
Chinese	*	5.12 ±0.36		5.48 ±0.34	*	3.66 ±0.94	*	4.42 ±0.99
Korean		4.48 ±0.45		5.54 ±0.59	*	3.90 ±1.24		2.96 ±0.96
Vietnamese	*	7.25 ±0.69	*	9.69 ±0.81	*	9.07 ±3.26		3.67 ±1.23

\* – Significantly different from English Only at the  $\alpha=.10$  level.

Source: Census 2000 Supplementary Survey and the 2001 Supplementary Survey

**Table C.6: Grandparent and Fertility (Questions 17, 18a -c)**

<b>Language</b>	<b>All Modes (%)</b>		<b>Mail (%)</b>		<b>CATI (%)</b>		<b>CAPI (%)</b>	
All occupied households	3.36	±0.02	4.38	±0.02	1.89	±0.04	2.00	±0.04
English Only	3.00	±0.02	3.87	±0.02	1.50	±0.04	1.77	±0.04
<b>Linguistically Isolated</b>								
Spanish	3.18	±0.12	* 7.88	±0.28	* 2.29	±0.25	1.98	±0.16
Russian	3.82	±0.56	* 6.16	±0.81	1.39	±1.29	1.74	±0.88
Chinese	* 5.09	±0.59	* 5.57	±0.62	3.03	±1.11	* 4.57	±1.16
Korean	3.50	±0.49	* 5.40	±0.68	1.56	±0.85	1.76	±0.77
Vietnamese	* 5.64	±0.59	* 8.25	±0.81	* 4.38	±1.59	2.07	±0.66
<b>Not Linguistically Isolated</b>								
Spanish	* 4.66	±0.09	* 7.06	±0.13	* 3.71	±0.22	* 2.52	±0.13
Russian	* 4.18	±0.45	* 5.47	±0.56	1.61	±0.78	2.47	±0.91
Chinese	* 5.31	±0.31	* 5.82	±0.34	* 3.99	±1.02	* 4.38	±0.79
Korean	* 4.90	±0.43	* 6.21	±0.61	2.67	±0.90	* 3.35	±0.82
Vietnamese	* 6.94	±0.63	* 8.99	±0.78	* 6.23	±2.15	* 4.30	±1.19

\* – Significantly different from English Only at the  $\alpha=.10$  level.

Source: Census 2000 Supplementary Survey and the 2001 Supplementary Survey

**Table C.7: Military (Questions 19-21)**

<b>Language</b>	<b>All Modes (%)</b>		<b>Mail (%)</b>		<b>CATI (%)</b>		<b>CAPI (%)</b>	
All occupied households	4.92	±0.02	6.18	±0.03	2.69	±0.05	3.01	±0.06
English Only	4.82	±0.03	5.90	±0.03	2.30	±0.04	3.18	±0.07
<b>Linguistically Isolated</b>								
Spanish	* 3.68	±0.16	* 11.18	±0.39	2.46	±0.32	* 1.44	±0.23
Russian	5.16	±0.58	* 9.42	±1.10	2.03	±1.16	* 0.43	±0.56
Chinese	5.01	±0.58	5.98	±0.62	2.44	±1.36	3.83	±1.36
Korean	5.37	±0.71	* 9.14	±1.06	1.12	±0.79	1.72	±1.13
Vietnamese	5.36	±0.69	* 8.13	±0.89	3.04	±1.70	1.61	±0.09
<b>Not Linguistically Isolated</b>								
Spanish	* 5.19	±0.11	* 7.58	±0.15	* 5.41	±0.29	* 2.46	±0.15
Russian	5.34	±0.70	6.42	±0.78	2.65	±1.00	4.00	±1.72
Chinese	* 5.84	±0.42	6.18	±0.39	* 4.52	±1.21	* 5.12	±1.07
Korean	5.37	±0.47	6.49	±0.59	* 4.36	±1.21	3.62	±1.07
Vietnamese	* 8.89	±0.79	* 11.13	±1.02	* 10.01	±3.89	5.48	±1.51

\* – Significantly different from English Only at the  $\alpha=.10$  level.

Source: Census 2000 Supplementary Survey and the 2001 Supplementary Survey

**Table C.8: Labor Force (Questions 23, 31-33, ESR)**

<b>Language</b>	<b>All Modes (%)</b>		<b>Mail (%)</b>		<b>CATI (%)</b>		<b>CAPI (%)</b>	
All occupied households	5.66	±0.03	6.39	±0.03	4.10	±0.05	4.82	±0.07
English Only	5.36	±0.03	5.95	±0.03	3.61	±0.05	4.74	±0.08
<b>Linguistically Isolated</b>								
Spanish	* 6.45	±0.19	* 12.95	±0.35	* 4.86	±0.29	5.11	±0.25
Russian	* 8.80	±0.90	* 12.20	±1.03	4.91	±1.53	5.51	±1.71
Chinese	* 8.12	±0.66	* 7.63	±0.49	6.11	±1.77	* 9.08	±1.60
Korean	* 9.92	±1.07	* 10.13	±0.89	6.60	±2.49	* 10.24	±2.15
Vietnamese	* 7.32	±0.68	* 9.79	±0.71	5.55	±1.54	4.32	±1.24
<b>Not Linguistically Isolated</b>								
Spanish	* 6.44	±0.10	* 8.50	±0.13	* 6.59	±0.27	* 4.34	±0.17
Russian	6.32	±0.59	* 7.03	±0.65	4.09	±0.94	5.80	±1.47
Chinese	* 6.87	±0.40	* 6.51	±0.33	* 6.04	±1.07	* 7.64	±1.12
Korean	* 7.90	±0.63	* 7.94	±0.64	* 6.49	±1.53	* 8.17	±1.59
Vietnamese	* 9.45	±0.72	* 11.95	±0.82	* 9.78	±3.14	5.87	±1.40

\* – Significantly different from English Only at the  $\alpha=.10$  level.

Source: Census 2000 Supplementary Survey and the 2001 Supplementary Survey

**Table C.9: Journey to Work (Questions 24-27)**

Language	All Modes (%)		Mail (%)		CATI (%)		CAPI (%)	
All occupied households	6.83	±0.04	6.84	±0.03	5.88	±0.07	7.08	±0.10
English Only	6.56	±0.04	6.45	±0.03	5.54	±0.07	7.10	±0.11
<b>Linguistically Isolated</b>								
Spanish	*	7.55 ±0.26	*	12.52 ±0.52		5.16 ±0.36	*	6.99 ±0.35
Russian	*	10.77 ±1.47	*	10.90 ±1.64		6.49 ±2.29		11.56 ±2.88
Chinese	*	9.89 ±0.73	*	7.99 ±0.66		8.25 ±2.35	*	12.83 ±1.71
Korean	*	11.26 ±1.38		7.90 ±1.10		4.65 ±1.88	*	15.47 ±3.00
Vietnamese	*	8.84 ±0.97	*	9.75 ±0.98		6.59 ±2.22		8.36 ±1.92
<b>Not Linguistically Isolated</b>								
Spanish	*	7.47 ±0.13	*	8.83 ±0.16	*	8.00 ±0.31	*	6.01 ±0.24
Russian	*	8.43 ±0.78	*	7.92 ±0.74		5.48 ±1.56	*	10.62 ±1.96
Chinese	*	8.13 ±0.48		7.07 ±0.38		6.72 ±1.27	*	10.59 ±1.40
Korean	*	9.47 ±0.75	*	8.13 ±0.71	*	10.17 ±1.97	*	11.54 ±1.85
Vietnamese	*	10.69 ±0.92	*	12.24 ±0.90		10.03 ±3.46		8.66 ±1.87

\* – Significantly different from English Only at the  $\alpha=.10$  level.

Source: Census 2000 Supplementary Survey and the 2001 Supplementary Survey

**Table C.10: Industry and Occupation (Questions 34-39)**

Language	All Modes (%)		Mail (%)		CATI (%)		CAPI (%)	
All occupied households	7.90	±0.03	9.13	±0.04	4.27	±0.06	6.78	±0.09
English Only	7.33	±0.04	8.22	±0.04	3.74	±0.06	6.74	±0.10
<b>Linguistically Isolated</b>								
Spanish	*	9.20 ±0.26	*	21.64 ±0.53	*	4.91 ±0.36		6.67 ±0.33
Russian	*	16.82 ±1.51	*	24.58 ±2.01		3.98 ±2.09		9.34 ±2.98
Chinese	*	16.37 ±0.96	*	20.17 ±0.99		5.39 ±2.01	*	11.62 ±1.99
Korean	*	18.73 ±1.59	*	24.75 ±1.60		4.11 ±1.66	*	13.44 ±3.12
Vietnamese	*	15.98 ±1.18	*	22.31 ±1.38		5.23 ±1.90		8.42 ±2.34
<b>Not Linguistically Isolated</b>								
Spanish	*	9.18 ±0.13	*	12.55 ±0.17	*	7.12 ±0.33	*	6.10 ±0.23
Russian	*	10.02 ±0.73	*	12.08 ±0.86		4.34 ±1.38		7.78 ±1.80
Chinese	*	11.65 ±0.53	*	12.70 ±0.52	*	6.45 ±1.31	*	9.82 ±1.41
Korean	*	11.77 ±0.84	*	13.33 ±0.88	*	7.90 ±1.99	*	10.16 ±1.90
Vietnamese	*	15.27 ±1.09	*	19.07 ±1.18	*	11.13 ±3.54	*	10.24 ±1.99

\* – Significantly different from English Only at the  $\alpha=.10$  level.

Source: Census 2000 Supplementary Survey and the 2001 Supplementary Survey

**Table C.11: Income (Questions 40a-40h, 41)**

Language	All Modes (%)		Mail (%)		CATI (%)		CAPI (%)	
All occupied households	11.69	±0.04	12.60	±0.04	9.75	±0.06	10.58	±0.09
English Only	11.62	±0.04	12.11	±0.04	9.73	±0.06	11.23	±0.11
<b>Linguistically Isolated</b>								
Spanish	*	10.10 ±0.19	*	20.56 ±0.41	*	6.44 ±0.29	*	7.68 ±0.26
Russian		11.21 ±0.87		13.99 ±1.18		11.07 ±1.96	*	7.96 ±1.50
Chinese		12.29 ±0.71		12.37 ±0.66		8.59 ±1.61		12.70 ±1.64
Korean	*	15.28 ±1.11	*	17.66 ±1.39		9.19 ±1.85		13.67 ±2.02
Vietnamese		12.33 ±0.78	*	15.41 ±0.91		7.56 ±1.69		8.97 ±1.61
<b>Not Linguistically Isolated</b>								
Spanish	*	11.39 ±0.12	*	14.98 ±0.16		9.96 ±0.30	*	8.13 ±0.22
Russian		11.74 ±0.77		12.41 ±0.89		9.75 ±1.49		11.22 ±1.72
Chinese	*	12.62 ±0.52		11.65 ±0.48		11.10 ±1.27	*	14.88 ±1.37
Korean	*	12.65 ±0.60		12.83 ±0.79		12.93 ±1.98		12.31 ±1.38
Vietnamese	*	14.10 ±0.78	*	16.98 ±0.93		12.61 ±2.76		10.46 ±1.40

\* – Significantly different from English Only at the  $\alpha=.10$  level.

Source: Census 2000 Supplementary Survey and the 2001 Supplementary Survey