

Differences in Length of Survey Administration between Spanish-Language and English-Language Survey Respondents

Tom Wells, Monica Vidalon, Charles DiSogra

Knowledge Networks Inc., 1350 Willow Road, Suite 102, Menlo Park, CA 94025

Abstract

In 2008, Knowledge Networks expanded KnowledgePanel to create KnowledgePanel Latino, the first nationally representative online sample of Latinos in the U.S. We have observed that the Spanish-language panelists take more time to self-administer their Spanish-language online questionnaires than those taking the English version.

We employ regression to estimate the effects of survey language, demographics, panel tenure, and type of Internet connection on survey completion time.

Our regression results show that education, age, and broadband internet connection have large effects and significantly reduce survey completion time. However, once several factors have been controlled, Spanish survey language still remains a strong predictor of administration length, which may speak to cultural differences and survey taking behaviors, which we will further investigate in this paper.

Key Words: survey completion length, online surveys, Spanish-language surveys, Latinos

1. Introduction

In 2008, Knowledge Networks expanded KnowledgePanel[®] to create KnowledgePanel LatinoSM, the first nationally representative online sample of Latinos in the U.S. This representative sample is achieved through probability-based sample selection, the inclusion of non-internet households, the inclusion of cell phone only households, and of particular importance for this research paper, the inclusion of Spanish-dominant households, whose members can take their KnowledgePanel surveys in Spanish or English (the majority take their surveys in Spanish).¹

The physical length of KnowledgePanel Spanish-language surveys are typically about 15% longer than the English versions of the same survey. Accordingly, we anticipated that completion length for Spanish-language surveys would be approximately 15-20% greater. However, for dual-language surveys, we have consistently observed Spanish-language completion length to be 75%, 100%, and 150% greater. To take one example, in our 2009 demographic profile survey, median completion length is 7.5 minutes among roughly 42,000 English-language panelists, while it is 18.7 minutes among roughly 2,000 Spanish-language panelists. This large difference also holds when focusing exclusively on Latinos -- the median completion length among approximately 2,000 English-language Latino panelists is 8.7 minutes.

¹ Survey language is determined during the recruitment process; for individual panelists, it remains consistent across KnowledgePanel surveys.

To our knowledge, this is a new finding, as there are no published research findings on these language-based differences in online survey completion length, nor findings on the factors which can account for these differences. In addition, large differences in length of survey administration can have large practical implications for respondent burden, respondent incentives, and costs.

In this paper, we examine completion length across several KnowledgePanel surveys, covering several different survey topics. We analyze completion length across online surveys that were assigned to large samples of English-language and Spanish-language panelists. We evaluate several possible explanations for the observed differences in completion length, which revolve around the survey instrument, respondent characteristics, and survey taking behavior.

2. Possible Explanations

2.1 Survey Instrument

As mentioned above, longer Spanish questionnaires can account for part of the difference in completion length, but by no means all of it. Skip patterns can also affect differences in completion length if they tend to consistently favor one group of survey respondents. Another factor related to survey administration length is internet connection speed, which we also examine. In order to represent the non-internet population, Knowledge Networks provides non-internet households with a device and free service to connect to the internet and to complete KnowledgePanel surveys.² A higher percentage of Spanish-language panelists complete their KnowledgePanel surveys using a dial-up internet connection (approximately 80% vs 10%), which accounts for some portion of the observed differences.

2.2 Respondent Characteristics

Group-level differences between Spanish-language panelists and English-language panelists with respect to education, age, household size, etc. are also likely to be contributing to the observed differences in completion length. In addition to formal educational attainment, higher education may also serve as a proxy for greater reading proficiency and computer facility. Measures of household size (number of people in the household, number of children in the household) are likely to increase online survey completion length for any of several reasons. When completing surveys, larger household sizes means more people to report on and more information to consider when reporting on household-level characteristics. Practically speaking, larger household sizes may result in more competition for computers in the household as well as more time needed for child care and household duties. Finally, we examine panel tenure. Panel tenure may be measuring panel conditioning, namely increased facility with online surveys. If so, we would expect greater tenure to result in shorter completion length.

2.3 Survey Taking Behavior

In August 2009, Knowledge Networks fielded an internal survey to gather feedback from panelists regarding their behavior when taking KnowledgePanel surveys. Specifically, we asked panelists when and where they usually take their KnowledgePanel surveys and whether they commonly experienced interruptions (and what types). As will be discussed

² Originally, these devices were WebTVs. More recently, Knowledge Networks has been providing laptop computers and dial-up internet connections. All non-internet Spanish-dominant households have received the latter.

shortly, we did uncover interesting differences between Spanish-language and English-language panelists, which impact the differences in survey completion length that we observed. Survey taking behaviors may also represent cultural differences between groups. Of course, differences in completion length may be due to other cultural differences that we have not measured.

3. Descriptive Results

3.1 Completion Length

Table 1 displays median completion length (expressed in terms of minutes) across several dual-language KnowledgePanel surveys. These completion length figures capture time actually spent on each screen, summed up across all screens in the survey. Completion lengths are not simply the difference between survey finish and survey start time stamps.

Table 1: Observed Differences in Self-Administered Survey Length

Survey	Median Length (in minutes)		Ratio (Spanish/English)
	Spanish	English	
Profile Surveys			
Broadcast TV	11.9	6.5	1.83
Demographics	18.7	7.5	2.49
Health Care	14.9	8.5	1.75
Lifestyle	18.5	9.6	1.93
Politics	18.7	10.3	1.81
Academic Client Surveys			
Health Survey 1	36.8	17.9	2.06
Health Survey 2	30.7	17.0	1.81
Post Election Survey	33.4	19.4	1.72
Commercial Client Surveys			
Shopping 1	33.4	16.8	1.99
Shopping 2	64.3	28.4	2.26

The difference reported earlier for the demographic profile survey is not an isolated finding. Across 10 surveys on a diverse array of topics, Spanish-language panelists are taking anywhere from 75% to 150% longer to complete their online surveys.³ This basic pattern emerges even when skip logic would seem to favor shorter completion length among Spanish-panelists. For example, Spanish-language panelists are less likely to be registered voters and have fewer questions to face in the Politics profile survey and the Post Election survey. Similarly, Spanish-panelists are more likely to report no health coverage in the Health Care profile survey and to be skipped on subsequent questions about types of health insurance, deductibles, etc.

3.2 Survey Taking Behavior

In August 2009, Knowledge Networks conducted a short internal survey to collect information on survey taking behaviors. The survey achieved a study-specific completion

³ When focusing exclusively on Latinos, the ratios among Spanish-language and English-language panelists across the five profile surveys are 1.89, 2.14, 1.82, 1.89, and 1.81 respectively.

rate of 53%. Survey taking behaviors were reported by 1,680 panelists (431 Spanish-language panelists and 1,249 English-language panelists). As Table 2 indicates, 84% of English-language panelists report taking their surveys in one sitting without any interruptions, in contrast with 70% of Spanish-language panelists.

Table 2: Survey Taking Behavior -- Self-Reports of Interruptions

	Spanish	English
In one sitting, from beginning to end, without any interruptions	69.5%	84.4%
In one sitting, with short interruptions	26.3%	12.6%
In more than one sitting	4.2%	3.0%
Total	100.0%	100.0%

Table 3: Survey Taking Behavior -- Self-Reports of Types of Interruptions

	Spanish	English
Someone else needs to use the laptop/PC/WebTV	3.7%	1.3%
The internet connection fails	8.6%	3.7%
Checking email/IM	3.0%	1.6%
Browsing the Internet	2.8%	1.0%
Household duties	14.4%	10.0%
Looking after the children	12.5%	2.3%
Other	2.6%	4.8%

Note: Multiple interruptions can be reported.

As shown in Table 3, Spanish-language panelists are more likely to report interruptions involving household duties, looking after children, and internet connection problems. This difference in survey taking behavior explains some of the extra time that Spanish-language panelists use to complete their surveys and can be linked to certain characteristics of this group (which is more likely to have dial-up internet service and more likely to have children in the household). In Table 4, we present overall median completion length for three profile surveys on different topics, broken down by self-reports of interruptions. These are the actual completion lengths across the three profile surveys among the 1,680 panelists completing the short internal survey and providing information on interruptions.

Table 4: Survey Taking Behavior and Completion Length

	Median Length (in minutes)		
	Demographic Profile Survey	Politics Profile Survey	Health Care Profile Survey
In one sitting, from beginning to end, without any interruptions	9.5	12.4	10.8
In one sitting, with short interruptions	12.4	14.8	12.0
In more than one sitting	12.7	15.2	12.5

The figures nicely detail the increases in survey completion length associated with interruptions. With these three particular examples, we see that taking surveys uninterrupted reduces survey completion length roughly 15-25% (2 to 3 minutes).

4. Regression Results

Finally, we employ regression to estimate the effects of survey language, respondent characteristics, panel tenure, and type of internet connection on survey completion length. We estimate two regression equations predicting completion length on KnowledgePanel's 2009 demographic profile survey, completed by 44,000 adults.⁴

Table 5: Regression Analysis of Survey Completion Length, Baseline Model

	β	S.E.
Constant	9.084*	.031
Spanish-survey language	11.635*	.141

*p<.05

The first model is a baseline model that only includes a coefficient for survey language. Ignoring all other factors for the moment, Spanish-language panelists take, on average, 11.6 minutes longer to complete this survey.⁵ The coefficient is very large and this one factor explains 14% of the variance in survey completion length.

Table 6: Regression Analysis of Survey Completion Length, Full Model

	β	S.E.
Constant	11.283*	.183
Spanish-survey language	7.286*	.200
High school	-1.577*	0.151
Some college	-1.855*	0.146
College	-2.560*	0.147
Age 30-44	-1.169*	0.105
Age 45-59	-1.209*	0.093
Age 60+	-0.566*	0.075
Number of children in household	0.216*	0.031
WebTV	4.262*	0.145
Dial-up	2.801*	0.106
Panel tenure (months)	-0.016*	0.001
African American	2.207*	0.115
Latino	2.050*	0.136
Other	0.943*	0.174
Two+ races	2.383*	0.185

*p<.05

Note: Also included as control variables in full model: gender, metro area status, region, and dummy variables for missing or undetermined internet connection data.

Reference categories: English-language survey, less than high school, age 18-29, broadband internet connection, white non-Hispanic, male, non-metro area, Northeast region.

⁴ In order that regression results are not unduly influenced by outliers, we removed respondents who completed this survey in under 3 minutes or in more than 60 minutes. This affected 2% of English-language panelists and 4% of Spanish-language panelists.

⁵ Recall that the difference in medians reported in Table 1 is 11.2 minutes.

The second model is the full model and includes respondent characteristics, panel tenure, and type of internet connection.⁶ This set of variables explains 21% of the variance in survey completion length. The regression results show that education, age, and broadband internet connection have large effects and significantly reduce survey completion length. Specifically, higher educational attainment reduces completion length 1½ to 2½ minutes, greater age reduces survey completion length ½ to 1 minute, and broadband internet connection reduces survey completion length 3 to 4 minutes. Number of children in the household and panel tenure have significant but small effects. Controlling other factors, each additional child in the household increases survey completion length by 13 seconds. Each additional year of tenure on KnowledgePanel reduces completion length by 11½ seconds. Among English-language panelists, African Americans, Latinos, other non-whites, and multiracial panelists take 1-2 minutes longer than whites to complete the demographic profile survey, which reflects unmeasured respondent characteristics and cultural differences.

Compared to the baseline model, the difference in completion length between Spanish-language and English-language panelists has been reduced by roughly 35%. However, once several factors have been controlled, Spanish-language panelists still take, on average, 7.3 minutes longer than English-language panelists to complete the demographic profile survey. (Keep in mind that this is on top of the result that Latinos who take their surveys in English take 2 minutes longer to complete this survey than whites.) This large difference reflects longer Spanish-language questionnaires, differences in survey taking behavior, and other unmeasured personal characteristics and cultural factors.

5. Conclusion

Across a variety of KnowledgePanel surveys, we have observed Spanish-language panelists taking 75% to 150% more time to complete their online surveys.

The results from our internal survey show that these observed differences can, in part, be explained by differences in interruptions experienced. The results of our regression analysis show that observed differences in completion length are also strongly affected by education, age, and type of internet connection. Controlling these factors, Spanish survey language still remains a strong predictor of administration length. These factors are important to consider when conducting dual-language survey research and may have profound practical implications for respondent burden, respondent incentives, and costs.

⁶ Also included in the regression equation as control variables are gender, region, metro area status, and dummy variables for missing or undetermined internet connection data.