"When we ask, do they answer? Item-nonresponse to questions of citizenship and immigration status in the California Health Interview Survey

Joseph Viana

Executive Summary

Legal status is an important social determinant of health for immigrant families however is typically not measured in public health surveys. A fundamental reason has to do with the sensitivity of legal status and how immigrants would choose to respond. The prevailing assumption has been that direct questions regarding legal status would be overly sensitive, prone to undesirable response behavior and ultimately poor data quality. This study examines response behavior to direct questions of citizenship and immigration status among immigrant adults in California surveyed between 2001 and 2015. Data come from the California Health Interview Survey which has consistently included questions regarding citizenship and immigration status; the primary outcome is whether the survey participant did or did not answer these questions.

Across this time period, 98.4% of the over 80,000 foreign-born participants in the California Health Interview Survey reported their citizenship and/or immigration status. However, nonresponse significantly increased for both questions, from 1.07% to 2.8% for citizenship and 1.51% to 4.63% for LPR status, with the largest increase occurring between the 2005 and 2007 cycles. The majority of nonresponse which did occur was attributable to Mexican-born participants, as well as participants who were generally younger, came from poorer households and conducted the interview in Spanish.

These results build upon a small but growing evidence base that direct question of legal status are fit for use. As population surveys evolve, it is necessary to more fully incorporate immigrant populations and experiences in the survey design. Evaluating actual response behavior tests our assumptions and allows for collection of important data while keeping an eye on data quality.

Introduction

Applied research on immigrant populations in the U.S. is limited by lack of data on legal status.[1] Including direct questions about legal status in population surveys could improve our understanding of population health and immigrant incorporation to better inform public health decisions. However, many are concerned that these topics are too sensitive to ask.[2-4] Sensitive survey questions are those which are perceived to be intrusive, socially undesirable, or have some threat associated with disclosure. Questions on immigration status may be overly sensitive if survey participants perceive some sort of risk – such as legal risk – associated with answering the question. The extent to which survey participants choose to not answer a question – referred to in the survey literature as item-nonresponse – is a common indication of sensitivity[5] and data quality.[6]

An expert panel convened by the Government Accountability Office suggested that response behavior to these questions would depend on the survey's organization and hypothesized that data quality would be favorable in academically-sponsored surveys relative to government-sponsored surveys. This hypothesis has been supported in the literature, with researchers finding lower rates of item-nonresponse to immigration related questions in the academically-sponsored Los Angeles Family and Neighborhood Survey (LAFANS) compared to the government-sponsored Survey of Income and Program Participation (SIPP). In LAFANS, rates of item-nonresponse to immigration related questions from 3.7% to 12.4% which resulted in a total of 4.3% of foreign-born survey participants with an ambiguous immigration status due to item-nonresponse. In SIPP, item-nonresponse rates to comparable questions were as high as 27.2%, resulting in 12.7% of foreign-born survey participants had an ambiguous legal status due to item-nonresponse. In addition, both surveys produced profiles of the unauthorized population which were consistent with external estimates, providing further evidence that these questions are feasible to ask. However, the researchers note

that these data were collected between 2001 and 2004, and subsequent increases in immigration enforcement may impact response behavior. To our knowledge, this is the only study to evaluate the fundamental response behavior or whether survey participants answer questions regarding immigration status.

The present study describes whether foreign-born participants in the California Health Interview Survey (CHIS) respond to questions of citizenship and immigration status from 2001 to 2015. CHIS is university-based, conducted through the UCLA Center for Health Policy Research in collaboration with the California Department of Public Health and California Department of Health Care Services; as such CHIS occupies a unique space between the university- and government-sponsored domains. CHIS has asked questions on citizenship and permanent resident with a green card/Legal Permanent Residence (LPR) status using consistent methodology since 2001. CHIS is the nation's largest state health survey, conducted in the state with the nation's largest foreign-born and unauthorized populations, both in terms of absolute size and percent of total population.[7,8] This represents a unique opportunity to empirically study whether survey participants answer questions thought to be unaskable.

Methods

CHIS data files from 2001 to 2015 were appended and merged with survey paradata, which indicated whether an observed value was based on self-report or whether the question was not answered and later imputed. Survey participants who reported being born outside the US or territory as well as participants who did not provide an answer to their country of birth were asked whether they were a citizen. Those who did not affirmatively report that they were a naturalized citizen, including those who did not provide an answer regarding their citizenship, were asked whether they are a permanent resident with a green card. A variable for the outcome of interest, item-nonresponse, was constructed for each question to identify

participants who either refused to answer or replied that they did not know. Responses to these questions, including nonresponse, were analyzed for participants who reported being born in Mexico, China, and the Philippines, as these are California's largest immigrant groups,[9] and any Central American country, which collectively represented a sizeable portion of item-nonresponse.

Multivariate logistic models were conducted which included predictors of nonresponse which have been previously identified in the literature or are salient to foreign-born survey respondents. These covariates included age, sex, education, poverty status, English proficiency, and language of interview. Dummy variables for survey cycle were included to address potential trends over time. As preliminary analyses indicated that the majority of nonresponse was attributable to Mexican-born participants, models also included a binary indicator for being Mexican-born. Multivariate models were also run on the Mexican subsample, but not for other country/regions of birth due to sample size constraints. To track potential changes in nonresponse by survey cycle, predicted probabilities of nonresponse were calculated for each cycle based on the multivariate models to account for secular changes in the sample composition.

As this analysis is intended to describe response behavior of CHIS participants as opposed to the state of California, results are unweighted. However, certain results presented in accompanying tables were calculated using CHIS survey weights with Taylor Series variance estimation to account for the complex survey designs of CHIS[10] as a sensitivity analysis. All analyses were conducted using Stata 14.[11]

Results

A total of 344,205 CHIS participants were interviewed between 2001 and 2015, of which 81,144 (23.6%) reported being born outside the US and 454 (0.1%) did not report their country of birth, resulting in 81,598 participants who were

eligible for the question regarding citizenship. Of these participants, 1,011 (1.24%) did not respond, and an additional 34,012 reported that they were not a citizen or their application was pending. Of the resulting 35,023 participants who were eligible for the following question regarding LPR status, 1,274 (3.64%) did not respond, of which the majority (n=815/1,274, 64%) had not responded to the previous question on citizenship either. Of the initial 81,598 who initiated the immigration module, 1.56% had an ambiguous immigration status due to item-nonresponse. Figure 2.1 illustrates the flow of survey participants through the immigration module.

CHIS participants from Mexico (n=30,120), Central America (n=5,535), China (n=4,638) and the Philippines (n=3,855) collectively accounted for 54.4% of all participants who reported being foreign-born. However, they accounted for 81.6% of item-nonresponse to the citizenship question and 85.1% of item-nonresponse to the question of LPR status. Item-nonresponse to the question of citizenship was 2.38% for participants born in Mexico, 1.34% for participants born in Central America, 0.50% for participants born in China and 0.29% for participants born in the Philippines. Item-nonresponse to the question of LPR status was 5.02% for participants born in Mexico, 3.08% for participants born in Central America, 1.21% for participants born in China and 1.52% for participants born in the Philippines.

Item-nonresponse to both citizenship and LPR questions was driven by Mexican-born participants, due both to their relative size (36.9% of all reported foreign-born) and their response behavior (Table 2.1). Of the 1,011 participants who did not respond to the question of citizenship, 718 (71.1%) were Mexican-born. In addition, fewer Mexican-born participants reported that they were a naturalized citizen (36.25%) than participants from Central America (45.96%), China (71.52%) or the Philippines (77.76%), resulting in a relatively large number of Mexican-born participants who were eligible for the subsequent question on LPR status.

Participants with incomplete data on years of US residency were excluded from the multivariate models of citizenship (n=178) and LPR (n=87) nonresponse, resulting in analytic subsamples of 81,420 for the citizenship nonresponse model and 34,936 for the LPR nonresponse model (Table 2.2). In both the general and Mexico-specific multivariate models, participants who did not respond to the citizenship question were more likely to be younger than 50 years old, live in poorer households, conduct the interview in Spanish, and reside in the US between 6-10, but not 1-5 (versus 11+) years. The likelihood of nonresponse was significantly lower among the participants age 65 or older, without a high school diploma or GED, and who chose to conduct the interview in an Asian language. Similar to the citizenship question, the likelihood of nonresponse to the LPR question was significantly higher among participants younger than 50 years old, who lived in poorer households and who conducted the interview in Spanish and was significantly lower among participants without a high school diploma or GED and who conducted the interview in an Asian language. Unlike the citizenship question, residing in the US for 6-10 years did not significantly predict nonresponse; however, participants residing in the US for fewer than 6 years were significantly less likely to not respond.

Item-nonresponse significantly increased between 2001 and 2015 for both citizenship and LPR questions. Figure 2.2 illustrates the trends in nonresponse to both questions using unadjusted as well as model-adjusted proportions of nonresponse. The largest significant increase in nonresponse relative to the previous cycle occurred in 2007 for both citizenship (chi2=22.86, p<0.001) and LPR (chi2=62.00, p<0.001) status.

Discussion

Despite long-held assumptions that questions regarding citizenship and particularly immigration status are too sensitive to ask, I find that 98.4% of the over 80,000 foreign-born participants in the California Health Interview Survey reported their citizenship and/or immigration status. This result compares favorably to previous research evaluating response behavior in two earlier surveys,[3] and contributes to an empirical evidence base which suggests that these important questions can be asked in population surveys and population health surveys. The majority of nonresponse which did occur was attributable to Mexican-born participants, which is consistent with previous findings that reporting behavior to questions regarding naturalization in the American Community Survey is most problematic among this population.[12] Sample participants who chose to not respond to these questions were generally younger, came from poorer households and conducted the interview in Spanish.

Between 2001 and 2015, despite increased visibility,[13] improving public opinion[14] and more inclusive legislation for unauthorized immigrants in California, nonresponse significantly increased for both questions, from 1.07% to 2.8% for citizenship and 1.51% to 4.63% for LPR status. The largest significant increase in nonresponse occurred between the 2005 and 2007 cycles. While outside of the scope of this paper, this increase may reflect national trends in immigration-related arrests during this time.[15] Minor changes in question wording between the 2001, 2003 and 2005 cycles did not appear to meaningfully impact nonresponse. The American Community Survey, which asks about citizenship but not LPR status, also experienced increasing nonresponse to the citizenship question from 0.4% in 2001 to 5.9% in 2015;[16] however, sizeable fluctuations did not coincide with those observed in CHIS.

Item-nonresponse is a common but incomplete measure of question sensitivity. Some have suggested that survey participants may be more inclined to misreport their status rather than not respond at all.[5] This is difficult to study as the true value is almost always unknown. As such, researchers often rely on a simple "more is better" assumption, where higher rater of what is thought to be sensitive or undesirable are considered to be more accurate than lower rates.[5] If the

question of LPR status is perceived to be overly sensitive, we expect that responses should be biased against reporting "no". This is particularly true for Mexican-born participants, of whom an estimated 93% of those without green cards are unauthorized.[17] In our sample, however, roughly a quarter of all Mexican-born participants willingly reported that they were a non-citizen without a green card.

The sensitivity of survey questions such as legal and immigration status is largely shaped by the broader context, such as domestic policy related to deportation and treatment of immigrant populations. Evidence suggests that in California, recent fears in the immigrant population created by national events has signaled itself in several indirect ways, including declines in crime reporting in immigrant neighborhoods,[18] and withdrawals from food stamps[19] and public insurance.[20] Because data for this study was collected prior to President Trump's administration, it remains to be seen how CHIS participants will respond to questions regarding citizenship and immigration status moving forward.

The current declines in reporting and withdrawal from public programs emphasizes concerns regarding threat of disclosure of immigration status in California, home to over 10 million immigrants. Beyond the institutional commitment to never share immigration data with any other agency, CHIS participants are protected under the California Information Practices Act (section 1798.24) which prohibits the release of personal information, as well as a Certificate from the Department of Health and Human Services which further protects CHIS from being forced to disclose identifying information by a "court subpoena, in any federal state, or local civil, criminal, administrative, legislative, or other proceedings."[21] Ultimately, however, it is the perception of threat which drives data quality.

There are important limitations to consider in regard to these results. First, immigration status and legal status are separate; there are authorized

immigration statuses other than a green card. For participants with these immigration statuses, answering that they are not a permanent resident with a green card cannot be interpreted as lacking legal status. Second, this paper focuses on CHIS participants and their decision to respond to particular questions; however, the decision to participate in the survey at all may also be affected by immigration or legal status. This type of behavior is part of unit-nonresponse, in which the sampled unit does not participate in the survey either because they were never reached of because they refused to participate.6 Whether unit-nonresponse differs by immigration status and to the extent that survey weights adequately correct for it is unknown. For this reason, I present the majority of my findings as unweighted characterizations of survey participants themselves; the use of survey weights did not substantively change results and were only presented sparingly as sensitivity analyses.

Conclusion

Public health requires meaningful data to monitor the health of different populations and inform the causes of persistent differences and disparities in health.[22] Immigration and legal status are important social determinants of health, but their presumed sensitivity have kept relevant questions off of nearly every survey positioned to address population health. By including questions on citizenship and immigrant status in population health surveys, that abide to the appropriate confidentiality requirements, we can better inform the specific health needs of a vulnerable population. The overall low levels of citizenship and immigrant status non-response in CHIS found from 2001-2015 suggests implementation of such questions is feasible.

Tables and Figures

Table 2.1 Nonresponse and Responses by Country of Birth, 2001-2015

	Unstratified	Mexico	Central America	China	Philippines
			Are you a citizen of the United States?		
Asked	81,598	30,120	5,535	4,638	3,855
Did not respond	1,011 (1.24%)	718 (2.38%)	74 (1.34%)	23 (0.50%)	11 (0.29%)
Responded	80,587	29,402	5,461	4,615	3,844
Yes	46,575 (57.79%)	10,920 (37.14%)	2,544 (46.58%)	3,317 (71.87%)	2,997 (77.97%)
No	33,472 (41.54%)	18,256 (62.09%)	2,859 (52.35%)	1,272 (27.56%)	806 (20.97%)
Pending	540 (0.67%)	226 (0.77%)	58 (1.06%)	26 (0.56%)	41 (1.07%)
			Are you a permanent resident with a green card?		
Asked	35,023	19,200	2,991	1,321	858
Did not respond	1,274 (3.64%)	963 (5.02%)	92 (3.08%)	16 (1.21%)	13 (1.52%)
Responded	33,749	18,237	2,899	1,305	845
Yes	21,050 (62.37%)	9,757 (53.50%)	1,593 (54.95%)	989 (75.79%)	726 (85.92%)
No	11,770 (34.88%)	8,019 (43.97%)	1,212 (41.81%)	252 (19.31%)	97 (11.48%)
Pending	929 (2.75%)	461 (2.53%)	94 (4.90%)	64 (4.90%)	22 (2.60%)

Table 2.2 Multivariate Associations of Nonresponse to Questions of Citizenship and Immigration Status

	Citizenship				LPR status			
	Unstratified (n=81,420)		Mexico (n=30,092)		Unstratified (n=34,936)		Mexico (n=19,181)	
Sex								
Male	1.01		0.95		0.92		0.89	
Female	Ref		Ref		Ref		Ref	
Age								
18-29	2.96	***	3.24	***	2.61	***	2.51	***
30-39	3.15	***	3.27	***	2.65	***	2.64	***
40-49	1.85	***	1.96	***	1.99	***	2.18	***
50-64	Ref		Ref		Ref		Ref	
65+	0.49	***	0.24	***	0.88		0.51	*
Household poverty								
0-99%FPL	2.01	***	1.76	**	1.33	*	1.27	
100-199%FPL	1.52	**	1.3		1.29	*	1.21	
200-299%FPL	1.17		0.97		1.08		0.93	
300%FPL+	Ref		Ref		Ref		Ref	
Education								
Less than High School	0.83	*	0.79	*	0.76	***	0.79	**
High School or GED	Ref		Ref		Ref		Ref	
Some college or more	0.96		0.86		1.04		0.91	
Language of interview								
Spanish	3.07	***	2.52	***	2.07	***	1.68	***
Asian language	0.63	*	N/A		0.52	**	N/A	
English	Ref		Ref		Ref		Ref	
English skill								
Not well or at all	0.98		1.01		1.06		0.95	
Speaks English only or well	Ref		Ref		Ref		Ref	
Years in the US								
1-5yrs	1.13		1.01		0.71	***	0.91	
6-10yrs	1.34	***	1.26	*	0.99		1.1	
11+yrs	Ref		Ref		Ref		Ref	
CHIS cycle								
2001	Ref		Ref		Ref		Ref	
2003	1.53	**	1.39	*	1.35	*	1.13	
2005	1.11		1.09		1.09		0.96	
2007	2.22	***	2.3	***	3.18	***	3.11	***
2009	2.41	***	2.53	***	3.39	***	3.41	***
2011/12	2.65	***	2.94	***	3.68	***	3.82	***
2013/14	1.84	***	1.93	***	2.86	***	2.83	***
2015	2.64	***	2.93	***	3.16	***	3.05	***
Country of birth								
Mexico	1.46	***	N/A		1.51	***	N/A	
All else	Ref				Ref			

Figure 2.1 Responses to questions of country of birth, citizenship and immigration status

Flowchart:

344,205
Interviewed

- 262,607 Born in U.S.
- 81,144 Born outside U.S,
- 454 Did not respond

From "Born outside U.S.":

- 46,575 Yes: Citizen
- 33,472 No: Not citizen
- 540 Application pending
- 1,011 Did not respond

From "No: Not citizen":

- 21,050 Yes: LPR
- 11,770 No: Not LPR
- 929 Application pending
- 1,274 Did not respond
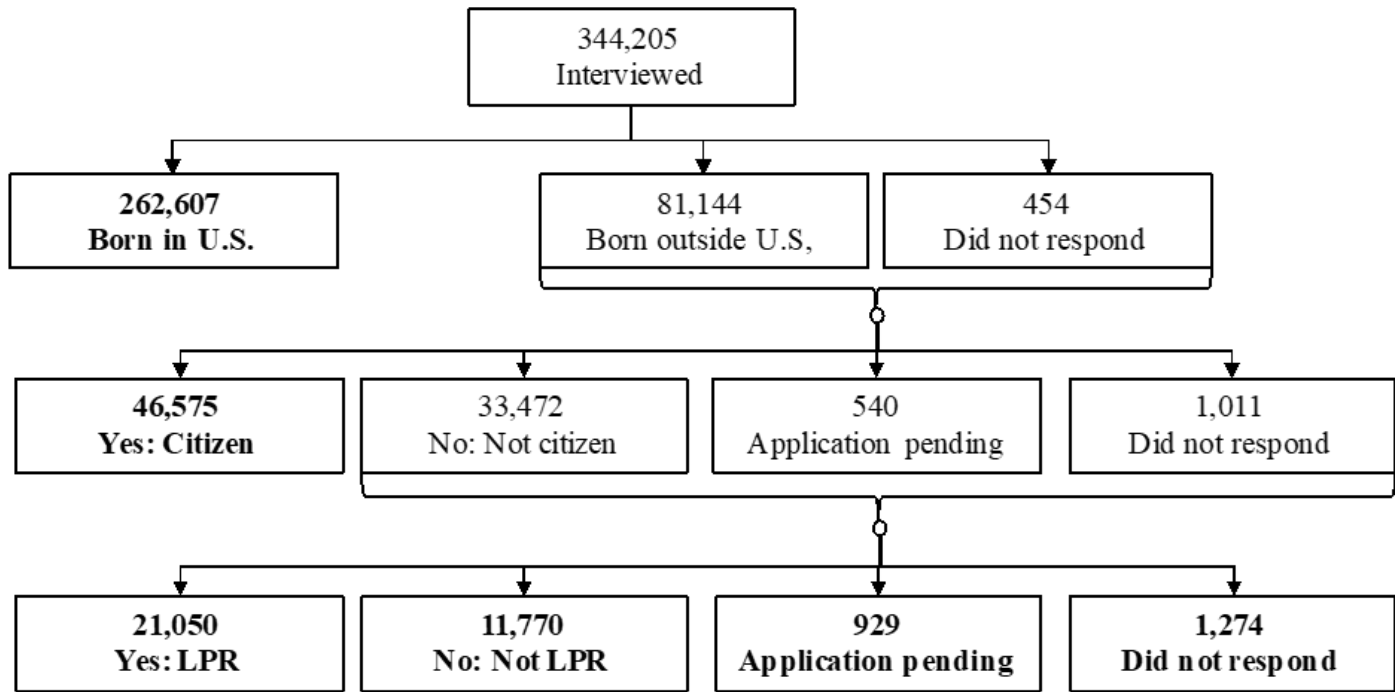
Figure 2.2 Nonresponse to Questions of Citizenship and LPR Status

Nonresponse to Questions of Citizenship and LPR Status

Legend:
— ▲ — Model adjusted INR: Citizenship
— ● — Model adjusted INR: LPR
△ Unadjusted INR: Citizenship
○ Unadjusted INR: LPR

x-axis: CHIS survey cyle (2001, 2003, 2005, 2007, 2009, 2011/12, 2013/14, 2015)
y-axis: 0%, 2%, 4%, 6%
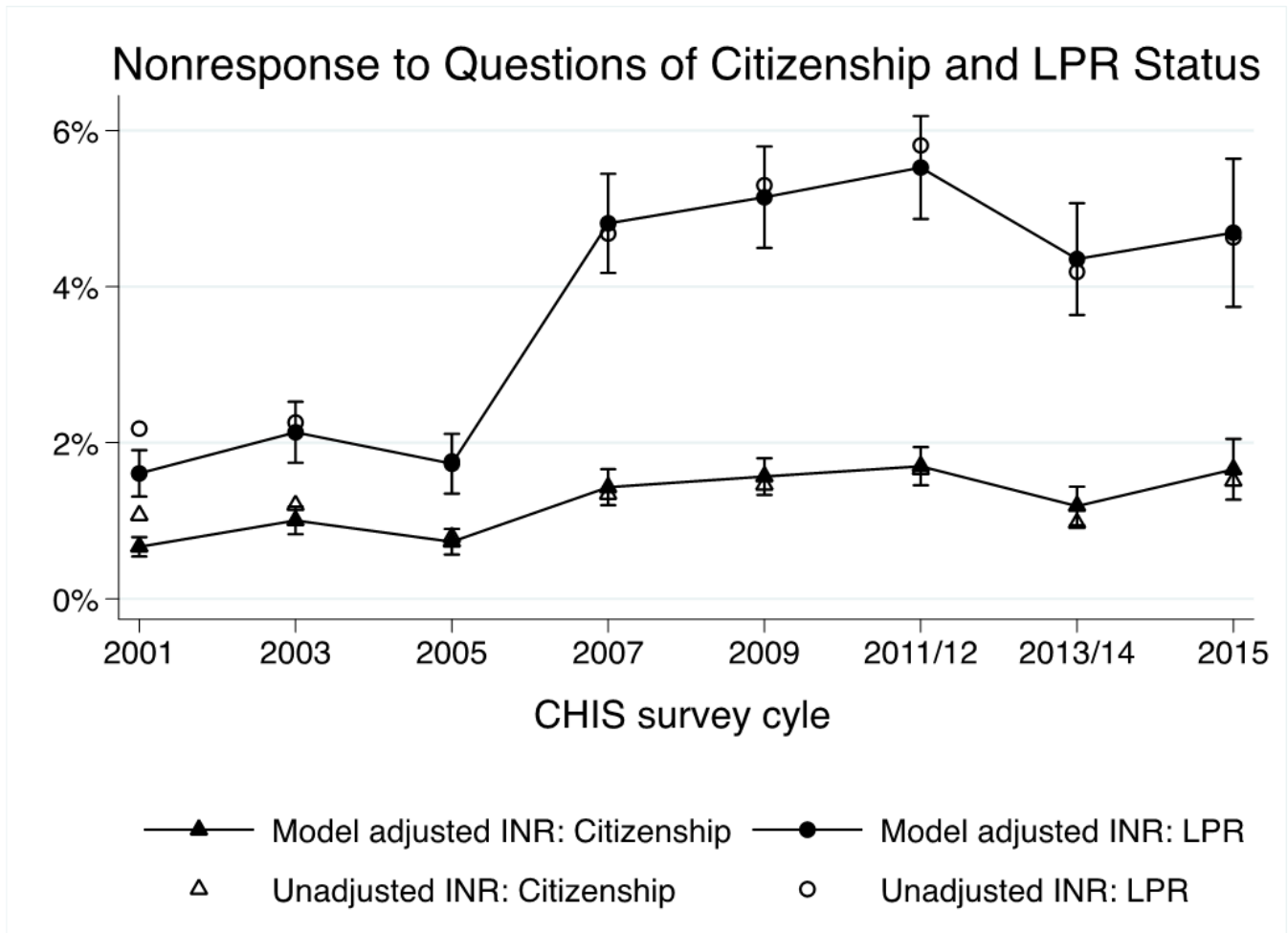
References

1.   Clark RL, King RB. Social and economic aspects of immigration. Ann N Y Acad Sci. 2008;1136:289-297. doi:10.1196/annals.1425.021

2.   U.S. Government Accountability Office. Estimating the Undocumented Population: A Grouped Answers Approach to Surveying Foreign-Born Respondents. Washington, D.C.: U.S. GAO; 2006. http://www.gao.gov/products/GAO-06-775. Accessed June 29, 2015.

3.   Bachmeier JD, Van Hook J, Bean FD. Can We Measure Immigrants' Legal Status? Lessons from Two U.S. Surveys. Int Migr Rev. 2014;48(2):538-566. doi:10.1111/imre.12059

4.   National Academies of Sciences E. The Integration of Immigrants into American Society.; 2015. doi:10.17226/21746

5.   Tourangeau R, Yan T. Sensitive questions in surveys. Psychol Bull. 2007;133(5):859-883. doi:10.1037/0033-2909.133.5.859

6.   Groves RM, Jr FJF, Couper MP, Lepkowski JM, Singer E, Tourangeau R. Survey Methodology. John Wiley & Sons; 2011.

7.   Baker B, Rytina N. Estimates of the Unauthorized Immigrant Population Residing in the United States: January 2012. Department of Homeland Security, Office of Immigration Statistics; 2013. https://www.dhs.gov/sites/default/files/publications/Unauthorized%20Immigrant%20Population%20Estimates%20in%20the%20US%20January%202012_0.pdf.

8.   Street 1615 L., NW, Washington S 800, Inquiries D 20036 202 419 4300 | M 202 419 4349 | F 202 419 4372 | M. U.S. unauthorized immigration population estimates. Pew Res Cent Hisp Trends Proj. November 2016. http://www.pewhispanic.org/interactives/unauthorized-immigrants/. Accessed July 4, 2017.

9.   Immigrants in California. PPIC. http://www.ppic.org/publication/immigrants-in-california/. Accessed July 21, 2017.

10.   2015 Weighting and Variance Estimation. Los Angeles, CA: UCLA Center for Health Policy Research http://healthpolicy.ucla.edu/chis/design/Documents/chis-2015-short-methodology-report-5_weighting_2016-12-13.pdf.

11.   StataCorp. Stata Statistical Software: Release 14. College Station, Texas: Stata Corp LP; 2015.

12.   Van Hook J, Bachmeier JD. How Well Does the American Community Survey Count Naturalized Citizens? Demogr Res. 2013;29(1):1-32. doi:10.4054/DemRes.2013.29.1

13.   Vargas JA. My Life as an Undocumented Immigrant. The New York Times. http://www.nytimes.com/2011/06/26/magazine/my-life-as-an-undocumented-immigrant.html. Published June 22, 2011. Accessed January 26, 2017.

14.   Chang C. California voters more tolerant of illegal immigrants, poll finds. Los Angeles Times. http://articles.latimes.com/2012/oct/28/local/la-me-poll-immigration-20121028. Published October 28, 2012. Accessed January 9, 2017.

15.   Gramlich J, comments KB. Immigration offenses make up a growing share of federal arrests. Pew Res Cent. April 2017. http://www.pewresearch.org/fact-tank/2017/04/10/immigration-offenses-make-up-a-growing-share-of-federal-arrests/. Accessed July 19, 2017.

16.   Census Bureau. Item Allocation Rates: American Community Survey. https://www.census.gov/acs/www/methodology/sample-size-and-data-quality/item-allocation-rates/. Accessed July 19, 2017.

17.   Passel JS. Percent of "Non–Green Card" Aliens Who Are Undocumented Immigrants, for Most Recent Period of Entry to the US, Based on Urban Institute Estimates Derived From March Current Population Surveys of 1999-2001: Custom Data Table. Washington, DC: Urban Institue; 2002.

18.   Latinos are reporting fewer sexual assaults amid a climate of fear in immigrant communities, LAPD says - LA Times. http://www.latimes.com/local/lanow/la-me-ln-immigrant-crime-reporting-drops-20170321-story.html. Accessed July 4, 2017.

19.   Duggan T. Immigrants' fear cited in declining food stamp use in SF. San Francisco Chronicle. http://www.sfchronicle.com/food/article/Fewer-eligible-San-Franciscans-taking-advantage-11151203.php. Published May 16, 2017. Accessed July 4, 2017.

20.   Trump's Immigration Policy Causing Some To Withdraw Kids From Medi-Cal | California Healthline. http://californiahealthline.org/morning-breakout/trumps-immigration-policy-causing-some-to-withdraw-kids-from-medi-cal/. Accessed July 4, 2017.

21.   Survey Respondent Information | UCLA Center for Health Policy Research. http://healthpolicy.ucla.edu/chis/respondents/Pages/confidentiality.aspx. Accessed September 1, 2017.

22.   Galea S, Vaughan RD. A Public Health of Consequence: Review of the August 2017 Issue of AJPH. Am J Public Health. 2017;107(8):1209-1210. doi:10.2105/AJPH.2017.303920