Individual and Community Effects on Immigrant Naturalization

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Abstract

Becoming a citizen is a component of a larger process of immigrant incorporation into U.S. society. It is most often conceived as an individual-level choice, associated with such personal characteristics as the duration of residence in the U.S., age, education, and language acquisition. This study is designed to examine collective aspects of naturalization, probing for characteristics of the community context that influence individual outcomes. We find strong evidence of contextual effects, especially for Hispanics. But there are also unexplained variations in the pattern of both individual and contextual effects across groups.

Introduction. This is an initial draft of a paper that will be further developed in the coming months. It is submitted for consideration for PAA in this form because, while it is unfinished, it reflects that direction of our thinking and methods of analysis more completely than would an extended abstract. All findings and interpretations are subject to change.

Individual and Community Effects on Immigrant Naturalization

Individual level variables, such as educational attainment, income, ability to speak English, and length of time in the United States, have been fairly well-established as positive predictors of immigrant naturalization (Liang 1994; Jones-Correa 2001; Yang 1994). Much of the existing work on immigrant naturalization has thus supported classic assimilation theory (Liang 1994) and has also shown that many of the individual factors that influence political participation in the general population (see Verba et al 1993) also apply to immigrants in the U.S.

We examine individual-level models of naturalization, with particular attention to differences in predictors for non-Hispanic white, Hispanic, black, and Asian immigrants. Our greater interest, though, is in the impacts of social and political context, understood as place-specific, community level or social structural factors, on citizenship acquisition. For one of the most important consequences of naturalization – the ability to participate in electoral politics – the impact of higher or lower rates of acquiring citizenship are found at the community level. Decisions about the boundaries of voting districts, from the local to the federal level, are constitutionally constrained by population density and its racial/ethnic composition, regardless of age or citizenship. In real politics, though, it is real or potential voting strength that matters, and we seek to identify the contextual factors that may affect this dimension of electoral power.

Studies of contextual influences on naturalization have been less numerous and less conclusive than those analyzing individual level predictors. The studies discussed below test theoretical propositions derived from classic assimilation theory, contact theory, and ethnic competition perspectives (see Liang 1994 and Bueker 2006 for an overview of these theoretical perspectives). Accordingly, they have assessed the role of the following variables in shaping immigrants' likelihood of naturalizing: residential location (metropolitan vs. rural location); population size or density; ethnic or racial concentration; racial residential segregation; the

density and population size of the immigrant population; and the ethnic or racial "mix" of the population, for given geographical units. Some research also anticipates the role that naturalization may play in politics, asking whether locales whose political rules promote easier electoral participation stimulate higher rates of naturalization.

Type of residential location: metro vs. non-metro. Several authors have examined the role that residential location plays in shaping immigrants' propensity to naturalize. For example, in one of the most recent and comprehensive examinations of immigrant naturalization, Bueker has analyzed whether living in a metropolitan area, as opposed to a rural or non-metropolitan area, impacts naturalization rates for 10 different ethnic or national-origin groups. Utilizing Current Population Survey data from 1994, 1996, 1998 and 2000[1], she finds that immigrants living in rural areas are more likely to naturalize, even when controlling for other individual level variables such as poverty, education, work and age (Bueker 2006). She also finds that this effect is especially pronounced for Mexican immigrants (2006).

Population Size. The population size of the metropolitan unit may also matter, but findings are relatively scant and inconclusive. An early study conducted by Portes and Curtis (1987), which analyzed a unique longitudinal data set on Mexican immigrants from 1973-1979 found that Mexican immigrants residing in small U.S. cities and living outside of the South and West were more likely to naturalize. However, in her analysis of 10 national origin groups, Bueker (2006) does not find metropolitan population size to be a significant predictor of naturalization.

Studies have also pointed to the significance of the ethnic or racial mix, as well as the population size and density of the immigrant population in residential areas, for immigrant naturalization. These studies build on the theoretical proposition that social contact of various sorts—whether with co-ethnics, immigrants, or predominantly native-born groups—shapes attitudes, behaviors, and thus the propensity to naturalize (see Liang 1994 for discussion of social contact theory derived from Blumer as well as Park and Burgess).

Percentage Foreign Born. Bueker finds the percentage of the overall foreign born population in a given metropolitan area to be negatively related to naturalization (2006). By contrast, Yang's earlier study based on 1980 PUMS data finds that the percentage of a particular immigrant group's urban population was *positively* related to naturalization (1994).

[1] She examines all immigrants eligible to naturalize, defined as those who have been in the U.S. more than 5 years. She also restricts her sample to those over age 18.

Studies have found that the impact of the percentage of foreign born population in a given geographical area on citizenship varies by broad racial groups. Yang's later analysis of immigrant data from the 1990 PUMS finds that the size of the general Asian immigrant community at the state level has a positive effect on the naturalization of Asian immigrants (2002b). The same study also shows that the impact of ethnic or immigrant community varies by national origin group: when he conducted separate logistic analyses for each of six different national origin Asian groups, Yang found that the size of a particular immigrant community at the state level has a "boosting" effect for Chinese immigrants but a "dampening" effect for Koreans and that immigrant community size is not significant for the four other Asian groups when modeled separately (2002b).

It is important to note that Yang and Bueker use relatively large geographical units of analysis—state and MSA. Our study, as explained in detail below, has the advantage of utilizing a smaller (and therefore more appropriate for analysis of propositions based on social contact theory) geographical unit of analysis, the PUMA.

Ethnic Concentration. Studies have also yielded competing findings about the impact of ethnic concentration and racial residential segregation on citizenship acquisition. Yang finds that the presence of co-ethnics in general (whether immigrant or non-immigrant), has a "hampering effect" on immigrant naturalization (2002a). In other words, higher populations of co-ethnics at the state level positively predict citizenship acquisition. Portes and Curtis had the advantage of access to a unique data set which included information about the characteristics of neighborhoods where immigrants lived. Their 1987 study of Mexican immigrants yielded findings which confirm Yang's: in communities with lower proportions of non-Hispanic whites, they found that Mexican immigrants were less likely to naturalize than those Mexicans living in communities with a high proportion of whites. In another twist, Portes and Curtis find that living in a highly white neighborhood actually *reduces* immigrants' stated *intention* to naturalize (1987). In other words, Mexican immigrants they studied who lived with a high proportion of whites were less likely to state that they *intended* to naturalize, though in the end, those migrants who *actually* naturalized were more likely to live in highly Anglo neighborhoods. In other words, living with whites comes with contradictory influences for the Mexican migrants studied by Portes and Curtis.

Liang and Bueker have both used measures of residential segregation as indicators of racial residential contact that might impact naturalization. Liang measures propensity for residential social contact with whites as the dissimilarity (with non-Hispanic whites) index at the MSA level. Liang's study (1994), which draws on 1980 PUMS data, finds that increased segregation from whites generally has a negative relationship with naturalization—confirming the notion that increased contact with whites could promote naturalization. Nevertheless, Liang confirms that the impact of contact with whites varies by ethnic group: he finds that living with whites has a much stronger positive effect on naturalization for Mexican immigrants than it does on other ethnic groups. He also finds that while social contact with whites is positively linked to naturalization for Mexicans, Cubans, Columbians and Koreans, for Chinese, residential contact with whites reduces the propensity to naturalize (1994). Bueker (2006) also looks specifically at residential segregation at the MSA level using dissimilarity indices with non-Hispanic whites as another way to measure cross-racial contact. However, she does not find significant effects on naturalization for white-black, white-Hispanic, or white-Asian residential segregation (measures which include all members of the racial groups—immigrants and non-immigrants).

Many researchers suppose, therefore, that mixed mechanisms are at play: Liang and Bueker both suggest that ethnic concentration or ethnic/racial segregation can lead to "ethnic competition" and can in turn promote the kind of social capital, ethnic competition or conflict, and collective identity that promotes naturalization. At the same time, both Liang and Bueker find support for the notion that residential contact with native whites can also lead to greater social-cultural assimilation and increased access to information about U.S. society in a way that can also enhance the likelihood to naturalize.

These authors, including Bueker, Liang, Yang, Portes, as well as Pantoja (2005), have also hypothesized that the experience of discrimination serves as a mechanism which mediates how contact with native born Americans or whites influences immigrant's likelihood to naturalize. However, very few studies are able to directly measure experience of discrimination. One exception is Pantoja's study of Dominicans in Queens which draws upon a unique data set from 2003 that includes questions about respondents' experience of discrimination. Jones-Correa also conjectures that discrimination plays a role in mediating the impacts of residential context (2001). In his analysis of 1996 CPS data, he treats California residence as a contextual variable that might capture many different state level contextual predictors, including anti-

immigrant sentiment or discrimination. He indeed finds that immigrants residing in California are *more* likely to naturalize than immigrants living in other environments and he surmises that this might be linked to the distinct anti-immigrant legislation and sentiment pervading the state during the mid 90s. Unfortunately, Jones-Correa does not tease out other reasons why living in California might make a difference for naturalization rates—for example, he mentions that the "California effect" could also be due to the particular nature of California's migration streams. Experience of discrimination when faced by a high levels of residential contact with whites could also explain the puzzling finding of Portes and Curtis that Mexican immigrants living in highly Anglo areas said they did not *intend* to naturalize (1987).

Finally, it is important to note that existing studies do not exploit all of the potential indicators available to measure the potential underlying dynamic of "ethnic competition" (see Liang 1994 and Bueker 2006). As discussed below, our study utilizes both residential segregation measures as well as measures of relative group economic status as indicators of potential group competition that could influence naturalization choices.

Country of origin as social context. The impacts of social context are not confined to immigrants' experience in the U.S.—the contextual effects imparted within an immigrant's country of origin may also shape their propensity to naturalize. In this way, national origin at the individual level can be understood as a variable which also represents the contextual effects of a nation as a whole on a migrant. Both Bueker (2006) and Yang (1994) disentangle apparent differences in naturalization rates by national origin groups by analyzing specific variables related to country of origin. Yang for example finds that immigrants, from the 1980 PUMS data, from socialist and refugee sending countries, when grouped together, have higher propensities to naturalize (1994). Bueker also finds support for the idea that immigrants from politically restrictive countries, as measured by the freedom house index, have higher propensities to naturalize (2006). Portes and Curtis (1987) as well as Yang (1994; 2002a) also find that a migrant's country of origin's distance from the U.S. plays a significant role: they explain that groups like Canadians and Mexicans are likely to return home more often and are thus more likely to maintain political ties to their home country rather than naturalizing.

Political Institutions. Finally, Jones-Correa (2001) has pushed for more attention to contextual impacts, understood as both social environment and also political institutions. In his analysis of the 1996 CPS naturalization data, he finds that state-level political variables, yielded from the

Book of States produced by the Council of State Governments, have significant impacts on naturalization rates. In particular, in addition to the contextual effect of living in California discussed above, state regulations that determine voting eligibility and accessibility, what he terms the "rules of the game" shape propensity to naturalize. Specifically, he finds that immigrants who live in states with more "liberal" voting rules or more open and accessible political institutions are more likely to naturalize.

Data and Method

1. Data source and sample

The analysis relies on the 5 percent Public Use Microdata Sample (PUMS) of the 2000 U.S. census (IPUMS 2004). The PUMS offers large sample sizes of various foreign-born racial groups and many important socioeconomic and demographic variables not available in other data sets. This advantage enables us to conduct more intensive analysis of citizenship across racial/ethnic groups and places (e.g., PUMA, State, and MSA). In the PUMS data, the place of residence is reported at the level of PUMAs. A PUMA typically contains approximately100,000 persons as large as many metropolitan regions or counties. We take advantage of this geographical unit when we incorporate aggregate tract-level neighborhood characteristics such as isolation index and proportion of naturalized citizens.

Despite the advantages of the PUMS, we recognize that these data have limitations in the study of citizenship. The PUMS file does not identify legal and illegal immigrants and therefore might include undocumented migrants who are not eligible for applying for citizenship.[2] This paper addresses this limitation by including occupation measure that has been used to estimate the number of illegal immigrants (Passel and Clark 1998; Passel 2005). Although undocumented immigrant workers can be found throughout the workforce, they tend to be over-represented in certain occupations. Relying on the existing occupation measure developed by Passel and et al.,

[2] According to Passel et al. (2004)'s estimation, the number of illegal immigrants in the country is 9.3 million. They represent 26 percent of the total foreign-born population.

we use occupation as a control variable to explain the effect of illegal immigrants. Furthermore, we consider the issue of illegal immigrants by carefully interpreting measures of residential context since undocumented immigrants likely work and settle in ethnic concentrations.

Our multivariate analysis is restricted to the immigrants who were 5 years old and above in 2000. Most analyses of this type using PUMS is limited to immigrants who are aged 18 and over and stayed for at least five years in the United States and therefore became eligible for naturalization. In initial descriptive analyses, however, we found a considerable proportion (17 %) of those who were age 18 and under out of total foreign-born population were naturalized (see Table 2 below). Thus, we include immigrant who are aged 18 and under. We must exclude those who are under age 5 since the English speaking variable used in our analysis is defined only for older persons.

Moreover, since PUMS data include all household members, there are potential problems of autocorrelation in estimating each specific multivariate model. Our procedure for each multivariate analysis is first to select all immigrants of a given racial/ethnic category, then select one person from every household.

2. Variables

Table 1 summarizes the measurements for the variables in the analysis. Citizenship as the is a dichotomy (i.e., naturalized citizen or non-citizen). Variables measured at the individual level include age, gender, marital status, number of coresident children, length of residence in the United States, English speaking ability, income, education, age at immigration, country of origin, and occupation. We use dummy variables to represent categories of age, length of residence, English competence, income, and education (see details in Table 1), allowing us to detect potential nonlinearity. Two of these measures represent what other studies refer to as

"rootedness" in the United States (Portes and Curits 1987): marital status and number of children.

Occupation variables were included as a partial control for illegal status. We employ the occupation measure developed by Passel et al. (1998 and 2005). Using the 1998 Standard Occupational Classification (SOC) in the PUMS file, twenty-two specific occupations in which illegal immigrants are highly represented (e.g., drywall/ceiling tile installer, grounds maintenance workers, food preparation workers, etc.) and whose proportion of illegal immigrants exceeds the proportion in the workforce (4.3 %) are classified as high probability of being illegal. Another set of high-level professional occupations such as physicians, lawyers, and engineers and protective service occupations such as police and firefighters that require license is classified as zero probability of being illegal immigrants. The rest of the occupations are categorized as else. Passel validates these categories with results of survey research among immigrants who status was legalized under the amnesty provisions of the 1990s.

Contextual variables include two clusters of variables: residential context and policy context. Some characteristics of the neighborhoods at the PUMA level in which immigrants live could affect their likelihood of becoming citizens. The neighborhood variables in the model include the isolation index, percentage of adult naturalized citizens, and household income ratio potentially as a measure of group difference or "ethnic competition." First, isolation indices measure the extent to which minority members are exposed only to one another in the census tract where they live. These indices are created as the group-weighted average percentage of the group proportion at the tract level, using Summary File 1 from Census 2000. Then, these values are aggregated at the PUMA level linked to individuals in the PUMS sample. Second, group-specific percentages of foreign-born adults who are naturalized citizens are also calculated at the

PUMA level. Third, median household income ratios to that of white population are calculated at the PUMA level. Using publicly available census data, the PUMA is the smallest identifiable geographic unit and is therefore preferable to the metropolitan region, which has been used by other studies.

Other contextual variables have an explicit political content. The political institutions of country of origin are believed to affect the propensity of naturalization, because U.S. citizenship is a potential shield for immigrants from repressive countries (Bueker 2003; Yang 1994). The Freedom House has developed rankings of countries in terms of civil liberty and political freedoms and updated the rankings every two years since 1972 (http://www.freedomhouse.org). They combine the two measurements to create an overall score (as a 3-point scale) of the country's degree of civic and political freedom. Dummy variables that indicate whether a birth country is free, partly free, and not free are attached to individual cases in the PUMS file.

Local voting policies may also influence immigrants' naturalization as a form of anticipatory political participation (Jones-Correa 2001; Ramakrishnan and Espenshade 2001). Following Jones-Correa (2001), we test whether voting-related policies as indicators of overall openness of the political institution in a state, impact naturalization. We use state-level information on availability of early voting and liberalized absentee voting drawn from Hansen (2001).

3. Descriptive results

Table 2 reports analysis of the 5% microdata sample from Census 2000 showing racial/ethnic differences in citizenship status for adults and for youth.

Most immediately relevant to future electoral participation is citizenship among persons aged 18 and above, the second panel in the table. The table reiterates what is already well known

about the share of immigrants in the population. Among white and black adults well under 10% are foreign-born, while immigrants are a majority of Hispanics and more than three quarters of Asians. This means that naturalization has a great potential impact on Hispanic and Asian electoral participation.

For Hispanics in particular, this is a depressing effect. Only 30.1% of Hispanic adult immigrants are naturalized citizens, compared to the national average of 42.9% for all adult immigrants.

Table 2 offers one other important type of information relevant to discussions of citizenship – the very important weight of second-generation and later generation group members who were under 18 in 2000 but whose U.S. birth makes them automatic citizens. The 10 million Hispanics in this category will nearly double Hispanic presence among voting-age citizens when these youths reach age 18. A similar though smaller impact will be found among Asians.

4. Multivariate models

Multivariate logistic regression is employed to analyze the effects of the explanatory variables on the probability of citizenship. Binomial logistic regression is appropriate since the dependent variable is dichotomous. The first model separately estimates the effects of individual characteristics on citizenship for four major racial/ethnic groups (i.e., Hispanics, Asians, non-Hispanic blacks, and non-Hispanic whites). The second model incorporates both the individual and contextual characteristics to examine how the contextual factors affect individual behavior of citizenship attainment. As we advance our analysis beyond the current study, further group specification (e.g., national origin categories) and interaction effects will be tested to examine whether some predictors have stronger effects among some ethnic groups than among others.

Occupation. Occupational categories have been constructed as a proxy for likelihood of being undocumented. These work as expected for Hispanics, Asians, and blacks. However in the non-Hispanic white model, both the "high risk" and "low risk" categories are negatively associated with naturalization. This result calls into question the generalizability of past studies of the relationship between occupation and legal status of immigrants. Apparently among whites, it is common for immigrants with high professional standing to choose not to become citizens.

Indicators of adaptation

Years in USA. For members of all racial/ethnic groups, persons with 6-10 years residence are two to five times more likely than newer arrivals to be naturalized. This is not surprising, since most immigrants face time constraints in eligibility for naturalization. But there continue to be very large differences with every increment in duration.

Age. Associated with duration of residence is age, whose effect is estimated independently here. The effect of age can be estimated simply for comparisons of persons over 55 with those in the 41-55 and 25-40 categories. To interpret coefficients for younger persons, bear in mind that age under 25 is a category of both age and education (that is, education is not defined for persons under 25). Therefore the reference category for younger persons is persons age 55+ who have beyond a BA degree.

Older persons are more likely to be naturalized. Among Hispanics this difference is very large, those 55+ are as much as five times more likely than those in the 25-55 range. The effect is in the same direction for blacks and non-Hispanic whites, two to three times more likely. Among Asians, however, there is little difference between those 41-55 and 55+;; those in the 25-40 range are about 40% less likely to be naturalized.

Age at immigration. Another related variable is age at immigration, treated here as an interval scale. Independent of age and duration of residence, people who arrived in the U.S. at a younger age are more likely to be naturalized, presumably reflecting their more slender identification with their country of origin.

Language. English language use is included here because the passage from sole reliance on one's native language is expected to be closely and naturally linked to time. English language ability can also be a prerequisite to naturalization, and learning English can be viewed as an indicator of desire to become more connected to the new environment. Among Hispanics there is little difference among those who speak only English at home, those who speak English well or very well. The effects on naturalization appear at lower levels: compared to those who do not speak Enlgish at all, those who speak it "not well" are nearly twice as likely to naturalize, and those who speak better are more than three times as likely. Among black immigrants, for many of whom English is a native language, effects are much larger. Results for Asians and whites are in the same direction, but the principal difference is between those who don't speak English at all vs. all others.

Gender and family characteristics

Gender. Women are more likely than men to naturalize by a factor of 10-20%, except among white immigrants. For whites, women are 10% less likely.

Marital status. Hispanic married persons are more likely to naturalize; for all other groups, they are less likely.

Children. For all groups, there is a modest increase in likelihood of naturalization for each coresident under-18 child in the household.

Socioeconomic indicators

Education. There is a simple monotonic relation between education and naturalization for whites and blacks – the higher the education level, the more likely to be naturalized, though the difference between the two highest education categories (BA vs. graduate education) is small for whites and small and non-significant for blacks. Results are more complex for Hispanics and Asians. For Hispanics the exception to the monotonic pattern is for those with graduate education – they are more likely to naturalize than those with high school or less, but less likely than those with some college or a college degree. Among Asians, it is this same group that creates the exception – and in this model those with graduate education are less likely than any other category to naturalize.

Income. The reference category for income is people with very low incomes, below $10,000. We have included many categories here to test whether the effect of income is monotonic, and we find that it is not. Among Hispanics, these persons are slightly more likely to naturalize than those in categories between $10,000 and $60,000, but substantially less likely than those with higher incomes. Still, the overall pattern suggest that naturalization increases with income. The same is true for Asians, though the details are different: below $45,000 most coefficients are negative, but above that level they are all positive, and the highest positive coefficient is for persons with incomes over $200,000. It is harder to discern any pattern for blacks. Many coefficients are not significant, and both positive and negative effects are found among lower income categories and among higher income categories. For whites, the main distinction is between people with the lowest income, under $10,000 – who are most likely to naturalize – and those with any other income.

Home ownership. Homeownership is significantly associated with naturalization, though more for Hispanics, Asians, and blacks (increasing probability by 50-60%) than for white (an increment of only about 20%).

-- Contextual effects

Model 2 in Tables 3-6 introduces contextual variables. On the whole these do not alter the individual-level effects described above. Many contextual variables do have significant coefficients.

The most general contextual effect in these models is the impact of the share of other immigrants of the same racial/ethnic background who have naturalized. Net of one's own characteristics, is there an additional pull toward naturalization if many co-ethnic immigrants have done so? Clearly there is. In our models, for every percent increase in the share of coethnic immigrants who are naturalized, the respondent's probability of naturalizing increases by an amount equal to 1.8% (Hispanics) to 2.9% (blacks).

What is it about community context that exerts a pull toward or a constraint against becoming a citizen? Our models consider several prospects:

Ethnic isolation. Living in an area with a high degree of ethnic isolation increases the probability that the respondent has many coethnic neighbors. Ethnic isolation decreases propensity to naturalize for Hispanics, blacks, and whites. But surprisingly it has the opposite effect for Asians.

Average group income. Where immigrant group members' incomes tend to be more on par with those of a standard reference category (we use the incomes of U.S. born non-Hispanic whites for

comparison), we would expect group members to be more likely to naturalize. This is the result for Hispanics, but the opposite is found for black, Asian, and white immigrants.

National political background. One motive for attaining U.S. citizenship is protection against the government of the country of origin, for those who experienced repressive regimes. This is our consistent finding for all groups when we compare the most repressive category of regimes vs. non-repressive regimes – a very strong effect for all but blacks. However the effect of coming from a "partly free" country is equivocal.

Local electoral institutions. We include two institutional variables to represent whether state law encourages electoral participation. These are availability of absentee voting and early voting. Absentee voting increases naturalization for blacks, but surprisingly it has a significant negative effect for other groups. Early voting increases naturalization for all groups except Asians, for whom the effect is negative.

Discussion

This study partly verifies results from previous research about the effects of individual-level predictors of attaining citizenship. The principal new finding is that effects are not uniform across groups. At the contextual level, the results offer stronger evidence than prior studies that there are community effects on naturalization. Here again, however, effects are not uniform. Perhaps the most consistent results are for Hispanics. Hispanic naturalization is positively influenced by the overall share of naturalized Hispanics in the community's immigrant population, and more specifically by lower ethnic isolation, higher relative income levels for Hispanics, origins in politically repressive countries, and local electoral regulations that promote voter participation. These are the patterns that we hypothesized based on prior theoretical and

empirical work. But although there is also clearly a contextual influence on other groups, detected in the effect of the group's level of naturalization in the community of residence, there are enough contradictory and unexpected effects to require additional efforts to specify these models correctly and to interpret the results.

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Table 1. Description of Variables

Variable	Measurement
Dependent Variable	0=else, 1=citizen
Citizenship	
Independent Variables	
Individual characteristics	
Age	1= age 5-15
	2= age 16-24
	3= age 25-40
	4= age 141-55
	5= Age 55+ (ref.)*
Sex	0= male (ref)
	1= female
Years in U.S.	1= 0-5 years (ref.)
	2= 6-10 years
	3= 11-15 years
	4= 16-20 years
	5= 21+ years
English competence	1= does not speak English (ref.)
	2= speaks not well
	3= speaks well
	4= speaks very well
	5= speaks only English
Household income	1= less than $10,000 (ref.)
	2= $10,000-$14,999
	3= $15,000-$19,999
	4= $20,000-$24,999
	5= $25,000-$29,999
	6= $30,000-$34,999
	7= $35,000-$39,999
	8= $40,000-$44,999
	9= $45,000-$49,999
	10= $50,000-$59,999
	11= $60,000-$74,999
	12= $75,000-$99,999
	13= $100,000-$124,999
	14= $125,000-$149,999
	15= $150,000-$199,999
	16= $200,000 or more
Education	
Less than high school	0= else, 1= Less than high school age 25 over
High school graduates	0= else, 1= High school grad age 25 over
Some college	0= else, 1= Some college age 25 over
Bachelor degree	0= else, 1= BA or associate age 25 over
Bachelor degree and more	0= else, 1= More than BA age 25 over (ref.)
Age at immigration	Years
Number of children	Number of children in the household
Marital status	0= Not Married (ref.)
	1= Married

Homeownership	0=else 1=owner
Occupation	0= else (ref.) 1= zero probability of being illegal immigrants 2= high probability of being illegal immigrants
Contextual characteristics	
Isolation index	The group-weighted average percent of the group proportion in a PUMA
Percentage of naturalized immigrants age 18+	Percentage of naturalized and age 18 + citizens out of foreign-born population
Income ratio	Ratio of median household income to that of all white population
Repressive Country	0=Free (ref..) 1= Partly free 2= Not free
Absentee vote policy	0= no absentee vote policy (ref.) 1= absentee vote policy
Early vote policy	0= no early vote policy (ref.) 1= early vote policy

Notes: ref. means a reference category that is omitted in the logistic regression analyses.

Table 2. Nativity and citizenship by age and race/ethnicity, 2000

	Total	Native citizen	Naturalized citizen	Non-citizen	% citizen of foreign-born
All ages					
White	194,527,123	187,682,147	3,728,091	3,116,885	54.5%
Black	35,237,875	33,064,583	971,487	1,201,805	44.7%
Hispanic	35,204,480	21,072,230	3,917,885	10,214,365	27.7%
Asian	11,886,283	4,444,223	3,693,427	3,748,633	49.6%
Other race	4,566,145	4,025,242	223,042	317,861	41.2%
Total	281,421,906	250,288,425	12,533,932	18,599,549	40.3%
Age 18 and above					
White	150,488,985	144,134,950	3,628,743	2,725,292	57.1%
Black	23,934,416	21,991,077	920,830	1,022,509	47.4%
Hispanic	22,956,194	10,560,032	3,726,855	8,669,307	30.1%
Asian	8,751,867	2,016,716	3,497,736	3,237,415	51.9%
Other race	3,168,140	2,690,153	210,074	267,913	43.9%
Total	209,299,602	181,392,928	11,984,238	15,922,436	42.9%
Age under 18					
White	44,038,138	43,547,197	99,348	391,593	20.2%
Black	11,303,459	11,073,506	50,657	179,296	22.0%
Hispanic	12,248,286	10,512,198	191,030	1,545,058	11.0%
Asian	3,134,416	2,427,507	195,691	511,218	27.7%
Other race	1,398,005	1,335,089	12,968	49,948	20.6%
Total	72,122,304	68,895,497	549,694	2,677,113	17.0%

Logistic Regression Estimates for Predicting Citizenship Acquisition: Hispanics (2000)

	Model 1			Model 2		
	Coefficient	S.E.	Odds Ratio	Coefficient	S.E.	Odds Ratio
Age						
age 55+ (ref)[a]						
age 41-55	-1.560***	0.011	0.210	-1.341***	0.012	0.262
age 25-40	-1.726***	0.009	0.178	-1.494***	0.010	0.224
age 16-24	-1.181***	0.005	0.307	-1.093***	0.005	0.335
age 5-15	-0.888***	0.004	0.412	-0.815***	0.004	0.443
Sex						
male (ref)						
female	0.257***	0.002	1.293	0.244***	0.002	1.276
Years in U.S.						
0-5 years (ref)						
6-10 years	0.648***	0.005	1.912	0.652***	0.005	1.920
11-15 years	1.329***	0.005	3.777	1.345***	0.005	3.838
16-20 years	1.993***	0.005	7.335	1.954***	0.005	7.054
21+ years	2.471***	0.006	11.831	2.428***	0.006	11.332
English competence						
does not speak English (ref)						
speaks not well	0.633***	0.004	1.882	0.636***	0.004	1.890
speaks well	1.144***	0.004	3.138	1.138***	0.004	3.121
speaks very well	1.241***	0.004	3.460	1.207***	0.004	3.342
speaks only English	1.126***	0.005	3.084	1.107***	0.005	3.026
Household income						
less than $10,000 (ref)						
$10,000-$14,999	-0.054***	0.005	0.948	-0.038***	0.005	0.963
$15,000-$19,999	-0.120***	0.005	0.887	-0.098***	0.005	0.907
$20,000-$24,999	-0.111***	0.005	0.895	-0.085***	0.005	0.918
$25,000-$29,999	-0.087***	0.005	0.917	-0.057***	0.005	0.944
$30,000-$34,999	-0.065***	0.005	0.937	-0.033***	0.005	0.967
$35,000-$39,999	-0.076***	0.005	0.927	-0.050***	0.005	0.951
$40,000-$44,999	-0.027***	0.005	0.974	-0.005	0.005	0.995
$45,000-$49,999	-0.037***	0.006	0.963	0.014*	0.006	0.986
$50,000-$59,999	-0.035***	0.005	0.966	-0.020***	0.005	0.981
$60,000-$74,999	0.033***	0.005	1.033	0.040***	0.005	1.041
$75,000-$99,999	0.096***	0.005	1.101	0.097***	0.005	1.102
$100,000-$124,999	0.139***	0.007	1.149	0.122***	0.007	1.129
$125,000-$149,999	0.118***	0.009	1.125	0.090***	0.009	1.094
$150,000-$199,999	0.195***	0.010	1.215	0.178***	0.010	1.195
$200,000 or more	0.101***	0.009	1.106	0.040***	0.009	1.041
Education[b]						
Less than high school	-0.559***	0.006	0.572	-0.370***	0.006	0.691
High school graduates	-0.126***	0.006	0.882	-0.040***	0.006	0.961
Some college	0.081***	0.006	1.084	0.143***	0.007	1.154
BA or associate degree	0.221***	0.007	1.247	0.241***	0.007	1.272
BA ore more (ref)						

Age at immigration	-0.003***	0.000	0.997	-0.006***	0.000	0.994
Number of children in the household	-0.029***	0.001	0.972	-0.005***	0.001	0.995
Marital status						
not married (ref)						
married	0.031***	0.003	1.031	0.035***	0.003	1.036
Homeownership						
not owned (ref)						
owned	0.412***	0.002	1.510	0.371***	0.002	1.449
Occupation						
all other occupations (ref)						
occupation with zero probability of being illegal immigrants	0.243***	0.004	1.275	0.231***	0.004	1.259
occupation with high probability of being illegal immigrants	-0.221***	0.003	0.802	-0.189***	0.003	0.828
Characteristics of PUMA						
Isolation index				-0.002***	0.000	0.998
percent naturalized citizens (age 18+)				0.018***	0.000	1.018
Household income ratio of group to white				0.135***	0.006	1.144
Characteristics of country of origin						
free (ref)						
partly free				0.103***	0.003	1.109
not free				0.638***	0.004	1.892
Policy context at state level						
Absentee policy						
no (ref)						
yes				-0.097***	0.002	0.908
Early vote policy						
no (ref)						
yes				0.050***	0.003	1.051
Constant	-2.104***	0.013	0.122	-2.888***	0.014	0.056
Goodness of fit	1553.628			1808.197		
Number of cases	273,762			273,085		

Notes: a. (ref) means a reference category.
b. Education variables apply only those who are aged 25 and over.
* p< .05 **p<.01 *** p<.001 (two-tailed tests)

Logistic Regression Estimates for Predicting Citizenship Acquisition: Asians (2000)

	Model 1			Model 2		
	Coefficient	S.E.	Odds Ratio	Coefficient	S.E.	Odds Ratio
Age						
age 55+ (ref)[a]						
age 41-55	0.035**	0.015	1.036	-0.220***	0.017	0.802
age 25-40	-0.512***	0.012	0.599	-0.645***	0.013	0.524
age 16-24	-0.781***	0.008	0.458	-0.840***	0.009	0.432
age 5-15	-0.510***	0.006	0.600	-0.508***	0.007	0.602
Sex						
male (ref)						
Female	0.090***	0.003	1.094	0.101***	0.003	1.106
Years in U.S.						
0-5 years (ref)						
6-10 years	1.509***	0.005	4.521	1.490***	0.006	4.437
11-15 years	2.475***	0.006	11.887	2.478***	0.006	11.913
16-20 years	3.090***	0.006	21.986	3.037***	0.007	20.851
21+ years	3.708***	0.008	40.787	3.607***	0.008	36.846
English competence						
does not speak English (ref)						
speaks not well	0.707***	0.009	2.027	0.919***	0.009	2.507
speaks well	0.962***	0.009	2.617	1.235***	0.010	3.440
speaks very well	0.981***	0.009	2.667	1.338***	0.010	3.812
speaks only English	1.314***	0.009	3.723	1.661***	0.011	5.266
Household income						
less than $10,000 (ref)						
$10,000-$14,999	0.068***	0.009	1.071	-0.016	0.009	0.984
$15,000-$19,999	0.015	0.008	1.015	-0.066***	0.009	0.936
$20,000-$24,999	-0.066***	0.008	0.936	-0.115***	0.009	0.891
$25,000-$29,999	-0.042***	0.008	0.959	-0.069***	0.009	0.933
$30,000-$34,999	-0.040***	0.008	0.961	-0.087***	0.009	0.917
$35,000-$39,999	0.010	0.008	1.010	-0.037***	0.009	0.963
$40,000-$44,999	-0.018*	0.008	0.982	-0.045***	0.009	0.956
$45,000-$49,999	0.002	0.008	1.002	-0.074***	0.009	0.929
$50,000-$59,999	0.046***	0.007	1.047	-0.026**	0.008	0.974
$60,000-$74,999	0.070***	0.007	1.073	0.002	0.007	1.002
$75,000-$99,999	0.146***	0.006	1.157	0.047***	0.007	1.048
$100,000-$124,999	0.148***	0.007	1.160	0.062***	0.008	1.064
$125,000-$149,999	0.086***	0.009	1.090	-0.003	0.009	0.997
$150,000-$199,999	0.136***	0.009	1.146	0.026**	0.010	1.026
$200,000 or more	0.229***	0.009	1.257	0.158***	0.010	1.171
Education[b]						
Less than high school	0.155***	0.006	1.168	0.019**	0.007	1.019
High school graduates	0.279***	0.006	1.322	0.216***	0.006	1.242
Some college	0.516***	0.006	1.676	0.458***	0.006	1.581
BA or associate degree	0.418***	0.005	1.519	0.400***	0.005	1.492
BA ore more (ref)						
Age at immigration	-0.009***	0.000	0.991	-0.009***	0.000	0.991

Number of children in the household	0.025***	0.001	1.025	0.016***	0.002	1.016
Marital status						
not married (ref)						
married	-0.020***	0.004	0.981	0.018***	0.004	1.018
Homeownership						
not owned (ref)						
owned	0.493***	0.003	1.637	0.445***	0.003	1.560
Occupation						
all other occupations (ref)						
occupation with zero probability of being illegal immigrants	0.097***	0.004	1.102	0.111***	0.004	1.117
occupation with high probability of being illegal immigrants	-0.102***	0.006	0.903	-0.103***	0.007	0.902
Characteristics of PUMA						
Isolation index				0.002***	0.000	1.002
percent naturalized citizens (age 18+)				0.025***	0.000	1.025
Household income ratio of group to white				-0.163***	0.008	0.850
Characteristics of country of origin						
free (ref)						
partly free				-0.337***	0.007	0.714
not free				0.538***	0.004	1.713
Policy context at state level						
Absentee policy						
no (ref)						
yes				-0.049***	0.003	0.952
Early vote policy						
no (ref)						
yes				-0.011***	0.004	0.989
Constant	-3.041***	0.019	0.048	-4.491***	0.022	0.011
Goodness of fit	3214.18			1262.93		
Number of cases	154,433			131,607		

Notes: a. (ref) means a reference category.
b. Education variables apply only those who are aged 25 and over.
* p< .05 **p<.01 *** p<.001 (two-tailed tests)

Logistic regression Estimates for Predicting Citizenship Acquisition: Non-Hispanic Blacks (2000)

	Model 1			Model 2		
	Coefficient	S.E.	Odds Ratio	Coefficient	S.E.	Odds Ratio
Age						
age 55+ (ref)[a]						
age 41-55	-0.881***	0.024	0.415	-0.836***	0.026	0.433
age 25-40	-1.210***	0.020	0.298	-1.217***	0.021	0.296
age 16-24	-0.915***	0.013	0.401	-0.825***	0.014	0.438
age 5-15	-0.574***	0.009	0.563	-0.511***	0.010	0.600
Sex						
male (ref)						
female	0.151***	0.005	1.164	0.135***	0.005	1.144
Years in U.S.						
0-5 years (ref)						
6-10 years	0.922***	0.009	2.515	0.897***	0.010	2.452
11-15 years	1.668***	0.009	5.301	1.645***	0.010	5.182
16-20 years	2.138***	0.010	8.481	2.100***	0.011	8.167
21+ years	2.534***	0.012	12.606	2.494***	0.013	12.113
English competence						
does not speak English (ref)						
speaks not well	1.055***	0.036	2.871	1.031***	0.037	2.805
speaks well	1.626***	0.035	5.081	1.642***	0.036	5.165
speaks very well	1.623***	0.034	5.069	1.639***	0.035	5.152
speaks only English	1.739***	0.034	5.694	1.679***	0.035	5.360
Household income						
less than $10,000 (ref)						
$10,000-$14,999	-0.130***	0.012	0.878	-0.101***	0.013	0.904
$15,000-$19,999	-0.048***	0.011	0.953	-0.004	0.012	0.996
$20,000-$24,999	-0.032**	0.011	0.968	-0.010	0.011	0.990
$25,000-$29,999	-0.014	0.011	0.987	0.002	0.011	1.002
$30,000-$34,999	0.005	0.011	1.005	0.009	0.011	1.009
$35,000-$39,999	-0.048***	0.011	0.953	-0.050***	0.012	0.952
$40,000-$44,999	-0.016	0.011	0.984	-0.009	0.012	0.991
$45,000-$49,999	-0.036**	0.012	0.964	-0.042***	0.013	0.959
$50,000-$59,999	0.001	0.010	1.001	0.023*	0.011	1.023
$60,000-$74,999	0.004	0.010	1.004	0.006	0.010	1.006
$75,000-$99,999	0.093*	0.010	1.097	0.065***	0.011	1.068
$100,000-$124,999	-0.007	0.013	0.993	-0.044***	0.013	0.957
$125,000-$149,999	-0.020	0.016	0.981	-0.077***	0.017	0.926
$150,000-$199,999	-0.009	0.019	0.991	-0.062***	0.021	0.940
$200,000 or more	0.026	0.019	1.026	0.018	0.020	1.018
Education[b]						
Less than high school	-0.376***	0.010	0.687	-0.482***	0.011	0.617
High school graduates	-0.220***	0.010	0.802	-0.315***	0.010	0.730
Some college	-0.121*	0.010	0.886	-0.201***	0.011	0.818
BA or associate degree	-0.001	0.009	0.999	-0.027**	0.010	0.974
BA ore more (ref)						
Age at immigration	-0.010***	0.000	0.990	-0.008***	0.000	0.992

Number of children in the household	0.040***	0.002	1.041	0.033***	0.002	1.034
Marital status						
not married (ref)						
married	-0.006	0.005	0.994	-0.004	0.005	0.996
Homeownership						
not owned (ref)						
owned	0.393*	0.005	1.482	0.333***	0.005	1.395
Occupation						
all other occupations (ref)						
occupation with zero probability of being illegal immigrants	0.116***	0.005	1.123	0.124***	0.006	1.132
occupation with high probability of being illegal immigrants	-0.272***	0.009	0.762	-0.232***	0.010	0.793
Characteristics of PUMA						
Isolation index				-0.001***	0.000	0.999
percent naturalized citizens (age 18+)				0.028***	0.000	1.029
Household income ratio of group to white				-0.154***	0.008	0.857
Characteristics of country of origin						
free (ref)						
partly free						
not free				-0.234***	0.006	0.792
Policy context at state level				0.020**	0.008	1.021
Absentee policy						
no (ref)						
yes				0.019**	0.007	1.019
Early vote policy						
no (ref)						
yes				0.220***	0.009	1.246
Constant	-2.554***	0.043	0.078	-3.641***	0.046	0.026
Goodness of fit	225.437			545.230		
Number of cases	47,642			43,836		

Notes: a. (ref) means a reference category.
b. Education variables apply only those who are aged 25 and over.
* p< .05 **p<.01 *** p<.001 (two-tailed tests)

Logistic regression Estimates for Predicting Citizenship Acquisition: Non-Hispanic Whites (2000)

	Model 1			Model 2		
	Coefficient	S.E.	Odds Ratio	Coefficient	S.E.	Odds Ratio
Age						
age 55+ (ref)[a]						
age 41-55	-2.138***	0.011	0.118	-2.336***	0.013	0.097
age 25-40	-2.139***	0.009	0.118	-2.179***	0.010	0.113
age 16-24	-1.769***	0.005	0.170	-1.800***	0.006	0.165
age 5-15	-1.073***	0.004	0.342	-1.076***	0.004	0.341
Sex						
male (ref)						
female	-0.101***	0.002	0.904	-0.077***	0.003	0.926
Years in U.S.						
0-5 years (ref)						
6-10 years	1.476***	0.006	4.376	1.363***	0.006	3.908
11-15 years	1.947***	0.006	7.010	1.903***	0.007	6.704
16-20 years	2.166***	0.006	8.726	2.176***	0.007	8.813
21+ years	2.549***	0.007	12.798	2.550***	0.007	12.808
English competence						
does not speak English (ref)						
speaks not well	0.656***	0.011	1.928	0.699***	0.012	2.011
speaks well	0.867***	0.011	2.380	0.974***	0.011	2.648
speaks very well	0.650***	0.011	1.915	0.839***	0.011	2.314
speaks only English	0.238***	0.011	1.268	0.692***	0.012	1.997
Household income						
less than $10,000 (ref)						
$10,000-$14,999	0.060***	0.007	1.061	0.095***	0.008	1.099
$15,000-$19,999	-0.061***	0.007	0.941	0.019*	0.008	1.019
$20,000-$24,999	-0.089***	0.007	0.915	0.001	0.008	1.001
$25,000-$29,999	-0.133***	0.007	0.875	-0.042***	0.008	0.959
$30,000-$34,999	-0.146***	0.007	0.864	-0.043***	0.008	0.957
$35,000-$39,999	-0.171***	0.007	0.843	-0.086***	0.008	0.917
$40,000-$44,999	-0.206***	0.007	0.814	-0.098***	0.008	0.906
$45,000-$49,999	-0.171***	0.007	0.843	-0.077***	0.008	0.926
$50,000-$59,999	-0.178***	0.006	0.837	-0.081***	0.007	0.922
$60,000-$74,999	-0.193***	0.006	0.825	-0.081***	0.007	0.922
$75,000-$99,999	-0.163***	0.006	0.850	-0.073***	0.006	0.930
$100,000-$124,999	-0.124***	0.007	0.883	-0.032***	0.007	0.968
$125,000-$149,999	-0.073***	0.008	0.930	0.029**	0.008	1.029
$150,000-$199,999	-0.122***	0.008	0.885	-0.029**	0.008	0.971
$200,000 or more	-0.091***	0.007	0.913	0.017*	0.008	1.017
Education[b]						
Less than high school	-0.366***	0.005	0.694	-0.289***	0.006	0.749
High school graduates	-0.242***	0.005	0.785	-0.166***	0.005	0.847
Some college	-0.210***	0.005	0.811	-0.145***	0.005	0.865
BA or associate degree	-0.027***	0.004	0.974	-0.012*	0.005	0.988
BA ore more (ref)						
Age at immigration	-0.039***	0.000	0.962	-0.041***	0.000	0.960

Number of children in the household	0.029***	0.001	1.030	0.011***	0.001	1.011
Marital status						
not married (ref)						
married	-0.015***	0.003	0.985	-0.032***	0.003	0.969
Homeownership						
not owned (ref)						
owned	0.175***	0.003	1.191	0.205***	0.003	1.228
Occupation						
all other occupations (ref)						
occupation with zero probability of being illegal immigrants	-0.064***	0.003	0.938	-0.031***	0.004	0.969
occupation with high probability of being illegal immigrants	-0.378***	0.006	0.686	-0.298***	0.006	0.742
Characteristics of PUMA						
Isolation index	-0.048**	0.015	0.953	-0.003***	0.000	0.997
percent naturalized citizens (age 18+)				0.023***	0.000	1.023
Household income ratio of group to white				-0.399***	0.010	0.671
Characteristics of country of origin						
free (ref)						
partly free						
not free				0.782***	0.005	2.186
Policy context at state level				1.005***	0.005	2.732
Absentee policy						
no (ref)						
yes				-0.148***	0.003	0.863
Early vote policy						
no (ref)						
yes				0.011**	0.004	1.011
Constant	-0.048**	0.015	0.953	-1.319***	0.021	0.267
Goodness of fit	2585.155			3807.848		
Number of cases	213,144			179,041		

Notes: a. (ref) means a reference category.
b. Education variables apply only those who are aged 25 and over.
* p< .05 **p<.01 *** p<.001 (two-tailed tests)