
The Economic Status of the Hispanic Population

Selected Essays

edited by

Marie T. Mora

The University of Texas-Pan American

Alberto Dávila

The University of Texas-Pan American



INFORMATION AGE PUBLISHING, INC.
Charlotte, NC • www.infoagepub.com

THE EVOLUTION OF HISPANIC LITERACY IN THE TWENTY- FIRST CENTURY

From the First to the Third Generation

Arturo Gonzalez

Office of the Comptroller of the Currency

One particular on-going area of research considers whether the economic disparity between Hispanic immigrants and assimilated non-Hispanic Whites is narrowing or whether future generations of Hispanics will be part of a permanent underclass (e.g., Portes & Rumbaut, 1996; Trejo, 1997; Card, DiNardo, & Estes, 2000; Gonzalez, 2002; Borjas, 2006; Duncan & Trejo, 2007; Lazear, 2007). Extant research has mostly examined differences in earnings, occupation, and education between generations of Hispanics and non-Hispanics to examine whether or not assimilation is taking place.¹ One issue that has not received much attention by such assimilation studies is the literacy of Hispanics.

English-language literacy is an important component of Hispanic assimilation because immigrants with limited English-language ability represent a large fraction of Hispanics. The extent of the use of the English language

is backed by evidence that higher levels of English usage correlates with having attitudes and opinions similar to those of non-Hispanic Whites (Pew Hispanic Center, 2004). In addition to the use of the English language, the "type" or "quality" of English can be considered an important measure of assimilation. To function at a high level in American society, Hispanics (or any other group) must have excellent English-language writing and verbal skills—which in turn require a deep and well developed knowledge of English grammar, vocabulary, and the peculiarities of American English. Conversely, Hispanics unable to work with and understand printed and written information are at risk of not being able to gather and use information for their benefit, be it from a school pamphlet, a newspaper, or through the internet (U.S. Department of Education, 2007).

Multiple studies have noted the growing literacy requirements both in the workplace and society as a whole (U.S. Department of Education, 2001). For instance, it is well documented that Hispanics with lower English-language speaking ability earn less than similar workers who speak English only or very well (e.g., McManus, Gould, & Welch, 1983; McManus, 1985; Kossoudji, 1988; Gonzalez, 2000; Hamilton, Goldsmith, & Darity, 2008; Mora & Dávila, 2011). However, unlike English speaking ability, which is taken up by at least 95% of second- and third-generation Hispanics (Hakimzadeh & Cohn, 2007; Pew Hispanic Center, 2009), full assimilation in literacy may be more difficult to achieve by U.S.-born Hispanics because this skill requires higher levels of educational attainment than Hispanics are presently attaining (U.S. Department of Education, 2007; Lopez, 2009; Gonzalez, 2011). Therefore, the level of English-language literacy among Hispanics has a direct relationship on their earning potential.

At the same time, the low amount of English-language usage by Hispanic immigrants probably impacts the skill set of their U.S.-born children. Specifically, it is likely that second- and third-generation Hispanics have lower literacy levels because of the correlation of skills between generations that has been found for schooling and other outcomes (Borjas, 1992; Card et al., 2000; Leon, 2005).² While estimating the intergenerational assimilation effect for English-language literacy is beyond the scope of this chapter, examining differences in literacy by Hispanic and generation status provides a more nuanced assessment of how Hispanics are faring in the United States than is generally given. For example, the literature on the returns to education suggests that schooling quality might be a more appropriate measure than the number of school years (Behrman & Birdsall, 1983; Card & Krueger, 1992). Therefore, knowing whether Hispanics attain full assimilation with respect to English-language literacy is essential to assess their intergenerational mobility.

THE NAAL SURVEY

Employing a unique survey—the 2003 National Assessment of Adult Literacy (NAAL)—this study examines differences in literacy in the English language between three generations of Hispanics and non-Hispanic Whites, and considers the effect of background factors in explaining such differences. The purpose of the NAAL was to obtain nationally representative measures of the English-language literacy of persons 16 and older. It gathered information on three types of literacy.

- *Prose literacy*: The knowledge and skills needed to search, comprehend, and use information from continuous texts, such as editorials, news stories, brochures, and instructional materials.
- *Document literacy*: The knowledge and skills needed to search, comprehend, and use information from non-continuous texts in various formats, including job applications, payroll forms, transportation schedules, maps, tables, and drug and food labels.
- *Quantitative literacy*: The knowledge and skills required to identify and perform computations, either alone or sequentially, using numbers embedded in printed materials, such as balancing a checkbook, figuring out a tip, completing an order form, and determining the amount of interest on a loan from an advertisement.

The final household NAAL sample consisted of about 18,100 persons. The derived scores for prose, document, and quantitative literacy range from 0 to 500, and can be interpreted using the following ranges (U.S. Department of Education, 2007):

	Prose	Document	Quantitative
Below Basic	0–209	0–204	0–234
Basic	210–264	205–249	235–289
Intermediate	265–339	250–334	290–349
Proficient	340–500	335–500	350–500

CHARACTERISTICS OF THE SAMPLE

The NAAL asked respondents to provide information about their place of birth, their parents' place of birth, as well as a host of other demographic characteristics. For the purposes of this study, the NAAL sample was restricted to Hispanics and non-Hispanic Whites living in households who had non-missing information on the characteristics included in the analysis.

The first generation is defined in this chapter as individuals who were not born in the United States and had two foreign-born parents. Note that persons born in the U.S. territories, including Puerto Rico, are classified here as foreign born. The second generation is defined as U.S.-born individuals who had one or two foreign-born parents. The third generation is defined as U.S.-born individuals who had two U.S.-born parents. This definition of the third generation includes fourth- and higher-generation respondents, and excludes persons born abroad of U.S. parents. The background characteristics included in the analysis are: language(s) learned before going to school, usual language(s) spoken now, how often the individual reads newspapers or books, age, years of education, school enrollment, gender, marital status, and census region of residence.

The demographic information from the NAAL survey shows that the Hispanic population was largely comprised of first- and second-generation Hispanics. Over 15 million Hispanics were foreign-born, which was nearly 60% of all Hispanics, compared to a share of 4% for non-Hispanic Whites. Furthermore, Hispanics outnumbered non-Hispanic Whites in the first-generation three to one. Second-generation Hispanics accounted for 23% of the Hispanic population, compared to nearly 10% for non-Hispanic Whites. Thus, less than one in five Hispanics (4.7 million) were third-generation Americans, accounting for less than 4% of the total third-generation population in 2003.

It is not surprising that the characteristics of the NAAL sample differed not just by Hispanic status, but also by generation status within the Hispanic population (full details are available from the author). In general, compared to non-Hispanic Whites, Hispanics were younger (33–38 years), more likely to be female, more likely to be enrolled in school, had completed fewer years of school, and were less likely to have ever married. Furthermore, Hispanics had fewer years of potential work experience,³ were just as likely to have worked in the week before the survey, more likely to have a blue-collar job,⁴ and earned less than \$20,000 per year, compared to about \$30,000 for non-Hispanic Whites. Hispanics were also more geographically concentrated than non-Hispanic Whites, with three-quarters living in the South and West. In contrast, about 45% of non-Hispanic Whites lived in the Midwest and Northeast at that time.

Several characteristics distinguish the first-generation Hispanics from other groups. First in terms of skills, the first generation averaged 10.1 years of school, 2.1–2.4 fewer years of schooling than second- and third-generation Hispanics. About 40% of first-generation Hispanics worked in blue-collar jobs, compared to less than 25% for every other group. This group also had the least amount of exposure to the U.S.-labor market (14 years compared to over 20 years for every other group). Half of Hispanic immigrants were men, slightly more than other U.S.-born groups, although non-Hispanic White immigrants were also more likely to be male.

Turning to more detailed examination of the NAAL respondents' literacy background reveals that whereas 75% and 98% of second- and third-generation non-Hispanic Whites learned only English before starting school, about 25% and 65% of Hispanics of the same generation did so. Instead, a large percentage of U.S.-born Hispanics were raised in a bilingual (about 22–36%) or Spanish-dominant household (14–38%). Despite these differences with non-Hispanic Whites, each succeeding generation of Hispanics was exposed to only English at home.

This pattern is similar in terms of languages spoken at home while growing up, except that a larger share of higher-generation Hispanics reported speaking both Spanish and English, 48–56%. Thus, although 65% of third-generation Hispanics reported learning to speak only English before school, 44% reported speaking only English at home while growing up. This lower number might reflect the open-ended nature of this question as opposed to the narrower period covered in the former question (i.e., “growing up” can be interpreted to include the teenage years, while “before school” implies an age of about six). Nevertheless, the survey reveals a decrease in the use of Spanish by Hispanics over the three generations: Spanish-only speakers made up 86% of the first generation, 30% of the second generation, but only 7% of the third generation.

Since the language that respondents were exposed to as children can affect the language outcomes in later years, the NAAL queried the language practices and self-reported ability of adults at the time of the survey. One such outcome is the language most often spoken. Hispanic adults of any generation were less likely than non-Hispanic Whites to be English-only speakers. Third-generation Hispanics were more likely than lower generations of Hispanics to speak only English, but at 61%, were still over 30 percentage points less likely than third-generation non-Hispanic Whites to speak only English.

The extent to which the language spoken by first-generation adults affected the likelihood that their children were English-only speakers (as adults) is not clear. Nevertheless, the fact that 33% of first-generation non-Hispanic Whites only spoke English, as opposed to 3% for Hispanics, raises the possibility that the outcomes observed in the second and third generations were linked to the literacy skill set of the first generation. Yet this does not mean that a large percentage of U.S.-born Hispanics did not speak English or become more literate in this language. For instance, the gap in English speaking between second-generation Hispanics and non-Hispanic Whites—64 percentage points—was almost twice as large as the gap for third-generation Hispanics (35 points). In fact, once bilingualism is considered, over 95% of second- and third-generation Hispanics reported usually speaking English.⁵

Self-reported English-language proficiency in speaking, understanding, reading, and writing are characteristics that provide insight into the English-

language literacy background of Hispanics, although these may be imprecise and subjective measures. Respondents who reported being able to speak, understand, read, or write English "very well" or "well" are defined as proficient. Hispanics by far had the least self-reported English proficiency of the major racial/ethnic groups considered here. Less than half of Hispanic immigrants were not proficient in any of the four English-language skills (49% for speaking, 43% for understanding and reading, and 35% for writing), and the large size of the foreign-born population (60% of all Hispanics) shifted the average English proficiency levels of the overall Hispanic population downward.

Since English-language skills seemingly improve with time in the United States, the proficiency of subsequent generations of Hispanics should increase over time in the United States. Consistent with this expectation, the self-reported reading proficiency rates for second- and third-generation Hispanics was 93–94%, 94–97% for reading, 96–98% for understanding, and 97–99% for speaking. Thus, a significant amount of assimilation took place between the first and second generation with respect to acquiring English-language skills as reported by the respondents.

Finally, the NAAL asked respondents how frequently they read English-language books or newspapers/magazines. Although the answers to this question depended on the respondent's reading ability, not everyone who can read *will* read an English-language newspaper or a book. Still, it is not surprising that Hispanic immigrants were the least likely to say they read English-language books or newspapers/magazines, as between 26 and 36% reported reading either type of material at least a few times a week. In contrast, over half of non-Hispanic White immigrants read both types of printed media. Second- and third-generation Hispanics were also less likely to read either type of media than their non-Hispanic White counterparts. The biggest gap (eight percentage points) was for books and second-generation Hispanics (73% read English-language books); for newspapers and magazines, half of second- and third-generation Hispanics read newspapers, but were 4–5 percentage points less likely than non-Hispanic Whites to be involved in these English literacy activities.

THREE MEASURES OF LITERACY IN THE NAAL

Average Literacy Scores

While the information about literacy activities and background above is informative, the self-reported information is subjective and, thus, can be difficult to interpret. For instance, since nearly all U.S.-born Hispanics and non-Hispanic Whites said they can speak and understand the English language well or very well, this measure tells us little.

The NAAL provides three objective measures of English-language literacy which are comparable across groups. As seen in Table 3.1, the test-based measures of literacy reveal important differences between Hispanics (in Panel A) and non-Hispanics (in Panel B), regardless of which generation is considered. Consistent with the trends of the four self-reported English abilities discussed above, with average scores of 193, 182 and 209 for document, prose, and quantitative literacy, respectively, Hispanic immigrants

TABLE 3.1 Means for Document, Prose and Quantitative English-Language Literacy, by Generation, in 2003

Ethnicity and Generation	Avg. Score	Below Basic		Basic	Intermediate		Proficient
Panel A: Hispanics							
<i>Document Literacy</i>							
First	193.8	54.50%	23.50%	19.90%	2.10%		
Second	263.1	11.00%	27.30%	56.20%	5.50%		
Third	261.7	10.20%	29.50%	56.90%	3.40%		
<i>Prose Literacy</i>							
First	182.2	67.10%	21.40%	10.40%	1.20%		
Second	258.5	14.90%	40.70%	40.30%	4.00%		
Third	269.0	9.10%	38.60%	47.10%	5.10%		
<i>Quantitative Literacy</i>							
First	208.7	65.00%	22.90%	10.00%	2.10%		
Second	259.0	32.20%	39.20%	25.30%	3.30%		
Third	266.8	27.70%	38.80%	28.20%	5.30%		
Panel B: Non-Hispanic Whites							
<i>Document Literacy</i>							
First	258.8	19.50%	23.20%	44.60%	12.60%		
Second	267.8	12.00%	23.70%	55.00%	9.30%		
Third	284.4	6.80%	18.50%	58.70%	16.00%		
<i>Prose Literacy</i>							
First	255.0	25.30%	29.50%	35.50%	9.70%		
Second	276.5	10.70%	31.00%	46.30%	12.10%		
Third	291.0	6.40%	24.10%	52.30%	17.20%		
<i>Quantitative Literacy</i>							
First	280.0	24.20%	32.10%	28.40%	15.20%		
Second	281.6	21.30%	34.20%	32.50%	12.00%		
Third	299	11.80%	31.40%	39.80%	17.00%		

Source: Author's estimates using the 2003 NAAL; see text for sample selection.

Notes: Sample size is about 13,560 (rounded to the nearest 10 for confidentiality purposes). Maximum of 1,000 iterations used in the MML means procedure (described in this chapter's appendix). See text for cut-off points. Estimates are weighted and adjusted for strata and cluster effects.

had the lowest literacy levels of any group. Their scores were about 70 points lower than for first-generation non-Hispanic Whites; they were also 50–75 points less than for second- and third-generation Hispanics (259 [prose and quantitative], and 269 [prose] and 267 [quantitative], respectively). In contrast, the English-language literacy gap between first-generation non-Hispanic Whites and second- and third-generation Whites was at most 22 points. The average scores and distribution of the document, prose, and literacy scores based on the empirical model are described in further detail in the chapter appendix.

While the relatively low English literacy of Hispanic immigrants may be no surprise, the distributions of the test scores reveal that about 55–70% functioned at or below Basic English literacy level. This implies that a significant segment of the Hispanic immigrant population in 2003 had difficulties in locating identifiable information in prose text (e.g., not identifying from a pamphlet how often one should have a specified medical test), performing simple quantitative operations (e.g., calculating the price difference between two appliances from information in a table), or locating information and following instructions in simple documents (e.g., locating a phone number to call and get directions to a job fair) (U.S. Department of Education, 2007). At the other end of the English-language literacy distribution, less than three percent of Hispanic immigrants demonstrated English-language proficiency in any of these tasks.

Second- and third-generation Hispanics had significantly higher scores than Hispanic immigrants, but were still not on par with U.S.-born non-Hispanic Whites. Nevertheless, even as the average scores of third-generation Hispanics lagged behind non-Hispanic Whites, there was a clear pattern of increasing English-language literacy for Hispanics from the second to third generation. In fact, the average U.S.-born Hispanic demonstrated intermediate-level literacy (the low cut-off is 250) for document literacy. For prose literacy, only third-generation Hispanics were classified as Intermediate (52%), while for quantitative literacy, both generations of U.S.-born Hispanics fell in the Basic category. Thus, the three types of English-language literacy reveal progress among Hispanics over generations, but Hispanics still lagged behind their non-Hispanic White counterparts.

The information in Table 3.1 can be used to examine the extent of Hispanic assimilation, defined as convergence with third-generation non-Hispanic Whites, and calculated as the ratio of the average Hispanic score to the average third-generation White score for each English-language literacy type. By the second-generation, Hispanic document-English-language literacy trailed third-generation non-Hispanic Whites by 8%, and the gap was at least 8% for prose and quantitative literacy. However, the progress of assimilation with respect to English literacy was significantly slower from the second to the third generation. For document literacy, the gap between second-

generation Hispanics and third-generations non-Hispanic Whites was not reduced. However, third-generation Hispanics reduced about 20 and 30% of the gap in quantitative and prose literacy, respectively. Thus, despite the slowing pace of assimilation, on average, third-generation Hispanics appear to have been catching up to third-generation non-Hispanic Whites. The next section considers whether differences in characteristics between Hispanics and third-generation non-Hispanic Whites accounted for these differences in English-language literacy.

A More Detailed Analysis of Literacy Outcomes

The role of English-language background and demographic characteristics in English literacy outcomes is explored using a more rigorous empirical methodology, the details of which are provided in this chapter's appendix. Since Hispanics and non-Hispanics differ in demographic and language traits, and these traits have a direct impact on literacy (such as average education), it is important to net out these separate effects. Table 3.2 shows the results for English-language literacy scores which are free of the impact of differences in characteristics. Column (1) considers how demographic traits help reduce the gaps in literacy presented in Table 3.1, while Column (2) adds language characteristics and practices.

For instance, in Table 3.1, first-generation Hispanics had a gap of 90.5 points with third-generation non-Hispanic Whites in document English-language literacy; but after netting out demographic characteristics in Column (1), the gap fell to 66.8 points (26% reduction in the literacy gap). The document literacy results for second- and third-generation Hispanics (–18.9 and –21.5) imply that these gaps were 11 and 5% lower than the average gaps in document literacy shown in Table 3.1.

The second column of each literacy type shows that accounting for differences in English-language background between Hispanics and third-generation non-Hispanic Whites further reduced the average gaps in literacy. After jointly considering differences in demographic and English-language traits, the average gap in the three literacy types fell by about 55% for Hispanic immigrants, 37% for second-generation Hispanics, and 15–29% for third-generation Hispanics. Thus, demographic and English-language background traits are important in accounting for the lower English literacy rates of Hispanics, but their importance differed for each generation of Hispanics.

Interestingly, although the English-language literacy variables measure different aspects of literacy, the results in Table 3.2 suggest that differences in characteristics were equally important in explaining the gap across different types of literacy for each Hispanic generation. That is, the gap for each type of English-language literacy was reduced by a similar percent-

TABLE 3.2 Empirical Results for the English-Language Literacy Outcomes for the Hispanic Generation Groups in 2003

Characteristic	Document		Prose		Quantitative	
	(1)	(2)	(1)	(2)	(1)	(2)
Constant	151.148 (4.23)	156.89 (4.21)	129.81 (5.32)	134.65 (5.17)	120.88 (5.30)	124.14 (5.33)
NH White×1st Generation	-25.50 (4.04)	-14.58 (5.66)	-36.66 (-3.57)	-19.63 (4.48)	-21.58 (3.72)	-9.69 (5.37)
NH White×2nd Generation	-6.08 (2.69)	-4.23 (2.58)	-7.14 (2.21)	-5.44 (2.39)	-10.75 (2.64)	-9.76 (2.52)
Hispanic×1st Generation	-66.78 (3.29)	-40.39 (4.46)	-79.44 (2.72)	-48.16 (4.42)	-62.49 (3.54)	-41.30 (5.34)
Hispanic×2nd Generation	-18.85 (3.72)	-13.34 (4.25)	-26.94 (3.58)	-20.42 (4.46)	-30.35 (3.26)	-24.79 (4.62)
Hispanic×3rd Generation	-21.46 (3.46)	-19.22 (4.21)	-18.26 (3.19)	-15.92 (3.53)	-24.91 (2.97)	-22.70 (3.21)
Demographic traits	Yes	Yes	Yes	Yes	Yes	Yes
Language(s) learned before school; Language(s) usually spoken now; and Read English-language books or newspapers	No	Yes	No	Yes	No	Yes

Source: Author's estimates using the 2003 NAAL.

Notes: Sample size is about 13,560 (rounded to the nearest 10 for confidentiality purposes). Demographic variables include age, age-squared, school years, enrolled in school interacted with school years, male, married or divorced or widowed, and region of resident. Estimates are weighted and adjusted for strata and cluster effects. See this chapter's appendix for more details.

age—55% for Hispanic immigrants, 37% for second-generation Hispanics, and 28% for third-generation Hispanics for prose and quantitative literacy. The exception is document literacy for third-generation Hispanics, which had the smallest reduction of all the results (-19.2 or 15% reduction of the average gap). Combined with the overall smaller impacts of background characteristics for third-generation Hispanics, this suggests that their English-language literacy outcomes require a more complex model and data to fully understand the reasons behind their lower literacy scores.

CONCLUSION

This chapter used a survey to examine the English-language literacy of Hispanics in the United States by generation status in a more detailed manner than previous studies. In addition to several objective-based measures of literacy, this study differentiates between three (cross-sectional) generations

of Hispanics. The results show that the gap in document, prose, and quantitative literacy scores between Hispanics and third-generation non-Hispanic Whites in 2003 was reduced by succeeding generations of Hispanics. This is especially noticeable from the first to the second generation for all three types of literacy. Although the extent of assimilation with respect to English-language literacy decreased from the second to the third generation, third-generation Hispanics had higher literacy scores and smaller gaps with third-generation non-Hispanic Whites than second-generation Hispanics.

Demographic and English-language characteristics are correlated with the English-language literacy gap between Hispanics and third-generation non-Hispanic Whites. Both types of characteristics helped to explain the lower English literacy of Hispanics and should be jointly considered in future analyses. This was especially true for first- and second-generation Hispanics, and less so for third-generation Hispanics. The English-language literacy outcomes of third-generation Hispanics is not as well explained in this study, and therefore requires a more complex study.

Since third-generation non-Hispanic Whites were probably more assimilated in general than third-generation Hispanics (because a larger share of "third-generation" non-Hispanic Whites in this category was in fact fourth- and higher generation), it is likely that third-generation Hispanics will continue to reduce the English-language literacy gap with succeeding generations.⁶ While the empirical analysis was limited to a cross-sectional generational study, the results suggest that added exposure to, and use of, the English language during childhood and as adults are likely to fuel further assimilation with respect to English-language literacy for Hispanics. The same is true for the increases in educational attainment.

The results of this chapter provide evidence that Hispanics are making progress in English-language literacy, but the results suggest certain policy opportunities for policymakers. First, it is important to continue gathering data on literacy. However, to provide more definitive analyses across generations, it would be worthwhile to collect more detailed information about generation status and/or gather longitudinal data. This would improve the comparability between Hispanic and non-Hispanic White populations. Second, expanding the availability of English-language courses to Hispanic immigrants could also enhance their children's exposure to English at home.

In addition to literacy tasks, the NAAL contains information about the respondent's language background, including English-language ability in speaking, understanding, reading, and writing, as well as language-use activities. Even when states face budget challenges, it is important that policymakers consider the intergenerational benefits of these programs in their cost-benefit assessment of these programs (Gonzalez, 2007). Another policy implication from these results is the importance of expanding the educational and intellectual achievement for parents and their children. This not

only includes further gains in college enrollment and graduation, but also programs at schools and in the home that promote literacy activities, such as reading for leisure. While failure to implement such policies is unlikely to stunt further gains in literacy for Hispanics in both absolute and relative terms, implementing such policies may speed up the assimilation process with respect to English-language literacy.

Disclaimer. The opinions expressed in this chapter are those of the author, and do not necessarily reflect the views of the Office of the Comptroller of the Currency or the Department of the Treasury.

NOTES

1. Studies tend to find that, on average, third-generation Hispanics have not fully caught up with third-generation non-Hispanic Whites, but it is not clear whether their progress has stalled or will continue into future generations. It should be pointed out that most studies, including this one, rely on cross-sectional data rather than longitudinal data, and hence the results are based on an imperfect comparison of "generations." Duncan and Trejo (2007) find evidence that persons of Mexican-descent are less likely to identify as such as part of the assimilation process. If this is the case, measures of assimilation are biased towards finding lower levels of assimilation.
2. The impact, b , one generation's skill set has on the skill level of the next generation is called the "intergenerational assimilation rate." For schooling, the assimilation rate, $1 - b$, between the first- and second-generation is about 0.70, meaning that about 70% of the gap between the first-generation and the population average is closed by the second generation (Bojijas, 1992; Card et al., 2000).
3. Potential work experience is calculated as $\text{Age} - (\text{School Years} + 6)$ for those not enrolled in school. For immigrants whose (Age at Arrival) exceeds (School Years + 6), potential work experience is Years in the United States, defined as $\text{Age} - (\text{Age at Arrival})$.
4. Blue collar occupations include farm, construction, production, transportation, and installation occupations. White collar occupations include professional, management, and service occupations.
5. The fact that Hispanics also tend to speak Spanish may be a benefit, as bilingualism can open up job opportunities not necessarily available to monolingual English speakers. Studies tend not to find a positive correlation between bilingualism and wages (Fry & Lowell, 2003; Cortina, de la Garza, & Pinto, 2007). This could be due to a large supply of native-Spanish speakers concentrated in particular labor markets, or combining Hispanics of different generations into one group, or ability and self-selection bias. Saiz and Zoido (2005) consider foreign-language skills acquired by American college students and find a 2-3% return, perhaps reflecting the importance of differentiating language skills that are acquired with little costs (such as by native speakers) and those with high costs (such by non-native speakers in college).

6. This assumes that third- and higher generations Hispanics continue to self-identify as Hispanics to be able to study them (Duncan & Trejo, 2007).

APPENDIX

Every respondent in the NAAL was given a literacy assessment booklet containing seven core tasks plus three blocks of literacy tasks (each block contained approximately 11 questions). The respondents were not given the same three blocks of literacy tasks, however; as answering all 152 literacy tasks (core questions + 12 blocks of tasks) would have taken more than three hours. In order to balance time constraint and coverage of literacy tasks, respondents were given one of 26 configurations of three blocks of tasks. The assignment of particular three blocks of tasks was based on a balanced incomplete block (BIB) spiraling design. Under the BIB design, approximately 11 questions were placed into a block, and three blocks were assigned to assessment booklets in a systematic way. In particular, the blocks were spiraled so that each block was paired with every other block across the 26 different configurations of the assessment booklet, and each block appeared in each of the three positions (first, middle, last) in a booklet (U.S. Department of Education, 2009). This design has the benefit of reducing the time commitment of each respondent, while also increasing the number of literacy tasks that can be assigned, ensuring that underlying literacy trait is fully covered by the tasks.

Using a BIB spiraling design approach makes it possible to obtain unbiased estimates of literacy scores for populations without first obtaining accurate estimates for individuals. Using "item response theory," marginal maximum likelihood (MML) regression is used to derive unbiased estimates of proficiency scales. This MML regression procedure estimates a linear regression for data in which the dependent variable (e.g., responses to a subset of questions) is only partially observed. MML regression makes it possible to link responses from the different booklets to a common scale by representing a respondent's score by a probability distribution over all of possible scores of the literacy being measured. Thus, MML regression provides parameter estimates of literacy for a population rather than for individuals.

For the empirical study, proficiency in English, y_i , is modeled as a linear function of binary variables indicating Hispanic \times U.S. generation (HG) status, binary variables indicating language-spoken before school ($L1$), present English-language practices ($L2$), demographic variables (X), and an error term (ε) assumed to have a normal distribution:

$$y_i = c_i + HG_i \delta + L1_i \beta_1 + L2_i \beta_2 + X_i \beta_3 + \varepsilon_i$$

Specifically the binary variables of *HG* are first-generation non-Hispanic White, second-generation non-Hispanic White, first-generation Hispanic, second-generation Hispanic, and third-generation Hispanic, with third-generation non-Hispanic White as the omitted category; the *L1* variables include language(s) spoken before school, with English-only the omitted category; the *L2* variables are language(s) used in speaking and reading and how often respondent reads newspapers or books in English; and the demographic characteristics are age, age-squared, completed years of school, interaction of school enrollment and school years, male, marital status, and region of residence. School enrollment is interacted with years of school since the years of school for NAAL student respondents are not comparable to those who have left school (especially for those under 25 years old).

Since proficiency for each respondent is measured as a subset of the 152 available tasks and is therefore not directly observed, ordinary least squares regression cannot be used with these data. Instead of the same dependent variable for each respondent, each respondent has a different dependent variable because respondents received one of the 26 assessment booklets. For this reason, the dependent variable is instead represented as a probability distribution of proficiency through a likelihood function. This likelihood function is estimated using MML models. The regression analysis incorporates the survey design weight, cluster and strata variables of the NAAL survey. Separate MML regressions are carried out for each literacy type and for different sets of control variables. For further details regarding MML see U.S. Department of Education (2009). The MML Regression procedure with 1000 maximum iterations is estimated using the "AM" statistical software developed by American Institutes for Research for use with the NAAL. Full estimates are available upon request from the author.

REFERENCES

- Behrman, J. R., & Birdsall, N. (1983). The quality of schooling: Quantity alone is misleading. *American Economic Review*, 73(5), 928-946.
- Borjas, G. J. (1982). The labor supply of male Hispanic immigrants in the United States. *International Migration Review*, 17(4), 343-353.
- Borjas, G. J. (1992). Ethnic capital and intergenerational mobility. *Quarterly Journal of Economics*, 107(1), 123-150.
- Borjas, G. J. (2006). Making it in America: Social mobility in the immigrant population. Working Paper 12088. National Bureau of Economic Research. Cambridge, MA.
- Card, D., DiNardo, J., & Estes, E. (2000). The more things change: Immigrants and the children of immigrants in the 1940s, the 1970s, and the 1990s. In G. J. Borjas (Ed.), *Issues in the economics of immigration* (pp. 227-269). Chicago, IL: University of Chicago Press.
- Card, D., & Krueger, A. B. (1992). Does school quality matter? Returns to education and the characteristics of public schools in the United States. *The Journal of Political Economy*, 100(1), 1-40.
- Cortina, J., de la Garza, R. O., & Pinto, P. M. (2007). *No entiendan: The effects of bilingualism on Hispanic earnings*. Working Paper 2007-03. Institute for Social and Economic Research and Policy. New York.
- Duncan, B., & Trejo, S. J. (2007). Ethnic identification, intermarriage, and unmeasured progress by Mexican Americans. In G. J. Borjas (Ed.), *Mexican immigration to the United States* (pp. 229-267). Chicago: University of Chicago Press.
- Fry, R., & Lowell, B. L. (2003). The value of bilingualism in the U.S. labor market. *Industrial and Labor Relations Review*, 57(1), 128-140.
- Gonzalez, A. (2000). The acquisition and labor market value of four English skills: New evidence from NALS. *Contemporary Economic Policy*, 18(3), 259-269.
- Gonzalez, A. (2002). *Mexican Americans & the U.S. economy: Quest for buenos días*. Tucson, AZ: University of Arizona Press.
- Gonzalez, A. (2007). *California's commitment to adult English learners: Caught between funding and need*. Public Policy Institute of California. San Francisco, CA.
- Gonzalez, A. (2011). Hispanic and first-generation college students: How do they fare in postsecondary education? In S. J. Trejo & D. Leal (Eds.), *Latinos and the economy: Integration and impact in schools, labor markets, and beyond* (pp. 95-112). New York: Springer.
- Hakimzadeh, S., & Cohn, D. (2007). *English usage among Hispanics in the United States*. Pew Hispanic Center. Washington, D.C.
- Hamilton, D., Goldsmith, A. H., & Darby, W. J. (2008). Measuring the wage costs of limited English: Issues with using interviewer versus self-reports in determining Latino wages. *Hispanic Journal of Behavioral Sciences*, 30(3), 257-279.
- Kossoudji, S. A. (1988). English language ability and the labor market opportunities of Hispanic and east Asian immigrant men. *Journal of Labor Economics*, 6(2), 205-228.
- Lazcar, E. P. (2007). Mexican assimilation in the United States. In G. J. Borjas (Ed.), *Mexican immigration to the United States* (pp. 107-121). Chicago, IL: The University of Chicago Press.
- Leon, A. (2005). Does "ethnic capital" matter? Identifying peer effects in the intergenerational transmission of ethnic differentials. University of Pittsburgh. Pittsburgh, PA.
- Lopez, M. H. (2009). *Latinos and education: Explaining the education gap*. Pew Hispanic Center. Washington, D.C.
- McManus, W. S. (1985). Labor market costs of language disparity: An interpretation of Hispanic earnings differences. *American Economic Review*, 75(4), 818-827.
- McManus, W. S., Gould, W., & Welch, F. (1983). Earnings of Hispanic men: The role of English language proficiency. *Journal of Labor Economics*, 1(2), 101-130.
- Mora, M. T., & Davila, A. (2011). The LEP earnings penalty among Hispanic men in the U.S.: 1980-2005. In S. J. Trejo & D. Leal (Eds.), *Latinos and the economy: Integration and impact in schools, labor markets, and beyond* (pp. 153-167). New York: Springer.
- Pew Hispanic Center (2004). *Assimilation and language*. Pew Hispanic Center. Washington, D.C.

- Pew Hispanic Center (2009). *Between two worlds: How young Latinos come of age in America*. Pew Hispanic Center. Washington, D.C.
- Portes, A., & Rumbaut, R. G. (1996). *Immigrant America: A portrait* (2nd Ed.). Berkeley: University of California Press.
- Saiz, A., & Zoido, E. (2005). Listening to what the world says: Bilingualism and earnings in the United States. *Review of Economics and Statistics*, 87(3), 523–538.
- Trejo, S. J. (1997). Why do Mexican Americans earn low wages? *Journal of Political Economy*, 105(6), 1235–1268.
- U.S. Department of Education, NCES (2001). *Adult literacy and education in America: Four studies based on the National Adult Literacy Survey* (NCES 1999–469). Washington, D.C.
- U.S. Department of Education, NCES (2007). *Literacy in everyday life: Results from the 2003 National Assessment of Adult Literacy* (NCES 2007–480). Washington, D.C.
- U.S. Department of Education, NCES (2009). *Technical report and data file user's manual for the 2003 National Assessment of Adult Literacy* (NCES 2009–476). Washington, D.C.: U.S. GPO.

CHAPTER 4

POVERTY AMONG HISPANICS IN THE UNITED STATES

Mary J. Lopez
Occidental College

In 2010, according to the United States Census Bureau, among the over 4 million people living in poverty in the United States, approximately 13.3 million (29%) were Hispanic, making them the racial/ethnic minority group most represented among the poor. This said, economic growth, expanded income support policies, and efforts to eliminate explicit discriminatory practices contributed to falling poverty rates and a narrowing of the racial and ethnic gaps in poverty before the Great Recession (Cancian & Danziger, 2009). However, large disparities in poverty have persisted, even after the Great Recession that struck a devastating blow to the U.S. labor market, as Hispanics and Blacks were twice as likely to be poor as non-Hispanic Whites in 2010. Understanding why racial and ethnic disparities continue to persist is important in mitigating poverty among Hispanic and Black Americans.

Several factors may be associated with the persistent racial and ethnic disparities in poverty. First, labor market opportunities differ across racial and ethnic groups. In 2000, for example, Hispanics comprised 44.2% of the workforce with less than a high school diploma (Borjas, 2006). At the