International Journal of Humanities Social Sciences and Education (IJHSSE)
Volume 1, Issue 11, November 2014, PP 1-11
ISSN 2349-0373 (Print) & ISSN 2349-0381 (Online)
www.arcjournals.org

Multilevel Analysis on the Likelihood of being In-Poverty by Age at Time of Entry to the US for Mexican-Origin Latinos

Carlos Siordia[1*]

[1] Department of Epidemiology, Graduate School of Public Health, University of Pittsburgh
PhD, 130 North Bellefield Ave, Pittsburgh,
Cas271@pitt.edu

Funding: CS is supported by the National Institutes of Health (grant T32 AG000181).

Under Review: This manuscript has not been published elsewhere and it has not been submitted simultaneously for publication elsewhere. Manuscript is only under review with IJHSSE.

Conflict of Interest: Carlos Siordia has no conflicts of interest with IJHSSE.

Abstract: *Minority groups in the United States have on average experience more financial disadvantages than their non-minority counterparts. The study investigates how age at time of entry affects the likelihood of being in-poverty for immigrants from Mexico to the US when compare to native born counterparts. The study uses Public Use Microdata Sample (PUMS) data files from 2009-2011 (3-year) from the American Community Survey (ACS). By using 120,098 individuals (100% Mexican-Americans; 40% female; average age 39; 33% in-poverty; 67% married) are nested over 1,954 spatial units (i.e., Public Use Microdata Areas) in a multivariate hierarchical logistic model (using HLM 6.04), the study shows that the likelihood of being in-poverty increases by 3% ($\beta=0.03;OR=1.03;\alpha<0.001$) for each year of increase in "age at time of entry" to the US. The results also indicate age (OR=0.95); with each increase in ability to speak English (OR=0.75); and with each increase in educational attainment (OR=0.94) the odds of being in-poverty decrease. Because time of entry—during an individual's lifecourse—may affect their economic life chances, research should continue to explore how immigrants to the US from various parts of the world fare relative to their US-born counterparts.*

Keywords: *inequality; poverty; Mexicans; immigration; multilevel; geography*

1. INTRODUCTION

Mexican-origin Latinos (i.e., males) and Latinas (i.e., female)— hereafter simply refer to as Mexicans–in the United States, an "ethnic" minority, have on average experience more financial disadvantages than their non-Mexican and "racially white" counterparts. Minority groups identified via language use, nationality, ethnicity, color of skin, religion, geographical location, and even political views can be found internationally. For example, a recent manuscript provided evidence for the growing economic inequality in China between urban and rural area dwellers (Xiong, 2012). The authors correctly argue that income disparities challenge the equilibrium of social harmony at the national and global level. Allowing injustice to persist in the form of poverty creates a "clear disparity between the moral and political values we claim to live by and those that prevail in reality" (Fitzpatrick, 2011).

Until now, no published work has investigated how age at time of entry into the United States (US) plays a role in the likelihood of being in-poverty for Mexicans in the US. This paper does not delineate all the details of any particular theory—it simply uses a conceptual framework, guided by published empirical work and the available data, to form and test a single hypothesis. A full review of the literature on poverty, discrimination, and immigration is not attempted. The focus is on discussing how *age at time of entry to the US* plays a role in the likelihood of being in-poverty for Mexican immigrants in the US. The specific aim of this cross-sectional multilevel quantitative study is to explore how "age at time of entry" plays a role on the likelihood of experiencing poverty amongst immigrant Mexicans in the US when compared to their US-born counterparts. Similar studies may be attempted using samples from around the world to see if the same pattern is evident. The paper may add to the literature on the socioeconomic inequality of minorities by showing that age at time of entry plays an important role in the odds of being in-poverty for Mexican immigrants in the US.

1.1 Poverty as a Measure of Social Inequality

A person's "life chances" can be robustly estimated by understanding if, when, why, and how they experience poverty. Life chances refers to how opportunities for achieving financial prosperity, social acceptability, and health are affected by structures of opportunity and risks (Evans et al, 2012). Poverty simply refers to the relative economic destitution prohibiting an individual from living an socioeconomically average material life. Extensive research has consistently shown that poverty ratios are demographically concentrated in ethnic and racial minorities in the US (see Siordia and Farias, 2013). A forthcoming paper documents how generally beneficially cohort effects failed to benefit both US-born and immigrant Mexicans in the US (Siordia and Leyser-Whalen, 2013). A core assumption in this paper, informed by evidence, is that social stratification is not produced randomly. Instead, it is presumed that social stratification is produced systematically through a constellation of day-to-day and person-to-person interactions. If we assume a constellation of interactions between individuals coalescent to form a system where social and economic resources are relegated as a function of compositional characteristics (e.g., ethnicity), then we could argue that economic disadvantages are non-randomly distributed by demographic characteristics (Saenz and Siordia, 2013) or geography (Siordia, 2013) and are partially born from systematic discriminatory practices born in the individual transactions that from structural systems (Mora and Davila, 2013). The key point here is that not all people are suffering equally in the US (Siordia, Panas, and Delgado, 2012), and as a consequence, the racial-ethnic economic inequalities that play a role in the origin and persistence of health disparities (Gravlee, 2009) persist in the modern era.

In this paper, "poverty" is framed as an instrumental construct capable of adequately capturing 'real' economic conditions. The data, outlined below, offers no way of measuring "relative deprivation" (Duclos and Gregoire, 2002)—the idea that deprivation is self-measured by contrasting 'self' to others in proximity. Poverty is not measurable within the available data as a condition of comparative disadvantage (Iceland, 2003:501) and thus fails to accurately capture how standards of minimum necessities vary between person (Sen, 1981). Solutions to these problems have been offered elsewhere (Foster, Greer, and Thorbecke, 1984)—but no academic consensus has risen on how best to opt out of the classical form of measuring poverty (i.e., with an individuals' personal or household income). This study, because of data limitations, follows in the classical way.

1.2 Age at Time of Entry as a Risk Factor for Economic Disadvantage

In this section, a brief discussion is offered on the conceptual views of how age at time of entry plays a role in the likelihood of being in-poverty for Mexicans in the US. After being unable to locate publication showing how age at time of entry to US from Mexico affects the odds of being in-poverty, a brief logic is presented. In general, it may be that the characteristics of residents in Mexico who immigrate to the US vary as a function of age. For example, a five year-old Mexican immigrant may come from a more economically resource rich family than a 30 year-old Mexican immigrant. In addition to the "pre-immigration" resources, there may also be "post-immigration" resources that help mitigate the likelihood of an immigrant to be in poverty as a function of their age at time of entry to the US. It should be noted that in this study, poverty status is being observed as a static (cross-sectional) point.

The data do not permit the formation of variables that account for an immigrants experience in Mexico, nor do they allow for the creation of measures that would inform us on how they pool their economic resources in the US to make economic ends meet. Findings in this report are framed with a focus on how post-immigration resources may vary between immigrants in relation to native born Mexicans origin Latinos. In particular, the results are framed with a special focus on how English language proficiency (i.e., ability to speak English) may differ between Mexican immigrants as a function of their age at time of entry to the US. Previous work has shown Mexican immigrants have greater odds of being in-poverty when compared to their native-born counterparts and that both individual (i.e., agency) and social (i.e., structural) forces affect economic status (Lopez MJ, 2013). It is being presumed that in general, there is a positive relationship between age at time of immigration to US and English language speaking proficiency—where arriving at younger ages is associated with a greater ability to speak English. If age at time of immigration retains its ability to explain some of the variance in the odds of being in-poverty after accounting for English proficiency and other important person-covariates, then the greater likelihood for economic disadvantage will be interpreted as being partially produce from the "immigrant" status because: an important variable was not included in the model; or as the effect of institutional (e.g., laws) and social (e.g., discrimination) factors.

Even though using a static measure of poverty status does not allow researchers to account for events with a temporal factor (and thus infer causality), the ability to account for age at time of immigration from Mexico to the US is possible in this cross-sectional analysis. The general research question is: Does the age of time of immigration influence the likelihood of experiencing poverty? If evidence is provided from the empirical models to answer this question in the affirmative, an explanatory framework will be made in closing. More technically, it is hypothesized that as the age at time of immigration increases, the likelihood of being in-poverty will increase—even after accounting for English language speaking proficiency, other compositional characteristics, and nesting by geographical location.

2. METHODS

2.1 Data

Public Use Microdata Sample (PUMS) data files from 2009-2011 (3-year) from the American Community Survey (ACS) are used in the analysis. The ACS is conducted to fulfill federal legal mandates and is a yearly and population based survey administered by the US Census Bureau (headquarter in Suitland, MD, USA). The microdata represent information collected on the US population over a 36-month period. Person-level observations in the ACS PUMS files can only be geographically reference to Public Use Microdata Areas (PUMAs). In this paper, "micro" units refer to individuals in the microdata and "macro" units refers to PUMAs.

2.2 Sample

The analytic sample of 120,098 individuals is made up of only Mexican-origin Latinos/as (HISP=2) residing in the US who are age 30-50 (AGEP 30-35) and who are participating in the labor market (ESR in 1,2,4,5: i.e., (1) are civilian employed at work; (2) civilian employed, with a job but not at work; (4) armed forces, at work; and (5) armed forces, with a job but not at work). The 30 to 50 age range is selected primarily because it is assumed individuals within this age group are more stable in terms of the various person-level measures relative to those of younger and older ages. There are some convenient reasons why the age range may be more than arbitrary in nature. Given the age range being selected and the year the PUMS data was collected, Mexican immigrants would have entered the US somewhere between 1969 and 1989. A full review on this topic is beyond the scope of the present study. The main point here is that the post-1969 immigration flows from Mexico to the US increased after the Civil Rights movements were beginning to impact policy and laws (Durand, Massey, and Zenteno, 2001) and that in the post-1989, the economy in the US entered a more turbulent economic era (Garner, 1994). The age range in the analytic sample not only increases the chances that the study subjects are in a more economically stable part of their life course, but the age range may have also captured a period of time when immigrants from Mexico to the US face the lowest physical and social resistance (Purcell and Nevins, 2005) to enter their current host nation (i.e., the US).

2.3 Age at Time of Entry to US

The independent variable is age at time of entry to the US. Two variables are used to compute the Age at Time of Entry (AToE) factor: year of entry to US (YOEP) and age (AGEP). The two variables are used to estimate the age at time of entry to the US. Using SAS 9.3® syntax, microdata, and analytic sample, only 0.5% (631) of the observations have an ToE score of "-2" or "-1"—it is assume they are data errors not captured by data editing algorithms at the US Census Bureau and are treated as immigrants who arrived during first year of live (i.e., ToE="1"). Native born are the reference category (i.e., ToE="0") in this measure. In the multilevel equations, when age at time of entry to US is modeled as the continuous independent variable, the zero refers to native born and all the other values to immigrants. Please note transparency about the issues that arouse during data management and modeling is very explicit because there are no other publication discussing the age at time of entry in ACS PUMS files and this paper hopes to open a clear discourse on how best to proceeded with the coding these forms of data and variables.

2.4 Poverty Measure

Poverty status is the binary dependent variable. The multilevel linear models (equations explained below) predict the likelihood of being “in-poverty” versus “not in-poverty”—a measure that follows existing academic standards (Poston et. al. 2010; Siordia & Farias 2013). Poverty in ACS PUMS data is calculated following standards specified by the Office of Management and Budget (OMB). The US Census Bureau calculates total income for families and compares it to a dollar value thresholds set in the OMB directive (see Bishaw and Macartney 2010). The thresholds are updated annually to adjust for inflation by using the Consumer Price Index (CPI-U). For example, in 2011, a household with four people (where two are related children under 18 years of age) had a poverty threshold of $26,434. Please note that a serious limitation with this measure is that it does not vary geographically. Thus, it fails to account for ‘relative’ cost of living.

The income-to-poverty ratio provided in ACS PUMS data is used because it is considered a more sophisticated measure of “depth of poverty” (DeNavas, Bernadette, Smith 2010). The 1.50 ratio, which indicates the person is at or below 150% of the poverty threshold, is used and could be interpreted as signaling the individual is near poverty instead of being “at” (ratio=1.0) or in “deep” (ratio=0.5) poverty (Timberlake 2007). The 1.5 is being used—instead of the classical 1.0 ratio—as a rough way of lowering the effect of geographical non-variability in the poverty measure. Thus, a person with a poverty statistic of less than 150 (i.e., if POVPIP $\leq$ 150) is assigned a “1” on the dependent variable and all others a zero. The empirical models predict the “1” condition.

2.5 Demographic Covariates

The models account for: age (continuous from 30-50); sex (binary where female=“1”); ability to speak English (continuous from “0” not able to speak English to “3” able to speak it very well), educational attainment (categories treated as continuous range from “0” no schooling completed to “24” has a doctorate degree), marital status (three binary variables compared to married: widowed, divorce or separated, or never married), and presence of disability (binary where having any form of disability=“1”). Please not that several categories for the age and educational attainment (Lopez MH, 2013) variables were created and found to be as efficient as the continuous variables being used models. Preliminary analysis also showed a linear association between poverty status and AToE—leading to the use of a linear (log-transformed) model.

2.6 Multilevel Logistic Models

The 120,098 person-level observations in the analytic sample are “nested” (i.e., geographically refereced) in 1,954 PUMA-level geographical units using HLM 6.08 software (Raudenbush, Bryk, and Congdon, 2004). This section outlines the multilevel logistic model. It must first be determine if there is any statistically significant variation in the binary poverty-status dependent variable occurring between the 1,954 level-2 nesting units (i.e., PUMAs). To decompose the variability into between- and within-PUMAs requires us to calculate the Intraclass Correlation Coefficients (ICC) from the following two-level random intercept model:

$$Prob(InPoverty = 1|\beta) = \varphi$$

$$Log[1 - \varphi)] = \eta$$

$$\eta_{ij} = \beta_o$$

$$\beta_o = \gamma_{00} + u_0$$

Results indicate the level-2 variance τ_{00} (i.e., u_0) has a value of 0.293 with a statistically significant chi-square value of 7,253 ($\alpha < 0.000$). This means there are statistically significant differences among the 1,954 PUMA’s on the average log-odds of being in poverty. The ICC represents the proportion of the variance in poverty-status between PUMAs and is calculated for nonlinear multilevel models (Snijders and Bosker 1999; Long 1997; Li 2005) as follows:

$$\rho = \frac{\tau 00}{\tau 00 \; + \pi^2/3}$$

which in this case is

$$= \frac{0.29339}{0.29339 + \left(\frac{3.14159^2}{3}\right)}.$$

The ICC equals 0.0819 (or 8.19% as a percent). ICC can range from 0 to 1 with higher values representing a stronger clustering effect of the dependent variable. Although work has shown Type-I Error rates could be inflated when a very small ICC (e.g., .01) occurs (Barcikowski 1981); there are no industry standards on what constitutes a "strong enough" ICC value. At the very least, the estimated ICC provides some evidence that a statistically significant variation of the dependent variable (i.e., binary poverty status) is irreducible to a 'classical' non-hierarchical (i.e., single-level) model (Gelman and Hill 2007: Raudenbush and Bryk 2002). In more theoretical terms, it could be argued that in the analytic sample, 8.19% of the variance in poverty occurs between PUMA—this is "the proportion of the variance explained by the grouping structure in the population" (Hox 2002; p. 15).

Since the multilevel logistic analysis of poverty is both statistically appropriate and deemed necessary, a "conditional model" is computed where all the level-1 (person-level/micro unit) factors are included. In equation form:

$$Prob(InPoverty = 1|\beta) = \varphi$$

$$Log[1 - \varphi)] = \eta$$

$$\begin{aligned}\eta_{ij} = \beta_{oj} + \beta_{1j}(AgeAtTimeOfEntry)_{ij} + \beta_{2j}(Age)_{ij} + \beta_{3j}(Female)_{ij} + \\ \beta_{4j}(English)_{ij} + \beta_{5j}(Education)_{ij} + \beta_{6j}(Widowed)_{ij} + \\ \beta_{7j}(DivSep)_{ij} + \beta_{8j}(NeverMarried)_{ij} + \beta_{9j}(Disabled)_{ij} + r_{ij}\end{aligned}$$

where η_{ij} is the predicted log-odds of being in-poverty (for simplicity, odds ratios are interpret using "percent change"); *i* and *j* refer to the i^{th} reference person in j^{th} PUMA; β_{0j} is the intercept in j^{th} PUMA; β_{1j} through β_{9j} are the nine average slopes for the factors under investigation by j^{th} PUMA; and r_{ij} is the error term for the i^{th} reference person in j^{th} PUMA. The equation for Level-2 (i.e., for PUMAs) is as follows:

$$\beta_{oj} = \gamma_{00} + u_0$$

$$\beta_{1j} = \gamma_{10}$$

and in similar fashion until

$$\beta_{11j} = \gamma_{90}$$

where γ_{00} is the intercept of the full model; γ_{k0} (k^{th} ranging from 1-9) are the *direct effects* of the individual-level factor on the odds of being in-poverty; and where u_o is the error measurement for all intercepts (no other 'Taus' are included because we assume micro-level associations are similar across all macro-level units (i.e., PUMAs)).

2.7 Public Use Microdata Area Fragmentation

In order to insure respondent confidentiality, the US Census Bureau limits the ability of public data users to geographically locate respondents to PUMAS—geographical polygons with at least 100,000 people or more. In terms of size, all PUMAs are smaller than states and their geographical boundaries are only limited by state boundaries. PUMAs are build using "blocks" are typically smaller than counties (see Siordia & Fox 2013). ACS PUMA boundaries being used here are identical to those in the 2000 5% census sample (see Ruggles et al. 2010).

Multilevel models are used because it is assumed, as is widely accepted in current approaches, that social process (e.g., poverty concentrations resulting from discrimination) vary as a function of geographical location (i.e., space) (Siordia, Saenz, and Tom, 2013). More technically, multilevel analysis presumes geographical heterogeneity is present and theoretical significant. In the eloquent works of Robert E. Park, as he gave his ASA presidential address:

> It is because social relations are so frequently and so inevitably correlated with spatial relations; because physical distances so frequently are, or seem to be, the indexes of social distances, that statistics have any significance whatever for sociology. And this is true, finally, because it is only as social and psychical facts can be reduced to, or correlated with, spatial facts that they can be measured at all (1926:18).

From such a view, accounting for characteristics of "spatial facts" is necessary. It may be that when we neglect measuring spatial facts in the investigation of social phenomena, the study of society is made less socially significant. Thus, it is argued, that analysis of space should supplement all social demographic analyses when possible.

Even if statistical relationships can vary as a function of geographical location, researchers should take great care on how and why they measure "geospacial" (i.e., geographical space) facts. In this analysis, no PUMA-level controls are introduced because, as has been shown before (Siordia and Fox, 2013), there are multipart PUMA polygons. In different words, multipart polygons are PUMAs that are made up of several geographical fragments (Siordia & Fox 2013). A map is provided to visually represent this issue in PUMAs and other work quantifies their presence across the US mainland (Siordia & Wunneburger, 2013). In order to insure the most flexible statistical assumptions are used, "population-average" model results with robust standard errors are presented. A multilevel model is retained, because although no PUMA-level covariates are introduced, the between-PUMA variation is statistically significant. With this approach and in essence, the 120,098 study subjects (i.e. people) are divided into 1,954 units (i.e., PUMAs)—were a total of 1,954 regressions are used to estimate the average intercept and slope of the micro-level relationships as a function of PUMA unit.

Table 1. *Descriptive statistics for analytic sample*

	Mean	**SD**[1]
In-Poverty	0.33	0.47
Native Born	0.39	0.45
Age at time of entry[2]	15.41	12.25
Demographics		
Age[3]	39.36	5.90
Female	0.40	0.49
Ability to speak English[4]	1.96	1.04
Education[5]	14.58	4.96
Married	0.67	0.47
Widowed	0.01	0.09
Divorced or Separated	0.13	0.33
Never Married	0.20	0.40
Disabled	0.04	0.19

[1] Standard Deviation
[2] Ranges from 1 to 50
[3] Ranges from 30 to 50
[4] 0=not able to speak English→ 3=able to speak it very well
[5] 0=no schooling completed → 24=doctorate degree

3. RESULTS

From Table 1, we see that about 33% of the analytic sample is in-poverty. Within the analytic sample, 29% are native born and the average age at time of entry is 15. In terms of demographics, the average age is 39, about 40% are females, and 67% are married. From the sample, the average person speaks English "well" and has a high school education with no diploma.

From Table 2, we see our hypothesis, that as age at time of entry to the US increases the odds of being in-poverty increase, is supported. The multilevel logistic model predicts a 3% (β 0.03: OR 1.03: %C 3%: $\alpha < 0.00$) increase in the likelihood of being in-poverty with each increase in age at time of entry to US. Because other very important variables related to poverty (e.g., education, language, etc.) are accounted for, and age at time of entry to the US remains statistically significant, it is argued that the greater likelihood for economic disadvantage for immigrants could be partially produce by institutional (e.g., laws) and social (e.g., discrimination) events that distinctly focus on making immigrants a marginalized group. It would be noted that as age (-5%: $\alpha < 0.00$), educational attainment (-7%: $\alpha < 0.00$), and ability to speak English (-25%: < α 0.00) increases increase, the odds of being in-poverty decrease. Married individuals are less likely to be in-poverty compared to all other marital conditions and disabled more likely to be in-poverty (29%: $\alpha < 0.00$) than abled bodied individuals. These are findings constant with previous research.

Table 2. *Multilevel logistic model predicting the likelihood of being in-poverty*

	Coeff[1]	OR[2]	LCI[3]	UCI[4]			%Change[5]
Age at time of entry[6]	0.03	1.03	1.02	1.03	**		3%
Demographics							
Age	-0.06	0.95	0.94	0.95	**		-5%
Female	-0.02	0.98	0.96	1.01			
Ability to speak English[7]	-0.29	0.75	0.74	0.77	**		-25%
Education[8]	-0.07	0.93	0.93	0.94	**		-7%
Married	ref	ref	ref	ref			
Widowed	0.66	1.93	1.69	2.22	**		93%
Divorced or Separated	0.50	1.65	1.59	1.73	**		65%
Never Married	0.13	1.14	1.10	1.20	**		14%
Disabled	0.26	1.29	1.21	1.39	**		29%

** = $\alpha < 0.001$

[1] Coefficient

[2] Odds ratio

[3] Lower confidence limit

[4] Upper confidence limit

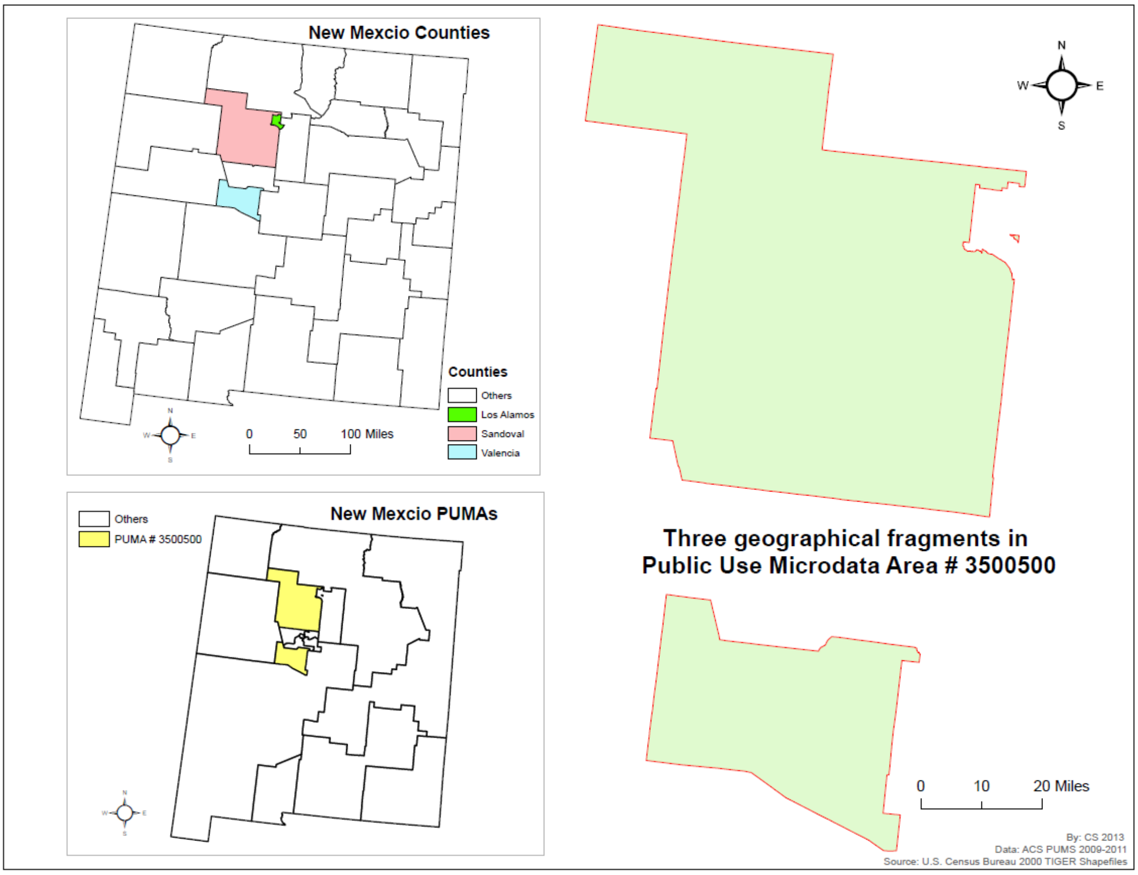
[5] Percent change=[(OR-1)*100]

[6] 0=US born and 1 through 50 to immigrants from Mexico to US

[7] 0=not able to speak English→ 3=able to speak it very well

[8] 0=no schooling completed → 24=doctorate degree

As discussed before, a statistically significant variation occurring between PUMAs was found. However, no factors were found that could explain the between-PUMA variation. Because PUMA polygon fragmentation may be potentially and partially responsible for this, Map 1 displays a multipart PUMA (#3500500) in New Mexico, USA. As can be seen, PUMA #3500500 is made up of a total of three geometrical fragments that come from three different counties (i.e., Los Alamos, Sandoval, and Valencia). Accounting for percent of Mexicans in the area would be difficult to conceptualize under such a condition. The US Census Bureau is moving towards remedying this issue. Perhaps in the future, PUMS data users will be able to avoid the "uncertain geographic context problem" (Kwan, 2012) caused by these multipart polygons.



4. Conclusions

There are some limitations with the study. Of particular interest for those investigating poverty, is the fact that the poverty measure does not vary by geography. Future work should continue to explore this topic and seek to incorporate more complex poverty-grouping schemes (see Foster and Santos, 2013). In addition, other age ranges and race-ethnic groups (e.g., non-Latino-White) are not examined. Future investigations should seek to replicate this study with other age and race-ethnic sub-samples. Lastly, no macro-level controls are introduced in the multilevel models. Future work should investigate what factors may help explain between-PUMA variation in the odds of being in-poverty.

Notwithstanding the limitations, the study adds to the literature by showing that age at time of entry to the US is an important factor when attempting to understand how economic resources are distributed amongst US residents. Since no other publication could be found where a discussion of why age at time of entry would affect a person's life chances (i.e., likelihood of being in-poverty) the following speculative explanation is offered: An immigrant's age at time of entry to a host nation confers both benefits and disadvantages. The analysis does not model potential benefits. The models predicting likelihood of, being in-poverty show that compare to their Mexican-origin US-born counterparts, Mexican immigrants to the US are more at risk of experiencing poverty—and the risk increases as age at time increases.

Immigrating at an early age may afford the individual more time to learn the necessary social skills (e.g., learn formal and colloquial English) to thrive in the local culture and economy—although subtle, the presupposition in this statement is that the host environment is hostile and marginalizes those who resist forced assimilation. Immigrating at an early age may also signal that caregivers moving the Mexican child to the US provide additional social and economic resources beneficial in adulthood. In contrast, arriving to the US at older ages from Mexico may confer risk to the immigrant—e.g., diminished language fluidity, limited US social networks, and any age discrimination generally present in labor markets. Because mitigating economic inequality is assumed to be an instrumental approach for improving democratic states, future research should continue to explore this issue as the rise of minority groups proliferates and growing inequality is seen for what it is: injustice.

REFERENCES

Barcikowski, R.S. 1981. Statistical Power with Group Mean as the Unit of Analysis. *Journal of Educational Statistics*, 6, 267-285.

Bishaw, A., and S. Macartney. 2010. U.S. Census Bureau, American Community Survey Briefs, ACSBR/09-1, *Poverty: 2008 and 2009*, U.S. Government Printing Office, Washington, DC.

Evans, K., I. Schoon, and M. Weale, M. 2012. Life Chances, Learning and the Dynamics of Risk in the Life Course. In *Second International Handbook of Lifelong Learning* (pp. 245-267). Springer Netherlands.

DeNavas-Walt, C., B.D. Proctor, and J.C. Smith. 2010. U.S. Census Bureau, Current Population Reports, P60-238, *Income, Poverty, and Health Insurance Coverage in the United States: 2009*, U.S. Government Printing Office, Washington, DC.

Duclos, J.Y., and P. Gregoire. 2002. Absolute and Relative Deprivation and the Measurement of Poverty. *Review of Income and Wealth*, Series 484, 471-492.

Durand, J., D.S. Massey, and R.M. Zenteno. 2001. Mexican immigration to the United States: Continuities and changes. *Latin American Research Review*, 107-127.

Fitzpatrick, T. 2012. HPP Lotter 2011 Poverty, ethics and justice University of Wales Press. *Journal of Poverty and Social Justice*, 20, 113-115.

Foster, J.E., and M. E. Santos, M. E. (2013). Measuring chronic poverty. Pages 143-165 in *Poverty and Social Exclusion: New Methods of Analysis*, edited by G. Betti and A. Lemmi. Routledge: New York.

Foster, J., J. Greer, and E. Thorbecke. 1984. A Class of Decomposable Poverty Measures. *Econometrica*, 52, 761-766.

Gardner, J.M. 1994. 1990-91 Recession: How Bad Was the Labor Market, The. *Monthly Lab. Rev.*, 117, 3.

Garner, T.I., and D. Betson. 2010. Setting and Updating Modern Poverty Thresholds. BLS Working Paper 435, Office of Prices and Living Conditions in the U.S. Department of Labor, U.S. Bureau of Labor Statistics.

Gelman, A., and J. Hill. 2007. *Data Analysis Using Regression and Multilevel/Hierarchical Models*. New York: Cambridge University Press.

Gravlee, C.C. 2009. How race becomes biology: embodiment of social inequality. *American Journal of Physical Anthropology*, *139*1, 47-57.

Hox, JJ. 1995. *Applied Multilevel Analysis*. Amsterdam: TT- Publikaties.

Iceland, J. 2003. Why Poverty Remains High: The Role of Income Growth, Economic Inequality, and Changes in Family Structure, 1949-1999. *Demography*, 403:499-519.

Kwan, M. P. 2012. The uncertain geographic context problem. *Annals of the Association of American Geographers*, *102*5, 958-968.

Li, Jin-Kai G. 2005. *The Influence of Women's Status on Fertility Behavior Between Taiwan and China—A Multilevel Analysis*. Sociology Ph.D. Dissertation at the University of Texas A&M.

Long, J.S. 1997. *Regression Models for Categorical and Limited Dependent Variables*. Thousand Oaks, CA: Sage Publications.

Lopez, M.H. 2013. Educational expectations and realities for young Latinos. Pages 23-31 in the *Economic Status* volume of the *Hispanic Population* edited by Richard Verdugo, Information Age Publishing, Charlotte, NC.

Lopez, M. J. 2013. “Poverty among Hispanics in the United States.” Pages 49-64 in the *Economic Status* volume of the *Hispanic Population* edited by Richard Verdugo, Information Age Publishing, Charlotte, NC.

Mora, M. T., and A. Davila. 2013. An overview of Hispanic economic outcomes in the first decade of the 2000s. Pages 1-22 in the *Economic Status* volume of the *Hispanic Population* edited by Richard Verdugo, Information Age Publishing, Charlotte, NC.

Park, R.E. 1926. "The Urban Community as a Spatial Pattern and a Moral Order," in *The Urban Community*, edited by Ernest W. Burgess. Chicago: University of Chicago Press.

Poston, D.L., J. Singelmann, C. Siordia, et al. 2010. Spatial Context and Poverty: Area-level Effects and Micro-level Effects on Household Poverty in the Texas Borderland and Lower Mississippi Delta: United States, 2006. *Applied Spatial Analysis and Policy* 3, 139-162.

Raudenbush, S.W., and A.S. Bryk. 2002. *Hierarchical Linear Models: Applications and Data Analysis Methods. Second Edition*. Thousand Oaks, California: Sage Publications.

Raudenbush, S.W., A.S. Bryk, and R. Congdon. 2004. HLM 6 for Windows [Computer software]. Skokie, IL: Scientific Software International, Inc.

Ruggles, S.J., T. Alexander, K. Genadek, et al. 2010. *Integrated Public Use Microdata Series: Version 5.0* [Machine-readable database]. Minneapolis: University of Minnesota, http://usa.ipums.org/usa/volii/2000pumas.shtml.

Purcell, M., and J. Nevins. 2005. Pushing the boundary: state restructuring, state theory, and the case of US–Mexico border enforcement in the 1990s. *Political Geography*, *24*2, 211-235.

Rogelio, S, and C. Siordia. 2012. The Inter-Cohort Reproduction of Mexican American Dropouts. *Race and Social Problems*, 4, 68-81.

Sen, A.K. 1981. *Poverty and Famine: An Essay on Entitlement and Deprivation*. Clarendon Press: Oxford University Press.

Siordia, C. 2013. The Regional Geoboundarization of the Mexican-origin Population in the United States through the Saenzian Logic. *Mexican Journal of Scientific Research*, in-press.

Siordia, C, and O. Leyser-Whalen. 2013. The Lucky Few and Baby Boom Generation: Relative Cohort Size, Mexican Ethnicity, and Gender on the Likelihood of Out-of-Poverty Status. *Sociological Focus*, in-press.

Siordia, C., and A. Fox. 2013. Public Use Microdata Area Fragmentation: Research and Policy Implications of Polygon Discontiguity. *Spatial Demography*, 11, 42-56.

Siordia, C., and R. A. Farias. 2013. A Multilevel Analysis on Latino's Economic Inequality: A Test of the Minority Group Threat Theory. Pages 65-79 in the *Economic Status* volume of the *Hispanic Population* edited by M Mora & A. Davila, Information Age Publishing, Charlotte, NC.

Siordia, C, L.J. Panas, and D.J. Delgado. 2012. Geographing Latinoization in the U.S. Mainland: Mexican Origin Latino Population Growth between 2000 and 2010 by County. Report in the *Hispanic Economic Outlook*, Spring: 9-14.

Siordia, C., J. Saenz, and S.E. Tom. 2012. An Introduction to Macro-Level Spatial Nonstationarity: A Geographically Weighted Regression Analysis of Diabetes and Poverty. *Human Geographies*, 6.2, 5-13.

Siordia, C., and D. F. Wunneburger. 2013. On the Quantity, Degree, and Location of Public Use Microdata Area (PUMA) Fragmentation. *Human Geographies*, 7(2): 5-13.

Snijders, T.A.B., and R.J. Bosker. 1999. *Multilevel Analysis. An Introduction to Basic and Advanced Multilevel Modelling.* London: Sage.

Timberlake, J.M. 2007. Racial and Ethnic Inequality in the Duration of Children's Exposure to Neighborhood Poverty and Affluence. *Social Problems*, 54, 319-342.

Xiong, Y. 2012. Social inequality and inclusive growth in China: the significance of social policy in a new era. *Journal of Poverty and Social Justice*, 20, 277-290.

AUTHOR'S BIOGRAPHY

Dr. Siordia is a US-born Mexican-American who was raised in Guadalajara, Jalisco, Mexico until the age of 10. After living for most of his live in Texas (USA) he now resides in Pennsylvania (USA), where he works at the Center for Aging and Population Health as a Postdoctoral Scholar with funding from the National Research Service Award from the National Institutes of Health. Dr. Siordia is primarily driven by the idea that both internal and external factors have the ability to influence economic and health well-being over the lifecourse.