Health Insurance Disparities among Hispanics in the United States

Author

Luigi Crevoisier

Abstract

This paper investigates how the rate of uninsured Hispanics is affected by the limited proficiency in English (acculturation variable). The rates of uninsurance of Hispanics is almost double the national average for the United States and policy makers have been struggling to develop solutions to address this issue. While the high cost of health insurance is thought to be affecting access to healthcare, it alone does not explain the racial disparities that exist in uninsurance rates. In this paper, I have used the Ordinary Least Squares Regression method to study what factors affect uninsurance among different Hispanic groups. The results indicate that limited English proficiency is a significant factor affecting access to insurance, in addition to other socioeconomic and cultural variables. The results are consistent with the literature supporting that lack of acculturation to US culture and self-employment has a positive effect on the percent of uninsured Hispanics. Furthermore, factors such as income, school attainment and being US native have a negative relationship to the percent of uninsured Hispanics. The results have major policy implications regarding the measures that the government needs to take in order to address the issue of racial disparities in uninsurance rates, including increasing the availability of medical information and services in Spanish.

Table of Contents

I. Introduction

Access to healthcare is a controversial policy topic in the United States and disparities in access to health insurance remain one of the major domestic issues that policymakers in the United States continue to struggle with. The Affordable Care Act (ACA), recently cleared by the Supreme Court, is a reflection of the government's attempt to address this problem as noted in National Federation of Independent Business V. Sebelius (2012). The ACA attempts to provide health insurance to the millions of uninsured Americans, including Hispanics, who cannot afford it, by reforming the health care system by mandating health care purchase requirement on all individuals and offering subsidies to buy private health plans or expanding the eligibility for public health insurance as remarked by The White House (2010).

The cost of health care in the United States is a significant barrier in health care access as the cost of insurance, drugs, and doctors can be prohibitive. According to the Cohen and Martinez (2004), the National Health Interview Survey in January-March 2012 estimated that 15.4 percent of people from all ages are uninsured; in other words, 47.3 million Americans did not have health insurance at the time of the interview. This is a major societal issue of concern given that health insurance is vital to encourage the population using health services which will produce better health results. In 2009, the Institute of Medicine (IOM) released a report containing strong evidence, from research studies in health insurance coverage, of the benefits of health insurance on the life of people and also analyzing potential factors responsible for the increasing number of uninsured people. These included the increasing cost of health premiums which surpasses the rates at which typical family income grows, decrease in the number of employer-sponsored health insurance (ESI), unemployment, and state budget cuts. The IOM states in its report that although there are safety net providers for uninsured people, health insurance appears to make a significant difference in health access and health outcomes. Acquiring health insurance allows people to access preventive health care and treatment which improve the quality of life and overall well-being of the population.

At the same time, it is important to note that the cost of health insurance is not the only feature that hampers people from accessing it. Other variables such as geographic location, English proficiency and culture can also play a big part. In this paper, I will focus on the health insurance disparities among Hispanics in the United States. Hispanics represent 16.7 percent of the United States population (313,914,040 people) according to U.S. Census Bureau 2012 population estimates. The rate of uninsurance among Hispanics is 37%, almost double the national figure of 15.4%. Furthermore, as the Hispanic population continues to grow rapidly, there are concerns that the population of uninsured people will significantly increase as well. Hispanics are the most disadvantaged of all ethnic groups, faring worse on developmental indicators than the remaining, non-Latino White, African Americans, Asian, and Native Americans Compared to other groups, they have the lowest educational attainment and a large proportion of people living in poverty. At the same time they are also the most diverse group, with people ranging from first generation immigrants with almost no formal education to three or more generations Americans with college degrees according to Brown et al (2000).

ACA's provision to obligate people living in the US to have health insurance seeks to reduce the percentages of uninsured people. However, the health improvements in the population resulting from the ACA are expected to reach a limit. This is because studies have shown that while health insurance is essential, it is not the only reason why some people do not access high-quality healthcare if at all. Thus, it is crucial to investigate and analyze other explanations for what prevents people from accessing health services or buying insurance in the first place. My hypothesis is that the high rates of uninsurance seen among Hispanics occur due to the limited English proficiency, the acculturation variable, of this group. In order to analyze, I will analyze this, I will use statistical analysis to identity what factors that have a direct and significant impact in the decision of individuals to obtain health insurance. Furthermore, the analysis will be divided by racial and cultural barriers in order to understand the different needs of different racial groups.

In the first section, there will be a literature review discussing the different type of potential variables to be used in the study. After this, there will be a discussion of the research methodology, including selection of variables and the metrics used to study the dependent and independent variables. Following this discussion, the results of the study will be presented and explained considering Hispanics as an aggregated and also divided in subgroups. Finally, there will be a discussion of the implications of the results on the how to address the disparities before and after the implementation of the ACA.

II. Literature Review

Health insurance has been studied empirically by many scholars and policy-makers. It has been used to study US-born individuals as well as the health status of immigrants. Two main schools of thought exist regarding potential explanations for the disparities in levels of health insurance. The first school of thought claims that health insurance disparities have been thought to have a main root in the language and cultural differences between the country of origin and family ancestry of an individual. Limited English proficiency, adaptation to the American culture, and preservation of cultural identity are examples of other potential factors influencing the acquisition of health insurance. According to the second school of thought, health insurance disparities are thought to be caused by the socioeconomic reality of the individuals. For example, type of employment, school attainment, income, etc. fall in this category and have been documented in many studies focusing in Hispanics and other minorities.

1. Cultural factors

Solis et al (1990) examined the relationship between language and health care and claim that Spanish speakers are less likely to use healthcare services compared with English-speaking Hispanics. Spanish speakers were less likely than English-speaking Hispanics to have a usual source of health care. Furthermore, people with no usual source of care were least likely to see a physician or to have their blood pressure checked, whereas those with a regular doctor appeared to have the greatest access (Schur and Albers 1996).

As scholarship suggests, the language barrier is one of the most important factors influencing access of Hispanics to health insurance as well as their lack of healthcare coverage and visits to health facilities. The lack of proper interpreter services for people with no fluency in the English language affects their access to health care (Jacobs et al. 2001) (Woloshin et al. 1995).

Lack of healthcare providers that speak their native language is likely to be a cause to why non-bilingual Spanish speakers do not obtain insurance (Carrasquillo et al. 1999).

2. Socioeconomic factors

Income and nature of employment are two of the major factors believed to influence the rates of uninsurance amongst Hispanics. Some studies show that immigrants tend to rely on employers for health insurance, making the occupation and industry in which they work one of the most important causes of their health coverage status. Alegria et al. support that there are significant differences between the rates of uninsured Hispanic subgroups, with Mexicans observed to be the group with highest uninsurance rate of 45 percent and the overall uninsurance rate among Hispanics reaching 37 percent (2005). Additionally, Carasquillo et al. (2000) studied the rates of employer-sponsored health coverage and found that approximately 50% of immigrants who work full time had employer-sponsored insurance; Immigrants from Guatemala, Mexico, and El Salvador were found to be less likely to obtain insurance through their employer. Furthermore, among the immigrants, the full time workers who earned more than 35,000 dollars per year were three times as likely to get insurance as those who earned less than 15,000 dollars per year.

Trevino et al (1991) found that one third of the Mexican-American population, one fifth of the Puerto Rican population, and one fourth of the Cuban-American population lack health insurance while one fifth of non-Hispanic black and one tenth of the non-Hispanic whites do not have health insurance. In addition, uninsured Hispanics are less likely to have a regular source of health care, have visited a physician in the past year, less likely to have had a routine physical examination, and to rate their health status as excellent or very good.

According to Estrada et al (1990) the findings of their study suggest that low income groups, younger age groups, the less acculturated, those with functional limitations, and those in poorer health status encounter more barriers to access health care. In addition, Trevino et al (1996) state uninsured Mexican Americans, who are mostly poor and less educated, are those in most need of health care. These uninsured Mexican Americans who most need the health care are also the least likely to receive it. An important insight of this study was that when Mexican Americans have health insurance, they do not use the health services available. This result could give an insight on how there could be a need to have health related campaigns to inform people that there are state programs that could provide them health insurance. Trevino et al (1996) also state that there is an imperative need to insure this segment of the population because of their age, as most of them are young adults which translate into a large portion of the workforce.

Addressing the concerns brought up in anti-immigration rhetoric that undocumented immigrants take advantage of welfare programs to access health care, Ortega et al (2007) used statistical analysis to demonstrate that Hispanic residing illegally in the United States use less health care, do not support public concern about immigrants' overuse of the health care system, and have more negative experiences with the health care that they have received. Therefore undocumented individuals demonstrate less use of health care than US-born citizens. The findings demonstrate that immigrant's authorization status is an important determinant of health care access and patterns of use of services among Hispanics.

Cutler and Lleras-Muney (2006) studied the relation between education and health status, and they presented evidence of the positive relationship between these two variables. In their study, individuals with more education are able to understand the need and benefit of acquiring health insurance to observe with a healthy behavior. Furthermore, being more educated meant that they were more likely to understand how to access and use health insurance and health services, thus making them more able to access health care facilities.

Toussaint-Comeau (2008) states that ethnic networks play a positive role in the likelihood that immigrants will choose self-employment as an alternative to wage employment. This in turn means that the burden of getting health insurance then falls on the self- employed people, there establishing that there exists a relationship between self- employment and health insurance. When individuals are self- employed, they are less likely to be insured given that the burden of paying for insurance falls completely upon them. Further, they are more likely to prioritize adding capital to their business or work over spending the amount of getting insurance.

The schools of thought presented reinforce the idea of a combination of socioeconomic and cultural factors are necessary to understand in better detail the extent of the effect of each variable affecting uninsurance rates. Socioeconomic variables such as income, employment type, school attainment are variables to consider on top of cultural ones such as the birth place and the acculturation to the US culture.

III. Data and methodology

1. Source

The source of the data used for this paper is the American Community Survey (ACS) three years estimate for the years 2009-2011 by the Census Bureau. The ACS collected its data through mail questionnaires', in-person interviews, and phone calls. This database contains data on health insurance, demographics, and socioeconomic characteristics of the sample to be studied. The data from the years stated above are averaged to create this dataset. The ACS is designed to classify members of the different ethnicities, including Asian or Pacific Islander, American Indian, White, or Black and their Hispanic origin or family ancestry if applicable. All the subjects who reported being of Hispanic origin were classified as Hispanic regardless of their race. An advantage of the database is that it contains information on a significant amount of Hispanics in the sample and also contains information about their Hispanic origin ancestry.

2. Separation of Hispanics into ethnic categories

For effective policy making, it is important to consider that Hispanics are not a monolithic group as it has been presented by most studies. Weinick et al (2004) stated that the Hispanic population suffers from the misconception of being a monolithic population ignoring the diversity within this population, which becomes a barrier to providing appropriate care to Hispanics. Different Latin-American countries exhibit extremely different social and cultural aspects. Therefore, it is important to take into consideration the different needs of each Hispanic subgroup. In the Hispanic Population: 2010 Census Brief, Hispanics in the United States are subdivided into

23 ethnic groups by country of origin: Mexican, Puerto Rican, Cuban, Dominican, Other Hispanic or Latino, Costa Rican, Guatemalan, Honduran, Nicaraguan, Panamanian, Salvadoran, Other Central American, Argentinean, Bolivian, Chilean, Colombian, Ecuadorian, Paraguayan, Peruvian, Uruguayan, Venezuelan, Other South American, and Spaniard. In my analysis, I divide the groups to be studied as follows: Mexican, Cuban, Puerto Rican, Central Americans and Caribbean, and South Americans and Spaniards. This classification is based on a previous study on Hispanics conducted by Weinick et al (2004) study in order to identify the characteristics of each of these groups.

3. Classification by PUMAs

The ACS includes the Public Use Microdata Areas (PUMAs) which are areas where the population is at least 10,000 and the limits of these do not cross state bounds; this essentially gives us groups of individuals with data on a variety of measure in the form of percentages of individuals exhibiting those characteristics in the area. In my study I use the data available on 624 PUMAs, which covers 1,154,479 people with ages up to 65 years old living in these areas. The dataset for this analysis contains PUMAs from the continental states, Puerto Rico and Hawaii; therefore, the compiled data contains the 23 subgroups of Hispanics from the Census and almost all US locations. Using PUMAs as observations is a procedure that has not been used in prior literature; therefore, I hope to provide new insight by pioneering this approach to analyzing health insurance disparities at that level.

Based on the literature review, socioeconomic factors as well as cultural factors were analyzed with percent of uninsured Hispanics. An Ordinary Linear Regression (OLS) was run to identify the most highly correlated factors to our dependent variable. This method was chosen to analyze the data as all the variables have linear trends. To overcome problems that could bias our results such as outliers, robust standard errors were used. In addition, the correlation between the independent variables in the model was checked for multicollinearity which is the high correlation between explanatory variables which potentially biases standard errors and coefficients of the all other variables, to ensure the accuracy of the model. This was done both at the aggregate level and at the subgroups level.

The software used to analyze the data is Stata 12.1. As in prior studies, income, education, and employment status will be included in addition to cultural variables such as percentage of US-born Hispanics and Limited proficiency in English. The dependent variable for this study is percentage of uninsured Hispanics. The independent variables will be the percent of Hispanics who have studied 12 years or more (high school graduate, equivalent or higher education), median Hispanic household income, percent of self-employed Hispanics, percent of US-born Hispanics, and Limited English Proficiency. All these variables are calculated for each PUMA. The Limited English Proficiency's (LEP) variable purpose is to measure the acculturation of the individuals to the United States culture and health system; therefore, it is the hardest variable to measure. The variable used from the ACS to measure the level of acculturation is the language spoken at home variable because it takes into consideration not only the language proficiency but also the integration of the English language and American culture in the everyday life of the subjects included in each PUMA.

4. Model

The OLS model for this study has the following form:

$$\%\,\boldsymbol{Uninsured\ Hispanics} = \boldsymbol{\beta_1} + \boldsymbol{\beta_2}(\%\boldsymbol{Hsorhigher}) + \boldsymbol{B_3}(\boldsymbol{Median\ Income}) + \boldsymbol{B_4}(\%\boldsymbol{Selfemployed}) + \boldsymbol{B_5}(\%\boldsymbol{Native}) + \boldsymbol{B_6}(\%\boldsymbol{LEP}) + \boldsymbol{\varepsilon}$$

where

%Hsorhigher = Percent of Hispanics who graduated from high school or higher education

Median_Income= Median Household Income

%Selfemployed= Percent of self-employed Hispanics

%Native = Percent of US Born Hispanics

%LEP= Limited English Proficiency (Percent of Hispanics who speak Spanish at home)

B_1 = constant

IV. Descriptive Statistics

The following descriptive statistics table portraits the population being studied. The sample demonstrates the significance and usefulness of having disaggregated data for policy making. Consistent with the Hispanic Population 2010 Census Brief, the sample shows that 37 percent of Hispanics are uninsured which is more than double the general percentage of uninsured people in the United States covering both Hispanics and non-Hispanics (15.7 percent). Nevertheless, when looking at uninsured Hispanics by groups, the percentage differs significantly. Mexicans and Central Americans & Caribbean have high rates above 32 percent, again double the national average. Cubans and South Americans and others are the next two groups with highest percentages 25.4 and 23.2 percent respectively. Puerto Ricans are the only group that is below national average with 15.4%. This could have an explanation. Puerto Ricans have high levels of exposure to the American health system and culture. Therefore, Puerto Ricans are not strangers to the mechanics of the American life style in which health insurance is an essential part. Thus, a primary analysis of the individuals of my study explains the reasoning that Hispanics are not a monolithic group with the same needs for each subgroup.

Summary Statistics Table: Sociodemographic and Insurance Characteristics of Hispanics in the United States

	Aggregate	Hispanic Subgroups				
	Hispanics	**Mexican**	**Puerto Rican**	**Cuban**	**Central Americans**	**South Americans and Spaniards**
Number of observations	115479	762640	104923	38710	124152	124054
Age (%)						
Under 18	35.8	38.2	35.2	25.7	30.5	30.4
18 to 34	28.5	28.6	27.7	23.6	32.1	26.9
Up to 65	35.7	33.3	37.2	50.7	37.4	42.7
Sex (%)						
Male	50.7	51.3	49.5	51.0	50.2	48.5
Female	49.3	48.7	50.5	49.0	49.8	51.5
Household Income (%)						
Under $25,000	22.1	22.9	25.6	17.6	21.4	16.4
$25,000-$75,000	46.7	48.3	38.8	40.8	47.6	42.2
Over $75,000	30.2	27.4	34.6	40.4	29.8	40.4
Nativity (%)						
U.S. Born	665	66.5	98.9	50.2	41.0	60.4
Foreign Born	345	33.5	1.1	49.8	59.0	39.6
Education (%)						
<12 years	486	52.9	41.4	29.6	49.3	33.6
12 years	0.2	19.7	21.2	24.0	19.9	19.5
>12 years	314	27.4	37.4	46.4	30.8	46.9
Occupation (%)						
Self-employment	4.4	3.9	2.5	7.8	5.8	6.5
Employed	49.6	47.7	50.2	56.0	53.8	54.3
Unemployed	46.0	48.4	47.3	36.3	40.3	39.2
Insurance Type (%)*						
Insured	70.2	67.7	84.6	74.6	65.3	76.8
Employer	39.5	36.9	46.1	49.7	35.7	50.6
Self-Purchased	5.8	5.0	6.1	9.2	5.5	9.3
Medicare	1.8	1.6	3.4	2.4	1.5	2.0
Medicaid	26.6	27.5	33.4	16.9	26.0	19.0
Uninsured	29.8	32.3	15.4	25.4	34.7	23.2

*Insurance categories are not mutually exclusive (e.g. Medicare and Medicaid).

Source: American Community Survey; Census Bureau 2009-2013- Year Survey Data

Results

The results of the multivariate linear regression as shown in Table 1 of appendix 1 show that all the variables except LEP are significant at the .01 level. LEP's p value was .05 which makes it only significant at the 0.10 level in this two tailed analysis. The R squared value is 66.1% meaning its explanatory power lies in the moderate to high range. Therefore, the variables selected

for this analysis do have a significant impact in the rates of uninsured people. Thus, the hypothesis that the percent of uninsured Hispanics in the US is affected by a combination of socioeconomic and cultural factors is supported by the results of this analysis.

Multivariate Model Results: Hispanic Aggregate

	Hispanic
hsorhigher	-0.335***
	(0.0304)
median_income	-0.00000197***
	(0.000000173)
native_rate	-0.259***
	(0.0275)
LEP	0.243*
	(0.124)
selfemployed	1.064***
	(0.139)
Constant	0.436***
	(0.129)
Observations	624
R-squared	0.661

Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

The educational attainment, median income, and nativity variable have a negative relationship to the dependent variable meaning that that as these increase, more Hispanics will obtain health insurance- decreasing the uninsurance rate. Self-employment, however, has a positive relationship with the rates of uninsurance. A potential explanation could be that getting health insurance implies an extra economic burden that business owners, particularly entrepreneurs, have to face. Some business owners have to provide health insurance to their employee which is already a big liability to deal with; as consequence, some of these business owners choose to trade-off the option of getting health insurance with retaining profits. LEP also has a positive relation with unisurance rates, and while still significant, it is not as significant as the rest of the independent variables. Given its importance in the study, further analysis is performed.

The correlation matrix (Table 2) of this model shows us that all the independent variables, as in real life, have some degree of relation; however, for this model, these variables are not excessively correlated. In order to investigate the significance of LEP in the model, we compare our basic model with all the variables (Model 1) with a model excluding only LEP (Model 2) and a model excluding the socioeconomic variables that have the highest correlation with LEP (Model 3), which are the percent of high school graduate or higher, median household income and self-employment (Table 3). We see that in the third model, where we remove the percent of high school

graduate or higher, median household income and percent of self-employment, the LEP coefficient is big enough, meaning that it is a significant variable; this is supported by its p-value which is significant at the 0.01 level (table 3). As consequence, LEP's significance is only significant at the 0.10 level in model 1 due to multicollinearity.

Analysis of Hispanics by Disaggregation into different ethnic groups

In this section, the regression was broken down to individually analyze the results for each ethnic group. The results of the regressions for each group are consistent with the aggregate results; however, some variables are not significant for certain groups. The following regressions also have robust standard errors to increase the accuracy of our model.

Multivariate Model per Ancestry or Country of Origin Results

	Mexicans	PR	Cubans	CAC	SAO
hsorhigher	-0.175***	-0.160**	-0.385***	-0.294***	-0.381***
	(0.0602)	(0.0617)	(0.0634)	(0.0423)	(0.0545)
median_income	-0.00000169***	-0.00000210***	-0.00000156***	-0.00000137***	-0.00000172***
	(0.000000252)	(0.000000356)	(0.000000374)	(0.000000302)	(0.000000333)
native_rate	-0.236***	-0.533***	-0.513***	-2.457***	-0.449***
	(0.0230)	(0.118)	(0.171)	(0.272)	(0.0818)
LEP	0.164***	0.306*	0.467***	0.970***	0.233***
	(0.0345)	(0.181)	(0.124)	(0.139)	(0.0852)
selfemployed	1.882***	6.873***	-0.0452	1.686**	0.662
	(0.324)	(1.894)	(1.247)	(0.685)	(0.858)
Constant	0.450***	0.494***	0.561***	0.524***	0.579***
	(0.0374)	(0.0225)	(0.0276)	(0.0172)	(0.0226)
Observations	390	315	255	378	384
R-squared	0.499	0.413	0.436	0.552	0.419
Adjusted R-squared	0.493	0.403	0.425	0.546	0.412

Standard errors in parentheses
PR,CAC,SAO stand for Puerto Ricans, Central Americans & Others, and South Americans & Others respectively
* p<0.10, ** p<0.05, *** p<0.01

According to these results, Puerto Rican's LEP variable is not significant at the .05 significance level, only at the .1 significance level. However, as in the correlation matrix (table 4), self-employment is highly correlated to all the variables but the school attainment one. To test this, I constructed alternate models to identity the problem. Table 4 has three models: a model using all the variables, another one without the LEP variable, and the last one without self-employment variable. It was found that self-employment is the variable affecting LEP and causing it to not be significant at the .05 level in the first model. Therefore, LEP's significant discrepancies are due to multicollinearity, as confirmed by the variance inflation factors (VIF) in Exhibit 1. In addition the self-employed variable is not significant for Cubans and South Americans & Others. For these groups, the self-employment variable is highly correlated to the cultural variables (tables 5 and 7). Therefore, by having a model that excludes the self-employment variable and another for the cultural variables as it can be seen in tables 6 and 8, it can be concluded that the significance of

our variable is affected by multicollinearity. As with the aggregate results, each variable will be explained:

a. Educational Attainment

The effect of percent of high school graduates on the percent of uninsured is substantial for all groups. There is an inverse relationship between the school attainment variable and the percent of uninsured Hispanics which is consistent with the results from the aggregate result. This will confirm that education plays an important role in determining the percentage of health insurance for the all the Hispanic groups considered in this study, consistent with Cutler and Muney (2006).

b. Median Household Income

Median household income has a negative, pronounced relationship against percent of uninsured Hispanics. This is also a very consistent variable of this study; for all the subgroups, income is a strong determinant of whether or not people acquire health insurance. Consequently, having higher income makes an individual in any of the groups less likely to be uninsured.

c. Percentage Spanish Spoken at Home (Limited English Proficiency)

Consistent with the aggregate result, LEP has a positive relationship with the dependent variable. In this section, interpreting this variable is trickier than the other ones since the Spanish is the same household language for all the groups, but it is not always a deterministic factor. As an example, Puerto Ricans, who have a less significant coefficient, have access to the US land and English which makes them a special case of Hispanics who are more likely to integrate to the US life style and bilingualism has been a discussed topic for this group (Department of Education 1998). The explanation might lie in the levels of acculturation. A Hispanic family that has resided in the US for generations will eventually combine with the American culture and language or converge to it which will let them access more healthcare information.

d. Percentage of US-Born or Native Residents

The percent of US-born Hispanics had a negative relation to percent of uninsured as in the results from the aggregated model; all the groups have a negative slope, supporting model 1. This pattern supports the hypothesis that these subgroups have been acculturating overtime and the following generations will be more likely to be covered by a health insurance plan. It is important to note that age and time living in the US are important in this context as immigrants born outside the US have legal restrictions which affect their eligibility and prevent them from getting Medicare or Medicaid as health insurance programs. Therefore, this variable covers not only a cultural aspect but a legal aspect.

e. Percent of Self-employed Hispanics

Self-employment rate and the uninsurance rate have a positive relationship for all groups but Cubans. In addition, for Cubans and South Americans & Others, this variable is not significant for the regression. However, when as it can be seen in the appendix 2, this is could be caused by the high multicollinearity between this variable and LEP as language is also a barrier for

entrepreneurs, failing to access credit information or understand market information. In tables 6 and 8, a model without this variable was created as well as others without the variables with high multicollinearity to the employment variable. Factors that influence this result could be success in surviving the first years of the business or high profitability because self-employment is an alternative to a wage paying job that could potentially enhance the socioeconomic standing of these groups as stated by Toussaint-Comeau (2008).

V. Policy Implications

The results of this study have various implications for potential adjustment of the current health policy. For one, the eventual implementation of the ACA promises to close the gap of health disparities for Hispanics; however, the evidence found in this paper is that health insurance itself will not be the solution for better health outcomes and statistics but only one method towards the goal. In order to truly eliminate the disparity in access to health care and health insurance, the government needs to complement the lowering the cost of health insurance with several soft measures. The following paragraphs contain potential complements to ensure the effectiveness of the ACA

Cultural factors, as demonstrated in this study, have significant impact on whether or not a Hispanic gets health insurance. This paper has evidence that in PUMAs where the percent of US-born and English proficiency are high, the rate of insured people will be higher. Therefore, the groups less likely to get health insurance are the Hispanics with limited English proficiency and immigrants, and it is imperative to help them get informed and aided to integrate them to the US system. Targeted outreach and enrollment assistance will be crucial to make sure uninsured Hispanics take advantage of the new coverage provided by the ACA.

The disparity caused by cultural factors could be addressed through different policies. To assist Hispanic with limited English proficiency, The Department of Health and Human Services Office of Minority Health (OMH) as well as the Office of Civil Rights (OCR) should ensure that the federal and states health exchanges make available information in Spanish in areas where a substantial number of Hispanic reside. This includes pamphlets, brochures and information online.

Although most of Hispanics are born in the US, a large number of Hispanics immigrate to the U.S. every year. The ACA excludes new immigrants from its benefits, Medicaid or receipt of federal subsidies for health insurance. The Centers for Medicare & Medicaid Services (CMS) should consider a potential inclusion of immigrants if the ACA succeeds in addressing the health insurance gap.

The study also demonstrates that addressing socioeconomic inequalities is vital to closing the insurance gap. The correlation between school attainment and rates of uninsurance shows that education plays an important role in reducing the percentage of uninsured people and increasing access to health care. At the federal level, the Department of Health and Human Services Office of Minority Health (OMH) needs to educate foreign-born and also US-born citizens on the various aspects related to health insurance such as the health care system in the US and how to finance health insurance, paying special attention to the options that will be made available through the implementation of the Affordable Care Act.

Hispanic entrepreneurs and small business owners should have resources and information made available to them as they are less likely to purchase health insurance due to its cost affecting their profits and lives. The Affordable Care Act does provide tax credit to small businesses which encourages business owners to insure both, the employer and the employees, and has provisions excluding business owners who have fewer than fifty employees hired. As consequence, there is a possibility that some small businesses with just over 50 employees might reduce their number of employees to avoid having to purchase health insurance and avoid penalty fees stated by the ACA. Therefore, the U.S. Small Business Administration inform and encourage small business owners to take advantage of the tax credits provided by the implementation of the ACA.

Median household income was one of the most important in this study due to its correlation to the percent of uninsured Hispanics in all models. Therefore, by having policies that lower health insurance plans prices, there is a potential to put health insurance plans at the reach of people who did not consider it in the past due to cost. The Affordable Care will try to insure a great part of the population without health insurance coverage through the expansion of Medicaid eligibility for people with household income up to 133 percent of the federal poverty line; in addition, the ACA will also establish federal and state health insurance exchanges for people with household income up to 400 percent of the federal poverty line.

VI. Conclusion

Using data from the American Community Survey, the analysis done in this paper supported the hypothesis that the acculturation variable of limited English proficiency has explanatory power on the low rates of uninsurance seen among Hispanics. The paper also identified other socio economic and cultural factors that influence the rates of uninsurance, namely the household income, self- employment, education attainment level and being native US-born or immigrant. There is a considerable amount of correlation between the variables considered for the models of this paper which is why these variables need to be jointly considered in order to understand what drives the racial disparity in uninsurance rates in the United States. With the introduction of the Affordable Care Act, more Hispanics will be able to enroll in health insurance programs; therefore, the rates of insured Hispanics will decrease. However, as studied in this paper, increasing access to health care for Hispanics needs to go beyond a simple lowering of costs of health insurance. Policy makers should consider all of the other explanatory factors studied in this paper in order to make effective policymaking that will help eliminate the inequalities that exist in the access of Hispanics to health insurance and health care in the United States.

VII. Further Research

This paper tried to investigate health insurance disparities through Public Use Microstatistical Areas and found consistent results with prior literature. Further research could potentially use Metropolitan Statistical Areas for a health insurance urban and regional study. Moreover, another data source that could be used to study the same topic is the Medical Expenditure Panel Survey (MEPS)

VIII. Work Cited

"America's Uninsured Crisis: Consequences for Health and Health Care." *Institute of Medicine*. Accessed October 6, 2013.

Brown R, Ojeda V, Wyn R, et al. Racial and Ethnic Disparities in Access to Health Insurance and Health Care. Los Angeles, CA: UCLA Center for Health Policy Research (2000).

Carrasquillo, O, E J Orav, T A Brennan, and H R Burstin. "Impact of Language Barriers on Patient Satisfaction in an Emergency Department." *Journal of General Internal Medicine* 14, no. 2 (February 1999): 82–87.

Cohen, Robin and Martinez, Michael. Health Insurance Coverage: Early Release Estimates From the National Health Interview Survey, January–March 2012. National Center for Health Statistics. (2012).

Cooper, P F, and B S Schone. "More Offers, Fewer Takers for Employment-based Health Insurance: 1987 and 1996." *Health Affairs (Project Hope)* 16, no. 6 (December 1997): 142–149.

Department of Education of Puerto Rico. "Bilingüismo" (1998)

Ennis, S. R., M. Rios-Vargas, and N. G. Albert. "The Hispanic population: 2010 (Census Brief C2010BR-04). Washington, DC: US Census Bureau." (2011).

Estrada, A L, F M Trevino, and L A Ray. "Health Care Utilization Barriers Among Mexican Americans: Evidence from HHANES 1982-84." *American Journal of Public Health* 80, no. Suppl (December 1990): 27–31.

Jacobs, Elizabeth A, Diane S Lauderdale, David Meltzer, Jeanette M Shorey, Wendy Levinson, and Ronald A Thisted. "Impact of Interpreter Services on Delivery of Health Care to Limited-English-proficient Patients." *Journal of General Internal Medicine* 16, no. 7 (July 2001): 468–474. doi:10.1046/j.1525-1497.2001.016007468.x.

Ortega, Alexander N, Hai Fang, Victor H Perez, John A Rizzo, Olivia Carter-Pokras, Steven P Wallace, and Lillian Gelberg. "Health Care Access, Use of Services, and Experiences Among Undocumented Mexicans and Other Latinos." *Archives of Internal Medicine* 167, no. 21 (November 26, 2007): 2354–2360. doi:10.1001/archinte.167.21.2354.

Schur, C L, and L A Albers. "Language, Sociodemographics, and Health Care Use of Hispanic Adults." *Journal of Health Care for the Poor and Underserved* 7, no. 2 (May 1996): 140–158.

Solis, J M, G Marks, M Garcia, and D Shelton. "Acculturation, Access to Care, and Use of Preventive Services by Hispanics: Findings from HHANES 1982-84." *American Journal of Public Health* 80 Suppl (December 1990): 11–19.

The White House. Health Reform for Latinos: The Affordable Care Act Gives Latinos Greater Control Over Their Own Health Care. (2010).

Toussaint-Comeau, Maude. *Do Ethnic Enclaves and Networks Promote Immigrant Self-Employment?* SSRN Scholarly Paper. Rochester, NY: Social Science Research Network, November 7, 2008.

Treviño, F M, M E Moyer, R B Valdez, and C A Stroup-Benham. "Health Insurance Coverage and Utilization of Health Services by Mexican Americans, Mainland Puerto Ricans, and Cuban Americans." *JAMA: The Journal of the American Medical Association* 265, no. 2 (January 9, 1991): 233–237.

Treviño, R P, F M Treviño, R Medina, G Ramirez, and R R Ramirez. "Health Care Access Among Mexican Americans with Different Health Insurance Coverage." *Journal of Health Care for the Poor and Underserved* 7, no. 2 (May 1996): 112–121.

Valdez R, Morgenstern H, Brown E, Wyn R, Wang C, and Cumberland W. "INsuring Latinos Against the Costs of Illness." *JAMA* 269, no. 7 (February 17, 1993): 889–894. doi:10.1001/jama.1993.03500070069031.

Weinick, Robin M, Elizabeth A Jacobs, Lisa Cacari Stone, Alexander N Ortega, and Helen Burstin. "Hispanic Healthcare Disparities: Challenging the Myth of a Monolithic Hispanic Population." *Medical Care* 42, no. 4 (April 2004): 313–320.

Woloshin S, Bickell NA, Schwartz LM, Gany F, and Welch H. "Language Barriers in Medicine in the United States." *JAMA* 273, no. 9 (March 1, 1995): 724–728. doi:10.1001/jama.1995.03520330054037.

IX. Appendix 1: Hispanic Aggregate

Table 1 Correlation Matrix Hispanic Aggregate

	hsorhigher	median_income	native_rate	LEP	selfemployed
hsorhigher	1				
median_income	0.524***	1			
	(0.000)				
native_rate	0.249***	0.192***	1		
	(0.000)	(0.000)			
LEP	-0.314***	-0.237***	-0.191***	1	
	(0.000)	(0.000)	(0.000)		
selfemployed	0.339***	0.146***	-0.413***	0.0164	1
	(0.000)	(0.000)	(0.000)	(0.683)	

p-values in parentheses
* p<0.10, ** p<0.05, *** p<0.01

Table 2 Multivariate Model Results: Hispanic Aggregate

Multivariate Model Results: Hispanic Aggregate

	Model 1	Model 2	Model 3
hsorhigher	-0.335***	-0.348***	
	(0.0304)	(0.0300)	
median_income	-0.00000197***	-0.00000200***	
	(0.000000173)	(0.000000174)	
native_rate	-0.259***	-0.261***	-0.447***
	(0.0275)	(0.0274)	(0.0300)
LEP	0.243*		1.063***
	(0.124)		(0.410)
selfemployed	1.064***	1.087***	
	(0.139)	(0.138)	
Constant	0.436***	0.685***	-0.483
	(0.129)	(0.0185)	(0.411)
Observations	624	624	630
R-squared	0.661	0.659	0.375

Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

X. Appendix 2: Hispanic subgroups

Puerto Ricans

Table 3: Correlation Matrix Puerto Ricans

	hsorhigher	median_income	native_rate	LEP	selfemployed
hsorhigher	1				
median_income	0.493***	1			
	(0.000)				
native_rate	0.345***	-0.0225	1		
	(0.000)	(0.657)			
LEP	0.342***	-0.0664	0.981***	1	
	(0.000)	(0.190)	(0.000)		
selfemployed	0.444***	0.0851	0.817***	0.805***	1
	(0.000)	(0.132)	(0.000)	(0.000)	

p-values in parentheses
* p<0.10, ** p<0.05, *** p<0.01

Table 4 Multivariate Models Puerto Rican Results

Multivariate Models Puerto Rican Results

	model 1	model 2	model 3
hsorhigher	-0.160**	-0.146**	-0.213***
	(0.0617)	(0.0600)	(0.0523)
median_income	-0.00000210***	-0.00000223***	-0.00000212***
	(0.000000356)	(0.000000338)	(0.000000317)
native_rate	-0.533***	-0.344***	-0.541***
	(0.118)	(0.0385)	(0.129)
LEP	0.306*		0.513**
	(0.181)		(0.208)
selfemployed	6.873***	6.983***	
	(1.894)	(1.895)	
Constant	0.494***	0.492***	0.533***
	(0.0225)	(0.0223)	(0.0193)
Observations	315	315	390
R-squared	0.413	0.408	0.466
Adjusted R-squared	0.403	0.401	0.461

Standard errors in parentheses
PR stands for Puerto Ricans
* p<0.10, ** p<0.05, *** p<0.01

Cubans

Table 5: Correlation Matrix Cubans

	hsorhigher	median_income	native_rate	LEP	selfemployed
hsorhigher	1				
median_income	0.522***	1			
	(0.000)				
native_rate	0.573***	0.206***	1		
	(0.000)	(0.000)			
LEP	0.519***	0.0912*	0.933***	1	
	(0.000)	(0.079)	(0.000)		
selfemployed	0.559***	0.101	0.928***	0.976***	1
	(0.000)	(0.106)	(0.000)	(0.000)	

Table 6 Multivariate Models Cuban Results

Multivariate Models Cuban Results

	model 1	model 2	model 3
hsorhigher	-0.385***	-0.459***	-0.375***
	(0.0634)	(0.0494)	(0.0614)
median_income	-0.00000156***	-0.00000143***	-0.00000187***
	(0.000000374)	(0.000000345)	(0.000000368)
native_rate	-0.513***	-0.493***	
	(0.171)	(0.160)	
LEP	0.467***	0.493***	
	(0.124)	(0.0718)	
selfemployed	-0.0452		2.184***
	(1.247)		(0.479)
Constant	0.561***	0.590***	0.567***
	(0.0276)	(0.0216)	(0.0250)
Observations	255	363	260
R-squared	0.436	0.444	0.416
Adjusted R-squared	0.425	0.438	0.409

Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

South Americans & Others

Table 7: Correlation Matrix South Americans & Others

	hsorhigher	median_income	native_rate	LEP	selfemployed
hsorhigher	1				
median_income	0.466***	1			
	(0.000)				
native_rate	0.525***	0.264***	1		
	(0.000)	(0.000)			
LEP	0.609***	0.288***	0.649***	1	
	(0.000)	(0.000)	(0.000)		
selfemployed	0.595***	0.292***	0.577***	0.907***	1
	(0.000)	(0.000)	(0.000)	(0.000)	

p-values in parentheses
* p<0.10, ** p<0.05, *** p<0.01

Table 8: Multivariate Models South Americans and Others Results

Multivariate Models South Americans and Others Results

	model 1	model 2	model 3
hsorhigher	-0.381***	-0.367***	-0.384***
	(0.0545)	(0.0552)	(0.0532)
median_income	-0.00000172***	-0.00000174***	-0.00000172***
	(0.000000333)	(0.000000338)	(0.000000328)
native_rate	-0.449***	-0.383***	-0.453***
	(0.0818)	(0.0730)	(0.0819)
LEP	0.233***		0.302***
	(0.0852)		(0.0489)
selfemployed	0.662	2.237***	
	(0.858)	(0.522)	
Constant	0.579***	0.573***	0.581***
	(0.0226)	(0.0228)	(0.0221)
Observations	384	384	391
R-squared	0.419	0.410	0.427
Adjusted R-squared	0.412	0.404	0.421

Standard errors in parentheses
SAO stands for South Americans and Others
* p<0.10, ** p<0.05, *** p<0.01

Exhibit 1

Puerto Rican's VIF

Variable	VIF	1/VIF
selfemployed	3.48	0.287156
native_rate	3.19	0.313324
hsorhigher	1.62	0.615536
median_inc~e	1.37	0.729445
Mean VIF	2.42	

Cuban's VIF

Variable	VIF	1/VIF
hsorhigher	2.17	0.461718
selfemployed	1.58	0.634461
median_inc~e	1.50	0.664985
Mean VIF	1.75	

South Americans and other's VIF

Variable	VIF	1/VIF
LEP	2.09	0.479583
hsorhigher	1.93	0.518038
native_rate	1.81	0.551598
median_inc~e	1.28	0.782309
Mean VIF	1.78	