2019

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Second-Generation Mexican Immigrants: How Do They Fare in the U.S. Labor Market?

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I.   Introduction

Discussions regarding immigrants and their economic output in the United States have been on-going for quite some time now. The policies surrounding the topic significantly affect immigration from the country which the United States accepts the most immigrants, Mexico. In 2017, the Pew Research Center found that 11.2 million immigrants living in the U.S. were from Mexico, accounting for 25% of all U.S. immigrants (China being the next largest at 6%). Additionally, the Pew Research Center projects that immigrants and their U.S. born descendants will account for 88% of U.S. population growth through 2065, assuming current immigration trends continue. This points toward a significant factor to consider, from both the political and economic perspectives – the assimilation and performance of the second generation of Mexican immigrants in the U.S. labor market. Analysis of such a large portion of our current and projected population is imperative in order to provide a large-scale representation of their economic effects in the United States.

In 1977, Chiswick came to the general conclusion that second-generation immigrants in the United States have experienced upward income mobility, earning higher wages than their parents. This paper will attempt to explain why this is and how the specific parental combinations making up each second-generation immigrant affects their labor market potential. While there is plenty of research on the first generation of Mexican immigrants, there is not as much research on the assimilation of the second generation. We cannot know the full effect of immigrants on the economy without knowing how their children, who would not be here if not for the first generation, perform in the economy. This paper contributes to the literature by examining and comparing wages of natives with both the first and second generation of Mexican

immigrants, as well as other immigrants. To more specifically analyze the second generation, we subcategorize them into three groups:1) both parents being born in Mexico, 2) one parent being born in Mexico and one parent born in the U.S., and 3) one parent being born in Mexico with one parent from any other country that is not the U.S. or Mexico. This will give a better idea of the outcomes of different parental combinations on their children's performance.

Both descriptive statistics and regression analysis of earnings will be used to examine the second-generation of Mexican immigrants relative to the first-generation, natives and other immigrants. The descriptive statistics focus on how the human capital characteristics of the second-generation compares to the characteristics of the other three groups. After the descriptive statistics are presented and discussed, regression analysis of the earnings of full-time employed individuals within the groups are studied.

The regression results account for demographic and educational variables as controls to allow for in-depth analysis on which factors most greatly influence wages and salaries in our sample. Finally, a dissimilarity index to measure differences in the distributions of educational attainment between groups of immigrants and natives is constructed. The Pearson Chi Square statistic is then used to determine if those distributions are "statistically" different from each other. The findings of this research paper could help inform the policy discussion that relates to the quantity and quality of education of immigrants and their children, thereby enhancing this substantial portion of our labor force. The institutions by which the United States assists each specific group of the second-generation of immigrants may be modified to aid those with disadvantages, economically improving our country as a whole.

II.   Theory & Hypothesis

        Human capital theory is the most suitable framework to examine and compare the wages of second-generation immigrants to the first generation and natives. The theory attributes investments in human capital, such as training experience and education, to an increase in skills, knowledge and ability in individuals, thereby leading to higher economic benefit in the labor market. From grade school to university to the workforce, each bit of knowledge gained along one's educational path (social, technical or otherwise) theoretically contributes to their ability to produce outcomes that will benefit them in the form of monetary income. Worth noting is the difference in acquired skill sets between United States natives and Mexican immigrants in the U.S. labor market. Education and training obtained in Mexico will not translate as well to the U.S. labor market as education and training within the United States will translate to the U.S. labor market (Borjas 1999).

        A factor to consider when analyzing the second-generation of Mexican immigrants' ability to progress in their levels of human capital in the United States is their reluctance to leave their home areas. Djajić (2003) points out immigrants' tendencies to concentrate in geographic locations within the host country because they can enjoy the benefits of the already established ethnic networks. These established ethnic networks are beneficial to the immigrants emotionally and socially, but may lead to limitations if it is a lower income area. Sanford (2002) details this phenomenon., "However, in choosing to live with other Mexican immigrants, they are choosing to live with people who have, on average, relatively little education, low English language skills, and scant earning power. Thus, employers will be less likely to open businesses and stores in Mexican neighborhoods, and simply by choosing to live among other Mexican immigrants they

4

are often choosing to live in economically depressed neighborhoods. Even the best and the brightest of the Mexican immigrants may be "pulled back" towards the "average" Mexican immigrant" (Sanford, 2002). If the second generation is subject to poor school districts and an environment that perpetuates a lack of assimilation to modern U.S. education and technological skill development, then those individuals will not have the opportunities and advantages that those in a higher income area might have.

Further developing the importance of education to human capital, research conducted by Derek Hum and Wayne Simpson (2007) found that "the role of education appears to be a crucial component to our understanding the wage and earnings gap between second generation immigrants and other native born. Educational differences between the second generation and other native born may depend on a variety of factors, one of the most important of which is the education of parents" (Hum and Simpson, 2007). Children are more likely to become what they are surrounded by, following in the niche footsteps of their parents (Seeborg 2012). The combination of parents with low educational attainment and economically limited school districts lowers the chances of a second-generation Mexican immigrant being able to achieve higher levels of education and human capital in the United States.

Conversely, Silverman found that "second-generation immigrants might receive higher levels of education in an environment where their parents are not completely assimilated to the host country" (Silverman, 2016). This trend can be attributed to the fact that the second-generation is speaking Spanish at home with unassimilated parents but learning English at school with other American children. This diversification of culture and language makes plausible the notion that the second-generation's adaptability could lead to better chances of higher levels of educational attainment.

Supplementary to human capital theory in this study is Roy's model (Borjas 2015), having to deal with positive and negative selection in immigration. In general, "selection" of immigrants to the U.S. depends on the degree of inequality in the source country, as well as the costs of immigration. Positive selection is expected when income inequality is low in the source country and when immigration costs are high from the source country to the host country. Inversely, we expect negative selection when income inequality is high in the source country and when the cost of immigration is low.

Hample discusses the reasons a Mexican might benefit from living in the United States, regardless of their levels of human capital, "In the case of Mexico, for instance, a poor person who does not receive a lot of government assistance can move to America and receive higher income through work and transfers. Thus, a Mexican with low human capital may benefit from living in the United States, even when they do not expect to obtain a high-skill job" (Hample, 2010). This is true and feasible for Mexicans with low human capital, serving as an example of negative selection. Opportunity and proximity to the United States give great incentive for Mexicans with low human capital to immigrate to the U.S. Countries such as China and Japan, however, immigrate to the United States because of their high levels of human capital, attaining higher levels of education. This serves as an example of positive selection in immigration.

The groups to be compared and analyzed in this study are U.S. born natives, first-generation Mexican immigrants, immigrants in the U.S. not from Mexico and the second generation of Mexican immigrants broken down into subgroups: individuals with both parents from Mexico, individuals with one parent from Mexico and one parent from the United States, and one parent from Mexico and one parent from any other country that is not Mexico or the

U.S. We break down the second generation of Mexican immigrants into these subcategories to see which specific parents lead to a more economically productive child.

Based on the factors and theories discussed, I expect groups with the highest levels of human capital to have the highest earnings. As discussed above, Mexican immigrants should be at an earnings disadvantage because of "negative selection" of many immigrants from Mexico. The second-generation of Mexican immigrants should do better than their parents because they have acquired much of their human capital in the United States. Additionally, the second-generation has the benefit of legal documents, where the first-generation might not. In her paper examining the transferability of human capital in the U.S. labor market among Latino immigrants to the U.S., Flores (2010) notes the occupational advantages that Nicaraguan immigrants receive from having legal documents, compared to first-generation Mexican immigrants who often do not have legal documents. Flores argues that "the contrasting treatment of Nicaraguans and Mexicans by U.S. immigration law seems to be responsible, at least in part, for their very different positions in the U.S. labor market". The second-generation will have these advantages over the first generation, but will still be at some disadvantage to natives due to the negative influence of "social capital" in their places of residence.

Non-Mexican immigrants are ranked below natives but above all Mexican immigrant groups because they should have lower social capital than natives and higher human capital than Mexican immigrants due to some positive selection. The second-generation cohorts are ranked in accordance with expected levels of capital available to them based on their parents. Having a U.S. native parent should be most beneficial in assimilation to the U.S., followed by having a foreign parent and two Mexican parents respectively.

For these reasons, I hypothesize the following ranking of wage and salary earnings of the six groups from highest to lowest:

1. U.S. born natives

2. Non-Mexican immigrants

3. 2nd Generation immigrant with one Mexican parent and one U.S. parent

4. 2nd Generation immigrant with one Mexican parent and one foreign parent

5. 2nd Generation immigrant with both parents from Mexico

6. 1st Generation Mexican immigrants

The following sections report the database, descriptive statistics, and empirical models that will be used to test these hypotheses.

III. Data

The data used in this study comes from the 2018 IPUMS current population survey (CPS) from the Minnesota Current Population Center (Flood, King, Rodgers, Ruggles & Warren, 2018). The CPS is jointly conducted by the U.S. Census Bureau and The U.S. Bureau of Labor Statistics and is primarily used to measure labor force statistics for the population within the United States. This database was utilized for this study due to its vast range of information available on first and second-generation immigrants in the United States including economic, demographic, and employment characteristics. Variables such as educational attainment, respondent's birthplace, and birthplace of the respondent's father and mother are among the key pieces of data that are critical to this study. In order to analyze the specific parental makeup of each second-generation Mexican immigrant and accurately compare them to natives, the first

generation Mexican immigrants and other first generation immigrants in the labor market, we needed to be able to filter and categorize the different types of second-generation Mexican immigrants into three groups: those with two parents from Mexico, those with one parent from Mexico and one parent from the United States, and those with one parent from Mexico and one parent from any other non-U.S. country. The sample extracted includes 108,593 total adult U.S. natives, first-generation Mexican immigrants, immigrants from any other country and second-generation Mexican immigrants. Respondents were labeled as "full-time employed" if they were aged 18-65 and worked at least 36 hours per week.

A noteworthy restriction in using this database is the lack of data on the English language proficiency of the respondents which can be a large factor in an immigrant's effectiveness in the U.S. labor market. Another limitation in using this dataset is the lack of information provided to describe the parents of the respondents. Second-generation immigrants taken from the same cross-section as first-generation immigrants omits our ability to analyze educational levels of the parents of the respondents which would have a large impact on the offspring's educational levels and, therefore, their likely U.S. labor market performance.

IV. Empirical Model

The following econometric model is a Mincerian earnings function and is used to analyze the wages of each group.

$$
\begin{aligned}
LnWage_i = {} & \beta_0 + \beta_1(Native_i) + \beta_2(FirstGenMex_i) + \beta_3(SecondGenBothMexParents_i) \\
& + \beta_4(SecondGenOneMexParentOneUSParent_i) \\
& + \beta_5(SecondGenOneMexParentOneForeignParent_i) \\
& + \beta_6(AllOtherImmigrants_i) + \gamma_1 D_i + \epsilon_1 E_i + u_i
\end{aligned}
$$

where, $LnWage_i$ is the natural logarithm of individual i's annual wage and salary earnings.

9

- The first six variables are dummy variables indicating the individual's specific immigration or nativity status.
- D_i is a vector for the included demographic variables (age, age squared, gender and marital status).
- E_i is a vector for the educational attainment of the individual, ranging from grade school to advanced degree.

The coefficients of the variables in the model will show the effect that the independent variables have on wages, ceteris paribus. The formal empirical model for this study uses the natural log of wages and salaries to measure the log point change in wages for each group. The natural log is used due to the wage distribution being truncated at zero and being highly right skewed. Without taking the natural log, we would most likely estimate some people making negative wages.

To contextualize the hypothesis within the model in correlation with the theory discussed above, we anticipate that $\beta_1 > \beta_6 > \beta_4 > \beta_5 > \beta_3 > \beta_2$. If the slopes hold true to this order, then the hypothesis will be supported.

The following table defines the variables in the model and gives the expected sign (positive or negative) that each variable will have. The expected sign communicates the variable's expected effect on our dependent variable, LnWages. The reference group (i.e. omitted variable) is the natives in the sample and the reference group for the educational attainment category is those who did not graduate from high school.

Table 1: Summary of Variables Table		
Variable	**Description**	**Expected Sign**
Dependent		

LnWages	Natural Log of Individual Earnings from Salary and Wages	
Independents		
First-generation		
Mexican Immigrant	Dummy Variable where 1 = First-generation Mexican Immigrant	Negative
Second-generation		
Both Mexican Parents	Dummy Variable where 1 = Mexican Immigrant Father & Mexican Immigrant Mother	Negative
One Mexican Parent / One Native Parent	Dummy Variable where 1 = One Mexican Parent and One Native Parent	Negative
One Mexican Parent / One Foreign Parent	Dummy Variable where 1 = One Mexican Parent and One Foreign Parent	Negative
Other Immigrants	Dummy Variable where 1 = All non-Mexican Immigrants in the United States	Negative
Controls		
Female	Dummy Variable where 1 = Female	Negative
Age	Age of respondent	Positive
Age Squared	Age Squared of respondent	Negative
Married	Dummy Variable where 1 = the respondent is married	
HSGrad	Dummy Variable where 1 = High school diploma highest degree achieved	Positive
SomeCollege	Dummy Variable where 1 = Completed 1-4 years of college	Positive
Bachelors	Dummy Variable where 1 = Bachelor's degree is highest degree achieved	Positive
AdvancedDegree	Dummy Variable where 1 = The respondent has a degree higher than Bachelor's (Master's, PhD)	Positive

V. Descriptive Statistics

This section will present the basic descriptive statistics of each group in the sample. In Table 2, the average earnings, standard deviation, and sample size of each of the full-time employed workers across groups are presented.

Table 2: Average Earnings of Full-Time Employed Workers Across Groups						
Variable	Natives	First Gen Mexican Immigrants	2nd Gen with Mexican Parents	2nd Gen with One Mexican Parent & One U.S. Parent	2nd Gen with One Mexican Parent & One Foreign Parent	Non-Mexican Immigrants
Avg. Earnings	$59,419.95	$36,704.60	$38,991.50	$47,278.67	$42,776.52	$61,512.92
Std. Dev.	69,173.68	45,073.29	40,177.62	79,853.85	32,884.47	75,321.60
Sample Size	50,036	3742	1281	558	92	8802
Note: CPS Sample 2018						

Given that we filtered the sample for this table to only include individuals 18-65 and working 36 hours or more per week, the sample size is significant enough to legitimately compare these average wages. The only sample that seems a bit small is the second-generation group with only 92 cases, but it makes sense that this group would be much smaller given the likelihood of the parents living in the United States.

The average earnings statistics in Table 2 show that the earnings of each cohort fall relatively in line with our hypothesis except the Non-Mexican immigrant group's average wages are slightly higher than the native sample's wages. Using Canadian immigrants as a proxy for our 'Non-Mexican Immigrant' group, Borjas' study in 1990 showing that Canadian immigrants

earned twice as much as Mexican immigrants is not far off with the wages of our sample. This particular sample includes immigrants from all around the world, but the fact that the Mexican immigrant population lags so far behind other immigrants begs for further analysis as to why.

The average earnings of the groups in this sample are consistent with Wu's study (2012) that used Census data. The study found that Chinese immigrant earnings rapidly assimilated in the United States, while Mexican immigrants showed wage divergence and no economic assimilation toward natives over time. Wu attributed this to the changing demand of the U.S. labor market as it becomes more and more knowledge-based and information-driven. We know that since Mexican immigrants have less formal education than other immigrants, on average, that they are less likely to be employed in occupations that are more knowledge-based and information-driven.

Table 2 shows that the increase in wages from the first-generation to the second-generation of Mexican immigrants is relatively significant, especially between the cohorts that had a non-Mexican parent. This is consistent with my human capital based hypotheses stated above. Seeborg (2012) presents an explanation for this increase in the way of niche job markets for immigrants, finding that while the first generation of Mexican immigrants occupied a large number of low earning blue collared jobs, the second-generation had begun carving out their own occupational patterns, moving into the occupational niches of retail sales clerks, secretaries, and customer service representatives. This upward mobility in the U.S. labor market can be attributed to increased levels of ethnic and human capital in the second-generation as they assimilate to the United States. The combination of increased education opportunities and environmental familiarity leads to better choices in the labor market for the second-generation and explains their higher wages.

13

Table 3 below presents descriptive statistics from the 2018 CPS for the entire adult

sample across groups, including demographics, employment status and education.

Table 3: Descriptive Statistics for Adults (Age 18-65) Across Groups						
Variable	Natives	First Gen Mexican Immigrants	2nd Gen with Mexican Parents	2nd Gen with One Mexican Parent & One U.S. Parent	2nd Gen with One Mexican Parent & One Foreign Parent	Non-Mexican Immigrants
Demographics						
Avg. Age	41	42	31	35	30	43
% Female	51.8%	49.3%	51.4%	55.0%	49.4%	53.3%
% Married	53.2%	68.0%	33.5%	37.1%	30.6%	64.3%
Employment Status						
% Employed	72.9%	70.5%	69.3%	69.4%	73.8%	72.2%
% Unempl	3.0%	3.0%	4.7%	3.6%	3.1%	2.6%
% NILF	24.2%	26.5%	26.0%	27.1%	23.1%	25.2%
Self Employed						
% Self Employed	7.0%	7.9%	3.4%	3.1%	1.9%	7.7%
Education						
% GradeSchool	0.9%	26.3%	3.1%	1.6%	3.1%	6.6%
% Some HS	6.7%	19.6%	14.8%	12.3%	8.1%	7.2%
% HS Grad	28.2%	31.8%	32.3%	32.4%	26.3%	23.5%
% SomeCollege	31.2%	13.6%	36.7%	37.0%	45.6%	21.4%
% Bachelors	21.9%	6.7%	9.7%	12.2%	13.1%	23.7%
% Advanced Degree	11.1%	2.0%	3.4%	4.6%	3.8%	11.3%
Sample Size	83,407	6,543	2,316	979	160	15,188

The second-generation's average age is about 32 years old and the first-generation

average age is 42. This discrepancy in age highlights even more a likely reason that the second-

generation's raw wages from Table 2 are higher than the first-generation's. On average,

individuals that are a decade older have more job experience and move up the ladder in the labor market over time, earning higher wages.

Table 3 also shows that an individual from the first-generation sample is two times more likely to be married than an individual from the second-generation sample. This could simply be due to the average age difference between the groups. Regression analysis later in the paper will indicate the true impact that marital status has on wages.

Noteworthy from the employment category are the differences between the number of self employed in the second-generation compared to all other groups. The second-generation is half as likely to be self-employed. Further studies could examine the reasons for this discrepancy. The difference could be attributed to a heightened entrepreneurial spirit in the first-generation as opposed to the second-generation. The first-generation were the ones that moved to the United States to pursue prosperity, while the second-generation was handed their situation and so may be less motivated to start their own business when they can work for their parents' business. Another possible explanation is that self-employment of the first generation could be out of necessity due to education deficiencies. The second-generation is twice as likely to have some sort of college degree, making them more attractive employers in the labor market.

Finally, linking these statistics back to Roy's model, the presence of positive selection for the other immigrant group and negative selection in the Mexican immigrant groups is evident in the educational attainment percentages. Due to a lack of educational attainment and prosperity in Mexico, Mexicans immigrate to the United States due to convenient proximity and labor market opportunities in the U.S. that support them better than Mexico could. As evidence of the relatively high levels of college degree attainment, immigrants from countries such as China,

India and Japan immigrate to the United States due to better opportunities in the United States than in the source countries for those with higher levels of education.

VI.   Regression Results

The purpose of this section is to analyze the earnings of second-generation Mexican immigrants compared to the first generation, natives and other immigrants. Multiple regressions are used in order to pinpoint the effect the variables have on each group's wages. The U.S. natives from our sample are used as the reference group. The results of the regressions for each model are presented in Table 4. Each model indicates the variables that are included in the regression. Most of the results are significant at the .01 level.

Table 4: Results for Ln_Wage Regression (Standard Error in parentheses)				
Variables	Model 1	Model 2	Model 3	Model 4
Constant	10.591*** (.004)	6.918*** (.041)	7.344*** (.041)	7.245*** (.040)
FirstGen	-.361*** (.017)	-.446*** (.016)	-.499*** (.015)	-.123*** (.016)
2nd Gen (Both Mexican Parents)	-.366*** (.028)	-.111*** (.027)	-.110*** (.026)	.027 (.024)
2nd Gen (One Mexican Parent, One U.S. Parent)	-.320*** (.043)	-.152*** (.040)	-.129*** (.039)	-.025 (.036)
2nd Gen (One Mexican Parent, One Foreign Parent)	-.310*** (.105)	.008 (.097)	.022 (.095)	.103 (.089)
Other Immigrants	.017 (.012)	-.052*** (.011)	-.070*** (.011)	-.078*** (.010)
Age	Not included	.170*** (.002)	.151*** (.002)	.126*** (.002)
AgeSquared	Not included	-.002*** (.000)	-.002*** (.000)	-.001*** (.000)
Female	Not included	Not included	-.306*** (.007)	-.369*** (.007)
Married	Not included	Not included	.257*** (.008)	.180*** (.007)
HSGrad	Not included	Not included	Not included	.378*** (.014)

SomeCollege	Not included	Not included	Not included	.510*** (.015)
Bachelors	Not included	Not included	Not included	.937*** (.015)
Advanced Degree	Not included	Not included	Not included	1.207*** (.016)
Adjusted R^2 Value	.010	.143	.182	.278
Sample Size	64,511	64,511	64,511	64,511

*** = Significance Level at the .01 level, ** = Significance at the .05 level, * = Significance at the .10 level.

Model 1 serves as a baseline model that only includes dummy variables for the five groups. Since natives are the reference group, the coefficients to the five dummy variables indicate the earnings disadvantage relative to natives. Models two through four add human capital and demographic determinants to the baseline equation. We are particularly interested in how adding these variables to the equation influences the effects of the five immigration variables. When age is controlled for in Model two we have substantial changes in the coefficients to the immigration variables for the immigration group dummies. This is probably because second-generation immigrants are much younger than the other groups on average. When age is controlled for, the estimated disadvantage of second-generation immigrants is much smaller. Model three controls for gender and marital status variables, producing marginal changes in the immigrant groups' coefficients. Model four includes all of the variables. Thus, the estimated effects of immigration status on earnings has taken all of these human capital and demographic differences into account.

The differences in these immigrant earnings relative to natives are consistent with past studies that have found wage gaps between immigrants and natives (Borjas 2015). The human capital variables (age, female, marital status and education) yield results consistent with our expectations based on human capital theory. Model one communicates information that is similar

to Table 2, showing the strict effects on wages of being in each group compared to natives. All variables in this model are significant except for the other immigrant group.

Model 2 adds Age and Age Squared variables and drastically reduces the differences in wages between the second-generation and natives by 17-30% for each second-generation cohort, although the cohort with one foreign parent's result was not statistically significant. The gap between the first-generation and other immigrants to natives is increased when age is controlled. These results show consistency with human capital theory as Age and Age Squared are effective in marginally approximating work experience.

Model 3 adds the Female and Married variables into the equation. The regression shows that being female is negatively correlated with wages at about -31% which is consistent with the literature (Borjas 2015). The Married variable is positively correlated to wages but its effect on the coefficients of the immigration dummy variables is negligible.

Model 4 includes all listed variables, adding educational attainment to Model 3. Results for the second-generation in this model are not statistically significant. Consistent with human capital theory, each marginal increase in educational attainment leads to a higher positive correlation with wages. Controlling for education significantly reduces the gap between the first-generation and natives.

Variables that were not available through our database which most likely would have had an impact on wages of the immigrant groups include English language proficiency and ethnic capital. The fact that immigrants from Mexico have the lowest rates of English proficiency (33%) (Pew Research Center 2019) is not surprising when analyzing their wages with other immigrants and considering the value of English in the U.S. labor market. Borjas' study in 1999 found that Hispanic immigrants who speak English earn 17 percent more than those who do not,

even after adjusting for differences in education and other socioeconomic characteristics between the two groups. This makes sense as English is by far the most spoken language in the United States (World Atlas 2018). Not being able to communicate with most of the population creates a large hurdle in the U.S. labor market. As an externality to human capital accumulation, ethnic capital variables such as the educational attainment of the parents and neighbors, the quality of the environment in which the individual grows, and the age in which the immigrant arrives in the United States would also most likely show significant effects on the wages of immigrants in regression analysis.

Data gathered by Pew Research Center showed the longer immigrants have lived in the U.S., the greater the likelihood they are English proficient. Some 45% of immigrants living in the U.S. five years or less are proficient. By contrast, more than half (56%) of immigrants who have lived in the U.S. for 20 years or more are proficient English speakers (Pew Research Center 2019). These statistics are supported by Sanford's study (2003) analyzing the age of arrival of immigrants in the U.S.

> "Education in the U.S. is an important part of the assimilation process as early immigrants acquire language proficiency and gain knowledge of US culture and economy. On the other hand, immigrants who arrive as young adults need to depend more on their ethnic community to adjust to the US economy. In fact, we found a strong interaction between age of arrival and ethnic capital. While young adult immigrants will experience lower standards of living because of their low ethnic capital, immigrants who come as young children will be affected much less by the average performance of their ethnic group. Also, the results of the interaction analysis suggest that early arrivals experience greater returns to education than late arrivals."

In essence, the earlier an immigrant arrives in the U.S., the better returns to human capital (language development, education) and the more ethnic capital investments in the labor market they will receive.

VII.   Dissimilarity Index of Educational Attainment

An additional way to compare and contrast educational attainment among the groups is through a dissimilarity index and Pearson Chi Square. These two tools give background for what we have seen in the descriptive statistics and regression results. We have shown that educational attainment is a significant predictor of earnings and that immigrant groups vary greatly in their educational attainment. The purpose of this section is to determine to what extent the groups differ in their educational attainment.

We use the dissimilarity index and Chi Square test to compare each of the immigrant cohorts' levels of educational attainment to the native group's levels of educational attainment. To calculate the dissimilarity index, we use the percentage distributions of educational attainment in our descriptive statistics presented in Table 3 to find the differences between each immigrant group's percentage compared to natives at each level. The absolute value of each difference is taken, and then summed together to give the dissimilarity index. The larger the dissimilarity index is, the more dissimilar the education groups are in comparison to natives. The mathematical equation is below.

$$\frac{1}{2}\sum_{i=1}^{J} \ |\frac{a_i}{A} - \frac{n_i}{N}|$$

Where,

a_i = the number of immigrants with level of education i

A = the total number of immigrants in the cohort

n_i = the number of natives with level of education i

N = the total number of natives in the sample

J = the number of education groups

The results of the Pearson Chi Square and Index of Dissimilarity presented in Table 5.

Each of the dissimilarity indexes are large, which suggests dissimilarity between immigrants and natives in educational attainment distributions. The distribution of educational attainment that is closest to natives is the Other Immigrants group and the distribution that is the most dissimilar is the first-generation of Mexican immigrants, with the second-generation cohorts in between.

Table 5: Comparing Distributions of Educational Attainment Across Groups		
	Pearson Chi Square (Significance)	Index of Dissimilarity
First-generation Mexican Immigrants		
Natives vs First-generation Mexican Immigrants	2168.5 (.000)	83.8%
Second-generation Mexican Immigrants		
Natives vs Both Parents Mexican	1843.0 (.000)	39.8%
Natives vs One Mexican Parent & One U.S. Parent	681.2 (.000)	32.5%
Natives vs One Mexican Parent & One Parent not from U.S. or Mexico	274.6 (.000)	36.0%
Other Immigrants		
Natives vs Non-Mexican Immigrants	2536.4 (.000)	22.7%

The percentages of the dissimilarity index fall exactly in line with the average wages in Table 2, which can be linked back to human capital theory. It is not a coincidence that the closer each cohort's index of dissimilarity is to zero, the closer their average wages are to natives' average wages. The fact that the index of dissimilarity is more than cut in half when comparing the first generation of Mexican immigrants to each second-generation cohort shows a positive

level of educational assimilation from one generation to the next. This educational assimilation further suggests that the second-generation's levels of human capital are higher and should translate into higher wages than the first-generation's in the U.S. labor market.

VIII. Conclusion

In summary, this study provides a detailed examination of second-generation Mexican immigrant earnings compared to the first-generation, immigrants from other countries, and natives. The regression analyses revealed demographics as the key explanatory variables for wage differences between the second-generation and natives, particularly Age and Age-Squared. Accumulation of human capital as a result of education also revealed to be critical in increasing second generation immigrant wages in the U.S. labor market.

Further studies to answer the question of how the second-generation of Mexican immigrants assimilate to the U.S. labor market could examine the strong effect of being married on wages, and the effect that having legal documents has on labor market success. The obstacles behind obtaining legal documents for Mexican immigrants inhibits their ability to prosper in the U.S. labor market.

As a whole, the results of this work show that the second-generation of Mexican immigrants in the United States begin to assimilate to natives in the measurement of wages from the first-generation, but that gaps still exist. The major effect that human capital and other demographic variables have on their earnings showed reason for a large portion of those gaps. Human capital accumulation in the forms of work experience and education have a significant effect on second-generation Mexican immigrant earnings and should be taken into consideration

in designing educational programs and policies for these immigrants and their communities to the extent that they can be influenced.

References

Borjas, G. J. (1999). *Heaven's door: Immigration policy and the American economy*. Princeton, N.J: Princeton University Press.

Borjas, G. J. (2015). Labor Mobility. Labor Economics (pp.322-346). Location: McGraw-Hill.

Chiswick, B. R. (1977). Sons of Immigrants: Are They at an Earnings Disadvantage? American Economic Review, 67(1), 376-380.

Djajic, Slobodan. 2003. "Assimilation of Immigrants: implications for Human Capital Accumulation of the Second-generation" *Journal of Population Economics*, 16(4): 831-845.

Flood Sarah, Miriam King, Renae Rodgers, Steven Ruggles, and J. Robert Warren. Integrated Public Use Microdata Series, Current Population Survey: Version 6.0 [dataset]. Minneapolis, MN: IPUMS, 2018. https://doi.org/10.18128/D030.V6.0

Flores, Nadia Y., "Assessing Human Capital Transferability into the U.S. Labor Market among Latino Immigrants to the United States." (2010). Annals of the American Academy of Political and Social Science, July 2010, v. 630, pp. 196-204.

Hample, Kelsey, "Intergenerational Transfer of Human Capital among Immigrant Families" (2010). Honors Projects. Paper 105. http://digitalcommons.iwu.edu/econ_honproj/105

Hum, Derek and Wayne Simpson. 2007. "The Legacy of Immigration: Labour Market Performance and Education in the Second-generation" *Applied Economics*, 39(13-15):1985-2009.

Radford, Jynnah. "Key Findings About U.S. Immigrants" (2019). Pew Research Center.

Sanford '02, Jeremy, "English Language Proficiency and the Earnings of Mexican Immigrants" (2002). Honors Projects. Paper 32. http://digitalcommons.iwu.edu/econ_honproj/32.

Sandford, J. and Seeborg, M. "The Effects of Ethnic Capital and Age of Arrival on the Standard of Living of Young Immigrants". (2003). The Journal of Economics, XXIX No. 1, 2003.

Seeborg, Melissa T., "Transmitting occupational niches from first to second generation immigrants: Are there earnings consequences from being the "copycat" generation?" (2012). Senior Projects. https://digitalcommons.iwu.edu/jwprc/2013/oralpres7/1/

Silverman, Karen, "Second-Generation Immigrants: The Effect of Parental Nativity Status on Earnings" (2016). Honors Projects. Paper 135. http://digitalcommons.iwu.edu/econ_honproj/135

Taylor, Paul. "Second-Generation Americans" (2013). Pew Research Center. https://www.pewsocialtrends.org/2013/02/07/second-generation-americans/

(2018, June 12). The Most Spoken Languages In America. Retrieved from https://www.worldatlas.com/articles/the-most-spoken-languages-in-america.html

Wu, Y. and Michael C Seeborg, (2012) "Economic assimilation of Mexican and Chinese immigrants in the United States: is there wage convergence?" *Economic Bulletin*, Vol. 32 No. 3 pp.1978-1991