Can Higher Education Ameliorate Racial/Ethnic Disadvantage? An Analysis of the Wage Assimilation of College-Educated Hispanic Americans

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Abstract
Hispanics are the largest minority group in the United States, but quantitative research on the various components of this population has not received extensive investigation. College-educated Hispanics have been particularly neglected due to exaggerated and negative stereotypes. This present study uses data from the 2010 National Survey of College Graduates to investigate wage attainments among college-educated Hispanics. Hispanic Americans are categorized based on their place of birth and age in which they entered the U.S. education system. Results indicate that native-born and foreign-born Hispanic women who have at least a college degree have reached approximate wage parity with comparable native-born non-Hispanic White women. By contrast, native-born Hispanic men face a 10% wage penalty relative to comparable native-born non-Hispanic White men. In addition, foreign-born Hispanic men who immigrated as adults and obtained their college degree outside of the United States face larger wage penalties that are augmented by a lack of citizenship. Theoretical and empirical implications are discussed.

Keywords
college-educated Hispanics, immigration generation, assimilation, wage inequality

Introduction
Hispanics constitute the largest minority group in the United States, representing about 18% of the total population. Due to the continuing influx of immigrants from Latin American countries, coupled with high fertility rates of Hispanic Americans, this ethnic population has continued to grow. This growth has been matched by a comparable rise in concern about social issues relating to this demographic group. One major concern is that Hispanic Americans have lower-than-average socioeconomic attainment, which is related to their assimilation level (Smith, 2003). Extensive prior sociological research has emphasized that racial discrimination and immigrant disadvantage are important factors contributing to the lower socioeconomic status of Hispanics in the United States (Farley, 1987; Kenney & Wissoker, 1994; Mroczkowski & Sánchez, 2015; Reimers, 1983). To date, however, demographic and socioeconomic variability within this population has not been adequately considered. In particular, the college-educated Hispanic population has been widely neglected in the literature. This neglect might be attributed to the fact that, on average, Hispanics fall behind other racial/ethnic groups in terms of educational and socioeconomic attainments (Chapa & Valencia, 1993; DeNavas-Walt et al., 2014). For instance, Americans of Hispanic or Latino background are less likely to have a college education compared with other racial/ethnic groups, despite the fact that their educational attainment has been improving in recent decades (Pew Research Center, 2016a). The lower socioeconomic attainment of Hispanic Americans has led to politicization and persistent oversimplified images of Hispanic immigrants and American-born Hispanics as being “low quality” and exclusively “lesser educated.” This statistical discrimination toward Hispanic Americans may have detrimental effects on wage outcomes among college-educated Hispanics. If the employers have the misperception that all Hispanic Americans are “lesser educated,” college-educated Hispanics might not be rewarded fairly in the labor market (Dickinson & Oaxaca, 2009).

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Ascertaining wage differentials between Hispanics and non-Hispanic Whites in the upper end of the labor market is important and timely. The U.S. labor market has been less favorable for less-skilled laborers (Kalleberg, 2011), and education is becoming substantially important for social mobility (Hout, 2012). Therefore, it is important to assess how and whether this labor market structural change benefits college-educated Hispanic Americans. In addition, traditional assimilation theory suggests immigration generation has a profound effect on a person’s socioeconomic outcomes (Alba & Nee, 1997). As the rate of Hispanic Americans going to college has been increasing (Pew Research Center, 2016a), examining the wage attainments of college-educated Hispanic groups differentiated by immigration generation may provide valuable insights into the factors underlying labor market assimilation among Hispanic Americans. Much research has focused on the educational gap between young Hispanics and non-Hispanic Whites and how the educational gap contributes to Hispanics’ lower income. Indeed, recent research indicates that the educational gap between Hispanics and non-Hispanic Whites remains large. For example, in 2017, 16.4% of Hispanic men and 24% Hispanic women had a college degree, relative to 41% and 49% for White men and women, respectively. In recent years, the educational attainments have been rising steadily among Hispanics (Pew Research Center, 2016a). However, if college-educated Hispanics do not reach wage parity with non-Hispanic Whites, this might discourage young Latino or Latinas from pursuing a higher level of education. Therefore, inequality might be partly reinforced as a vicious cycle.

This present study seeks to fill the research gap by providing a systematic examination of college-educated Hispanic Americans’ wage outcomes compared with the benchmark population of native-born non-Hispanic Whites. Hispanic Americans are categorized into immigration generation groups based on their place of birth and the time they enter American educational system. Using National Survey of College Graduates (NSCG) 2010, Hispanic groups’ wage outcomes are analyzed with pre-labor market and labor market characteristics. Considering that being Hispanic for men and women might have different effects on their labor market outcomes, men and women are analyzed separately. Extensive data and prior literature have suggested that women in general face a gender penalty in the labor market as women receive lower income compared with their male counterparts (Browne & Misra, 2003; Wang & Sakamoto, 2016). Examining wage inequality characterized by race and gender, McCall (2001) found that wage differences can be larger for racial/ethnic groups than for gender groups. Interestingly, when examining Hispanic wage differences by gender, one report found that the wage of Latino/Hispanic men was about 69% the wage of non-Hispanic White men, whereas the wage of Latina/Hispanic women was about 58% the wage of non-Hispanic White women in 2015 (Pew Research Center, 2016b). Thus, in the present study, we analyzed Hispanic men and women separately to examine potential differences in their labor market performance.

### Education and Labor Market Outcomes Among Hispanics

In general, Hispanics fall behind the national average in terms of socioeconomic attainments (Chapa & Valencia, 1993; DeNavas-Walt et al., 2014). Specifically, Hispanics have lower median household income compared with non-Hispanic Whites (US$47,675 vs. US$65,041), and their poverty rate is also higher than the U.S. average (19.4% vs. 12.7% as reported by U.S. Census Bureau, 2017). These indicators differ between foreign-born and native-born Hispanics. For example, the median personal income for foreign-born Hispanics was US$24,200 and for native-born Hispanics was US$28,800 in 2013 (Pew Research Center, 2019). In terms of educational indicators, Hispanic Americans’ educational attainment remains below the national average. About 15% of Hispanic Americans more than the age of 25 years have a college degree whereas this figure is close to 30% for Americans overall (U.S. Census Bureau, 2015). Specifically, 20% of native-born Hispanics are college-educated, whereas only 12% of foreign-born Hispanics are college-educated (Pew Research Center, 2019). In addition to having a lower rate of college attendance and completion, prior research has indicated that Hispanics are more likely to attend part-time school and are also more likely to receive their college education in their mid-twenties or beyond. By the same token, Hispanic Americans are less likely to pursue graduate or professional degrees (Fry, 2002). Thus, Hispanics’ lower socioeconomic status is partly due to their lower educational attainments (Trejo, 1997). These socioeconomic disadvantages are typically inherited by second-generation Hispanics although their attainments are actually much higher than those of their foreign-born parents (Alba & Nee, 1997; Perlmann, 2005). The observation that Hispanic immigrants typically come to the United States with a low level of human capital, such as lower educational level, is often used to explain the lower socioeconomic status of Hispanic immigrants and their children.

The image of the Hispanic population as having lower levels of education might have adverse consequences, however, for college-educated Hispanics. Given the politicization of the immigration issue in general and Hispanic immigration in particular, labor market discrimination against Hispanics needs to be carefully monitored. Indeed, a direct racial/ethnic wage penalty against Hispanics might have even conceivably increased in recent decades since the Civil Rights era (cf. Sakamoto et al., 2000). As discussed by Maia and colleagues (2015), direct racial/ethnic wage penalties against demographically small minority groups are sometimes difficult to sustain. Because the Hispanic population is no longer a demographically small minority as during the pre-Civil Rights era, the now large Hispanic population might be seen by the majority as being more of a serious economic threat.
College-educated Hispanics might be the most underpaid if negative stereotypes about being “low quality” and “lesser educated” are most at odds with their actual human capital investments and productivity levels.

In addition, the contemporary labor market differs from earlier decades in that earnings inequality has notably increased, the occupational structure has become more bifurcated and less favorable for manual workers while socioeconomic mobility has become more dependent upon having a college education (Cheng, 2014; Hout, 2012; Kalleberg, 2009). In recent years, the economic return to education has reached its highest point yet (Goldin & Katz, 2007) so that the correlation between economic attainment and education is undoubtedly greater than it had been in the pre-Civil Rights era (Hout, 2012; Hout & DiPrete, 2006; Sakamoto et al., 2000). Educated people have higher personal income, greater household income, more occupational prestige, and they experience lower unemployment rates and shorter periods of unemployment (Hout, 2012). In addition, Kim and Sakamoto (2008) find a 47% increase in the explanatory power of educational levels in predicting wage inequality, whereas Tamborini et al. (2015) investigate administrative tax records to reveal an even stronger association between education and lifetime earnings in the United States. For example, Tamborini et al. (2015) report that the gap in lifetime earnings between high school and college graduates is around US$1.13 million for men and US$792,000 for women.

In the context of generally high returns to education in the labor market of the 21st century, the case of college-educated Hispanics is thus quite important because it has major implications for the long-term socioeconomic standing of this demographic group. If college-educated Hispanics receive low wages as do lesser-educated Hispanics, then low income and disadvantaged socioeconomic circumstances will continue to be the predominant characteristic of the Hispanic population with a minimal development of class stratification. Furthermore, younger cohorts of Hispanics would then have less incentive to obtain a college education if the perception of low economic returns persists due to that being the predominant pattern in the labor market. A vicious cycle of disadvantage is thereby reinforced that is readily perpetuated in the contemporary stratification system characterized by a high level of inequality.

At the same time as the returns to a college education are rising on average in the labor market as a whole, however, the variance in those returns remains nonetheless considerable (Brand & Xie, 2010). Part of this heterogeneity derives from differences in the economic returns by major field of study (Gerber & Cheung, 2008; Kim et al., 2015). Kim and colleagues (2015) use administrative data and find that lifetime earnings differentials between different fields of study can be even larger than the average gaps between college graduates and high school graduates. Fields of study in science, technology, engineering, and math (STEM) usually have higher economic returns in the labor market (Kim & Sakamoto, 2010; Rumberger & Thomas, 1993). By contrast, fields of study in the arts and humanities tend to have lower economic returns (Goyette & Mullen, 2006; Grave & Goerlitz, 2012; Kim et al., 2015). The high earnings of Asian Americans, for example, are partly attributable to their greater preponderance in STEM fields and their lesser representation in the arts and humanities (Sakamoto et al., 2009).

In addition to field of study, college prestige plays a significant role in labor market outcomes. Not surprisingly, prior studies find that persons graduating from more prestigious colleges are more likely to have better labor market outcomes (Brewer et al., 1999; Gerber & Cheung, 2008). On average, graduates from research universities and private universities earn more than their counterparts from liberal arts colleges and public institutions (Monks, 2000). If college-educated Hispanics are less likely to graduate from prestigious colleges, then this horizontal aspect of educational stratification might be implicated in earnings differentials between college-educated Hispanics and college-educated non-Hispanics.

### Assimilation of the Hispanic Population in the United States

Another reason for investigating college-educated Hispanics is the related concern of assessing assimilation processes for this group which is characterized by a high level of first-generation and second-generation persons (U.S. Census Bureau, 2011). About 50% of Hispanic Americans are foreign-born, and 20% of adult Hispanics are born to immigrant parents (Pew Research Center, 2017). The reasons people migrate from Latin American countries to the United States are diverse. Some Latin Americans come to the United States for better economic opportunities, whereas others come to the United States to unite with family members. In addition to economic pull factors, historic ties and geographic proximities result in many persons from Latin America coming to the United States to reunite with their family members. The large immigration stream from Latin America has fueled a dramatic growth of the Hispanic population in recent decades although high levels of fertility are another significant factor (Landale & Oropesa, 2007; Pew Research Center, 2013).

In conventional immigration studies, immigrants are classified into three major demographic groups including the first generation, the 1.5 generation, and the second generation (Portes & Rumbaut, 2005). First-generation immigrants usually refer to those who were born outside the United States and moved here as adults. The 1.5 generation refers to those who were born in a foreign country but moved to the United States before or during their early teenage years so that they reach adult maturity in this country. The second generation refers to those who were born in the United States to at least one foreign-born parent. The second generation by law has U.S. citizenship despite their parental documentation or immigration status and is typically fluent in English as their dominant and native language. While assimilation patterns
can vary, the 1.5 generation is usually fluent in English and is completely familiar with American customs and culture. By contrast, the first generation generally encounters the United States as a foreign country having been socialized in their country of origin. The classic assimilation model suggests that second and 1.5 generation immigrants usually demonstrate a high level of assimilation in U.S. society and usually fare better than first-generation immigrants in the labor market because they face fewer immigrant disadvantages. For example, a recent study focusing on Nigerian Americans reports that second generation Nigerian Americans have reached wage parity with native born non-Hispanic Whites (Sakamoto et al., 2021).

A couple of immigration studies also define a “1.25 generation” to refer to persons who were foreign-born and attended primary and secondary schooling in their country of origin, but who later came to the United States to complete a college or graduate degree (Kim & Sakamoto, 2010). The rationale for defining a “1.25 generation” is that coming to the United States at a somewhat older age, they received much of their socialization in their country of origin. Furthermore, arriving in the United States closer to adulthood, learning English is more of an arduous task compared with the 1.5 generation who learns English naturally as a youth. Thus, the situation of the “1.25 generation” is rather “in between” that of the first generation and the 1.5 generation in terms of language acquisition and socialization into American culture.

Assimilation processes are intrinsically important in themselves, but they also relate to our research concern of estimating the net racial/ethnic effect of being Hispanic in the contemporary labor market. Researching similar topics for Asian Americans (another demographic group with high levels of immigration), several scholars have also demonstrated the importance of controlling for “place of education” when assessing racial/ethnic earnings inequalities between immigrants and native-born individuals (Kim & Sakamoto, 2010; Zeng & Xie, 2004). The highest educational degree is a critically important component of a person’s human capital and educational credentials in the U.S. labor market. However, educational degrees acquired outside the United States are usually not fully recognized in the U.S. labor market for a variety of reasons (Arbeit & Warren, 2013; Duleep & Regets, 1997; Kim & Sakamoto, 2010; Zeng & Xie, 2004). For example, using NSCG, Arbeit and Warren (2013) found a 17% wage penalty for female immigrants who acquired their highest degree abroad and a 11% wage penalty for male immigrants who received their highest educational degree abroad.

The “1.25 generation” therefore has a decided labor market advantage over the first generation because the highest degree of the former group is typically from an accredited U.S. college or university whereas the college degree (if any) of the first generation is usually not recognized because it is from a foreign institution that American employers are unable to confidently evaluate. Nonetheless, the “1.25 generation” may be somewhat disadvantaged compared with the 1.5 generation and the second generation because having more limited language skills and social networks at the start of one’s work career often results in fewer employment opportunities (Kim & Sakamoto, 2010).

Research on Asian Americans has already clearly demonstrated the empirical significance of these immigrant distinctions in the U.S. labor market (Kim & Sakamoto, 2010; Sakamoto et al., 2009; Zeng & Xie, 2004). What remains unknown in any detailed manner are the wage differentials for these immigrant groups among college-educated Hispanics. Accounting for this immigrant heterogeneity—including place of birth, whether they attended high school in the United States, and place of highest educational degree—is likely as important in the case of Hispanics as it is for other immigrants. Given the exceptional growth of the Hispanic population including its diversity by immigrant group, an increasing number of foreign-born Hispanics have likely attended American colleges.

While not focusing specifically on the college-educated component of the labor force, prior research has shown that immigration factors play a significant role in the labor market outcomes of Hispanics. From a generational perspective, conventional linear assimilation theory suggests that first-generation immigrants face disadvantages in the U.S. labor market. On average, the foreign-born population has lower socioeconomic attainments compared with native-born persons which are partly attributed to their lack of U.S.-specific human capital (Grenier, 1984; McManus et al., 1983; Stolzenberg, 1990; Tainer, 1988). After arriving in the United States, first-generation immigrants often have reduced social networks, less familiarity with American culture, and limited understanding of local norms and labor market practices (Bonacich, 1972; Stolzenberg & Tienda, 1997). In addition, as noted above, first-generation immigrants’ college education usually cannot be completely transferred into the U.S. labor market (Mattoo et al., 2008). Therefore, first-generation immigrants are more likely to be concentrated in the secondary labor market (Bailey & Waldinger, 1991). Classical assimilation theory posits, however, that after several generations, immigrant population will eventually assimilate into the U.S. mainstream society (Gordon, 1964).

Therefore, based on conventional linear assimilation theory, we expect to see a linear increase in wage outcomes with increasing immigration generation among Hispanic immigration groups. The more assimilated group (i.e., native-born) will have the least disadvantage in terms of wages, and the least assimilated group (i.e., foreign-born and no educational experience in the United States) will have the largest wage disadvantage compared with native-born non-Hispanic Whites.

Data and Method

Data, Target Population, and Variables

We use data from the NSCG for the year 2010. The sampling frame for the 2010 is nationally representative and consists of
noninstitutionalized persons who participated in the American Community Survey and who indicated that they had a bachelor’s or some higher degree. As is conventional in labor market studies, we restrict our analyses to persons aged 25 to 64 years who were not enrolled in school when answering the survey. In addition, persons who reported that they worked outside of the United States are not included in this study.

For the purposes of our research concerns, the NSCG has a number of important advantages. First, it is one of the few data sets that specifically identifies place of education. With that information, we are able to accurately differentiate first-generation and 1.25-generation Hispanics from the sample that would otherwise be subject to significant measurement error (e.g., immigrants who obtained a graduate degree at a somewhat older age). Another advantage of the NSCG is that it provides information on field of study for the highest degree as well as indicators relating to college prestige. No other data set in the public domain provides all of these variables that are crucial given our focus on the college-educated segment of the labor force.1

The dependent variable in the multivariate models is the natural logarithm of hourly wage. These data permit the direct calculation of the hourly wage using the variables on annual earnings during the previous year, number of weeks worked in the previous year, and the usual hours worked per week in the previous year (i.e., the hourly wage equals annual earnings divided by the product of the number of weeks worked and usual hours worked per week). The variable of hourly wage is right skewed; therefore, we used the natural logarithm of hourly wage to obtain a more normally distributed dependent variable. Given that the regional distribution of racial/ethnic groups might affect their comparable purchasing power across the nation (Kim & Sakamoto, 2010; Wang et al., 2017), the computed hourly wages are further adjusted for cost-of-living differences based on regional price levels (Aten, 2007).2 Calculated hourly wages that were initially less than 1.00 were recoded to 1.00 while those that were initially greater than 750.00 were recoded to 750.00 to minimize the influence of outliers and probable measurement error.3

The key independent variables are the generational Hispanic groups. Hispanics are classified into four demographic groups based on their immigration status with relation to the time they entered the U.S. education system, to determine whether there is an effect of nativity status and location of education on labor market parity. These Hispanic demographic groups include (a) first-generation Hispanics (HIS-1.0) who are foreign-born and have completed their education abroad; (b) 1.25-generation Hispanics (HIS-1.25) who are foreign-born and have completed high school in a foreign country, but have received their highest educational degree in the United States; (c) 1.5 generation Hispanics (HIS-1.5) who are foreign-born but moved to the United States before high school and have received both their high school degree and highest educational degree in the United States; and (d) native-born Hispanics (HIS-NB) who were born in the United States and also have completed all their education in the United States. The reference group is native-born non-Hispanic Whites. The classification description of the four demographic groups is summarized in Table 1.

It is worth noting that in our actual sample, the vast majority of the Hispanics (i.e., 4,855 out of the 5,294 Hispanic respondents or 92%) identify as White. The remaining 8% identify as Black, Asian, other, or multiracial (i.e., some combination of White, Black, Asian, or other). The racial composition of this sample is consistent with previous research that finds that Hispanics with a college degree are more likely to identify themselves as White (Choi et al., 2008). A limitation of the NSCG is that no information is provided about specific ethnic identity within the Hispanic category (e.g., Mexican, Cuban) so that our primary focus must be on Hispanics as an overall category.

Additional independent variables are used to control for other factors that affect the wage. The first set considers demographic characteristics including age in years and its quadratic, marital status, disability status, gender, presence of children below the age of 6 years in the household, and parents’ educational level in years. Two dichotomous variables are also constructed to indicate missing data on father’s education and missing data on mother’s education.4 The rationale for including these two missing-indicator variables is that they are indirect measures of family structure while growing up, and children from single-parent family are generally known to have lower socioeconomic outcomes (Bloome, 2017).

The second set of control variables refers to measures of educational attainment which, as discussed above, are known to be consequential for economic outcomes. Although our sample is restricted to persons with at least a college degree, notable variation in the highest educational level completed still remains. Using the bachelor’s degree as the reference group, additional dichotomous variables are included to indicate the highest degree being a master’s degree, a professional degree, or a doctorate degree. Additional dichotomous variables are used to indicate 14 different major fields of study for the highest degree. The fields of study include computer science and technology, life science, chemistry and physics, astronomical science,
economics, political science, psychology, sociology and anthropology, engineering, health-related majors, education, business, social service and social work, and other majors. Other dichotomous variables are included to indicate the Carnegie classification type for institution awarding the highest degree (i.e., Research I University, Research II University, Doctoral Granting, Comprehensive, Liberal Arts I, Liberal Arts II, and other). Prior research has demonstrated that these distinctions are related to college prestige as well as wage differentials in the labor market (Hersch, 2019; Kim & Sakamoto, 2010; Zhang, 2005). For example, Zhang (2005) found that students who graduate from Research I and Doctoral II institutions receive the largest economic return to education.

A third set of control variables is used in some models to indicate work characteristics including those pertaining to the job and the employer. Dichotomous variables are used to indicate employer type (i.e., whether the establishment is private sector for-profit, private sector nonprofit, self-employed unincorporated, self-employed incorporated, elementary or secondary school, junior college, university, medical school, research institute, local government, state government, and federal government). Employer size is indicated by the number of employees at the establishment. Occupation is also controlled for. The Bureau of Labor Statistics’ Standard Occupational Classification system has 867 detailed occupations (U.S. Bureau of Labor Statistics, 2020). Due to our focus on only college-educated workers and their occupations generally lie within the middle or upper end of the occupational hierarchy, the NSCG does not provide a full set of occupational codes. We instead use a set of 45 dichotomous variables to indicate the available occupational codes in these data.

Prior labor market studies—in both sociology and economics—have shown that these variables have direct effects on wages (Brown & Medoff, 1989; Dunn, 1986; Groschen, 1991; Sakamoto & Wang, 2017; Schmidt & Zimmermann, 1991). Nonetheless, we do not include this set of work characteristics in all of the model specifications because these independent variables are not predetermined or exogenous with respect to the dependent variable. That is, in contrast to demographics and educational attainment, work characteristics are intervening variables because they are determined in the labor market simultaneously with the wage. Work characteristics mediate the effects of the (primarily) pre-labor market variables (i.e., demographics and education). The model specification that includes the variables for work characteristics yields the direct effects demographics and education (i.e., not the total effects).

The fourth set of the control variables refers to nine regions of residence including New England, Mid-Atlantic, East North Central, West North Central, South-Atlantic, East South Central, West South Central, Mountain, and Pacific. We view region as being primarily predetermined because we have eliminated regional differentials cost of living from the wage. Citizenship status, an important variable for many immigrants in regard to their labor market outcomes, is also included in some of the models as a dichotomous independent variable (i.e., “yes” coded as 1 vs. “no” coded as 0). We do not assume citizenship status to be primarily predetermined, however, because workers with higher wages may be more likely to be supported by their employers for permanent residency in the United States.

**Statistical Models**

We specify multiple ordinary least squares (OLS) regression models with the natural logarithm of the hourly wage as the dependent variable. Using OLS estimation, our major theoretical interest lies in the effects of the four Hispanic immigrant groups (i.e., HIS-1.0, HIS-1.25, HIS-1.5, and HIS-NB). We construct a set of regression model specifications as shown below. Model 0 serves as the baseline model showing the total bivariate differentials between non-Hispanic Whites (i.e., the reference group) and the Hispanic groups. Because the dependent variable is a natural logarithm, a slope coefficient (i.e., \( b \)) from the regression refers to a proportionate difference after being exponentiated (i.e., \( e^b - 1 \)). Model 1 controls for the pre-labor market factors including demographics, educational attainment, and region. Model 2 adds citizenship to Model 1. Model 3 is our full model specification that controls for pre-labor market (demographics, education, region), citizenship, and work characteristics. These models are estimated separately for men and women due to notable interactions (i.e., differences) by gender. Variance inflation factors (VIFs) are used to assess multicollinearity and to make sure the predictors are not highly correlated with each other.

\[
Y_t = \alpha_t + \epsilon_t.
\]

\[
Y_t = \alpha_t + \beta_t \chi_{demo} + \beta_t \chi_{edu} + \beta_t \chi_{region} + \epsilon_t. \tag{1}
\]

\[
Y_t = \alpha_t + \beta_t \chi_{demo} + \beta_t \chi_{edu} + \beta_t \chi_{residency} + \epsilon_t. \tag{2}
\]

\[
Y_t = \alpha_t + \beta_t \chi_{demo} + \beta_t \chi_{edu} + \beta_t \chi_{region} + \beta_t \chi_{citizenship} + \epsilon_t. \tag{3}
\]

where \( Y_t \) refers to the log hourly wage of the \( t \)th individual who belongs to the \( t \)th demographic group with \( t = 0, 1, 2, 3, 4 \), indicating native-born non-Hispanic Whites, HIS-1.0, HIS-1.25, HIS-1.5, and HIS-NB, respectively. In these specifications, \( \alpha_t \) represents an intercept, \( \chi \) is a given vector that denotes the sets of the control variables while the \( \beta \)s are their population-level effects. To ensure a more nationally representative sample, the results are obtained using the survey sampling weights for the NSCG.
Empirical Results

Descriptive Statistics

The descriptive statistics are presented in Table 2. In our sample of college-educated members of the labor force, non-Hispanic Whites have a higher average hourly wage compared with HIS-NB and HIS-1.0, but a lower average hourly wage compared with HIS-1.25 and HIS-1.5. Surprisingly, among all the groups, HIS-NB makes the lowest hourly wages, before and after adjusting for the cost of living. The descriptive statistics also indicate that HIS-NB and HIS-1.5 are generally younger than the other groups. Hispanics report lower educational levels for their parents compared with non-Hispanic Whites. In addition, Hispanics have more missing data on their parents’ educational levels.

With regard to educational characteristics, HIS-1.25 are more likely to achieve a doctorate or master’s degree and less likely to achieve a professional degree or only a bachelor’s degree, relative to other groups. This pattern might be partly attributable to the fact that master’s and doctorate programs in the United States usually offer scholarships or fellowships that cover tuition and the cost of living whereas undergraduate and professional programs are less likely to do so. Instead, U.S. undergraduate education can be costly and even more expensive than it is in other countries. Therefore, many HIS-1.25 may have acquired their bachelor’s education in their home country and came to the United States for a graduate degree, which can be more cost-effective for this immigrant population. HIS-1.0 are more likely to achieve only bachelor’s degrees or professional degrees compared with other demographic groups. HIS-1.5 and HIS-NB have a distribution of educational attainment similar to non-Hispanic Whites. In addition, HIS-1.25 are more likely to receive their highest degrees from a Research I University compared with other groups. In terms of the field of study for their highest educational level, HIS-1.5 and HIS-NB are more likely to study social sciences such as psychology, political science, and sociology which are not as financially lucrative. However, HIS-1.25 and HIS-1.0 are more likely to study engineering than non-Hispanic Whites. HIS-1.0 are also more likely to major in health-related fields than other groups. This pattern might reflect the demand for skilled immigrants (i.e., STEM) in the United States that affects immigration policies relating to HIS-1.25 and HIS-1.0.

Regarding work characteristics, HIS-NB are less likely to work for private for-profit corporations whereas HIS-1.0 are more likely to work for private for-profit corporations than the other groups. In addition, compared with other groups, HIS-1.25 are more likely to work for universities whereas HIS-1.5 and HIS-NB are more likely to work for elementary and middle schools. HIS-1.0 are also more likely to be self-employed than other groups, which is consistent with the literature that first-generation college-educated Hispanic immigrants are more likely to be entrepreneurs than native-born Americans (Fisher & Lewin, 2018). With regard to region of residence, Hispanics are less likely to reside in the North and are more likely to live in West South Central (which includes Texas) and Pacific (which includes California).

Table 3 shows mean hourly wages by the educational variables. The results indicate that professional degree holders have the highest hourly wage ($M = $US64.75). Those who received a degree from a Research I University have a higher hourly wage ($M = $US43.66) compared with other types of educational institutions. Business, health, engineering, and economics majors earn a higher hourly wage compared with other majors.

Multivariate Analyses

Table 4 displays the estimated effects of being Hispanic by generation on log hourly wage with four model specifications among men. The key independent variables are the four Hispanic demographic groups (HIS-1.0, HIS-1.25, HIS-1.5, and HIS-NB), and native-born non-Hispanic White men serve as the reference group. The estimates for Model 0 show the overall bivariate differentials vis-a-vis non-Hispanic White men. The coefficient for HIS-1.5 is slightly negative (~0.0711) but not statistically significant indicating that the mean wage difference between this group and non-Hispanic Whites could be due to random sampling error. The coefficient for HIS-1.5 is also substantively small and not statistically significant in Models 1, 2, and 3. These findings imply that the relations between wages and the independent variables for HIS-1.5 and non-Hispanic White men are quite similar. Regarding HIS-1.25, results indicate that HIS-1.25 have a bivariate wage differential of about 22% (i.e., $e^{1.1962} – 1$) that is statistically significant ($p < .01$) in Model 0. This substantially higher wage relative to non-Hispanic White men is statistically explained away in Model 1 where the coefficient for HIS-1.25 is quite close to zero and not statistically significant. After controlling for education and the other pre-labor market variables, no net effect is evident for HIS-1.25. The same conclusion of no net multivariate relationship in the wage patterns for HIS-1.25 is also evident in Models 2 and 3 where the coefficients for this group are not substantively or statistically significant.

One group for which a net multivariate effect is statistically significant is HIS-NB. In regard to the overall bivariate difference as shown in Model 0, the coefficient is statistically significant and implies that HIS-NB have an average wage that is about 21% (i.e., $e^{-1.383} – 1$) lower. After controlling for pre-labor market characteristics in Model 1, the estimate remains significant but is notably reduced implying that HIS-NB have an average wage that is about 10% (i.e., $e^{-1.1004} – 1$) lower net of demographics, education, and region. The results are nearly identical in Models 2 and 3. Results indicate that HIS-NB have a net wage disadvantage of 10% relative to comparable non-Hispanic White men.
Table 2. Descriptive Statistics.

|                              | Whites  | HIS-NB | HIS-1.5 | HIS-1.25 | HIS-1.0 |
|------------------------------|---------|--------|---------|----------|---------|
| Average hourly wage (US$)    | 38.79   | 33.84  | 42.51   | 40.89    | 34.61   |
| (SD)                         | (33.95) | (27.57)| (57.43) | (33.74)  | (33.29) |
| Average cost-of-living adjusted hourly wage (US$) | 37.37   | 31.58  | 39.91   | 38.83    | 32.99   |
| (SD)                         | (32.64) | (26.19)| (56.75) | (31.59)  | (31.43) |
| Average hours worked per week| 43.06   | 43.23  | 43.06   | 44.21    | 43.61   |
| (SD)                         | (11.68) | (11.58)| (11.79) | (11.76)  | (12.71) |
| Average weeks worked previous year | 50.21  | 50.12  | 50.28   | 49.99    | 50.66   |
| (SD)                         | (5.74)  | (5.85) | (5.46)  | (5.77)   | (5.50)  |
| Average age (years)          | 45.22   | 40.65  | 41.72   | 44.34    | 50.66   |
| (SD)                         | (10.93) | (10.33)| (10.21) | (9.44)   | (8.83)  |
| Married (%)                  | 74.48   | 61.41  | 64.80   | 78.26    | 80.14   |
| Males (%)                    | 59.21   | 50.71  | 59.62   | 64.13    | 60.29   |
| Children below the age of 6 years (%) | 17.94  | 22.18  | 22.37   | 22.61    | 19.14   |
| Parents’ education           |         |        |         |          |         |
| Father’s education (years)   | 14.85   | 13.72  | 13.77   | 14.45    | 14.11   |
| Missing on father’s education (%) | 0.35  | 1.44   | 2.59    | 1.52     | 2.50    |
| Mother’s education (years)   | 14.10   | 13.43  | 13.25   | 12.94    | 13.11   |
| Missing on mother’s education (%) | 0.13  | 0.31   | 2.05    | 1.09     | 1.43    |
| Level of education attainment (%) | 53.95  | 58.42  | 57.98   | 28.48    | 60.64   |
| Bachelor’s degree            | 53.95   | 58.42  | 57.98   | 28.48    | 60.64   |
| Master’s degree              | 34.10   | 29.21  | 29.33   | 50.65    | 18.43   |
| PhD                          | 5.20    | 4.46   | 4.23    | 18.91    | 8.41    |
| Professional degree          | 6.75    | 7.91   | 8.46    | 1.96     | 12.52   |
| Total (100)                  | (100)   | (100)  | (100)   | (100)    | (100)   |
| Highest degree from Research 1 (%) | 34.13  | 28.53  | 31.51   | 41.52    | NA      |
| Major for highest degree (%)  |         |        |         |          |         |
| Computer science and technology | 10.14  | 9.10   | 11.87   | 10.65    | 11.45   |
| Life science                 | 9.32    | 8.45   | 6.41    | 8.04     | 9.84    |
| Chemistry and physics        | 4.70    | 4.07   | 2.05    | 3.70     | 2.33    |
| Astronomical science         | 1.21    | 1.50   | 1.50    | 1.74     | 1.43    |
| Economics                    | 2.37    | 2.18   | 2.46    | 3.48     | 3.94    |
| Political science            | 2.67    | 3.90   | 5.32    | 2.83     | 0.36    |
| Psychology                   | 5.72    | 8.42   | 8.87    | 3.48     | 3.76    |
| Sociology and anthropology   | 4.02    | 7.06   | 6.82    | 2.83     | 2.68    |
| Engineering                  | 17.12   | 15.11  | 19.24   | 24.78    | 28.62   |
| Health                       | 11.58   | 9.69   | 8.46    | 6.96     | 18.43   |
| Education                    | 7.93    | 8.56   | 6.00    | 5.43     | 2.68    |
| Business                     | 9.15    | 7.54   | 10.37   | 16.09    | 7.87    |
| Social service               | 2.24    | 2.09   | 1.77    | 0.43     | 0.72    |
| Other majors                 | 11.83   | 12.34  | 8.87    | 9.57     | 5.90    |
| Total (100)                  | (100)   | (100)  | (100)   | (100)    | (100)   |
| Citizen (% of yes)           | 100.00  | 100.00 | 92.67   | 66.74    | 55.28   |
| Regions of residence         |         |        |         |          |         |
| Northeast                    | 7.36    | 2.57   | 4.01    | 3.77     | 4.31    |
| Mid-Atlantic                 | 14.02   | 10.34  | 16.62   | 13.44    | 13.33   |
| East North Central           | 17.50   | 6.71   | 5.59    | 5.66     | 11.76   |
| West North Central           | 9.59    | 1.94   | 1.15    | 2.59     | 1.57    |
| South-Atlantic               | 17.85   | 13.67  | 25.64   | 27.59    | 27.65   |
| East South Central           | 4.60    | 1.18   | 1.72    | 2.83     | 2.94    |
| West South Central           | 8.17    | 16.15  | 11.32   | 16.75    | 13.73   |
| Mountain                     | 7.64    | 9.43   | 4.15    | 5.19     | 4.51    |
| Pacific                      | 13.28   | 38.01  | 29.80   | 22.17    | 20.20   |
| Total (100)                  | (100)   | (100)  | (100)   | (100)    | (100)   |
Table 3. Mean Hourly Wage by Educational Characteristics.

|                          | Hourly wage (US$) | Adjusted hourly wage (US$) | Sample size |
|--------------------------|-------------------|-----------------------------|-------------|
| **Educational degree**   |                   |                             |             |
| Bachelor’s degree        | 34.35             | 33.05                       | 18,830      |
| Master’s degree          | 39.47             | 37.86                       | 11,613      |
| Doctoral degree          | 40.51             | 38.72                       | 1,852       |
| Professional degree      | 62.16             | 59.39                       | 2,407       |
| **Carnegie classification** |                   |                             |             |
| Research I University    | 42.96             | 41.20                       | 11,471      |
| Research II University   | 38.36             | 37.45                       | 2,986       |
| Doctoral grant           | 38.23             | 37.07                       | 4,984       |
| Comprehensive            | 33.15             | 32.73                       | 9,120       |
| Liberal Arts I           | 34.26             | 32.26                       | 4,487       |
| Liberal Arts II          | 29.45             | 28.46                       | 1,599       |
| Other types              | 39.93             | 38.04                       | 3,629       |
| **Major of highest degree** |                   |                             |             |
| Computer science and technology | 37.84             | 36.34                       | 3,503       |
| Life science             | 30.94             | 29.55                       | 3,180       |
| Chemistry and physics    | 36.46             | 35.23                       | 1,572       |
| Astronomical science     | 41.93             | 40.09                       | 437         |
| Economics                | 42.73             | 40.95                       | 830         |
| Political science        | 38.60             | 36.71                       | 978         |
| Psychology               | 31.50             | 29.73                       | 2,082       |
| Sociology and anthropology| 29.57             | 27.85                       | 1,509       |
| Engineering              | 41.15             | 39.77                       | 5,984       |
| Health                   | 45.40             | 43.83                       | 3,946       |
| Education                | 31.67             | 30.38                       | 2,718       |
| Business                 | 43.55             | 42.14                       | 3,153       |
| Social service           | 31.89             | 30.55                       | 753         |
| Other majors             | 41.18             | 39.23                       | 4,057       |

Note. The adjusted hourly wage is adjusted for regional cost-of-living differences.
The most distinctive group in Table 4 is HIS-1.0. Their coefficient in Model 0 indicates that their overall bivariate difference is statistically significant and implies that they have an average wage that is about 33% ($e^{-0.4029} - 1$) lower. In contrast to some of the other groups in Table 4, however, this disadvantage is not at all statistically explained by the pre-labor market variables. The estimate in Model 1 is virtually the same (i.e., about 34% $[e^{-0.4140} - 1]$ lower).

In the case of HIS-1.0 men, Table 4 reveals that an important independent variable is citizenship status because in Model 2 the coefficient for this group is still significant but is substantially reduced implying a 24% ($e^{-0.2681} - 1$) net disadvantage which is lower than the 34% disadvantage in Model 1. Evidently, the lack of citizenship status among HIS-1.0 is an important factor in determining their wages. The estimate in Model 1 is virtually the same (i.e., about 34% $[e^{-0.4140} - 1]$ lower).

In the case of HIS-1.0 men, Table 4 reveals that an important independent variable is citizenship status because in Model 2 the coefficient for this group is still significant but is substantially reduced implying a 24% ($e^{-0.2681} - 1$) net disadvantage which is lower than the 34% disadvantage in Model 1. Evidently, the lack of citizenship status among HIS-1.0 is an important factor in determining their wages. The estimate in Model 1 is virtually the same (i.e., about 34% $[e^{-0.4140} - 1]$ lower).

The regression results for women are shown in Table 5. In contrast to men, no net effect of HIS-NB is evident for women in Table 5. While an overall bivariate differential is statistically significant in Model 0 indicating a 12% ($e^{-0.1261} - 1$) lower average wage relative to non-Hispanic White women, the coefficient for HIS-native is no longer statistically significant in Model 1, which controls for the pre-labor market variables. The coefficients for HIS-NB are also not significant in Models 2 and 3.

In contrast to the racial/ethnic differentials for men, HIS-1.5 women have higher wages than non-Hispanic White women as shown in Table 5. In terms of the bivariate differential, HIS-1.5 women have a 17% ($e^{1.607} - 1$) higher average wage relative to non-Hispanic White women according to Model 0. After controlling for the pre-labor market variables in Model 1, the net effect of being HIS-1.5 is reduced only slightly, and they still have an advantage of 15% ($e^{1.1055} - 1$). That is, given their demographic characteristics, education, and region, HIS-1.5 women have 15% higher wages comparable with White women. The advantage for HIS-1.5 women in Table 5 is even slightly larger in Models 2 and 3.

### Table 4. Estimated Effects of Being Hispanic by Immigrant Group on Log Hourly Wage Among Men.

|                | Model 0          | Model 1          | Model 2          | Model 3          |
|----------------|------------------|------------------|------------------|------------------|
| **HIS-NB**     | $-0.2383^{***}$  | $-0.1004^{*}$    | $-0.1003^{*}$    | $-0.1040^{*}$    |
|                | (0.0456)         | (0.0437)         | (0.0437)         | (0.0410)         |
| **HIS-1.5**    | $-0.0711$        | $-0.0498$        | $-0.0371$        | $-0.0272$        |
|                | (0.0988)         | (0.0674)         | (0.0690)         | (0.0607)         |
| **HIS-1.25**   | $0.1962^{**}$    | $-0.0158$        | $0.0443$         | $0.0153$         |
|                | (0.0644)         | (0.0560)         | (0.0606)         | (0.0539)         |
| **HIS-1.0**    | $-0.4029^{***}$  | $-0.4140^{***}$  | $-0.2681^{**}$   | $-0.2295^{***}$  |
|                | (0.1088)         | (0.1013)         | (0.0801)         | (0.0716)         |

**Control variables**

- Demographic: Y
- Parents’ education: Y
- Educational achievement: Y
- Field of study for highest degree: Y
- Carnegie classification: Y
- Region: Y
- Citizenship: Y
- Employment type: Y
- Employment size: Y
- Occupation: Y

**Intercept:** 3.4210^{***} 1.0051^{***} 0.7990^{***} 1.1055^{***}

**Adjusted $R^2$:** .0104 .2373 .2376 .3259

**N:** 20,279 20,279 20,279 20,279

Note. HIS-NB refers to native-born Hispanics. HIS-1.5 refers to foreign-born Hispanics who immigrated to the United States at a young age and attended high school (and later college) in the United States. HIS-2.5 refers to foreign-born Hispanics who attended high school overseas but obtained their highest degree in the United States. HIS-1.0 refers to foreign-born Hispanics who obtained all of their schooling overseas. The hourly wage is adjusted for regional cost-of-living differences. Robust standard errors are reported in the parentheses. The variance inflation factor (VIF) was used to diagnose multicollinearity for the models. Unsurprisingly, the control variables Age and the Square of Age had VIF scores above 10 across Models 1 to 3, indicating high correlation, which should not be a concern because Square of Age is derived from Age. The key independent variables (HIS-NB, HIS-1.0, HIS-1.5, and HIS-1.25) had VIFs below 1.5, and the control variables had VIFs below 10.

$p < .05$. **$p < .01$. ***$p < .001$. 

The hourly wage is adjusted for regional cost-of-living differences. Robust standard errors are reported in the parentheses. The variance inflation factor (VIF) was used to diagnose multicollinearity for the models. Unsurprisingly, the control variables Age and the Square of Age had VIF scores above 10 across Models 1 to 3, indicating high correlation, which should not be a concern because Square of Age is derived from Age. The key independent variables (HIS-NB, HIS-1.0, HIS-1.5, and HIS-1.25) had VIFs below 1.5, and the control variables had VIFs below 10.
Regarding HIS-1.25 women, the coefficients are not statistically significant in any of the models. A substantively and statistically significant coefficient is evident for HIS-1.0, however, in Model 0 where the estimate implies a 25% (i.e., \(e^{-0.2839} - 1\)) lower mean wage. This estimate is very similar in Model 1, which controls for the pre-labor market variables implying that demographics, education, and region do not account for their lower mean wage. The HIS-1.0 coefficient becomes insignificant in Model 2 which controls for citizenship. That is, citizenship is the key variable that is associated with the lower wages of HIS-1.0 women compared with non-Hispanic White women.

**Auxiliary Analysis**

As noted earlier, the NSCG does not identify specific ethnic groups within the Hispanic category. Nonetheless, for exploratory purposes, we can impute one’s ethnic group among Hispanics based on place of birth for those who are foreign-born. For example, a Hispanic who was born in Mexico can be presumed to be a Mexican immigrant whereas a Hispanic who was born in Peru can be presumed to be a Peruvian immigrant. This place-of-birth procedure cannot be applied to HIS-NB, however, because by definition they are born in the United States. When using native-born non-Hispanic Whites as the reference group. The hourly wage is adjusted for regional cost-of-living differences. Robust standard errors are reported in the parentheses. The variance inflation factor (VIF) was used to diagnose multicollinearity for the models. Unsurprisingly, the control variables Age and the Square of Age had VIF scores above 10 across Models 1 to 3, indicating high correlation, which should not be a concern because Square of Age is derived from Age. The key independent variables (HIS-NB, HIS-1.0, HIS-1.5, and HIS-1.25) had VIFs below 1.5, and the control variables had VIFs below 10.

| Table 5. Estimated Effects of Being Hispanic by Immigrant Group on Log Hourly Wage Among Women. |
|---------------------------------------------------------------|
| Model 0           | Model 1           | Model 2           | Model 3           |
| Hispanics (native-born non-Hispanic White is reference group) |
| HIS-NB            | −0.1261**         | −0.0652           | −0.0651           | −0.0725          |
|                   | (0.0573)          | (0.0517)          | (0.0517)          | (0.0464)         |
| HIS-1.5           | 0.1607***         | 0.1368**          | 0.1465**          | 0.1409**         |
|                   | (0.0552)          | (0.0600)          | (0.0595)          | (0.0574)         |
| HIS-1.25          | 0.1810            | 0.0882            | 0.1476            | 0.1801           |
|                   | (0.2012)          | (0.2077)          | (0.2182)          | (0.1789)         |
| HIS-1.0           | −0.2839**         | −0.2875**         | −0.1493           | −0.0488          |
|                   | (0.0890)          | (0.1067)          | (0.1275)          | (0.1087)         |

Control variables

- Demographic: Y Y Y
- Parents’ education: Y Y Y
- Educational achievement: Y Y Y
- Field of study for highest degree: Y Y Y
- Carnegie classification: Y Y Y
- Region: Y Y Y
- Citizenship: Y
- Employment type: Y
- Employment size: Y
- Occupation: Y

Intercept 3.1436*** 1.7243*** 1.4551*** 1.5048***
Adjusted R² 0.0050 0.1430 0.1437 0.2281
N 14,423 14,423 14,423 14,423

Note. HIS-NB refers to native-born Hispanics. HIS-1.5 refers to foreign-born Hispanics who immigrated to the United States at a young age and attended high school (and later college) in the United States. HIS-1.25 refers to foreign-born Hispanics who attended high school overseas but obtained their highest degree in the United States. HIS-1.0 refers to foreign-born Hispanics who obtained all of their schooling overseas. The hourly wage is adjusted for regional cost-of-living differences. Robust standard errors are reported in the parentheses. The variance inflation factor (VIF) was used to diagnose multicollinearity for the models. Unsurprisingly, the control variables Age and the Square of Age had VIF scores above 10 across Models 1 to 3, indicating high correlation, which should not be a concern because Square of Age is derived from Age. The key independent variables (HIS-NB, HIS-1.0, HIS-1.5, and HIS-1.25) had VIFs below 1.5, and the control variables had VIFs below 10.

*p < .05. **p < .01. ***p < .001.
Table 6 are generally closer to the effects for the models in Table 4. These findings suggest that Mexicans are less selective whereas Colombians are the most selective among HIS-1.0. Compared with the results in Table 4 for HIS-1.25, the estimates in Table 6 are very similar for Other Hispanics. Colombians are the most selective and Mexicans are the least selective according to Model 0, but after controlling for the other independent variables in the other models, none of the effects are statistically significant in Table 6 for any ethnic group of HIS-1.25. This multivariate similarity is the same conclusion for Table 4. In regard to HIS-1.5, none of the coefficients in any of the models for any of the groups is statistically significant. This finding is the same basic conclusion for Table 4. Whether or not an overall Hispanic category or Mexican or Colombian, HIS-1.5 men appear to be on par with non-Hispanic White men.

Table 7 shows the multivariate results for Mexican, Colombian, and Other Hispanic women again using the same statistical models. Native-born, non-Hispanic White women are the reference group. The results for HIS-1.0 women show that the effects for Mexicans are not statistically significant while the effects for Colombians are more negative and statistically significant in Models 0 and 1. Thus, in contrast to men as well as to HIS-1.0 women overall, HIS-1.0 Mexican women are not less selective whereas HIS-1.0 Colombian women are less selective.

In regard to HIS-1.25 women in Table 7, none of the coefficients are statistically significant except for Colombians for

| Table 6. Estimated Effects of Being Hispanic Country of Origin on Log Hourly Wage Among Men. |
|---------------------------------------------------------------|
| Hispanic ethnic groups (non-Hispanic White men is reference group, N = 17,415) |
| Model 0 | Model 1 | Model 2 | Model 3 |
|---------------------------------------------------------------|
| **Hispanic ethnic groups** (non-Hispanic White men is reference group, N = 17,415) | | | |
| **HIS-1.0** | | | |
| Mexican | $-0.6094^{**}$ | $-0.5713^{**}$ | $-0.4213^{**}$ | $-0.3617^{**}$ |
| (N = 103) | (0.2055) | (0.1742) | (0.1618) | (0.1245) |
| Colombian | $-0.1267$ | $-0.1788$ | $-0.0371$ | $-0.1313$ |
| (N = 31) | (0.1338) | (0.1400) | (0.1577) | (0.1261) |
| Other Hispanics | $-0.3335^{**}$ | $-0.3680^{**}$ | $-0.2363^{*}$ | $-0.1929^{*}$ |
| (N = 203) | (0.1229) | (0.1177) | (0.0953) | (0.0853) |
| **HIS-1.25** | | | |
| Mexican | $0.1441$ | $-0.0434$ | $-0.0076$ | $-0.0953$ |
| (N = 57) | (0.1351) | (0.1282) | (0.1226) | (0.0916) |
| Colombian | $0.3320^{**}$ | $0.0481$ | $0.1254$ | $0.1186$ |
| (N = 48) | (0.1225) | (0.0816) | (0.0782) | (0.0757) |
| Other Hispanics | $0.1881^{*}$ | $-0.0254$ | $0.0362$ | $0.0318$ |
| (N = 190) | (0.0873) | (0.0730) | (0.0773) | (0.0712) |
| **HIS-1.5** | | | |
| Mexican | $-0.2033$ | $-0.0353$ | $-0.0249$ | $0.0341$ |
| (N = 133) | (0.1855) | (0.0834) | (0.0845) | (0.0625) |
| Colombian | $-0.0603$ | $-0.1174$ | $-0.1159$ | $-0.3590^{†}$ |
| (N = 35) | (0.1407) | (0.1180) | (0.1184) | (0.1876) |
| Other Hispanics | $0.0315$ | $-0.0672$ | $-0.0519$ | $-0.0237$ |
| (N = 269) | (0.1142) | (0.1087) | (0.1114) | (0.0841) |
| Control variables | | | |
| Demographic | Y | Y | Y | Y |
| Parents’ education | Y | Y | Y | Y |
| Educational achievement | Y | Y | Y | Y |
| Field of study for highest degree | Y | Y | Y | Y |
| Carnegie classification | Y | Y | Y | Y |
| Region | Y | Y | Y | Y |
| Citizenship | Y | Y | Y | Y |
| Employment type | Y | Y | Y | Y |
| Employment size | Y | Y | Y | Y |
| Occupation | Y | Y | Y | Y |
| Intercept | $3.4210^{***}$ | $0.9710^{***}$ | $0.7770^{***}$ | $1.0555^{***}$ |
| Adjusted $R^2$ | .0059 | .2339 | .2342 | .4253 |
| N | 18,484 | 18,484 | 18,484 | 18,484 |

Note. The hourly wage is adjusted for regional cost-of-living differences. Robust standard errors are reported in the parentheses. HIS = Hispanics.

$^{†}p < .1. ^*p < .05. ^{**}p < .01. ^{***}p < .001.$
whom the estimates are also extremely large in all of the models. For example, the coefficient for HIS-1.25 Colombian women in Model 1 controlling for the pre-labor market variables is 1.1885 which implies a net advantage of 228% (i.e., $e^{1.1885} - 1$). As shown in Table 7, this finding is based on only 26 cases. The coefficient in Model 1 for HIS-1.25 women overall in Table 5 was not statistically significant because Colombians are such a small group in this immigrant category. The finding of a large advantage for Columbian women in Table 7 suggests that they are an extraordinarily select group compared with Mexican and Other Hispanic HIS-1.25 women but also compared with Columbian HIS-1.25 men. Although not nearly as large, the coefficients for HIS-1.5 in Table 7 are also statistically significant for Colombians. The coefficients for Other Hispanics in Table 7 are statistically significant as well. The combined sample size for these two groups substantially exceeds the sample size for Mexican HIS-1.5 as shown in Table 7. The coefficients for Mexican HIS-1.5 women are not statistically significant in any of the models.

### Discussions and Conclusion

The college-educated Hispanic population is an important demographic category, but research on this group is unfortunately still lacking. The present study examines wage inequality between college-educated Hispanics and college-educated non-Hispanic Whites while taking into account Hispanic population’s immigrant generational status. Using prior

### Table 7. Estimated Effects of Being Hispanic Country of Origin on Log Hourly Wage Among Women.

| Hispanic ethnic subgroups (non-Hispanic White women is reference group, N = 11,995) | Model 0 | Model 1 | Model 2 | Model 3 |
|---------------------------------|--------|--------|--------|--------|
| HIS-1.0                         |        |        |        |        |
| Mexican                         | 0.2098 | 0.1299 | 0.2682 | 0.3325 |
| (N = 49)                        | (0.2587) | (0.2590) | (0.2455) | (0.2526) |
| Colombian                       | -0.4521** | -0.4251* | -0.3286† | -0.0742 |
| (N = 36)                        | (0.1399) | (0.1715) | (0.1902) | (0.1734) |
| Other Hispanics                 | -0.3280** | -0.3945** | -0.2557† | -0.2149† |
| (N = 137)                       | (0.1261) | (0.1289) | (0.1330) | (0.1229) |
| HIS-1.25                        |        |        |        |        |
| Mexican                         | 0.0585 | -0.2293 | -0.0927 | -0.165 |
| (N = 25)                        | (0.2225) | (0.1779) | (0.1799) | (0.1202) |
| Colombian                       | 1.1511*** | 1.1885** | 1.2066** | 1.2926*** |
| (N = 26)                        | (0.3089) | (0.4341) | (0.4225) | (0.4329) |
| Other Hispanics                 | -0.0249 | -0.1247 | -0.0733 | -0.0073 |
| (N = 114)                       | (0.1347) | (0.0801) | (0.0904) | (0.1314) |
| HIS-1.5                         |        |        |        |        |
| Mexican                         | 0.0477 | 0.1007 | 0.1059 | 0.0496 |
| (N = 75)                        | (0.1299) | (0.1274) | (0.1260) | (0.1198) |
| Colombian                       | 0.1886*** | 0.1784*** | 0.1814*** | 0.1585*** |
| (N = 24)                        | (0.0460) | (0.0565) | (0.0566) | (0.0596) |
| Other Hispanics                 | 0.2284*** | 0.1372† | 0.1501† | 0.1746* |
| (N = 197)                       | (0.0720) | (0.0796) | (0.0790) | (0.0776) |
| Control variables               |        |        |        |        |
| Demographic                     | Y      | Y      | Y      | Y      |
| Parents’ education              | Y      | Y      | Y      | Y      |
| Educational achievement         | Y      | Y      | Y      | Y      |
| Field of study for highest degree | Y      | Y      | Y      | Y      |
| Carnegie classification         | Y      | Y      | Y      | Y      |
| Region                          | Y      | Y      | Y      | Y      |
| Citizenship                     | Y      | Y      | Y      | Y      |
| Employment type                 | Y      | Y      | Y      | Y      |
| Employment size                 | Y      | Y      | Y      | Y      |
| Occupation                      |        |        |        |        |
| Intercept                       | 3.1436*** | 1.7876*** | 1.5384*** | 1.6053*** |
| Adjusted R²                     | .0068 | .1426 | .1431 | .2257 |
| N                               | 12,678 | 12,678 | 12,678 | 12,678 |

*Note.* The hourly wage is adjusted for regional cost-of-living differences. Robust standard errors are reported in the parentheses. HIS = Hispanics. 
†p < .1. *p < .05. **p < .01. ***p < .001.
research as a guide, Hispanic immigrants are broken down into groups based on their place of birth and the time they entered the U.S. educational system.

In regard to labor market parity—the classic issue of the extent to which workers with similar productivity-related characteristics are remunerated equally—our results generally support the conclusion that college-educated Hispanic women have achieved wage parity relative to native-born, college-educated, non-Hispanic White women in the labor market. The auxiliary analysis where Hispanics are broken down into Mexicans, Colombians, and Other Hispanics shows similar results. Indeed, Colombian women who immigrated at a young age or for college actually have higher wages than comparable non-Hispanic White women.

To be sure, the coefficient for native-born Hispanic women is negative and significant in Model 0. In a broader sense, the average socioeconomic standing of native-born, college-educated Hispanic women still lags behind that of college-educated, non-Hispanic White women. However, our results indicate that the discrepancy is not due to the labor processes that discriminate against Hispanics but rather to pre-labor market factors (e.g., demographics, field of study, college prestige) that are controlled for in Model 1. These pre-labor market factors, including the characteristics of educational attainment, however, can be affected by one’s racial/ethnic or gender background (Merolla, 2018). The wage disadvantage of HIS-1.0 women seems to be statistically explained by citizenship in Model 2. After controlling for citizenship in addition to the pre-labor market variables, the negative coefficients for Hispanic adult female immigrants are no longer statistically significant at a conventional level. This finding is consistent with a prior study finding that Hispanics with legal status in the United States fare better in the labor market than Hispanics without legal status (Hall et al., 2010).

Regarding college-educated Hispanic men, HIS-1.5 and HIS-1.25 also have achieved labor market parity relative to college-educated, native-born, non-Hispanic White men. However, native-born college-educated Hispanic men have not achieved full labor market parity relative to native-born, college-educated non-Hispanic men. The disadvantage is about 10% which is statistically significant. This finding controls for demographics, parental education, field of study, and college prestige so the continuing racial/ethnic disadvantage for native-born college-educated Hispanic men is a quite notable outcome.

This disadvantage of 10% poses a slight problem for traditional assimilation theory. Hispanic men who immigrated at a young age or for college seem to have achieved labor market parity as noted above, but native-born Hispanic men should be more assimilated than foreign-born Hispanic men. According to traditional assimilation theory, one would have expected the disadvantage to be associated with immigrant Hispanic men rather than with native-born Hispanic men (as is the case with Asian Americans; Kim & Sakamoto, 2010). The estimate of 10% is also slightly higher than the generic estimate of 4% mentioned earlier for native-born Hispanic men in 1990 (Sakamoto et al., 2000). This puzzling finding is augmented by the expectation that college-educated workers should be (if anything) more assimilated than workers without a college degree because American schooling generally promotes assimilation.

Perhaps the higher level of inequality in the 21st-century labor market has exacerbated average differences between groups (Blau & Kahn, 1992). As the earnings distribution becomes more dispersed, the distance between any two prior points on that distribution is accordingly stretched out (Manduca, 2018). If the wages of workers ranked lower in the labor market queue are declining over time while the wages of workers ranked high in the queue are increasing, then the wage differential could be increased over time. While providing specific evidence for this sort of explanation is beyond the scope of our analysis, future research is clearly needed on the labor market outcomes of native-born, college-educated Hispanic men.

College-educated Hispanic men who immigrated as adults face the largest wage penalties. In contrast to women, a sizable wage disadvantage persists after controlling for citizenship (in Model 2) and even work characteristics (in Model 3). This larger penalty for adult male immigrants is not necessarily contrary to assimilation theory because the college degree and much of the prior labor market experience were obtained outside of the United States. Nonetheless, the clear disadvantage among college-educated Hispanics who are adult immigrants underscores heightening stratification in the contemporary labor market.

The other general conclusion from our findings is that racial/ethnic effects may vary notably by gender. This conclusion has been made elsewhere for other racial/ethnic categories (Greenman & Xie, 2008) and has been theoretically considered in terms of “intersectionality” (McCall, 2001; Shields, 2008). Our findings contribute to the intersectionality literature and suggest that immigrant men and women can have different labor market opportunities and outcomes. Most concretely, our findings underscore that racial/ethnic inequalities in wages can vary considerably by gender in that the Hispanic–White wage differential among women (i.e., a Hispanic group of women compared with non-Hispanic women) is often quite different from the Hispanic–White wage differential among men (i.e., a Hispanic group of men compared with non-Hispanic men). For this reason, both theorists and researchers of racial/ethnic inequalities need to be careful to clarify which specific groups their conclusions apply to as well as what specific reference group is being used to make the contrast.

At the same, we are nonetheless impressed with the important effects of education to the extent that it is relevant and recognized in the contemporary American labor market. Although space constraints prevent us from displaying and reviewing the coefficients for all of the educational variables, in general they are sizable and are often larger than 10%. While our analysis did not include workers without a college
degree, the contrast between Model 0 and Model 1 involves controls in the latter specification for educational levels (i.e., by level and type of graduate degree), field of study of the highest degree, and an indicator of college or university prestige. In most of our tables, the contrasts between the estimated net racial/ethnic effects in Model 0 versus Model 1 are frequently substantial; for example, among HIS-1.25 men in Table 4, the disadvantage is 22% according to Model 0 (as noted earlier) but close to zero and not statistically significant according to Model 1. This and many other results suggest how various measures of educational attainment are important in affecting wage differentials. We interpret this latter conclusion as being broadly consistent with the view expressed by Fischer and Hout (2006) that education has become a critical determinant of inequality in modern America and that “educational attainment divides Americans economically, socially, geographically, and politically” (p. 241).

The findings of the present study have important theoretical implications. For instance, our study in part challenges conventional assimilation theory, which suggests that native-born Americans have better labor market outcomes compared with immigrants. In contrast, our results indicate that native-born college-educated Hispanic men lag behind comparable non-Hispanic White men in terms of hourly wages, whereas foreign-born Hispanic men who received education in the United States have achieved wage parity with native-born non-Hispanic White men. In addition, our results indicate that Hispanic men and women fare differently in the labor market. Thus, it will be important for future research to analyze men and women separately to prevent overlooking important gender differences in the labor market outcomes of immigrants. Our study also suggests that much can be learned by expanding assimilation theory so that it takes into account potential gender differences. Indeed, immigrant men and women might have very different migration experiences and outcomes.

Our findings indicate that receiving a college education in the United States could benefit immigrants. Thus, policymakers should implement educational programs for adult immigrants to ameliorate their disadvantages in the U.S. labor market. In addition, wage gaps between college-educated native-born Hispanics and comparable Whites might reflect an unfair reward system in the U.S. labor market, and measures should be taken to prevent such issues.

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Notes
1. A limitation of these data for our research purposes is that no direct information is provided about proficiency in English.
2. Aten (2007) provides Spatial Price Indexes for each state based on the 2003 and 2004 Consumer Price Index and county-level rent surveys from the U.S. Census Bureau. We used this information about Spatial Price Indexes but collapsed them to the level of the nine standard U.S. Census regions.
3. Recoding extreme values is preferable to deleting them which could generate sample selection bias. In our sample, 129 cases had an hourly wage below US$1, these cases were recoded to US$1. In total, 28 cases had an hourly wage above US$750. These cases were recoded to US$750.
4. The missing value on father’s education has a significant effect on the dependent variable (natural logarithm of hourly wage), suggesting that the categorical variable of missing data is indicative of representing some other unobserved characteristics, such as having a disadvantaged social background (i.e., family structure).
5. In this study, we use Carnegie Classification because it is available for more institutions than some other similar measures (i.e., Barron’s rating). In addition, Hersch (2019) suggested that Carnegie classification in National Survey of College Graduates (NSCG) is strongly related to Barron’s category.
6. The 45 occupations include computer scientist, mathematician, clinical psychologist, agricultural scientist, biological scientist, forest scientist, chemist, geography scientist, physical scientist, other physical scientists, economists, political scientists, psychologist, social scientist, other social scientist, astronomical engineer, chemical engineer, civil engineer, computer engineer, industrial engineer, mechanical engineer, other engineer, health-related occupations, computer and engineering related managers, secondary teacher, technicians, other technicians, architects, actuaries, top- and mid-level managers, accountants/personal training/other management related, pre-secondary teachers, post-secondary teachers, clergy/counselors, social workers, marketing-related occupation, writer, historian, administration, farmers/lawyers/librarians, public service, tutors, construction, and other occupations.
7. We analyzed another set of auxiliary analysis examining Hispanic Whites and Hispanic non-Whites’ wage differentials. We found no statistically significant differences between these two groups. The results are available upon request.
8. The sample sizes of Hispanics born in Peru or Cuba are fairly large overall, but not for each of the three foreign-born immigrant groups after breaking down by gender. To ensure statistical robustness, Peruvians and Cubans are therefore included into the Other Hispanics category.

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