

Does Skin Tone Matter?

Immigrant Mobility in the U.S. Labor Market

JooHee Han

School of Labor and Employment Relations
University of Illinois Urbana-Champaign
joohee@illinois.edu

Abstract

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Keywords: skin tone, immigration, assimilation, occupational status.

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INTRODUCTION

Skin tone emerges at the center of recent scholarship on the process of changing racial hierarchies and racial inequality. The greater influx of immigrants of color, scholars predict, will change the current black-white racial divide in the future (Lee and Bean 2007). Some expect the American stratification structure will be rearranged to be more like that of Latin America where inequality is shaped along color scales rather than racial categories (Bailey, Fialho, and Penner 2016; Bonilla-Silva and Dietrich 2009; Telles 2014). Some others expect that the racial hierarchy in the U.S. will change from whites/non-whites to non-blacks/blacks as the majority group embraces lighter-skinned racial groups whose socioeconomic status becomes comparable to whites, including Asians and light skinned Latinxs, a process called “whitening” (Gans 2012). Another prediction of the future racial hierarchy in the U.S. is to move “toward the eventual elimination of distinct racial and ethnic groups in favor of a skin-color hierarchy,” based on the fact that over history the skin color hierarchy has changed little while the meaning of race and ethnicity has changed substantially (Hochschild 2005: 81).

The diverse racial and ethnic composition of contemporary immigrants also suggests that skin tone plays a key role for immigrants in navigating their positions in the U.S. racial hierarchy and their relation to native-born Americans at the individual level. Upon encountering the U.S.’ prevailing system of colorism and racism skin tone is critical for U.S. immigrants because they either rarely experienced racial discrimination in their country of origin or were familiar with a differing hierarchy of skin tone status (Foner 2000; Roth 2010; Waters 1999). Skin tone can continue to influence the immigrant assimilation process and ethnoracial identity formation, particularly among

immigrant children, because skin tone is an important phenotype by which native people perceive immigrants' race (Alba and Nee 1997; Gans 1992; Portes and Rumbaut 2006; Portes and Zhou 1993; Zhou 1997).

Nonetheless, empirical studies examining immigrant skin tone discrimination are scarce, in large part because representative survey data to measure skin tone in addition to race are also scant.¹ Longitudinal data that include skin tone are even scarcer. The few existing empirical, survey-based studies of immigrants find a negative effect of dark skin tone on labor market outcomes (for example, Frank, Akresh, and Lu 2010; Hersch 2008; Mason 2004; Rosenblum et al. 2016). A drawback of these studies is that they examine the effect of skin tone only at one time point, leaving the question of how skin tone influences the immigration and labor market assimilation process over time unexamined. Nonetheless, these existing studies suggest that reception in the U.S. is deflected downward for darker-skinned immigrants.

On the other hand, those studies that examine immigrant assimilation processes over time tend to neglect skin tone effects (for example, Akresh 2008; Chiswick 1978; Chiswick and Miller 2009). They explain downward mobility experienced by immigrants when they cross the border as being due to imperfect skill transferability and show that immigrants later experience upward mobility as they accumulate destination country-specific human/social capital, resulting in U-shape labor market trajectories. While these studies focus on how country of origin, visa type, education level, and social ties influence the depth of the U-shape, none of them examine immigrant skin tone, nor race of immigrants. That the only relevant control variable in those studies is country of origin indicates that the authors seem to assume that immigrants from one country are racially

homogenous while ignoring the possibility that skill transferability is influenced by racial and/or skin tone discrimination.

In this study, using the New Immigrant Survey (NIS) 2003, I analyze how skin tone influences immigration and assimilation processes in occupational trajectories, including the baseline pre-immigration period. This study is the first to analyze the mechanisms of dark skin tone penalties for immigrants in the U.S. labor market, focusing on temporal incorporation, controlling for pre-immigration selection, and across the full range of immigrant origins using a representative survey of immigrants who earned their legal permanent residency. This study also contributes to the immigrant assimilation literature with its focus on the effect of skin tone and racial group membership on intra-generational mobility for the first generation, which has been less developed in the current literature, cultural narratives of assimilation in particular. In addition, this study brings attention to the role of skin tone in the current skill transferability literature by examining the extent to which skin tone influences the process.

COLORISM AND RACIAL INEQUALITY IN THE U.S.

A rich literature documents the negative association between dark skin tone and various social stratification outcomes in the U.S., such as occupational status, income, educational attainment, and mate selection (Hamilton, Goldsmith, and Darity 2009; Hughes and Hertel 1990; Hunter 1998; Keith and Herring 1991; Monk 2014), as well as in psychological domains such as self-esteem, perceptions of attractiveness, racial identity, and whites' affective reactions to minorities (Bond and Cash 1992; Hagiwara, Kashy, and Cesario 2012).

Such stratification by skin tone is the consequence of colorism, defined as “the process of discrimination that privileges light-skinned people of color over their dark-skinned counterparts” (Hunter 2007: 234). Colorism is conventionally understood as a within-ethnoracial process that operates in relation with but in many ways distinctively from racism, which is defined as discrimination by membership in racial categories. Hunter (2007: 238), for example, theorizes this relationship: “racism is a larger, systemic social process and colorism is one manifestation of it,” characterizing the degree of racial discrimination as moderated by skin tone, with lighter-skinned individuals facing less racial discrimination. Reflecting this perspective, negative effects of dark skin tone among Americans are therefore documented only within one specific racial or ethnic group in most empirical studies: often limited to either blacks (Hughes and Hertel 1990; Hunter 1998; Keith and Herring 1991) or Hispanics (Espino and Franz 2002; Mason 2004).

However, research on racial fluidity and multi-dimensionality contingent on social contexts, as well as racial formation theories (Roth 2010; Saperstein 2006; Saperstein, Penner, and Light 2013; Omi and Winant 1994) suggests that colorism should also be conceptualized beyond a within-race discrimination process because skin tone, along with other phenotypes, influences the boundaries of ethnoracial group membership itself. Ethnoracial boundaries are not naturally given or fixed but created and changing as a consequence of constant negotiations between actors who have different strategies in defining memberships of ethnoracial groups (Wimmer 2008), through interactions across individual (micro), institutional (meso), and cultural (macro) levels (Saperstein, Penner, and Light 2013). In this process, skin tone plays a key role as a signal of race, particularly

when racial classification process is an interactional accomplishment. It has been pointed out that along multiple dimensions of ethnoracial classification, perception of race by others is more critical than self-identified race in predicting discrimination (Golash-Boza 2006; Mason 2004; Monk 2015; Roth 2010; Saperstein 2006). A mismatch between racial self-identity and racial classification by others based on phenotype is often observed in daily life interactions. Light-skinned Hispanic high school students are often perceived as white European descendants despite their self-identity as Latinxs (Fergus 2009). Reflecting such a discrepancy between self-identified and perceived race, empirical studies show that the combination of skin tone and self-identified race serves as a better predictor of inequality in the U.S. and in the majority of Latin American countries than either race or skin tone alone does (Bailey, Fialho, and Penner 2016). This scholarship thus suggests that skin tone stratification must be understood beyond one ethnoracial group as skin tone and self-identity are two different dimensions of race (Roth 2010).

DOWNWARD MOBILITY OF IMMIGRANTS OF DARK SKIN TONE

Dark Skin Tone Penalties

Empirical studies of variation in skin tone show a dark skin tone penalty in the U.S. labor market among immigrants as well, net of race and other individual demographics. Hersch (2008), using the NIS data, finds immigrants with the lightest skin color earn, on average, 17 percent more than comparable immigrants with the darkest skin tone, net of race. Such a dark skin tone penalty is also found within a specific ethnic immigrant group. Frank, Akresh, and Lu (2010), for example, using the same data, find dark skin tone to be associated with wage loss among Latinx immigrants, with darker

toned Latinx immigrants earning, on average, \$2,500 less per year than their lighter-skinned counterparts.

The existence of dark skin tone penalties indicates that skin tone is a critical factor in immigrants' assimilation to the U.S. mainstream. Assimilation theory predicts that immigrants will be unilaterally assimilated into the U.S. mainstream, although it may take time (Alba and Nee 1997, 2003). Scholars of assimilation theory argue that dark skin tone may slow the pace of acculturation as dark-skinned immigrants more often face racial discrimination, but that it is not an absolute obstacle. Gans (1992) raises the possibility that immigrants with dark skin color and/or from a low socioeconomic class in the country of origin, in particular, may be trapped at the bottom of stratification in the U.S. It is likely that, because skin tone separates those deemed phenotypically black from whites, immigrants with darker skin tone, like those from the Caribbean, will have more difficulty assimilating to the U.S. than immigrants with lighter skin tone (Alba and Nee 1997). However, they further argue that skin tone is not an all-encompassing obstacle since there are immigrant groups, like South Asians, whose skin tone is relatively dark but who have successfully achieved higher socioeconomic status. Instead, their new assimilation theory contends that the types of capital (human and cultural capital) immigrants bring with them, rather than skin tone or race, are the stronger predictors of immigrants' assimilation (Alba and Nee 2003).

In contrast, "segmented assimilation" scholars suggest that race is a singularly critical determinant of immigrants' assimilation paths, especially among immigrant children. Segmented assimilation theory posits that immigrants' assimilation into the U.S. society is not a singular path but that the context of reception in the U.S. determines the

direction of assimilation (upward, lateral, and downward) (Portes and Rumbaut 2006). Skin tone is one of the factors that set the context of reception because some of the new immigrants may never have experienced discrimination based on skin tone or racial type in their home countries (or experienced culturally different racialization hierarchies in their sending societies). Relative to light-skinned European descendants whose assimilation to the American mainstream was less influenced by phenotypical discrimination, new immigrants and their children often encounter racial barriers to upward mobility (Portes and Zhou 1993; Zhou 1997).

As such, both assimilation theory and segmented assimilation theory contend that the dark skin tone of immigrants is an obstacle to assimilation and upward mobility, largely because a dark skin tone is associated with black Americans, who are often stuck at the bottom of the racial hierarchy in the U.S. Alba and Nee (1997: 846), for example, argue that “not dark skin color per se, but the appearance of connection to the African American group raises the most impassable racist barriers in the United States.” In other words, a dark skin tone matters only as long as immigrants’ skin tone is dark enough to be perceived as African American.

However, a dark skin tone penalty is found both within and across ethnoracial groups, beyond whether dark skin tone is categorically connected to an African American phenotype or not. Even within African American racial groups, dark-skinned members face stronger discrimination in the labor market than lighter-skinned members (Kreisman and Rangel 2015; Monk 2014) and similar results are found among Hispanics as well (Frank, Akresh, and Lu 2010; Mason 2004). Golash-Boza (2006: 35) insists that how much Latinxs “fit the Hispanic somatic norm image” of the Indian/mestizo phenotype, a

stereotype widely shared among Americans as hardworking, undocumented, low wage earners, rather than their association with a black racial phenotype, determines whether they will face racial discrimination instead of ethnic discrimination. Kreisman and Rangel (2015) found a larger wage gap between light-skinned and dark-skinned African Americans than that between whites and blacks, suggesting that a dark skin tone penalty results from more complex mechanisms beyond self-identified membership in the black racial group.

Both theory and empirical analyses of the role of skin tone for the immigrant assimilation process have been relatively underdeveloped in the assimilation and segmented assimilation literatures, where dark skin tone is discussed as just an indicator of immigrants' black racial classification. Golash-Boza (2006: 31) critiques segmented assimilation theory's lack of critical evaluation of racial discrimination, failing to address the extent to which "whiteness is a prerequisite for assimilation into dominant culture." Similarly, Jung (2009) points out that their study fails to acknowledge the dynamics of racial inequality and domination of immigrants by omitting native-born African Americans in their models, treating them as an exceptionally unassimilated population. Further, even less emphasis is placed on racial mobility blockages in the new immigration theory (Alba and Nee 2003).

Downward Mobility of Dark Skin Tone Immigrants

Scholars who study skill transferability between pre- and post-immigration find that immigrant labor market trajectories often follow a U-shape. Due to imperfect skill transferability, immigrants experience downward mobility immediately after immigration

and then experience upward mobility as they accumulate human capital in the destination country (Akresh 2008; Chiswick 1978; Chiswick and Miller 2009); but how the skin tone or race of immigrants may affect the shape of this curve has not been considered.

While both assimilation and segmented assimilation theories put more focus on the intergenerational mobility of subsequent generations rather than intragenerational mobility of first generation immigrants themselves, segmented assimilation studies suggest that downward mobility at arrival is influenced by skin tone as well. The implicit assumption of the argument that race is one of the main factors determining the context of immigrants' assimilation process is the premise that immigrants have rarely experienced prejudice and discrimination based on their phenotypes in their home countries. Scholars argue that immigrants of dark skin tone in particular have to re-define their phenotypic attributes as obstacles of upward mobility in the U.S. after immigration (Portes and Zhou 1993; Zhou 1997). As a consequence, immigrants with dark skin tone often stress their ethnic identities in order to avoid the subordinate status attached to American blacks (Bonilla-Silva 1997). For example, Foner (2000: 260) notes “[d]ark-skinned (West) Indian immigrants, whose skin color might put them at risk at being confused with African Americans, emphasize their ethnic identity and distinctive history, customs, and culture as a way to avoid such mistakes.”

Despite the racial hierarchy in the U.S. some dark-skinned immigrant groups achieved upward mobility. Scholars attribute this economic success to ethnic identity and culture that such immigrants maintain in resistance to the attempt to racialize them as American blacks (Portes and Zhou 1993). Waters (1999) goes further, arguing that West Indian immigrants maintain strong ethnic identities and culture, which allow them to

resist American black culture into which they would have otherwise assimilated. In other words, these three cultural factors combined together--positive attitudes toward work and employment; an ambitious outlook stemming from their high socio-economic status in the sending countries; and soft skills to deal with interpersonal interactions with white Americans--led West Indian immigrants to economic success relative to American blacks. Such a cultural explanation overlaps with the new assimilation theory that stresses cultural and human capital as a key to immigrant mobility (Alba and Nee 2003).

In contrast to cultural explanations of economic success of dark-skinned immigrants, empirical studies point to discrimination and prejudices against dark-skinned immigrants in the U.S labor market resulting in job mismatch and instability that prohibit upward mobility. Although not limited to immigrants, Kreisman and Rangel's finding (2015) that the wage gaps between light-skinned blacks and dark-skinned blacks increase over time in the National Longitudinal Survey of Youth 1997 data suggests that similar processes may also apply to immigrants. The authors speculate that the cumulative disadvantage for darker-skinned blacks results from mismatches and job instability due to labor market discrimination. Furthermore, the discrimination is more likely preference-based discrimination against darker skinned blacks rather than statistical discrimination for the whole black racial group since the negative effect of dark skin tone on wage has not been ameliorated despite their accumulation of experiences over their working careers.

Many immigrants are known to find their first job in co-ethnic niches but dark-skinned immigrants are likely less able to enter into the better paying general labor market. Morales (2008), for example, finds that dark-skinned Latinxs are more likely

relative to light-skinned Latinxs to find employment in co-ethnic niches. The author, applying queuing theory, explains that workers are sorted by skin tone and lighter skinned workers are preferred in the general labor market but dark-skinned workers are not, leaving dark-skinned immigrants with fewer chances to be hired in the general labor market, regardless of earnings, resulting in limitations on upward mobility. The author suspects that the result is more likely due to labor queue (employers' preference). In a similar way, residential immobility of immigrants of dark skin tone (for example, South, Crowder, and Chavez 2005) may create a job mismatch as well by prohibiting them from moving close to better jobs.

Another source of discrimination against dark-skinned immigrants in the labor market is the perceived criminality of dark skin tone. In an experimental study, Dixon and Maddox (2005) find that participants (95 out of 130 being white), when viewing television news reports, were more likely to remember a darker-skinned black male perpetrator, and felt more emotional discomfort than when a perpetrator was a lighter-skinned black. Such a tendency is also found among Hispanics as well. Second generation Latinxs are more likely to be arrested in the Greater Los Angeles County Area net of individual attributes (Alcala and Montoya 2016), presumably evidence of the perceived criminality of dark-skinned Latinxs. Pager (2009) shows that not only a criminal record but also widespread perception of all blacks as potential criminals reduces their employment probability. Even without such a perceived criminality, affective reactions toward immigrants based on skin tone via interpersonal interactions may shape the diverse paths of assimilation. For example, in an experimental implicit bias study, Hagiwara, Kashy, and Cesario (2012) find that whites react more negatively

toward blacks with darker skin tone and more typical facial features of African Americans than toward blacks with lighter skin tone and less typical facial features of African Americans without being aware of their different reactions.

From the discussions above, I hypothesize that *H1: Immigrants with darker skin tone will experience steeper downward mobility at arrival to the U.S. net of race*, and that *H2: Immigrants with darker skin tone will experience less steep upward trajectories post-immigration net of race*.

On the other hand, a dark skin tone penalty at arrival to the U.S. may not emerge if dark-skinned immigrants already experienced similar penalties in their country of origin. Preferential treatment toward people with lighter skin tones is also found in some countries around the world, including some Asian countries (Glen 2009), Mexico (Villarreal 2010), and Brazil (Telles 1992). For example, Rondilla (2009) finds that lighter skin is preferred among Filipinos and the preference is stronger among immigrants compared to U.S.-born Filipinos. Such a prevailing preference around the world is attributed to the beauty industry's promotion of whiteness as a primary symbol of beauty (Glen 2009) and internalization of whiteness as superior after colonial histories (Hall 2010). Stratification by skin color, "pigmentocracy," is prevalent across many Latin American countries (Bailey, Fialho, and Penner 2016; Telles 2014). Villarreal (2011), for example, finds that Mexicans with dark brown skin tone have lower levels of educational attainment and occupational status and their likelihood of living in poverty is higher than those with lighter skin tone. However, it is difficult to test this hypothesis unless we can compare the immigrants sample both to the population of their sending countries and to the U.S. population in order to measure the relative penalty of dark-skinned immigrants

across their sending countries and the U.S. Thus, in this study, comparing the skin tone effects net of race between the pre-immigration baseline period and after-immigration periods will test the level of dark skin penalty among the immigrants when they cross the border.

ANALYTIC STRATEGY

I analyze the New Immigrant Survey (NIS) 2003 data.² The sample is comprised of immigrants who obtained lawful permanent residency (LPR) in 2003 and the survey was fielded in 2003 and 2004. Jasso et al. (2000) stress that the NIS was designed to overcome a number of deficiencies in previous immigrant related surveys. The first is cross-sectionality, lacking pertinent information on individual immigrants' dynamics. The second is small sample sizes, which limited the number of immigrant groups that could be analyzed. Third, crucial variables, such as specific visa categories, were missing in earlier surveys. The NIS data include information on pre-immigration history and are designed as panel data. Such longitudinal information enables researchers to study dynamic aspects of immigration.

Importantly, the NIS 2003 data has an unusually precise measure of skin tone, from 0 to 10, with 0 being lightest and 10 darkest. The skin color scale was printed in the field interviewer manual and interviewers were asked to measure respondents' skin tone after the survey regardless of race (respondents could not see the scale).³ Skin tone is reported for the 4,652 face-to-face survey respondents out of 8,573 respondents total, excluding phone interview respondents.⁴ The skin tone measure in the NIS has been tested as to its precision and judged to be both valid and reliable (Hersch 2008).

Following the previous studies using the NIS data, in this study skin tone is treated as an interval variable.

The main research question of this study is to evaluate the effects of skin color on immigrants' occupational trajectories over the immigration process. The dependent variable is immigrants' occupational status and its trajectory over time. The survey asked respondents' occupation at three time points: job held before immigration (T1), first job in the U.S. (T2), and current job at interview date (T3).^{5,6} Occupational status is coded with the International Socio-Economic Index (ISEI) of 2008 (Ganzeboom 2010), the updated version of the 1988 International Standard Classification of Occupations (Ganzeboom and Treiman 1996). Compared to the 1988 version, the new ISEI of 2008 is derived from larger samples in more countries from the International Social Survey Program (ISSP) 2002-2007, with women now included.⁷ The Census 2003 occupation codes in the NIS 2003 are recoded into ISEI 2008. I analyze ISEI instead of wage/earnings for a couple of reasons. First, some of the countries of origin are grouped into several regions for confidentiality purposes in the NIS 2003 data, which makes it difficult to adjust wages from jobs abroad into comparable U.S. wages based on international currency rates. Second, ISEI has strengths over the wage/earnings variable in that ISEI is based not only on earnings for each occupation but also on education level for each occupation so as to capture one's relatively stable socioeconomic status rather than potentially transitory income status. Hence, ISEI is more stable and comparable across time and space, and thus it is a better measurement for international comparison (Hout and DiPrete 2006; Treiman 1977). For these reasons, ISEI is used in many previous studies to examine pre- and post-immigration mobility (Akresh 2008).⁸

Since not all respondents whose skin tone is reported are employed at all three time points, the analysis is limited to those whose skin tone is reported and who were employed at each period. This selection rule makes the current study comparable to previous research using the same dataset, which also limits the sample to respondents who were employed (Akresh 2008; Frank, Akresh, and Lu 2010; Hersch 2008).⁹ Excluding respondents who were not employed in paid work may cause drawbacks and potential biases if skin tone strongly selects into employment. Thus, it is possible that the skin tone penalty, if found in this study, will actually be larger than estimated.

Self-identified race is controlled, and interacted with time in separate models in order to examine the relative role of skin color and race/ethnicity. The NIS asks if they are Hispanics or not regardless of race. A relatively large proportion of respondents identify themselves as whites (53%); this will be discussed further. Asians consist of 26 percent, blacks 11 percent, and Native Americans and Pacific Islanders 4 percent of the sample. To avoid bias from missing on the race variable, race missing is also controlled for.

Variables that may influence occupational status and immigrants' assimilation are additionally controlled: demographics of gender and age, human/social/cultural capital, visa type, country of origin, U.S. experiences, regions of U.S. residence. Definitions and measurements are provided in the Appendix, Table A.1.

[Table 1 about here]

Table 1 summarizes the descriptive statistics of the variables. I construct the data

as person-time longitudinal data. The total number is 8,159 person-time observations whose skin tone is reported and who were employed at each time point. The mean occupational prestige score across the three time points is 39.10. The mean transition between T1 and T2 is -8.17 and that between T2 and T3 is 2.48, which clearly shows that immigrants experience downward mobility with immigration and then recover their occupational status over time. The average trajectory follows a U-shape, as predicted in the literature.

ANALYSIS

Figure 1, which describes the mean ISEI scores by skin tone at three time points, clearly shows that occupational status is stratified by skin tone: immigrants with light skin have higher occupational status than those with medium and dark skin tone during and after immigration, all following U-shape trajectories as expected. However, the depth of U-shapes is different by skin tone. Immigrants with dark skin tone experience steeper downward mobility but less steep upward mobility after immigration than immigrants with lighter skin tone do.

[Figure 1 about here]

To examine the net effect of skin tone on occupational status at three time points, a generalized least square random effects model, which adjusts for correlations among observations and heteroscedasticity, is employed.¹⁰ Fixed effects models are often applied to panel data in order to capture the net effects of time-varying variables on outcome

variables while controlling for both observed and unobserved heterogeneities across entities, α_i , as in equation (1).

$$y_{it} = \mu_t + \beta \text{SkinTone}_i + \gamma \text{Time2}_i + \delta \text{Time3}_i + \eta \text{SkinTone} \times \text{Time2}_i + \theta \text{SkinTone} \times \text{Time3}_i + \lambda X_i + \alpha_i + \varepsilon_{it} \quad (1)$$

$$y_{it} = (\mu_t + \alpha_i) + \beta \text{SkinTone}_i + \gamma \text{Time2}_i + \delta \text{Time3}_i + \eta \text{SkinTone} \times \text{Time2}_i + \theta \text{SkinTone} \times \text{Time3}_i + \lambda X_i + \varepsilon_{it} \quad (2)$$

Instead, in this study, random effects models are applied since the main research interest is the effect of skin tone, a time-constant variable as in equation (2), where y = ISEI score, i = individual, t = time point, X_i = a set of time-constant control variables, μ_t = an intercept that may be different for each period, and ε_{it} = individual and time-specific error term.¹¹ In random effects models, α_i is assumed to be a set of random variables that are normally distributed, of which variance is constant, and that is independent of all other independent variables. Whereas α_i is controlled for in fixed effects models, it creates a random intercept combined with μ_t but not controlled for in equation (2).¹² In addition to the coefficient β of the main independent variable, skin tone, time dummies for Time2 and Time3 are estimated to measure the mean of the time-specific effects across individuals relative to those at Time1. Furthermore, interaction terms of skin tone with Time2 and Time3 are estimated to capture how the effect of skin tone varies across time.

Results show that immigrants with dark skin tone are likely to have lower occupational status at all three time points. Table 2 summarizes the coefficients of the

GLS random effects model predicting occupational status. In model 1, it shows that one scale unit difference in darker skin tone is associated with 0.88 lower occupational status on average across three time points. Immigrants experience a steep downward mobility at T2 on average, the first job in the U.S., of which occupational status is 8.77 points less than T1, the last job abroad. Then, immigrants catch up in occupational status by 2.43 points at T3.

Next, time and skin tone interaction terms are added in model 2, which shows that the dark skin tone penalty is stronger at T2 and T3, after immigration to U.S., relative to before immigration. One unit darker skin tone additionally decreases occupational status by 0.44 points at T2. That is, immigrants, on average, experience downward mobility after immigration to the U.S. at T2 by 6.99 points and immigrants with one scale darker skin tone experience 0.44 points further downward mobility. Thus, immigrants with the darkest skin tone experience downward mobility by $0.44 \times 10 = 4.4$ points further than those with the lightest skin tone at T2. Thus, for example in service and sales occupations, an immigrant who worked as a transport conductor (ISEI = 40) in their home country is likely to have his/her first job in the U.S. as cleaning and housekeeping supervisor in offices/hotels (ISEI = 33), while s/he may be likely to get a lower-level occupation such as waiter (ISEI = 28) if s/he has the darkest skin tone.

[Table 2 about here]

The dark skin tone penalty in the U.S. diminishes slightly but still persists at T3. The interaction effect of dark skin tone at T3 is -.34, which means immigrants with one scale unit of darker skin tone have 0.34 point lower occupational status at T3 in addition

to the average downward mobility experienced by immigrants relative to T1. This coefficient is slightly lesser than $-.44$ at T2 but still larger than before immigration, at T1, and statistically significant. Controlling for additional covariates in model 3 yields the similar dark skin tone penalty at T2 and T3 and the results stay robust even controlling for race in model 4.

Employment status, as well as occupational status, is also a critical measure of labor market outcomes because unemployment can be an extreme example of downward mobility if one cannot find a job after immigration. However, the NIS 2003 data contain respondents' employment status in detail only at T3, whether a respondent is working, unemployed and looking for work, temporarily laid off/on sick or other leave, disabled, retired, or a homemaker. At T1 and T2, the survey asked about a respondent's job only if they ever worked for pay. Thus, by necessity I had to exclude the unemployed from this analysis. As a sensitivity test for resulting bias, I examined whether dark skin tone is associated with non-working status, including but not limited to the unemployed among the respondents who have valid skin color information and were in the labor force. Similar to Monk (2014), I found no evidence for association between dark skin tone and non-working status. This was the case even when limiting the analysis to T3, when detailed employment status is specified, and, still, no association is found between skin tone and unemployment excluding those age 65 and older, most of whom are likely retired.

Next, in order to further examine the relative role of skin tone and race, race is modeled and interacted with time. The results are provided in model 5 through model 7 in Table 2. Hispanics, on average, are likely to have 11.12 points lower occupational status

than non-Hispanics across three time points (model 5). In addition, compared to whites, Asians have 3.54 higher occupational status whereas blacks have 4.99 lower status across times. When race is interacted with T2 and T3 in model 6, Hispanics have 1.23 points and 3.13 points higher occupational status at T2 and T3 respectively relative to non-Hispanic immigrants, but statistically significant only at T3. Despite the higher occupational status at T3 than T1, Hispanics yet have lower occupational status than non-Hispanics due to the overall low status by 12.50 points (coefficient of Hispanic in model 6). Similarly, Asians have 4.27 and 3.28 points higher occupational status at T2 and T3 relative to white immigrants. Considering the overall higher occupational status of Asians relative to white immigrants, Asians continue to maintain higher status. On the other hand, blacks have 4.39 and 4.02 points lower status at T2 and T3 respectively. Results suggest that Hispanics and Asians experience upward mobility over time at T2 and T3 relative to their reference groups whereas blacks continue to remain in lower occupational status over time. A similar pattern is found when additional covariates are controlled for in model 7.¹³

Finally in model 8, both race and skin tone are interacted with T2 and T3. The interaction effects of race with time stay similar to those in model 7, where skin tone and time interactions are not included. However, the skin tone and time interaction effects disappear in model 8. This does not mean that there is no additional skin tone effect on immigrants' occupational mobility once race interaction effects are also controlled for. Considering the stronger dark skin tone penalty at T2 and T3 (interaction effects) net of race in model 4, one plausible interpretation is that skin tone is a strong indicator of race and inclusion of a race interaction absorbs the variance of occupational status associated

with skin tone. Table 3, which summarizes coefficients of skin tone and interaction terms with time for each ethnoracial group, shows that time and skin tone interaction effects disappear for all subsample of ethnoracial groups.¹⁴ In addition, within-group dark skin tone penalties appear only for Hispanics when covariates are controlled and additionally for whites when covariates are not controlled. Since Hispanics can be any race, negative coefficients of skin tone in both models 1 and 2 suggest skin tone is an indicator of race among Hispanics although there is no time interaction effect. Interestingly, an even stronger negative effect (-2.11) of darker skin tone appears among whites in model 3 than among Hispanics (-.83) in model 1, which suggests that discrepancy between self-identified white race and their perceived dark skin tone is larger among whites than among Hispanics (and blacks and Asians).

Nonetheless, it is worth noting that interaction effects of skin tone with time remain negative for blacks and Asians (and white at T2) although they are not statistically significant. This loss of significance results, at least in part, from the reduction in statistical power when stratifying the sample by ethnoracial groups. Inclusion of interaction terms between race and skin tone (not shown here) in models 3 and 4 in Table 2 (pooled sample) does not change the interaction effects of skin tone with T2 and T3, suggesting that the within-race dark skin tone penalty likely exists although the statistical power decreased in subsamples. In sum, results show that skin tone not only serves as an indicator of perceived race but also creates inequality within self-identified race.

[Table 3 about here]

The dark skin tone penalty in the immigration process discussed so far is summarized in Figure 2, which shows the means of predicted occupational prestige scores for the sample by skin tone and time after each individual is fitted to OLS regressions at each time point with all covariates controlled. Even before immigration, immigrants with darker skin tone are predicted to have lower occupational status. The association, however, is not linear. Immigrants with darker skin tone have higher occupational status than those with medium skin tone. Indian immigrants and highly selective African immigrants with very dark skin color belong to this group. After immigration at T2 and at T3, immigrants, regardless of skin tone, have lower occupational status than in their home country. At this time, however, the relationship between skin tone and occupational status is linear, with immigrants with darker skin tone having lower occupational status than those with lighter skin tone. This shows that immigrants with the darkest skin tone are expected to experience the most downward mobility when crossing the border and in their assimilation process after immigration.

[Figure 2 about here]

DISCUSSION AND CONCLUSION

Due to the lack of available data, previous empirical research using large-scale survey data examines mainly the dark skin tone penalty for immigrants cross-sectionally in the U.S., failing to examine the influence of skin tone during the immigration process and the post-immigration assimilation process. In this study using the NIS 2003 data, which measured both immigrants' occupational history including pre-immigration jobs

and their skin tone, I examine the effects of skin tone and race on immigrants' occupational trajectories, including the transition from their home country to the U.S. labor market.

I find that immigrants whose skin tone is darker are more penalized in the process of migration to the U.S. by experiencing deeper downward occupational mobility relative to those whose skin tone is lighter. This supports my first hypothesis, which predicted that immigrants with darker skin tone will experience steeper downward mobility upon arrival to the U.S. While some scholars find a U-shape pattern of immigrants' occupational mobility trajectory (Akresh 2008; Chiswick 1978; Chiswick and Miller 2009), they focus mainly on human capital aspects from the skill transferability frame without incorporating discrimination factors caused by phenotypic attributes like skin tone. However, the current study suggests that skin tone and race influences the skill transferability processes of immigrants. In addition, my results show that immigrants with the darkest skin tone have lower occupational status in the U.S. labor market than they did in their home country. This may imply that immigrants begin to face discrimination based on their skin tone upon arriving to the U.S., which they had not, or to a lesser degree, experienced in their home country. By ethnoracial group, Hispanics and Asians are likely to experience upward mobility after immigration whereas blacks continue to remain at a lower occupational status than white immigrants. This finding supports previous assimilation and segmented assimilation studies suggesting that phenotypic attributes such as skin tone and race set the context of reception for immigrants in the U.S., compelling immigrants to redefine the meaning of their phenotypic attributes in a new cultural stratification system (Alba and Nee 1997; Gans

1992; Portes and Rumbaut 2006; Portes and Zhou 1993; Zhou 1997).

Furthermore, the results reveal that the dark skin tone penalties in the U.S. labor market do not diminish over time among immigrants even as they develop skills and accumulate work experiences in the U.S., resulting in a lopsided U-shape pattern. This supports my second hypothesis, which predicted that immigrants with darker skin tone will experience less rapid upward trajectories over post-immigration time. While assimilation theories focus on second and third generations' mobility, this finding challenges assimilation theory's prediction that phenotypic attributes are not impassible obstacles for immigrants in the long run even if they do slow the pace of assimilation (Alba and Nee 1997, 2003). Instead, this finding is consistent with Hersch's study (2011) (and segmented assimilation theory), which finds that the dark skin tone penalty persists over time among immigrant spouses of the respondents in the NIS 2003 data, whose duration of residence in the U.S. is more heterogeneous than that of the primary respondents. However, this conclusion may be premature, due to the short duration of observation in the NIS 2003 sample. Thus, a longer period of observation may answer the question more clearly.

While assimilation theory predicts declining impact of skin tone in that even immigrants with dark skin tone, like South Asians, overcome the obstacles they encounter, the opposite may also be true since there is no reason to expect employers' skin tone preference to change with immigrants' length of time in the U.S., especially if such a preference is based on their biases (Kreisman and Rangel 2015). Such an optimistic prediction of assimilation theory stems from an emphasis on the behavior of immigrants rather than that of employers. Immigrants' acculturation studies take the same approach.

Waters (1999), for example, argues that employers highly value West Indian immigrants' ethnic culture and prefer them over American blacks who they see as having their own subculture unassimilable to the American mainstream, which led West Indian immigrants to relative economic success. Although she acknowledges that their decision to maintain a strong ethnic culture is a strategic response to the U.S. racial hierarchy, whether such ethnic identity and culture enabled them to achieve economic success overcoming skin tone/racial discrimination is not at all clear. Pierre (2004), for example, critiques the suggested causal relationship that ethnic culture led West Indian immigrants to economic success may be the result of reverse causality if we consider West Indians' higher educational level and pre-immigration socio-economic status. The cultural hypothesis is challenged by empirical studies as well. Modell (1991) found no earnings difference between West Indian immigrants and native-born American blacks when controlling for human capital and other attributes. In fact, Waters and her colleagues themselves (2010) find that types of acculturation between immigrants and their children (consonant, dissonant, selective) do not influence children's socio-economic mobility, refuting the cultural hypothesis that selective acculturation leads children to upward mobility (Portes and Rumbaut 2001).

Although immigrants' cultural or behavioral dimensions are not incorporated in the current study, considering that immigrants are more likely able and motivated workers (Chiswick 1987), the observed dark skin tone penalty in this study may be underestimated. Immigrants may try to overcompensate for their minority status but inevitably face some degree of dark skin penalties from employers. If immigrants share similar levels of human capital and motivation comparable to the American population,

they may have experienced harsher dark skin penalties in the U.S. labor market than observed in this study. The dark skin tone penalty found among immigrants in the current study does not necessarily refute the cultural explanation of West Indian immigrants' success, whose reference group is American blacks (Waters 1999). Nonetheless, the dark skin tone penalty suggests that phenotype and race are inevitable obstacles that dark-skinned immigrants face. Thus, it will be worth examining further how employers' conscious and unconscious bias works toward immigrants' skin tone over the employment period.

The findings from this study will expand the discussion of the role of skin tone in the racial identification process in the future. The dark skin tone penalty at T2 and T3 net of race and country of origin from model 3 in Table 2 implies that self-identified race alone may not be a precise proxy for immigrant racial group membership. In an additional analysis for each subsample of ethnoracial groups in Table 3, the overall dark skin tone penalty (not interaction effects with T2 and T3, without controls) is found for whites and Hispanics but not for Asians and even a positive effect of dark skin tone is found among blacks. It may be due to the possible discrepancy between how immigrants' race is perceived and categorized in the U.S. depending on their skin tone and how they identify their own racial category. Frank, Akresh, and Lu (2010), using the same data but limiting their sample to Latinxs, find that Latinxs tend to identify themselves as white rather than non-white or "other." Darity, Dietrich, and Hamilton (2005) also point out that Latinxs, even those with very dark skin tone, disproportionately prefer to identify themselves as white. As a consequence, although most Latinxs identify as white, dark-skinned Latinx immigrants encounter a wage penalty in the labor market (Frank, Akresh,

and Lu 2010).

Thus, using racial self-identity only as a proxy for how others may treat individuals based on their race is problematic in survey data. Using skin tone data (as identified by the interviewer), as well as self-identified race, may be a way to better calibrate how we measure racialized outcomes (Bailey, Fialho, and Penner 2016). Roth (2010) conceptualizes multiple dimensions of racial identity, emphasizing how others perceive one's race rather than oneself is central to discrimination. In this process, the subcategory of skin tone plays a more critical role in understanding and constructing interactions than one's racial identity since discrimination varies depending on to what extent "individuals are perceived to fit a particular category" (Monk 2015: 406). Similarly, Kreisman and Rangel (2015) suspect that the perceived differences by skin tone in interactions rather than the categorical classification of race create the earnings gap within African American racial group. This is not limited to immigrants with dark skin tone. Maghbouleh (2017), for example, documents how even groups categorically defined as a white racial group, Iranian Americans, face discrimination in daily life interactions. On the other hand, interviewers often "whiten" immigrants' race relative to their self-identified race in surveys (Sapperstein 2006). Thus, future studies should examine how dark skin phenotype interacts with other dimensions of race in differing social contexts to create different meanings of race in American society.¹⁵

NOTES

1. The National Survey of Black Americans 1979-1980, the 1979 Chicano National Survey, the 1990 Latino National Political Survey, and the National Survey of American

Life 2001-2003 are the major national-level surveys that measure respondents' skin color and race. The Multi-City Study of Urban Inequality 1992 and the Detroit Area Study 1995 data are the commonly used regional studies. There are health related surveys, such as the National Heart, Lung and Blood Institute's Coronary Artery Risk Development in Young Adults.

2. Recently, the NIS 2nd wave data was publicly released but it is not included in this analysis. Due to high attrition rates of the sample in the 2nd wave data, inclusion of the 2nd wave data in the analysis reduces the sample size to around half of the original sample. A thorough analysis of sample selection in the 2nd wave is under way.

3. For further information, see Hersch (2008) Appendix A.

4. Because dropping samples whose skin tone is not reported and of those without a job at each time point complicates applying sampling weights, the analyses here are unweighted following previous research using the same dataset (for example, Frank, Akresh, and Lu 2010; Rosenblum et al. 2016).

5. Twenty-nine respondents who work outside the U.S. at T2 and T3 are excluded.

6. One limitation of this analytic frame is that time spans between T1, T2, and T3 are inconsistent across the sample. However, controlling for age, U.S. labor market experience, and whether they received LPR while residing in the U.S. mitigates this problem.

7. For more details and a complete list of ISEI, refer to Ganzeboom (2010), at

<http://www.harryganzeboom.nl/isco08/qa-isei-08.htm>.

8. However, using occupational indexes as a proxy measure of labor market status in the U.S. may have limitations since within-occupation as well as between-occupation wage

inequality consists of a considerable portion of total wage variance (Avent-Holt and Tomaskovic-Devey 2014; Kim and Sakamoto 2008), and there can be within-occupation bias in job sorting as a consequence.

9. For example, Akresh (2008) limits the sample to the respondents who both reported a last job abroad and were in the U.S. labor force at the time of the interview, dropping about 60% of the sample.

10. For the purpose of robustness check for the GLS random effects model, I also analyze the effects of skin tone at each time point separately using OLS regression and find it yields results similar to the current analysis.

11. Here I assume skin tone is time-constant. However, it also should be acknowledged that skin tone may change over time. For example, construction workers who tend to work outdoors may have darker skin tone than their original tone (Hersch 2008), and some people intentionally bleach their skins (Glen 2009). The racial fluidity based on social context also suggests that perceptions of skin tone may change over time depending on social contexts.

12. A trade-off exists between random effects models and fixed effects models in that the former has risks of omitted variable bias by assuming unobserved attributes are independent of other observed variables but have a higher efficiency than the fixed effect model. In addition, fixed effects only include estimates for measures that vary over time, excluding time-invariant cases and variables (Allison 2009). The result of the Hausman test indicates that the coefficients in the two models are different at the $p < 0.05$ level, in which case fixed effects models are recommended. Results from a fixed effects specification show patterns quite similar to the current random effects model. The fixed

effect result is not shown here but available upon request.

13. R^2 in models that fit race is larger than in models fitting skin tone. R^2 is .18 in model 6 where race/ethnicity and its interaction with time are included while it is .06 in model 2, where skin tone and its interaction with time are included. This suggests the explanatory power of race/ethnicity is larger than that of skin tone. However, it may be due to interval vs. categorical variable differences in explanatory power. R^2 is not different between model 3 where skin tone is fitted with additional control for covariates (.43) and in model 7 where race/ethnicity is fitted instead (.43). Additional control for race/ethnicity in model 4 does not change R^2 in model 3 where only skin tone and its time interaction are fitted. They suggest that self-identified race and skin tone are two different dimensions of race as discussed earlier.

14. Similarly, we can stratify the model by gender since skin tone influences may be different for men and women. However, gendered immigration assimilation processes are complex because skin tone effects are compounded with other factors such as visa type (e.g., a spouse of U.S. citizen visa would be granted more to females) and deserve a separate paper.

15. This study is not without limitations. Undocumented immigrants are not included in the analyses. The majority of undocumented immigrants are from Mexico and Latin America, having emerged as a racialized class in the U.S. (Massey and Pren 2012). I speculate that including them in the analyses would not change the results significantly. They are likely to have held lower occupational status even before immigration due to their relatively low human capital, and the dark skin tone penalty in the U.S. relative to pre-immigration is less salient. In addition, a recent study shows that legal status does not

make any difference in the degree of subjective perception of experiencing institutional discrimination such as hiring decisions (Landale, Oropesa, and Noah. 2017).

Nevertheless, skin tone effect for undocumented immigrants' assimilation process is worth further research.

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Table 1. Descriptive Statistics of Variables

| Variables | Mean (S.D.) |
|--|---------------|
| Dependent Variables | |
| ISEI (10~89) (N=8,159 person-time observations) | 39.10 (18.12) |
| Independent Variables | |
| Skin Tone (0=lightest to 10=darkest) | 4.10(2.24) |
| Race/Ethnicity | |
| Hispanic (1=Hispanic; 0=non-Hispanic) | .38 |
| White (omitted reference) | .53 |
| Asian | .26 |
| Black | .11 |
| Other (Native American and Pacific Islander) | .04 |
| Race not reported (1= missing any of race/ethnicity variables) | .07 |
| Control Variables | |
| Demographics | |
| Female | .42 |
| Age (19-95) | 38.19(11.30) |
| Human/Social/Cultural Capital at Arrival | |
| Education Years Abroad (0~24) | 12.18(4.80) |
| Fluent English at Arrival (1=fluent; 0=not fluent) | .49 |
| Have Visa Sponsor (1=yes; 2=no) | .64 |
| Ever traveled to U.S. with non-immigrant visa (1=yes; 0=no) | .30 |
| Visa Type | |
| Spouse of U.S. Citizen (Omitted Reference) | .18 |
| Employment Principal | .19 |
| Diversity | .13 |
| Other | .50 |
| U.S. Experience | |
| Education Years in the U.S. (0~15) | .81(2.16) |
| U.S. labor market experience years (0~66) (N=1,786) | 5.31(6.67) |
| Achieved LPR via Visa Adjustment (1=adjustment; 0=new arrival) | .64 |
| Country Born | |
| Europe, Canada, Central Asia (omitted reference) | .20 |
| East South Asia | .26 |
| Mexico | .15 |
| Latin America and Caribbean | .28 |
| African Sub-Saharan | .07 |
| Middle East and Other | .05 |
| Region of U.S. Residence | |
| North East | .33 |
| Midwest | .11 |
| West | .37 |
| South (omitted reference) | .19 |

Table 2. Coefficients of Generalized Least Square Random Effect Model Predicting Occupational Prestige Scores (N=8,159 Person-Time observations)

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|--|--------------------|--------------------|--------------------|--------------------|---------------------|---------------------|---------------------|--------------------|
| Main Effects | | | | | | | | |
| Skin Tone (0=lightest; 10=darkest) | -0.88*** (0.11) | -0.63*** (0.14) | 0.17 (0.13) | 0.25* (0.14) | | | | 0.07 (0.15) |
| Time2 (1 st Job in the U.S) | -8.77*** (0.33) | -6.99*** (0.69) | -7.68*** (0.66) | -7.66*** (0.66) | -8.14*** (0.33) | -9.15*** (0.61) | -10.13*** (0.59) | -9.84*** (0.76) |
| Time3 (Current Job in the U.S) | -6.23*** (0.34) | -4.84*** (0.70) | -5.56*** (0.68) | -5.54*** (0.68) | -5.61*** (0.34) | -7.18*** (0.61) | -8.24*** (0.60) | -7.97*** (0.77) |
| Race/Ethnicity | | | | | | | | |
| Hispanic (vs. non-Hispanic) | | | | -1.36 (0.97) | -11.12*** (0.59) | -12.50*** (0.76) | -3.16*** (1.08) | -3.26*** (1.09) |
| Asian (vs. White) | | | | -3.14*** (1.18) | 3.54*** (0.65) | 1.36* (0.79) | -4.70*** (1.27) | -4.79*** (1.28) |
| Black (vs. White) | | | | -2.59** (1.08) | -4.99*** (0.82) | -2.59** (1.00) | 0.13 (1.19) | -0.18 (1.31) |
| Other (vs. White) | | | | -0.69 (0.96) | -1.85 (1.20) | -1.78 (1.20) | -0.60 (0.96) | -0.60 (0.96) |
| Race not reported | | | | -0.70 (0.78) | -1.58 (0.98) | -1.54 (0.98) | -0.66 (0.78) | -0.66 (0.78) |
| Interaction Effects | | | | | | | | |
| Skin Tone*Time2 | | -0.44*** (0.15) | -0.38*** (0.14) | -0.39*** (0.14) | | | | -0.11 (0.17) |
| Skin Tone*Time3 | | -0.34** (0.15) | -0.31** (0.14) | -0.32** (0.14) | | | | -0.10 (0.18) |
| Hispanic*Time2 | | | | | | 1.23 (0.80) | 1.84** (0.78) | 1.99** (0.82) |
| Hispanic*Time3 | | | | | | 3.13*** (0.82) | 3.61*** (0.79) | 3.75*** (0.83) |
| Asian*Time2 | | | | | | 4.27*** (0.88) | 3.12*** (0.85) | 3.25*** (0.88) |
| Asian*Time3 | | | | | | 3.28*** (0.88) | 2.12** (0.85) | 2.24** (0.88) |

| | | | | | | | | |
|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|
| Black*Time2 | | | | | | (0.89) | (0.86) | (0.89) |
| | | | | | | -4.39*** | -4.57*** | -4.10*** |
| | | | | | | (1.14) | (1.09) | (1.34) |
| Black*Time3 | | | | | | -4.02*** | -4.20*** | -3.76*** |
| | | | | | | (1.16) | (1.12) | (1.37) |
| Control Variables | | | | | | | | |
| Demographics | | | Y | Y | | | Y | Y |
| Human/Social/Cultural Capital | | | Y | Y | | | Y | Y |
| Visa Type | | | Y | Y | | | Y | Y |
| U.S. Experience | | | Y | Y | | | Y | Y |
| Country Born | | | Y | Y | | | Y | Y |
| Region of U.S. Residence | | | Y | Y | | | Y | Y |
| Constant | 47.41*** | 46.42*** | 21.35*** | 21.39*** | 47.47*** | 48.22*** | 22.96*** | 22.75*** |
| | (0.57) | (0.66) | (1.54) | (1.54) | (0.49) | (0.56) | (1.50) | (1.55) |
| R-squared | .06 | .06 | .43 | .43 | .18 | .18 | .43 | .43 |

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1 (two-tailed tests)

Table 3. Coefficients of Generalized Least Square Random Effect Model Predicting Occupational Prestige Scores by Self-identified Race

| | Hispanic | | White | | Black | | Asian | |
|------------------------------------|-----------------|-----------------|-------------------|--------------------|--------------------|--------------------|--------------------|-----------------|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Main Effects | | | | | | | | |
| Skin Tone (0=lightest; 10=darkest) | -.83** (.25) | -.43* (.23) | -2.11*** (.23) | -.13 (.22) | .69* (.38) | .21 (.36) | .02 (.36) | .46 (.29) |
| Interaction Effects | | | | | | | | |
| Skin Tone*Time2 | .31 (.28) | .39 (.28) | -.18 (.25) | -.09 (.25) | -.25 (.45) | -.21 (.44) | -.16 (.35) | -.22 (.33) |
| Skin Tone*Time3 | .24 (.29) | .27 (.28) | .30 (.26) | .33 (.25) | -.43 (.47) | -.47 (.45) | -.50 (.35) | -.54 (.34) |
| Control Variables | | | | | | | | |
| | | Controlled | | Controlled | | Controlled | | Controlled |
| Constant | 39.01 (1.15) | 24.00 (3.65) | 49.19*** (.87) | 27.33*** (2.02) | 39.79*** (2.87) | 38.84*** (8.54) | 49.32*** (1.56) | -2.33 (5.53) |
| R-squared | .07 | .29 | .11 | .39 | .14 | .35 | .01 | .46 |

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1 (two-tailed tests)

Figure 1. Mean ISEI by Skin Tone at Three Time Points

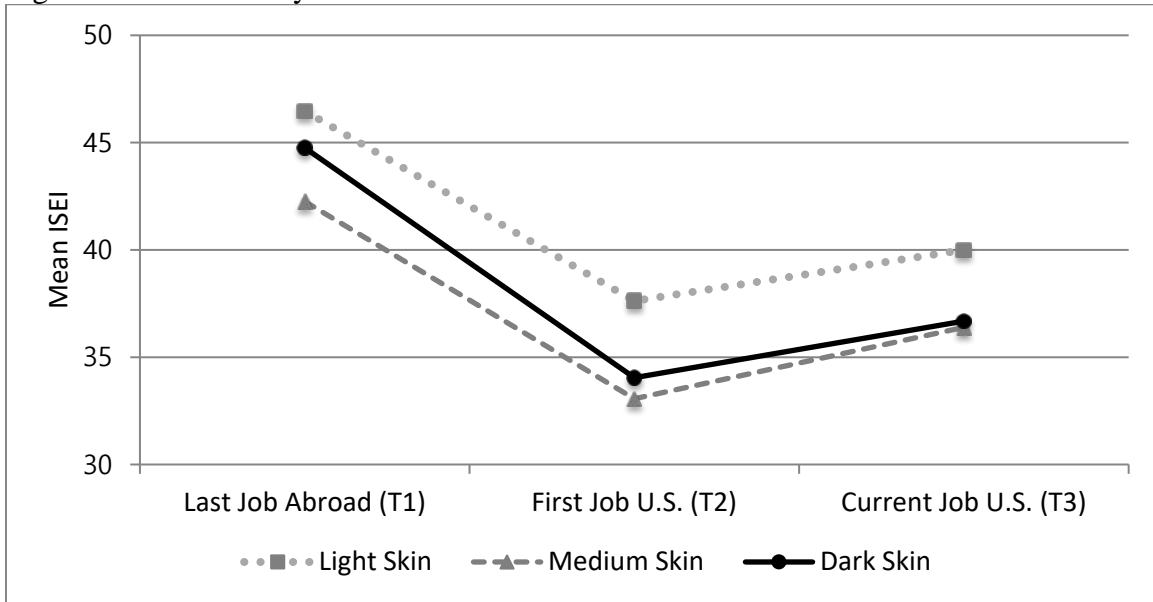
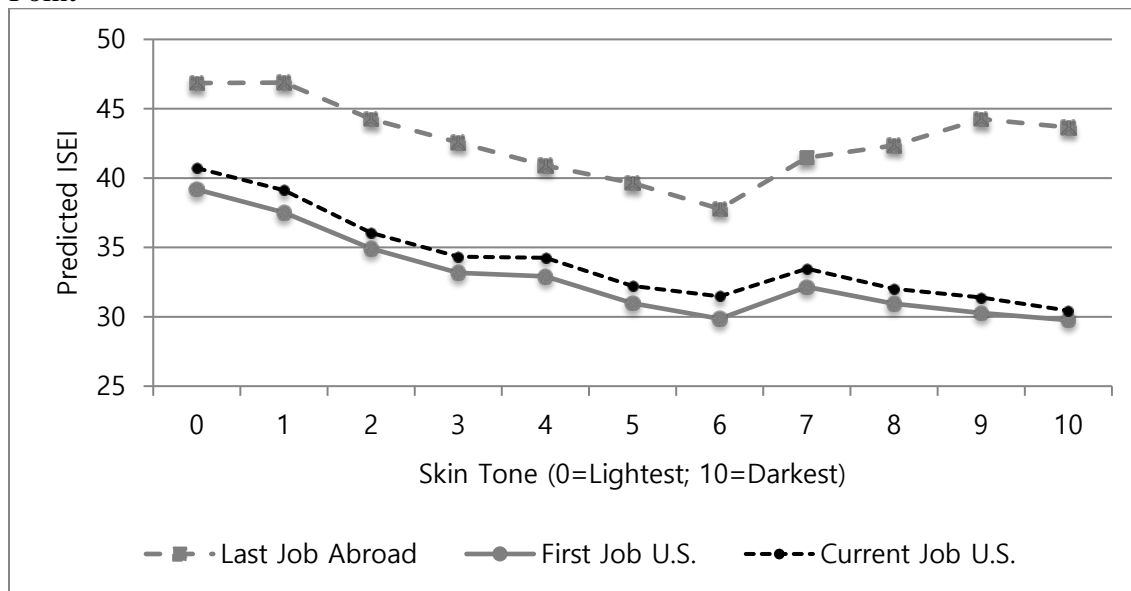


Figure 2. Mean Predicted ISEI by Skin Tone and Time Fitted to OLS Regression at Each Time Point



Appendix

Table A1. Control Variable Definitions and Measurements

Human/Social/Cultural Capital

1. The years of education from abroad are top-coded at 24 years.
 2. A respondent is coded as fluent in English if the respondent either has not spoken any language other than English, spoke English at home at the age of 10, or regularly (at least once a week) read English newspapers before immigration. (1=fluent; 0=not fluent).
 3. Having a visa sponsor(s) is used as a proxy measure for social capital. (1=yes; 2=no).
 4. Having ever traveled to the U.S. with a non-immigrant visa is controlled as a proxy measure of cultural capital. (1=yes; 0=no)
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Types of visa

Visa types are grouped into four categories for three dummy variables with spouse of U.S. citizen as the omitted reference: employment principal, diversity, and other category. Visa type is defined based on the classes of admission. The first group is spouses of U.S. citizens (18%). The second group is employment principal (19%) who are qualified for an employment visa. The third group is diversity immigrants (13%) who were randomly selected from lottery visas designated for persons from countries underrepresented in recent immigration. The fourth group, other (50%), consists of humanitarian immigrants, including refugees, asylees, and parolees and undocumented immigrants who are becoming legal, including registry-provision immigrants who qualify by virtue of length of residence and immigrants targeted by special legalization legislation (Jasso 2011).

U.S.-specific variables

1. Years of education completed in the U.S. are included and top-coded at 15 years. Since the sample of the survey is age 18 and older, average years is relatively short at .81 year.
 2. In addition, years of U.S. labor market experience are controlled for as a measurement of human capital accumulated in the U.S., calculated by subtracting the starting year of the first job held in the U.S. from the survey year.
 3. While controlling for the length of time worked in job at each interval could also be included, I decided to exclude it since the outcome variable is occupational status at each time point and duration for each occupation does not change anything about occupation itself. If the outcome variable was income, then job tenure should be controlled for. Alternatively, I control for years of U.S. experience. The average years of U.S. work experience is about 5.31 years when respondents have their first job in the U.S.
 4. Additionally, whether respondents achieved legal permanent residency while residing in the U.S. as a status change from non-immigrant status, or they achieved it as they immigrated to the U.S., is controlled as a further proxy for U.S. experience.
 5. These U.S.-specific variables are available only at T2 and T3, they should be
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considered missing at T1. However, excluding them reduces sample size considerably and makes the panel data unbalanced. Thus, here I treat them as time-constant variables even before immigration to examine how adding more controls changes the effects of dark skin tone. Adding U.S.-specific variables only minimally changes the time effects and their interaction effects with skin tone while increasing the R-square considerably.

Country Born

While the individual country of origin is reported for some of the respondents, regions of origin are reported for countries with small sample sizes due to confidentiality concerns. Following Rosenblum et al. (2016), who examine dark skin tone penalty by region using the same data, countries of origin are grouped into six countries or regions: Europe, Canada, Central Asia; East South Asia; Mexico; Latin America and Caribbean; African Sub-Saharan; and Middle East and Other. I separate Mexico from other Latin American and Caribbean countries because sample sizes are sufficient.

U.S. Region

Lastly, the regions of current residence in the U.S. are controlled based on where their green cards were sent: South, Northeast, Midwest, and West.
