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Race, ethnicity and nativity and the prestige of colleges attended

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ABSTRACT

Although much literature examines racial/ethnic variation in college attendance, comparable research on the prestige of colleges attended is quite limited. Of particular interest are the colleges attended by Asian and Hispanic Americans, two populations with varied education outcomes across ethnicity and nativity. The analysis draws on a diverse sample from the National Longitudinal Study of Adolescent to Adult Health to estimate OLS and Heckman selection models of prestige of the bachelor's institution attended among current college enrollees (Wave III) and graduates (Wave IV). Across all model specifications Chinese Americans tend to enroll and graduate from more prestigious colleges than Whites and most other racial/ethnic-nativity groups in the analysis. In contrast, economic disadvantage accounts for Mexican Americans' enrollment at less prestigious colleges than Whites. These findings suggest the important role of college prestige in stratification, especially for specific Asian American populations.

1. Introduction

Despite the large body of literature about racial/ethnic variation in college attendance and completion, much less is known about differences in the prestige of the bachelor's institutions attended. Most related research has examined gaps in college prestige between Black, Hispanic, and White populations (Alon et al. 2010; Davies and Guppy 1997; Desmond and López Turley 2009; Fry 2004; Reardon et al. 2012). Although college prestige plays a central role in current theory on Asian Americans' mobility (Lee and Zhou 2015), little research has studied college prestige among Asian Americans (An 2010; Niu et al. 2006).[1] Moreover, few of these studies consider variation by ethnicity and nativity among Asian and Hispanic Americans, two important axes of education differences (Feliciano and Lanuza 2016, 2017; Fishman 2020; Sakamoto et al. 2009; Xie and Goyette 2004). Lastly, few comparable studies address methodological issues, such as the measurement of college prestige or sample selection (Heckman 1979) into college attendance. This paper fills this literature gap by providing detailed estimates of racial/ethnic-nativity variation in college prestige using current theory, data, and methods.

Indicators of college prestige strongly predict adult social mobility.[2] For example, college selectivity predicts enrollment into graduate programs (Zhang 2005), occupational attainment (Brand and Halaby 2006), personal earnings (Behrman et al. 1996),[3] and

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[1] An's (2010) study focuses on college applications and Niu and colleagues' (2006) study examines applications and enrollment in Texas. Both studies do not disaggregate by ethnicity or nativity.

[2] Prior research references college selectivity or quality (indexed), rather than prestige.

[3] Other studies find a less consistent relationship with personal earnings (Brand and Halaby 2006; Dale and Krueger 2002; Long 2008). However, it is worthwhile to note that the economics research on college attributes and earnings is much larger and more established than that on these other outcomes.

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household income (Long 2008). Yet, classic mobility theory (Blau and Duncan 1967; Mare 1980; Sewell et al. 1969) does not focus on horizontal inequality among college attendees.

The present study answers the following questions. 1) How does the prestige of bachelor's institutions attended vary across race/ethnicity and nativity? 2) To what extent do socioeconomic selection, academic preparation, and selection into college attendance play roles in such variation? 3) How does the relationship between parental education and college prestige vary across race/ethnicity and nativity? These questions are examined using data from the National Longitudinal Study of Adolescent to Adult Health's institution-linked file (Wave III and IV) to estimate OLS and Heckman selection models of prestige of college attended and graduated from. The Heckman models account for selection into college enrollment and completion to obtain estimates representative of the Add Health sample.

2. Theoretical framework

2.1. Prioritization of attending prestigious colleges

Recent literature documents racial/ethnic variation in the prioritization of attending prestigious colleges. Literature on Asian Americans reveals heavy emphasis on college prestige in conceptualizations of mobility. For example, Lee and Zhou's (2015) Los Angeles-based qualitative work explained that many Asian Americans hold a very narrow cognitive script about mobility—referred to as success frames—, defining socioeconomic success as attending prestigious colleges to obtain professional jobs with high incomes. Lee and Zhou documented young west-coast Chinese and Vietnamese Americans' awareness of the importance of college prestige, noting that interviewees differentiate "the 'UCs' (the University of California schools, which are the most elite public universities), the 'Cal States' (California state universities), community colleges, and elite private schools like Stanford and the Ivys" (2015:55). The authors found that "even within each of the college tiers the interviewees could detail the hierarchical rankings and reputational strengths among them" (2015:55).

In earlier work, Xie and Goyette (2003) described Asian Americans' focus on education as a "strategic adaptation" to racial stratification in the US economy. Similarly, Dhingra (2018) argued that Indian American immigrant parents view educational attainment as the primary means to achieve mobility in a competitive market—modeled for them by their experiences in India. In turn, many young Asian Americans may experience considerable familial pressure for educational achievements (Dhingra 2018; Tao and Hong 2014), which leads to pressure to attend college at prestigious higher education institutions (Lee and Zhou 2015). Asian American parents often financially prioritize college, with higher rates of saving for college and larger amounts of college savings than White parents after accounting for sociodemographic background and academic preparation (Dondero and Humphries 2016).

In contrast, familial obligations may be related to lower college prestige for Hispanic Americans. For example, the preference for living at home accounts for Hispanic-White gaps in applying to selective colleges (Desmond and López Turley 2009). However, Hispanic-White differences in students' reported preferences for staying at home for college are negated by controlling for socioeconomic background and academic preparation (Ovink and Kalogrides 2015). Similarly, Hispanic American parents are less likely to save money for college than Whites. However, Hispanic American parents who save money for college save similar amounts to White parents after controlling for socioeconomic background and academic preparation (Dondero and Humphries 2016). Such familial priorities about staying close to home and reducing financial strain may lead many young Hispanic Americans to attend less prestigious colleges (Ovink 2017).

Prior qualitative research demonstrates that Hispanic Americans—like Asian Americans—may put considerable emphasis on the importance of attending college as a means of mobility (Ovink 2017). However, the lower levels of community educational resources and (often) low numbers of co-ethnics with high levels of education may constrain young Hispanic Americans' educational opportunities and knowledge relative to their Asian American peers (Lee and Zhou 2015; Ovink 2017). Thus, Hispanic Americans may take on more flexible success frames and attend less prestigious colleges without familial stigma (Lee and Zhou 2015), which allow for attending less prestigious colleges to be a marker of socioeconomic success (Ovink 2017). Yet, once academic preparation and socioeconomic status are accounted for, it is possible that Hispanic Americans also prioritize attending prestigious colleges similarly or more than Whites. As with Asian Americans, Hispanic Americans may view attending prestigious colleges as "strategically adaptive" to racial stratification.

In summary, prior research demonstrates substantial racial/ethnic differences in attitudes towards higher education. Many Asian Americans view attending a prestigious college to be a prerequisite for economic success in the United States. Thus, Asian Americans may prioritize college prestige more than Whites in selecting colleges. Like Asian Americans, many Hispanic Americans believe that college is a pathway to mobility. However, Hispanic Americans often prioritize alternative college attributes to prestige, such as proximity to home, due to a combination of familial, geographic, and economic constraints. It is possible that Hispanic Americans' prioritization of college prestige may appear after accounting for socioeconomic status and academic preparation.

2.2. Racial stereotyping

Racial stereotyping may reinforce Asian Americans' success frame and focus on college prestige. Asian Americans are often portrayed as a model minority, associated with academic achievement and economic success (Xu and Lee 2013). Teachers and other influences may give extra aid to young Asian Americans to push them in academics (Lee and Zhou 2015). In turn, these youths may be more likely to believe in their chances to attend prestigious colleges. In contrast, young Hispanic Americans may experience racial stigmatization which negatively impacts academic performance (Nadler and Clark 2011). In turn, some Hispanic Americans argue that

attending college will help escape negative stereotyping (Ovink 2017). However, economic, geographic, and familial constraints often reduce average college prestige as many Hispanic Americans take alternative college routes to the four-year degree. Although racial stereotyping could impact college prestige through other means (e.g., academic background), racial stereotyping may work together with racial/ethnic differences in prioritization of attending prestigious colleges. However, the effects of racial stereotyping—or explicitly prioritizing college prestige, for that matter—cannot necessarily be distinguished from other explanations by the mere existence of residual differences with Whites.

2.3. Academic preparation and socioeconomic status

Asian Americans' attendance of prestigious colleges may be driven by high levels of academic preparation. For example, high school GPAs and higher rates of taking college-track courses than Whites may lead to admittance and attendance at more prestigious colleges than Whites (Hsin and Xie 2014; Kao and Thompson, 2003; Lee and Zhou 2015). In contrast, Hispanic Americans have lower levels of academic achievement than Whites, often connected with economic disadvantage and racial stereotyping (Kao and Thompson, 2003; Madrid 2011). Thus, academic preparation may account for Asian and Hispanic Americans' higher and lower college prestige, respectively, than Whites.

As previously mentioned, racial/ethnic differences in socioeconomic background could influence college prestige. While many Asian American populations (e.g., Chinese and Filipino Americans) have higher levels of socioeconomic status than Whites, Hispanic Americans average considerably lower levels of socioeconomic status than Whites (Feliciano and Lanuza 2017; Kao and Thompson, 2003). In turn, this may account for Asian Americans' higher and Hispanic Americans' lower college prestige than Whites, even after only examining those who attend college.

Lee and Zhou (2015) propose that Asian Americans' educational attainment is less impacted by low parental education-level than Whites, contrasting with classic mobility models' emphasis on inter-generational inequality transmission (Blau and Duncan 1967; Mare 1980; Sewell et al., 1969). They attribute this pattern to the spread of success frames and social resources across socioeconomic status within immigrant community networks. Fishman's (2020) work supports Lee and Zhou's hypothesis, finding that the children of Chinese, Indian, Korean, and Vietnamese immigrants average high education levels regardless of their parents' education. Similarly, Liu and Xie (2016) find that socioeconomic status is a weaker predictor of academic achievement and educational expectations for Asian Americans than for Whites. These three sets of authors also find some evidence that Hispanic Americans—and possibly Blacks (Fishman 2020)—are less negatively impacted by low levels of parental education than Whites.

2.4. College prestige and sample selection

A sampling bias problem could stem from non-representative selection into college attendance. In a cross-sectional model of college prestige, only college attendees are included. Thus, the model examines patterns among this potentially non-representative subsample of the population, potentially influencing observed racial/ethnic gaps in college prestige.

This selection problem is analogous to Heckman's (1979) correction for women's selection into non-wage earning. Just as women with no wages may receive "reserve" wages in lieu of monetary wages, college non-attendees may receive "reserve college prestige" in lieu of attending a more prestigious college. For example, a college-non-attender may prioritize family-formation, helping with a family business, or other economic or social ventures to college prestige. The reserve college prestige could account for college non-attendance, as the reserve college prestige may exceed the potential college prestige obtained.

For example, the high proportion of Asian Americans who attend college may downward bias Asian American-White college prestige gaps. Even if Asian Americans have a higher average preference for prestigious colleges than Whites, the high proportion of Asian American college attendees may dilute Asian Americans' average college prestige. Thus, a model should jointly estimate race/ethnic-nativity differences in college attendance and racial/ethnic-nativity differences in college prestige. Consequently, the model estimates college prestige patterns across a population-representative sample. The college attendance selection models should not only account for characteristics included in the regression equation of interest, but also for potential moderation between parental education and race/ethnicity-nativity (mentioned above) and for individual and family-level achievement pressures to attend college, which may impact who attends college.[4]

2.5. College enrollment and graduation

College prestige of institution attended can be measured at two time-points, current college enrollment and graduation. For example, racial/ethnic differences in college prestige could be consistent across both indicators. However, it is plausible that college prestige differences at enrollment and graduation may vary. For example, if Asian and/or Hispanic Americans enroll in more prestigious colleges but have lower completion rates than Whites, then college prestige gaps may be reduced by graduation. Alternatively, if Asian and/or Hispanic Americans are more likely to persist in prestigious colleges than Whites, then college prestige differences may grow from attendance to graduation.

[4] Variables included solely to satisfy the exclusion restriction assumption are discussed in the data and methods sections.

2.6. Heterogeneity among Asian and Hispanic Americans

Thus far, the present study has focused on Asian and Hispanic Americans as aggregate populations. For one, the immigration circumstances of these populations varies considerably in timing and socioeconomic selectivity (Feliciano 2005; Lee and Zhou 2015). For example, the educational selectivity of Mexican American immigrants is considerably lower than most other Hispanic immigrant populations. This selection pattern may be partially connected with distance to immigrants' origin country (Feliciano 2005).

Second, it is possible that the role of graduate education varies in success frames across ethnicity. For example, Lee and Zhou (2015) document many Chinese and Vietnamese Americans' intense focus on professional jobs requiring advanced degrees (e.g., medical school, doctoral programs, or law school). Yet, it is well-documented that many Filipino Americans focus on nursing as a means to career and earnings mobility (Choy 2003), related to the United States' colonial relationship with the Philippines and the selective immigration of nurses (Brush 2005; Choy 2003). Although many nurses obtain graduate degrees, they are not a prerequisite to become a registered nurse. Therefore, success frames among Asian Americans may vary by ethnic differences in success frames. In turn, the type of job desired may determine the prioritization of college prestige, especially if the goal of college prestige is to improve graduate school admissions.

Lastly, racial/ethnic patterns in college prestige likely vary by nativity. For example, Feliciano and Lanuza (2017) find higher levels of education among the children of Asian and Hispanic American immigrants than among later generations. Similarly, Hispanic American immigrants may be more resilient to the negative consequences of racial stereotypes than later generation Hispanic Americans (Owens and Lynch 2012). Lastly, Feliciano and Lanuza (2016) find that high parental expectations, interests in school, and foreign language use in early childhood largely account for immigrants' high levels of graduate school expectations. The focus on graduate school may also suggest the benefits of obtaining degrees from prestigious undergraduate institutions. For these reasons, Hispanic and Asian Americans' ethnicity is often disaggregated by nativity in socioeconomic attainment models (Feliciano and Lanuza 2017; Fishman 2020; Sakamoto et al., 2009).

2.7. Comparisons with White and Black Americans

Classic stratification research primarily focused on White Americans (Blau and Duncan 1967; Sewell et al., 1969) and more recent research continues to treat later generation White Americans as the reference group (Feliciano and Lanuza 2017; Fishman 2020; Kao and Thompson, 2003). Comparisons with later generation Black Americans also are important because they represent a large historically marginalized population underrepresented at highly selective colleges (Ciocca Eller and DiPrete 2018). Despite their disadvantages in socioeconomic status and academic preparation (Kao and Thompson, 2003), qualitative research—which compares success schemas across Asian Americans, Whites, Blacks, and Mexican Americans—suggests that Black Americans may prioritize attending colleges as a method for achieving mobility amidst racial stratification (Lee and Zhou 2015). Thus, it is possible that Blacks—after accounting for socioeconomic background and academic preparation—may attend more prestigious colleges than Whites.

3. Measuring college prestige

Most comparable studies have focused on college selectivity indicators, with little consideration of measurement (Alon et al., 2010; An 2010; Davies and Guppy 1997; Desmond and López Turley 2009; Niu et al., 2006). Yet, some economic research on the effects of college prestige on adult outcomes have used a variety of predictors to account for measurement limitations. Dale and Krueger's (2002) foundational study, for example, found similar results from models using SAT or Barron's index as predictors of earnings. Long (2008), and Zhang (2005) used numerous indicators of college "quality" to examine its relationship with income. Both studies found somewhat different estimates across indicators. Black and Smith (2004) used four indicators of college "quality" to derive a college quality index using principle component analysis (PCA): average faculty salary, average freshman SAT, and average freshman retention rate. Long (2008) also derived a principle component score of college quality using data from four measures: average first year SAT scores, tuition minus average grants, loans, and work study, average full professor's salary, and professors per student.

The goal in this study is to examine the relationship between race/ethnicity-nativity and college prestige. Unfortunately, observed indicators of selectivity or college finances—such as average SAT scores, rejection rates, or professor salaries are imperfect measures of college prestige (Bollen 1989). Moreover, young adults and their parents are unlikely to focus on attending a school for such characteristics. Rather, their goal is to attend a prestigious college.

A PCA would combine different qualities of an institution into an indicator for college "quality." However, combining disparate institutional indicators creates theoretical problems. For example, some components may be desirable (e.g., a high average SAT score), while other components may be less desirable (e.g., high average professor's salary). Yet, both components likely correlate with prestige and are combined in the PCA.

Confirmatory factor analysis (CFA) provides better measurement by estimating latent college prestige, which is reflected in college selectivity (e.g., average SAT scores) and college finances (e.g., high average professor's salary) (Bollen 1989). A more prestigious college will have more academically selective students and possess larger coffers than a less prestigious college. In turn, young adults and parents may—to varying degrees—pursue attending a prestigious college. The latent prestige variable more accurately reflects college prestige than individual observed indicators, using the observed indicators to estimate latent college prestige.

4. Data

For analysis, this paper uses data from National Longitudinal Study of Adolescent to Adult Health (Harris and Richard Udry, 2013). The study began in 1993 with an in-school survey and was followed with four in-home surveys. The analysis primarily relies on background information from Wave I (1994–1995) and information from early young adulthood in Wave III (2002) and later young adulthood in Wave IV (2007–2008). Information on colleges attended is obtained from the Wave III and IV College Mobility Data (Gaydosh et al., 2019). Data from Chetty and colleagues' (2017) Mobility Report Card: The Role of Colleges in Intergenerational Mobility were linked to the Add Health respondents. The linked data are from a sample of college students born between 1980 and 1982, who attended a college or university in the early 2000s. The respondents were ages 19 through 22 when entering college. The Wave III data are from the institution which respondents were currently enrolled at, while the Wave IV data have information from the institution from which the respondents obtained a degree. For simplicity, only data from the first degree are used in the analysis.

Ten rounds of multiple imputation are used to recover missing right-hand variables. Due to high missingness rates from high school data (obtained from Wave III), auxiliary variables of reported Wave I grades are included as covariates to help model the cumulative high school GPA and high school coursework variables. Similarly, Wave I block-level median income is introduced to help model missing cases of parental income in Wave I. All analyses are weighted using Add Health's Wave III and IV cross-sectional weights.

The samples are constructed as follows. The analysis begins with 20,745 cases in Wave I. Of these cases, 16,763 observations fall into the 7 specified race/ethnicity-nativity categories (see below). Attrition in Wave III (N = 11,792) and Wave IV (N = 12,231) accounts for losing more cases. The Heckman selection models only include 9,164 and 11,478 cases for Wave III and IV, respectively. This occurs because these models drop respondents who have enrolled in college (Wave III) or completed a bachelor's degree (Wave IV) who do not have linked-college information. A probit regression of missingness among college enrollees and graduates finds little evidence of systematic differences between those with complete or missing linked-college information (Table E.1). Among these respondents, 3,087 and 3,242 respondents remain for the college prestige analyses for the college enrollment and graduate models, respectively.

5. Measures

Six indicators are included in the college prestige factor model. Average SAT scores and Barron's index are two of the most commonly used indicators of college selectivity (Dale and Krueger 2002; Davies and Guppy 1997; Eide et al. 2016). Rejection rates are also used in Barron's index to measure selectivity (Eide et al., 2016); for this reason they are included. In addition, college financial indicators—faculty average salary, endowment per student, and instructional spending per student—are also featured in the factor model. All estimates are obtained from 2000 or 2001—except for rejection rates, which are only available from 2013. Barron's index is given as a four-point scale but is constrained to a dichotomous outcome (elite/highly selective vs. selective/non-selective) due to non-normality. Because over 20 percent of respondents attended elite/highly selective colleges, the linear probability regression in the factor analysis is relatively unproblematic. All other indictors—except rejection rates—are transformed using a natural log to account for right skew.

The predictor of interest is race/ethnicity-nativity. The analysis compares Asian and Hispanic Americans groups with later generation White and Black Americans. Asian and Hispanic populations are disaggregated by ethnicity with only ethnicity-nativity groups. The respondents are then disaggregated by nativity, consistent with similar Add Health research (Feliciano and Lanuza 2017; Fishman 2020). The 2.5+ generation indicates that at least one parent was born in the United States. The 1.5–2.0 generation indicates that both parents are immigrants. Ethnicity-nativity groups with 30 or more cases remain in the analyses, a benchmark for maintaining statistical power in mean comparisons (VanVoorhis and Morgan 2007). These groups are compared with 2.5+ generation Whites and Blacks, representing the majority racial group and the largest minority racial group in the United States. Unfortunately, Add Health does not include information on White and Black respondents' ethnic background (e.g., Western European or Middle Eastern). Due to small sample sizes, the 2.5+ generation Filipino respondents are dropped. The final race/+ethnicity-nativity variable includes 7 categories: 2.5+ generation non-Hispanic Whites, 2.5+ generation non-Hispanic Blacks, 2.5+ generation non-Hispanic Chinese, 1.5–2.0 generation non-Hispanic Chinese, 1.5–2.0 generation non-Hispanic Filipino, 2.5+ generation Mexican, 1.5–2.0 generation Mexican.[5] Supplemental analyses examine aggregated Asian and Hispanic Americans among the ethnic groups with less than 30 cases per ethnicity-nativity group.

Parental socioeconomic indicators include parental education, family income, and parental occupation. Parental education is treated as a linear indicator of education years. Respondents with two resident parents are assigned the education of the parent with higher education-level. Education year counts are estimated to match closely to categorical variable predictions of the outcome: 8 (<HS), 12 (HS), 13 (some college), 16 (bachelor's), 19 (more than bachelor's). Models treating parental education as a categorical term yield nearly identical estimates (Appendix D.5). Family income is transformed with a natural log to account for right skew. Because family income has structurally missing cases from parents who did not partake in the parent survey, a block-level median

[5] In general, the race/ethnicity-nativity categories chosen reflect Bonilla-Silva's (2004) tri-racial framework with Whites in the first category, "Whites", Chinese and Filipino Americans in the second category, "Honorary Whites", and Blacks in the third category, "Collective Black". Mexican Americans are more difficult to fit into a clear category as Bonilla-Silva's framework places many into all three, depending on skin-tone and assimilation. Most Mexican American Add Health respondents selected White and/or other race. Dividing Mexican Americans by nativity may address assimilation. Disaggregation of Mexican Americans by Add Health's skin-tone data are beyond the scope of this study.

income indicator from Wave I is included in the multiple imputation model to help estimate missing cases. Parental occupation is divided into 7 categories: professional 1 (e.g., doctor, scientist, lawyer), professional 2 (e.g., librarian, teacher), manager, white collar/office, blue collar, military/farm/other, unemployed. Similar indicators are used in recent Add Health education research (Feliciano and Lanuza 2017; Fishman 2020). Again, the respondent is assigned the higher occupational attainment if they have resident parents with different occupation-levels. Gender (dichotomized), sibsize, and family structure are also included in the models, as done in similar work using Add Health (Feliciano and Lanuza 2017). Sibsize is transformed with a natural log to account for right skew. Family structure is broken into five categories (Harris 1999): two biological parents, two parents, single mother, single father, and other.

Cumulative GPA is from the Wave III high school transcript data. These data unfortunately were not obtained from all respondents. For this reason, information on reported Wave I grades are used to help model missing GPA in the multiple imputation models. In addition, robustness tests found no meaningful changes when replacing cumulative GPA with subject-specific GPA (from transcripts) or Wave I subject-specific reported grades (Tables D.8 and D.9).

High school coursework is also obtained from the Wave III transcript data. High school mathematics is broken into a 7-point scale: 0 (no math), 1 (basic/remedial math), 2 (general/applied math), 3 (pre-algebra), 4 (algebra), 5 geometry, 6 (algebra II) 7 (Advanced Math—algebra III, finite math, statistics), 8 (trigonometry), 9 (calculus). High school science coursework is categorized in a 5-point scale: 1 (no science/remedial/basic science/general science), 2 (Biology I), 3 (Chemistry), 4 (advanced science—Biology II or Chemistry II), 5 (Physics). English and humanities/social science coursework is dichotomized: 1 (ever took honors or advanced placement), 0 (never took honors or advanced placement). Foreign language coursework is broken into a five-point scale.

Educational expectations and parental education pressure are included in the selection model. These indicators are obtained from Wave I. The measure of expectations uses a 1 to 5 rating of how likely the respondent is to attend college. The bottom two categories are merged to account for non-monotonic patterns (Fishman 2019). Expectations is treated as a categorical indicator. Parents were asked the following question: "How disappointed would you be if {NAME} did not graduate from college?" The answer was divided into three categories: not disappointed, somewhat disappointed, and very disappointed. Because the parental pressure indicator was obtained from the parent survey, an indicator of respondents' perception of their parents' education pressure is included in the imputation model to help model missing cases.

Three variables are added to the selection equation for the Heckman model to satisfy the exclusion restriction assumption. Age in Wave I is treated as a linear term. Grade in Wave I is treated as a categorical term. Lastly, self-rated health in Wave I is treated as a linear variable (1–5).

6. Methods

6.1. Factor analysis

First, a confirmatory factor analysis estimates a latent variable of college prestige. This model assumes that college prestige is reflected in college selectivity indicators: average SAT scores, Barron's index, and rejection rates. It also assumes it is reflected in signals of institutional finances: faculty average salary, endowment per student, and instructional spending per student. The confirmatory factor analysis (CFA) uses modification indices to determine correlations between the error terms of endogenous variables.[6] The statistical fit is displayed using the Chi^2 test, CFI, TLI and BIC. The BIC is calculated, such that

$$BIC = Chi^2 - df * Log(N)$$

where df is the degrees of freedom and N is the number of observations. If the BIC is lower than zero, the specified model fits better than the saturated model (Raftery 1995). For ease of analysis, the factor model is converted into predicted values of college prestige among the respondents. Full information maximum likelihood is used to predict values of cases missing information on the endogenous factor variables.

6.2. OLS regression

Next, OLS regression equations of college prestige at Wave III (currently enrolled in college) are estimated, such that

$$y = x\beta + u_1 \quad (1)$$

where the equation represents the relationship between x, race/ethnicity-nativity, and y, college prestige. The variable, u_1, represents the error term, with a range from zero to infinity. Additional models sequentially introduce covariates for sociodemographic variables (parental education, parental occupation, parental income, gender, and sibsize) and academic preparation indicators (high school GPA, mathematics coursework, English coursework, science coursework, foreign language coursework, and humanities coursework). Equivalent regressions are estimated for college prestige at Wave IV (college graduates). However, results from the regression are only attributable to college enrollees; they do not necessarily apply to non-enrollees.

[6] Tests comparing the CFA with MIMIC models—which sequentially treat the observed variables as causal indicators—support the CFA (Bauldry and Bollen 2016).

6.3. Heckman selection model

Lastly, Heckman selection models are estimated. The Heckman model aims to resolve the problem of non-random sample selection into the regression equation of interest. The model uses maximum likelihood to jointly estimate selection into the predictor variable for the regression equation.[7] The selection equation—using probit regression—estimates if the respondent is currently enrolled in college and, thus, has a college prestige score, taking the following form

$$\mathbf{Z}_y + u_2 > 0 \tag{2}$$

where **Z** represents a matrix of college enrollment predictors and u_2 represents the error term, with a range of zero to one. (1) All right-hand covariates in the regression equation are included in the selection equation. (2) Several additional covariates are included to help model the selection of college graduates: a series of parental education by race/ethnicity-nativity interactions, expectations to attend college, and parental pressure to attend college. (3) To avoid problems from collinearity between the correction term and the predictors of equation (1) (Bushway et al. 2007), covariates correlated with college enrollment (e.g., age, grade, and self-rated health), but theorized to be unrelated to college prestige, are included in the selection equation to satisfy the exclusion restriction. For example, older grade—net of age—gives an individual more opportunity to enroll in college or time to complete college. Unless elite colleges meaningfully increase or decrease enrollment across yearly cohorts, it is unlikely that grade would predict college prestige. Similarly, self-rated health is a strong predictor of post-secondary enrollment, even after accounting for academic achievement (Haas and Fosse 2008). Although health issues may interrupt college entry, they are unlikely to reduce one's college prestige—net of academic achievement. Due to joint estimation, the error terms from the selection and regression equations are allowed to correlate, such that

$$(u_1, u_2) = \rho$$

where ρ (rho) is the correlation between the error terms of equations (1) and (2). If ρ does not equal zero, then the regression equation (1) yields biased estimates. In this situation, however, the jointly estimated Heckman model should provide consistent estimates. These estimates should be attributable to the entire sample, not just college enrollees. Note that the Heckman model uses information from two groups: college enrollees with college prestige scores and non-enrollees with no college prestige scores. Current college enrollees with no college prestige score are not used in the estimation. The ramifications for the observation sizes is described above in the data section. The Heckman model is then replicated for college graduates in Wave IV. In this instance, the selection equation (2) estimates if a respondent graduated college by Wave IV, and the outcome in the regression equation (1) is college prestige among college graduates.

6.4. Interaction models

Lastly, the OLS and Heckman models are re-estimated with an interaction term between race/ethnicity-nativity with parental education to test if the relationship between parental education and college prestige varies across race/ethnicity-nativity. Again, these models are replicated across the college enrollee and college graduate outcomes.

7. Results

7.1. Race/ethnicity-nativity across samples

First, the distribution of race/ethnicity-nativity across the analytical samples is displayed (Table 1). The largest racial/ethnic-nativity group for all models is 2.5+ generation Whites. All models also have sizable samples of 2.5+ generation Blacks. All groups have at least 60 cases in the selection-equation sample and 30 cases in the selected sample. Note that the full sample contains large numbers of Mexican Americans and relatively few Chinese and Filipino Americans. However, among those with college prestige scores, especially in the graduate model, there are similar numbers of these groups. For example, over half of the Chinese Americans in the full sample graduated from college by Wave IV and have college prestige scores, while less than one-fifth of 2.5+ generation Mexican Americans in the full sample graduated from college and have college prestige scores. The pattern reflects Chinese and Mexican Americans' relatively high and low levels of college enrollment and completion, respectively.

7.2. Factor analysis

A factor model of latent college prestige is estimated (Table 1). The model constrains the log (SAT) to 1 and, thus, the factor scores are measured in log (SAT) units. The model includes a variety of correlated errors, as determined by modification indices (see notes for Table 1). The preferred factor model has an excellent statistical fit, passing the Chi^2 test with 3 degrees of freedom remaining for college prestige among college enrollees and graduates. In both models, the BIC is below zero, indicating a better fit than a saturated

[7] The maximum likelihood estimator is more efficient than the two-step Heckman model. Current statistical software reduces the computing time for the estimator, a major hindrance in early work (Tauchmann 2010). In addition, Stata's heckman command does not allow for two-step models to estimated with survey weights.

Table 1
Distribution of race/ethnicity-nativity across sub-samples.

	Enrolled		Graduated	
	N	%	N	%
With College Prestige				
Race/Ethnicity-Nativity				
2.5+ White	2057	66.63	2261	69.74
2.5+ Black	662	21.44	611	18.85
2.5+ Chinese	31	1.00	43	1.33
1.5–2.0 Chinese	71	2.30	92	2.84
1.5–2.0 Filipino	80	2.59	87	2.68
2.5+ Mexican	103	3.34	78	2.41
1.5–2.0 Mexican	83	2.69	70	2.16
Complete Sample				
Race/Ethnicity-Nativity				
2.5+ White	7395	62.71	7795	63.73
2.5+ Black	2830	24.00	2961	24.21
2.5+ Chinese	64	0.54	69	0.56
1.5–2.0 Chinese	146	1.24	135	1.10
1.5–2.0 Filipino	304	2.58	261	2.13
2.5+ Mexican	575	4.88	560	4.58
1.5–2.0 Mexican	478	4.05	450	3.68

Notes: The selection equation in Heckman models drops selected individuals with no college prestige scores. Complete tables of descriptive statistics are displayed in Tables B.1-B.4.

model. In effect, these models demonstrate that a latent variable—which this paper denotes "college prestige"—underlies selectivity (SAT, Barron's, and rejection) and college finances (salaries, endowment, and instruction spending). The predicted college prestige scores approximate normal distributions (Fig. 1). Analysis of regression model residuals (not shown) also (more closely) approximate normal distributions. These college prestige scores are used in the later analysis.

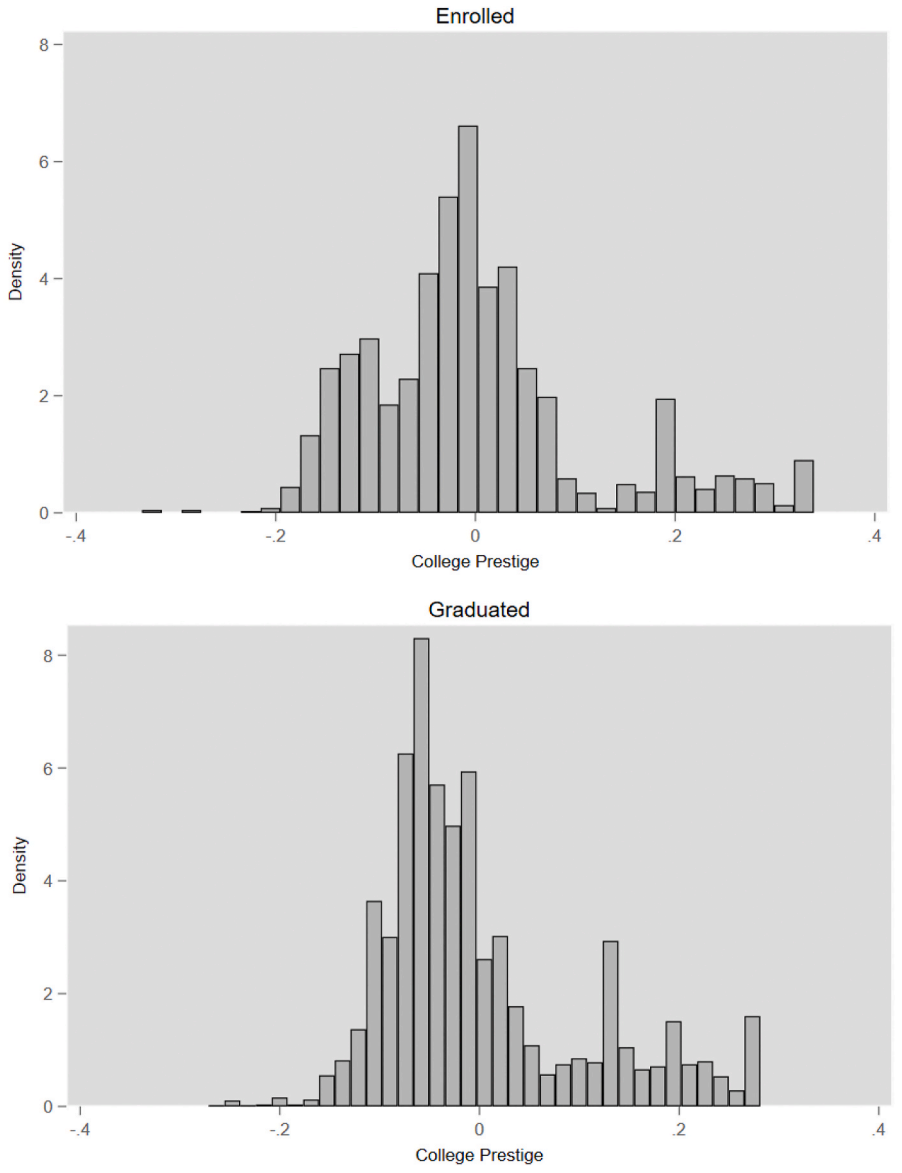
7.3. Cross tabulations

Mean college prestige scores across race/ethnicity-nativity are displayed in Fig. 2. 2.5+ generation Whites have mean prestige scores around 0 for both college enrollees and graduates. 2.5+ generation Blacks, 2.5+ generation Mexican Americans, and 1.5–2.0 generation Filipino Americans generally have negative mean college prestige scores. On the other hand, Chinese Americans have mean college prestige scores well above zero, considerably higher than 2.5+ generation Whites. For example, 2.5+ generation Chinese American college enrollees average 19 percent (100*(exp(0.17)-100)) higher college prestige than Whites (1.001 = 100*(exp(0.0013)-100)). These findings are consistent with the Chinese Americans' prioritization of attending prestigious colleges, suggesting that at least some Asian American populations have higher college prestige than Whites.

7.4. College enrollee models

Next, results from models of college prestige among college enrollees are displayed (Table 2; Fig. E.1). The bivariate model (1) finds that Chinese Americans currently enrolled in college average higher college prestige than 2.5+ generation Whites. For example, 2.5+ generation Chinese Americans average 19 percent (100*(exp(0.18)-100)) higher college prestige than 2.5+ generation Whites. However, 2.5+ generation Blacks, Mexican Americans, and 1.5–2.0 generation Filipino Americans average lower college prestige than 2.5+ generation Whites. 2.5+ generation other Asian Americans average similar college prestige to Whites. Introducing socio-demographic covariates in Model 2 leads to little change in estimates for Chinese and Filipino Americans, in general. However, 2.5+ generation Blacks and Mexican Americans no longer have lower college prestige in Model 2 than Whites. Tests using structural equation models for evaluating mediation confirm that this change is driven by the inclusion of these variables (not shown). Model 3 introduces academic preparation covariates. This inclusion leads to meaningful attenuation for Chinese Americans with high college prestige. Mediation tests show that this attenuation is driven by these covariates (not shown). For example, the point estimate for 1.5–2.0 generation Chinese Americans reduced by 27 percent between Models 2 and 3. In addition, these inclusions lead to higher college prestige estimates for 2.5+ generation Blacks and 1.5–2.0 generation Mexican Americans relative to 2.5+ generation Whites. In sum, socioeconomic disadvantage explains 2.5+ generation Blacks and Mexican Americans' lower levels of college prestige than 2.5+ generation Whites, while high levels of academic achievement partially explain Chinese Americans' high levels of college prestige. Even after inclusion of all covariates, however, Chinese Americans still attend more prestigious colleges than 2.5+ generation Whites.

The Heckman model (4) accounts for selection into college enrollment (see Fig. E.1 for visualization with confidence intervals). Consequentially, these estimates can be attributable to the entire sample. A correct interpretation is that this model should randomly select individuals from the whole sample, and confer them a college prestige score, regardless of whether they were currently a college enrollee in Wave III. The joint estimation yields a high correlation between the selection and regression equation error terms (rho =



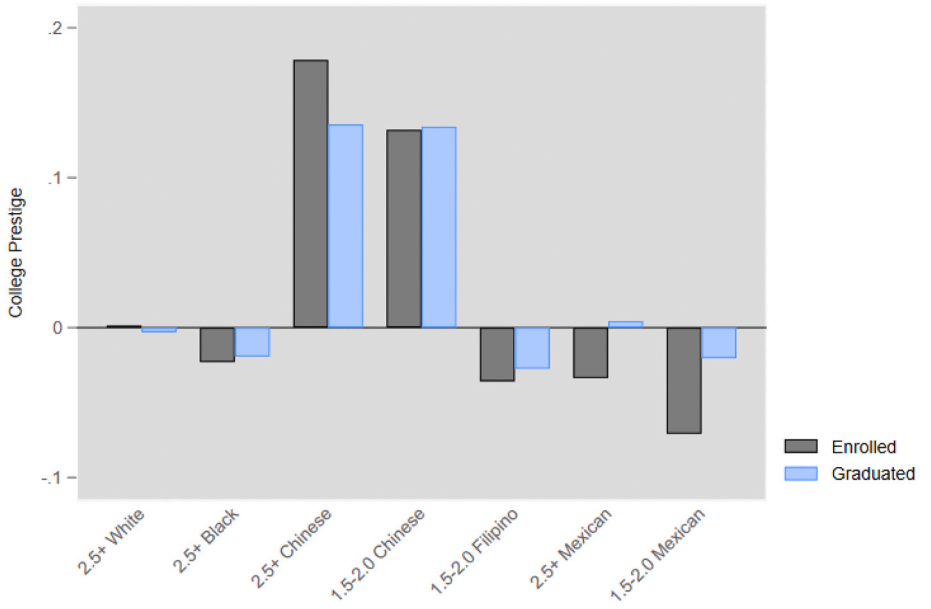
Notes: Density scales the heights of the bars so that the sum of their areas equals 1.

Fig. 1. Factor scores of college prestige from college enrollees (Wave III) and college graduates (Wave IV).

0.88) (Table C.1), demonstrating that the regression equation—on its own—yields biased results. The Heckman model yields estimates in the same direction for Chinese Americans as Model 3. However, the estimates for 1.5–2.0 generation Chinese Americans' estimates increase by 14 percent, between Models 3 and 4. For example, in Model 4, 1.5–2.0 generation Chinese Americans, average 11 percent higher (100*(exp(0.11)-100)) college prestige than 2.5+ generation Whites after accounting for covariates and selection into enrollment. Thus, the results suggest that high rates of college enrollment among the children of Chinese American immigrants may somewhat dilute college prestige scores.

7.5. College graduates

Quite similar results are observed in the college graduate analyses (Table 3; Fig. E.2). The bivariate model (1), finds that Chinese American college graduates average higher college prestige than 2.5+ generation White college graduates. For example, 2.5+ generation Chinese Americans average 15 percent (100*(exp(0.14)-100)) higher college prestige than 2.5+ generation Whites. 2.5+ generation Blacks average lower college prestige than 2.5+ generation White college graduates. Both 1.5–2.0 generation Filipino Americans and 2.5+ generation other Asian American college graduates average similar college prestige to Whites. The results largely



Notes: Estimates are obtained from Table A.1.

Fig. 2. Mean College Prestige by Race among College Enrollees and Graduates. Notes: Estimates are obtained from Table A.1.

Table 2
Confirmatory factor analysis of college prestige.

	Enrolled	Graduated
	B (SE)	B (SE)
Log (SAT)	1 (Constrained)	1 (Constrained)
Intercept	0.04 (0.00)**	0.09 (0.00)**
Barron's (Linear Probability Model)	3.23 (0.10)**	3.57 (0.09)**
Intercept	0.06 (0.01)**	0.20 (0.01)**
Rejection Rate	1.00 (0.04)**	1.09 (0.03)**
Intercept	0.33 (0.00)**	0.39 (0.00)**
Log (Faculty Salary)	1.50 (0.04)**	1.73 (0.03)**
Intercept	8.97 (0.00)**	9.05 (0.00)**
Log (Endowment/Student)	15.37 (0.54)**	17.15 (0.68)**
Intercept	7.09 (0.05)**	7.83 (0.04)**
Log (Instruction Spending/Student)	4.55 (0.11)**	4.81 (0.11)**
Intercept	8.34 (0.01)**	8.62 (0.01)**
N	3087	3242
Chi^2 (3 df)	4.48	2.12
$p > Chi^2$	0.21	0.55
RMSEA	0.01	0.00
CFI	1.00	1.00
TLI	1.00	1.00
BIC	−5.99	−8.42

Notes: The enrollment model includes correlations between log (SAT) and Barron's index, log (SAT) and log (faculty salary), log (SAT) and rejection rate, Barron's index and log (endowment/student), Barron's index and log (instruction spending/student), and rejection rates and log(endowment/student). The graduate model includes correlations between log (SAT) and log (faculty salary), Barron's index and log (faculty salary), Barron's index and log (endowment/student), rejection rate and log(endowment/student), and log(endowment/student) and log (instruction spending/student). The optimal correlations for statistical fit were calculated with modification indices.
* $p < .05$, ** $p < .01$.

remain unchanged with the introduction of sociodemographic covariates in Model 2, although the 2.5+ generation Black residual disadvantage is nullified, and 1.5–2.0 generation Mexican Americans average higher college prestige than Whites in this model. This role of sociodemographic covariates is confirmed in mediation tests (not shown). As seen in the college enrollee estimates, the introduction of academic preparation covariates in Model 3 modestly reduces Chinese Americans' gap in college prestige with 2.5+ generation Whites. Estimation of mediation tests using structural equation models find that introducing these academic characteristics

accounts for these changes (not shown). For example, the point estimate for 1.5–2.0 generation Chinese Americans reduces by 18 percent between Models 2 and 3. These results demonstrate that among college graduates, Chinese Americans and the children of other Asian American college graduates attend more prestigious colleges than 2.5+ generation white college graduates. Like the analysis from college enrollees, the college graduate results suggest the roles of socioeconomic disadvantage for 2.5+ generation Blacks and 1.5–2.0 generation Mexican Americans and high levels of academic achievement for Chinese Americans in their college prestige.

Lastly, Heckman models account for selection into college graduation. Thus, these estimates can be attributable to the whole sample, rather than just college graduates. The joint estimation yields a high correlation between the selection and regression equation error terms (rho = 0.94) (Table C.1), again demonstrating that the OLS regression equation yields sampling bias. Estimates remain largely unchanged from Model 3 to Model 4. Like the college enrollee Heckman model, the Heckman model yields higher average college prestige estimates for 2.5+ generation Blacks than among 2.5+ generation Whites. This change from Model 3 suggests that low college graduation rates among these populations hide their average college prestige, or that those without college prestige also would be likely to attend more prestigious colleges than 2.5+ generation White non-graduates.

To compare point estimates across race/ethnicity-nativity with tighter confidence intervals, models are estimated which aggregate both generations of Chinese Americans. These models are estimated both among enrollees and graduates (see Fig. E.3). Enrollee models reveal slight overlap in estimates between this group with 2.5+ Blacks. The graduate model only shows a slightly overlap with the wide confidence interval of 1.5–2.0 generation Mexican Americans. These results suggest that Chinese American young adults attend more prestigious colleges than 2.5+ generation Whites and most other racial/ethnic-nativity groups.

In sum, the results demonstrate that Chinese Americans tend to attend considerably more prestigious colleges than 2.5+ generation Whites and most other race/ethnic-nativity groups—both at enrollment and graduation—across all model specifications. Accounting for socioeconomic background has little-to-no impact on Chinese Americans' college prestige relative to 2.5+ generation Whites. At the same time, academic preparation may partially account for Chinese Americans' high levels of college prestige. These results suggest a stronger prioritization for attending prestigious colleges among Chinese American populations than among Whites. The children of Filipino immigrants, however, attend less prestigious colleges—on average—than 2.5+ generation Whites—demonstrating that this pattern does not apply to all Asian Americans. Little variation by nativity is observed among Chinese and Mexican Americans. However, supplemental analyses reveal wider nativity variation in aggregated Asian and Hispanic American groups. 2.5+ generation

Table 3
OLS and heckman selection models of college prestige on race/ethnicity-nativity with selected covariates among college enrollees.

	Model 1	Model 2	Model 3	Model 4
	B (SE)	B (SE)	B (SE)	B (SE)
Race/Ethnicity-Nativity (2.5 White)				
2.5 Black	−0.02 (0.01)*	−0.01 (0.01)	0.02 (0.01)**	0.04 (0.01)**
2.5 Chinese	0.18 (0.04)**	0.15 (0.04)**	0.11 (0.03)**	0.11 (0.03)**
1.5–2.0 Chinese	0.13 (0.03)**	0.13 (0.04)**	0.10 (0.03)**	0.11 (0.03)**
1.5–2.0 Filipino	−0.04 (0.01)*	−0.03 (0.01)*	−0.03 (0.02)	−0.02 (0.02)
2.5 Mexican	−0.03 (0.02)*	−0.02 (0.02)	−0.00 (0.01)	−0.00 (0.01)
1.5–2.0 Mexican	−0.07 (0.02)**	−0.01 (0.02)	−0.02 (0.01)	−0.02 (0.02)
Parental Education Years		0.01 (0.00)**	0.00 (0.00)*	0.01 (0.00)**
Log (Family Income)		0.02 (0.01)**	0.01 (0.00)*	0.02 (0.01)**
Parental Occupation (Prof. 1)				
Professional 2		−0.04 (0.01)**	−0.03 (0.01)*	−0.03 (0.01)*
Manager		−0.03 (0.01)*	−0.02 (0.01)	−0.02 (0.01)
White Collar/Office		−0.04 (0.01)**	−0.03 (0.01)	−0.02 (0.01)
Blue Collar		−0.05 (0.01)**	−0.02 (0.01)	−0.03 (0.01)*
Military/Farm/Other		−0.04 (0.02)**	−0.03 (0.02)	−0.03 (0.01)*
Unemployed		−0.03 (0.02)	−0.02 (0.02)	−0.05 (0.02)*
Female (Male)		−0.00 (0.01)	−0.01 (0.01)**	−0.01 (0.01)
Log (Sibsize)		−0.01 (0.01)	−0.00 (0.00)	−0.01 (0.01)
Fam. Structure (2 Bio. Parents)				
2 Parents		−0.01 (0.01)*	−0.00 (0.01)	−0.02 (0.01)*
Single Mother		0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Single Father		−0.03 (0.01)*	−0.00 (0.01)	−0.00 (0.01)
Other		−0.02 (0.02)	0.01 (0.01)	−0.03 (0.02)
HS GPA			0.03 (0.00)**	0.06 (0.01)**
English Track			0.00 (0.01)	0.00 (0.01)
Humanities Track			0.02 (0.01)**	0.03 (0.01)**
F. Language Track			0.01 (0.00)**	0.02 (0.00)**
Science Track			0.01 (0.00)**	0.01 (0.00)**
Math Track			0.01 (0.00)**	0.02 (0.00)**
Intercept	−0.00 (0.01)	−0.11 (0.03)**	−0.30 (0.03)**	−0.65 (0.04)**
Estimator	OLS	OLS	OLS	Heckman
Observations	3087	3087	3087	3087

Notes: Estimates from the selection equation in the Heckman Model are in Table C.1. The selection equation includes an additional 6077 non-selected cases, for a total sample size of 9164.
$p < .05$, ** $p < .01$.

Blacks have higher college prestige in the hypothesized Heckman models. The analysis also finds that socioeconomic background may disadvantage 2.5+ generation Blacks and Mexican Americans in college prestige relative to 2.5+ generation Whites in enrollment models.

7.6. Interaction models

Lastly, models which allow parental education to interact with race/ethnicity-nativity are estimated to test if the relationship between parental education and college prestige varies by race/ethnicity-nativity (Table 5; Fig. 3). The OLS college enrollee model reveals only a weak negative interaction for 2.5+ generation Blacks. However, the Heckman college enrollee model reveals no interactions. The Heckman model shows a negative interaction at the 0.10 alpha level—as hypothesized for 1.5–2.0 generation Chinese Americans (see Table 5).

The college graduate models yield similar results, with the OLS model revealing a weak negative interaction for 2.5+ generation Blacks and negative interactions for 1.5–2.0 generation Chinese and Mexican Americans. The Heckman model shows negative interactions for 1.5–2.0 generation Chinese and Mexican Americans. Due to evidence of sample selection bias from the Heckman model, it is preferred to the OLS model. The Heckman model plotted estimates (Fig. 3) show a positive relationship between parental education and college prestige for 2.5+ generation Whites. In contrast, the pattern is relatively flat for 1.5–2.0 Mexican Americans, while the 1.5–2.0 generation Chinese Americans have a negative slope. Consistent with other related research (Fishman 2020), the gap in college prestige between 1.5 and 2.0 generation Chinese Americans and the other groups is widest among respondents with low levels of education. For example, there are 25 and 19 percent expected gaps in college prestige between 1.5 and 2.0 generation Chinese Americans and 2.5+ generation Whites and 1.5–2.0 generation Mexican Americans, respectively, among those whose parents have 8 years of education. In contrast, no difference in college prestige is observed among those with parents who have 19 or more years of education. Although only observed in one model specification, these results somewhat support Lee and Zhou's high mobility hypothesis.

Table 4
OLS and heckman selection models of college prestige on race/ethnicity-nativity with selected covariates among college graduates.

	Model 1	Model 2	Model 3	Model 4
	B (SE)	B (SE)	B (SE)	B (SE)
Race/Ethnicity-Nativity (2.5+ White)				
2.5 Black	−0.02 (0.01)	−0.01 (0.01)	0.01 (0.01)	0.03 (0.01)**
2.5+ Chinese	0.14 (0.03)**	0.12 (0.02)**	0.10 (0.02)**	0.09 (0.02)**
1.5–2.0 Chinese	0.14 (0.02)**	0.15 (0.02)**	0.12 (0.02)**	0.13 (0.03)**
1.5–2.0 Filipino	−0.02 (0.02)	−0.02 (0.01)	−0.03 (0.01)**	−0.05 (0.01)**
2.5+ Mexican	0.01 (0.02)	0.01 (0.02)	0.01 (0.01)	−0.02 (0.01)
1.5–2.0 Mexican	−0.02 (0.02)	0.04 (0.02)*	0.03 (0.02)	0.03 (0.02)
Parental Education Years		0.00 (0.00)**	0.00 (0.00)**	0.01 (0.00)**
Log (Family Income)		0.02 (0.01)**	0.02 (0.00)**	0.03 (0.01)**
Parental Occupation (Prof. 1)				
Professional 2		−0.05 (0.01)**	−0.04 (0.01)**	−0.03 (0.01)**
Manager		−0.04 (0.01)**	−0.03 (0.01)**	−0.03 (0.01)*
White Collar/Office		−0.04 (0.01)**	−0.03 (0.01)**	−0.03 (0.01)**
Blue Collar		−0.04 (0.01)**	−0.03 (0.01)**	−0.04 (0.01)**
Military/Farm/Other		−0.04 (0.01)**	−0.04 (0.01)**	−0.04 (0.01)**
Unemployed		−0.02 (0.02)	−0.02 (0.02)	−0.04 (0.02)*
Female (Male)		−0.01 (0.00)	−0.01 (0.00)*	−0.01 (0.00)*
Log (Sibsize)		−0.01 (0.00)	−0.01 (0.01)	−0.01 (0.00)
Fam. Structure (2 Bio. Parents)				
2 Parents		0.01 (0.01)	0.01 (0.01)	−0.01 (0.01)
Single Mother		0.02 (0.01)*	0.02 (0.01)*	0.01 (0.01)
Single Father		−0.00 (0.01)	0.02 (0.01)	0.02 (0.02)
Other		0.00 (0.02)	0.01 (0.02)	−0.01 (0.02)
HS GPA			0.01 (0.01)	0.06 (0.01)**
English Track			0.01 (0.01)	0.01 (0.01)
Humanities Track			0.02 (0.01)**	0.03 (0.01)**
F. Language Track			0.01 (0.00)**	0.02 (0.00)**
Science Track			0.00 (0.00)	0.01 (0.00)**
Math Track			0.01 (0.00)**	0.02 (0.00)**
Intercept	−0.00 (0.01)	−0.11 (0.03)**	−0.21 (0.03)**	−0.70 (0.04)**
Estimator	OLS	OLS	OLS	Heckman
Observations	3242	3242	3242	3242

Notes: Estimates from the selection equation in the Heckman Model are in Table C.1. The selection equation includes an additional 8236 non-selected cases, for a total sample size of 11,478.
* $p < .05$, ** $p < .01$.

Table 5
OLS and heckman models of college prestige with parental education by race/ethnicity-nativity interactions.

	Enrolled		Graduated	
	B (SE)	B (SE)	B (SE)	B (SE)
Race/Ethnicity-Nativity (2.5+ White)				
2.5+ Black	0.08 (0.03)**	0.09 (0.04)*	0.06 (0.03)*	0.07 (0.03)*
2.5+ Chinese	0.15 (0.16)	0.16 (0.17)	−0.07 (0.10)	−0.05 (0.11)
1.5–2.0 Chinese	0.20 (0.08)*	0.30 (0.09)**	0.26 (0.06)**	0.39 (0.06)**
1.5–2.0 Filipino	−0.04 (0.05)	0.08 (0.07)	−0.20 (0.09)*	−0.16 (0.09)
2.5+ Mexican	−0.02 (0.05)	0.02 (0.05)	−0.04 (0.05)	−0.04 (0.07)
1.5–2.0 Mexican	0.01 (0.04)	0.05 (0.05)	0.15 (0.05)**	0.17 (0.08)*
Parental Ed. Yr.	0.00 (0.00)**	0.01 (0.00)**	0.00 (0.00)**	0.01 (0.00)**
Race/E.-N X Ed. Yr.				
2.5+ Black X Yr.	−0.00 (0.00)*	−0.00 (0.00)	−0.00 (0.00)*	−0.00 (0.00)
2.5+ Chinese X Yr.	−0.00 (0.01)	−0.00 (0.01)	0.01 (0.01)	0.01 (0.01)
1.5–2.0 Chinese X Yr.	−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.00)*	−0.02 (0.00)**
1.5–2.0 Filipino X Yr.	0.00 (0.00)	−0.01 (0.01)	0.01 (0.00)	0.01 (0.01)
2.5+ Mexican X Yr.	0.00 (0.00)	−0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
1.5–2.0 Mexican X Yr.	−0.00 (0.00)	−0.01 (0.00)	−0.01 (0.00)**	−0.01 (0.01)*
Estimator	OLS	Heckman	OLS	Heckman
Observations	3087	3087	3242	3242

Notes: All models include the same covariates as those in Tables 3 and 4
* $p < .05$, ** $p < .01$.

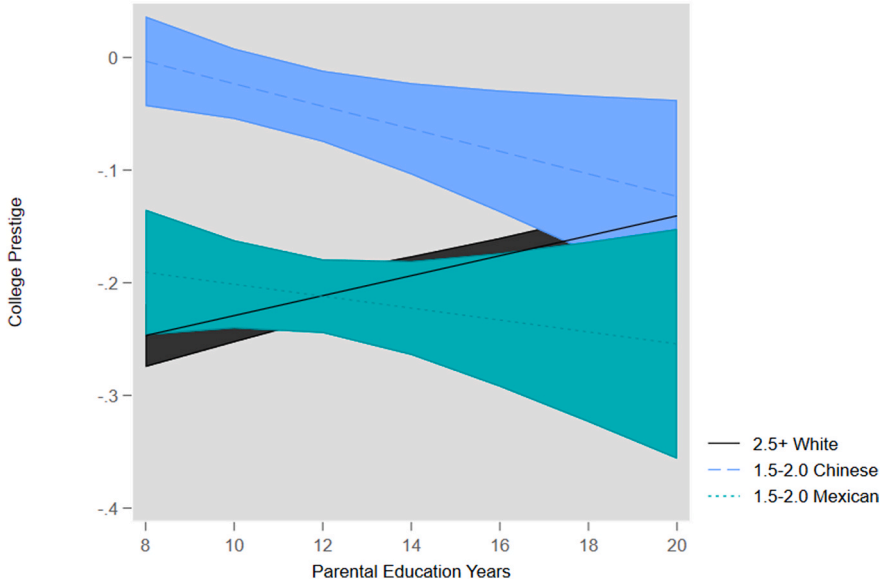


Fig. 3. College prestige by race/ethnicity-nativity across parental education among graduated respondents.

8. Extensions and sensitivity analyses

8.1. Other Asian and Hispanic Americans

Additional models were estimated which aggregated Asian and Hispanic American groups with less than 30 cases per cell (Figs. F.1 and F.2). In general, 2.5+ generation other (non-Chinese) Asian and other (non-Mexican) Hispanic Americans have similar college prestige to 2.5+ generation Whites across all models, consistent with assimilation theory. On the other hand, 1.5–2.0 generation other (non-Chinese/Filipino) Asian Americans have consistently higher levels of college prestige than 2.5+ generation Whites, much like Chinese Americans. 1.5–2.0 generation other Hispanics have similar college prestige to 2.5+ generation Whites in bivariate models but have somewhat higher college prestige after introducing covariates in OLS models and applying Heckman's correction. Again, these results demonstrate the distinct college prestige patterns of specific Asian American populations.

8.2. Sensitivity analyses

A series of sensitivity analyses were performed to demonstrate the robustness of the findings. First, OLS and Heckman models of the six college prestige factors were estimated in the college enrollee and graduate data (Tables D.1 and D.2). Estimates from the primary analyses are consistent with those from Barron's, SAT, rejection rates, faculty salary, and instructional spending per student, although estimates modestly vary. The Barron's and SAT estimates are quite like those from the college prestige factor score. Given that these indicators are commonly used in past research (Dale and Krueger 2002; Davies and Guppy 1997; Eide et al., 2016), we can reasonably assume that findings from these studies often apply to college prestige. The estimates of endowment per student are distinct.

Next, the estimation of the selection equation was evaluated in a series of inclusions/removals of covariates (Tables D.3 and D.4). Second, equivalent non-survey weighted Heckman maximum likelihood models were compared with non-survey weighted Heckman two-step models (Table D.5). Third, the sample size of the outcome was adjusted, only including factor scores with complete Barron's and SAT information (Table D.6). Fourth, cumulative GPA was replaced with subject-specific GPA and Wave I reported subject-specific GPA (Tables D.8 and D.9). None of these changes resulted in any meaningful changes in estimates.

Lastly, OLS and Heckman models were estimated which allowed parental income to interact with race/ethnicity-nativity (Table D.7). A negative interaction between 1.5 and 2.0 generation Chinese Americans and parental income was observed in the Heckman model for graduates. Although this finding is tenuous, it is consistent with the high mobility pattern observed in some of the models with parental education by race/ethnicity-nativity interactions. To summarize, the sensitivity tests demonstrate the robustness of the primary findings in a variety of model specifications.

9. Discussion and conclusion

9.1. Discussion

The results reveal that Asian Americans from specific ethnic-nativity groups tend to attend considerably more prestigious colleges than most other US populations. Across all model specifications from college enrollees and graduates, Chinese Americans enroll and graduate from more prestigious colleges than Whites and most other racial/ethnic-nativity groups. Although the cross-sectional models could only attribute these findings to those who attend college, the Heckman models correct for sample selection into college attendance, allowing the results to be attributable to the Add Health sample. The pattern is not explained by socioeconomic background, and these differences are only modestly attenuated by including academic preparation covariates in the models. These results are consistent with the argument that Asian American populations prioritize attending prestigious colleges more than Whites (Lee and Zhou 2015), although reliance on residual differences for inference cannot rule out alternative explanations. This preference is speculated to be connected with plans to obtain professional jobs (e.g., doctor, lawyer, scientist) (Lee and Zhou 2015; Xie and Goyette 2003), for which attending prestigious colleges is proposed to carry considerable benefits, especially in graduate school enrollment and future wages.

This finding does not apply to all Asian American populations, with a negative association for the children of Filipino immigrants in hypothesized Heckman models. Although the extension analyses show high levels of college prestige among the children of non-Chinese/Filipino Asian American immigrants, they also reveal no difference in college prestige between 2.5+ generation non-Chinese Asian Americans with Whites. In the case of Filipino Americans, the population may prioritize the entry of colleges which focus on nursing or other similar careers (Choy 2003), which may have lower college prestige scores than colleges focused on liberal arts degrees, which often precede enrollment in professional or doctoral programs.

The analyses demonstrate important nuances in the racial/ethnic educational stratification. Firstly, Mexican Americans and 2.5+ generation Blacks enroll at less prestigious colleges than 2.5+ generation Whites, largely driven by socioeconomic disadvantages. Once socioeconomic status is adjusted, this difference is negated—such patterns are also observed in similar research (Feliciano and Lanuza 2017; Fishman 2020). Moreover, hypothesized Heckman models even find that 2.5+ generation Blacks attend somewhat more prestigious colleges than 2.5+ generation Whites, but less prestigious colleges than Chinese Americans. In addition, no clear nativity pattern is observed across race/ethnicity. Such findings contrast with similar research focused on college selectivity (Alon et al., 2010; Desmond and López Turley 2009; Fry 2004; Reardon et al., 2012), suggesting that many of the racial/ethnic contrasts among four-year college attendees are relatively narrow and are driven by economic background.[8] In general, the analyses reveal somewhat similar horizontal stratification among White, Black, Mexican American, and Filipino American college attendees upon adjusting for economic background, while displaying Chinese Americans' distinct pattern of attending very prestigious colleges.

These findings from Chinese Americans and 2.5+ generation Blacks are consistent with the prioritization of attending prestigious colleges. Many racial/ethnic minority populations may view attending prestigious colleges as a pathway to social mobility and evading racial/ethnic stratification. Although there is little consistent evidence of attendance of less prestigious colleges than Whites among minority populations, it is possible that racialization plays a role in the observed patterns—perhaps mediated by academic achievements for 2.5+ generation Blacks and 1.5–2.0 generation Hispanic Americans. Moreover, it is possible that racial stereotypes for Filipino Americans may vary relative to those for Chinese Americans. Despite the variation in college prestige by nativity, there is no

[8] These other studies primarily focus on broader contrasts (e.g., predicting college applications) and—except for Desmond and López Turley (2009)—are descriptive or use relatively limited covariates. These differences may explain the wider gaps between Hispanic Americans and Blacks with Whites in prior research.

consistent nativity difference across race/ethnicity. In fact, for Chinese and Mexican Americans, the estimates are generally similar across generations. Given the absence of viable mechanisms to explain why these minority groups are attending colleges, the results lend the strategic adaptation hypothesis only speculative support. However, the findings suggest that these minority populations'—especially Chinese Americans—prioritize attending prestigious colleges.

Lee and Zhou's (2015) hypothesis about a weak relationship between parental education and offspring's education outcomes is only partially supported in this analysis. This pattern is observed among the children of Chinese immigrants in one model specification, but not among other Asian American groups. The case of the children of Chinese American immigrants may relate to their extracurricular education communities (Lee and Zhou 2015; Zhou and Kim 2006) and high levels of familial achievement pressure (Tao and Hong 2014). Consistent with Lee and Zhou's hypothesis, these communities may spread narrow success frames across Chinese Americans of different socioeconomic groups, portraying attending prestigious colleges as the primary pathway to economic success. Later generation Chinese Americans, however, may be less likely to be engaged in such communities. However, as Lee and Zhou (2015) and Liu and Xie (2016) suggest, the children of Mexican American immigrants may have a weak relationship between parental education and college prestige. Future research will need to theorize on mechanisms through which this weak association may occur. As with Chinese Americans, it is hypothesized that ethnic community and familial achievement pressures cross socioeconomic boundaries (Ovink 2017). However, these populations only have a flat association between parental education and college prestige; they do not attend more prestigious colleges than Whites on average.

The analysis innovatively applies the Heckman (1979) selection model. Correcting for selection into college attendance may yield somewhat different estimates for some racial/ethnic-nativity groups. The difference between OLS and Heckman estimates is most clearly observed when examining estimates from 2.5+ generation Blacks. Selection into college attendance may disadvantage this population, reducing their average college prestige scores. Although the estimates for Chinese remain similar in direction across the OLS and Heckman models, there is some evidence of diluted estimates in non-corrected models. For example, the Heckman results show a 14 percent increase in prestige of college enrolled in relative to the OLS model for the children of Chinese American immigrants.

In sum, the results from this research highlight the distinct education outcomes among many Asian American populations. Although prior research demonstrates that many Asian Americans complete high levels of education (Feliciano and Lanuza 2017; Fishman 2020), this study shows that this population also attends more prestigious colleges than Whites and most other racial/ethnic-nativity groups. Yet, the long-term benefits of attending these more prestigious colleges is unknown. For example, most prior research shows that Chinese Americans—and possibly the children of other Asian American immigrants—have similar or slightly lower incomes than Whites (Kim and Sakamoto 2010; Zeng and Xie 2004). Future research will benefit from examining the role of college prestige in racial/ethnic-nativity financial differences across Asian American ethnic-groups. One possibility is that attending more prestigious colleges makes up for Asian Americans' earning disadvantage. Alternatively, disaggregation by ethnicity and nativity may reveal higher earnings for specific Asian American groups than for Whites, mediated—in part—by attending prestigious colleges. Moreover, future work should consider the roles of college prestige in racial/ethnic-nativity differences in graduate admissions and occupational attainment.

On the other hand, the analysis suggests that Mexican Americans and Blacks attend similarly or slightly more prestigious colleges than Whites after accounting for socioeconomic background, academic preparation, and selection into college attendance. Nevertheless, these potential benefits remain hidden in bivariate estimates, and probably only play a minor role in influencing financial circumstances, graduate admissions, and occupational attainment.

9.2. Limitations

There are several key limitations for this study. The first is Add Health's dearth of college-entrance standardized test (e.g., SAT or ACT) data. Arguably differences in these test scores could account for racial/ethnic-nativity differences in college selectivity. However, it may be correct to not include this information in college prestige models. High school GPA and coursework should account for academic preparation, and any standardized test-mediated effects on college prestige. However, racial/ethnic-nativity discrepancies between standardized tests, net of GPA, would suggest that this population is prioritizing college prestige. For example, if Chinese Americans' college prestige advantage is accounted for by higher SAT scores, it can be reasonably assumed that this is due to test preparation as these tests must have independent effects from academic preparation to account for residual effects. Test preparation is likely performed with the clear goal of improving college outcomes, especially in admittance to prestigious colleges. Thus, there may be two different types of college prestige prioritization: mediated and non-mediated prioritization. Non-mediated effects would suggest prioritization of college prestige when selecting colleges to apply to and enroll in. Prior research provides support for the latter type (An 2010; Niu et al., 2006). Lastly, given Asian Americans' high achievement levels and the close correlation between achievement and standardized tests scores, the modest attenuation of Asian Americans' higher college prestige levels from the inclusion of academic preparation covariates (see Model 3 in Tables 2 and 3) do not suggest that standardized test preparation would account for the remainder of the residual. Again, these patterns are suggestive of the latter (non-mediated) type of college prestige prioritization.

Second, it is possible that the racial/ethnic-nativity variation in college prestige is driven by one or a series of omitted variables, such as parental wealth or grandparents' socioeconomic status. Given that controlling for socioeconomic status only mildly attenuates point estimates, this problem is unlikely.

Third, the current analyses cannot differentiate the attitudes of Asian American young adults from those of their parents. Thus, the high prestige pattern among Asian Americans may either be attributable to children or parents, or a combination of both. More detailed data on mechanisms—especially that which differentiates parents' and offspring's attitudes—may allow for this

decomposition.

Fourth, unfortunately available indicators of college expectations and parental pressure to attend college in Add Health focus primarily on college attendance. Thus, including these covariates aid in estimating selection equations, but has little impact on the equations of college prestige. Variables which focus on the type of college adolescents' plans to attend a type of college would provide a more effective attitudinal mechanism test.

Fifth, Add Health does not have data to disaggregate 2.5+ generation Whites and Blacks by ethnicity. For example, the results generally assume Whites represent the predominant amalgamation of Western, Central, and Southern European populations. However, Eastern European and Middle Eastern individuals cannot be parsed out using Add Health.

9.3. Conclusion

The present study examines race/ethnic-nativity variation in college prestige. The results reveal that Chinese Americans attend more prestigious colleges than Whites and most other racial/ethnic-nativity groups. The findings are not only attributable to college attendees; results from the Heckman selection models suggest that these patterns would hold even if college attendees are randomly selected from the total population. Thus, the results suggest that some Asian American populations prioritize attending prestigious colleges. In contrast, Mexican Americans and Blacks attend similarly prestigious colleges to Whites after adjusting for socioeconomic status. Results from the hypothesized models suggest that disadvantage in academic preparation, economic background, and selection into college may hide many Mexican Americans' and Blacks' prioritization of attending prestigious colleges. In sum, the findings demonstrate considerable racial/ethnic variation in prestige of colleges attended, highlighting Chinese Americans' completion of degrees at prestigious colleges.

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Appendix A. Supplementary data

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