# Educational Mobility among the Children of Asian American Immigrants[1]

Samuel H. Fishman
*Duke University*

Recent qualitative research argues that Asian Americans' educational attainments are not predicated on their parents' education, diverging from status attainment theory. Using data from two nationally representative studies, the analysis reveals extremely high levels of offspring education and no association with parents' education among Chinese, Indian, Korean, and Vietnamese immigrants. High adolescent educational expectations and parental pressure regardless of parental education partially account for the lack of association. In contrast, the education patterns of whites, blacks, Mexican Americans, and later-generation Asian Americans are generally consistent with status attainment theory. These results demonstrate that educational attainment among certain Asian American populations diverges from classic stratification models and indicate the need for more detailed explorations to further contextualize these patterns.

## INTRODUCTION

Asian Americans' impressive educational achievements span from the early 20th century (Hirschman and Wong 1986) to the early 21st century (Kao 1995; Xie and Goyette 2004; Hsin and Xie 2014; Feliciano and Lanuza 2017). Although earlier research primarily focuses on cultural explanations

[1] This research uses data from Add Health, a program project directed by Kathleen Mullan Harris and designed by J. Richard Udry, Peter S. Bearman, and Kathleen Mullan Harris at the University of North Carolina at Chapel Hill and funded by grant P01-HD31921 from the Eunice Kennedy Shriver National Institute of Child Health and Human Development, with cooperative funding from 23 other federal agencies and foundations. Special acknowledgment is due to Ronald R. Rindfuss and Barbara Entwisle for


0002-9602/2020/12602-0002$10.00

(Kitano 1976; Wong 1980; Barringer, Gardner, and Levin 1993), much current research explores historical immigration trends and the interplay between racial stratification, socioeconomic selection, and culture as factors in Asian Americans' education patterns (Kao and Thompson 2003; Xie and Goyette 2003, 2004; Louie 2004; Zhou and Kim 2006; Sakamoto, Goyette, and Kim 2009; Hsin and Xie 2014; Lee and Zhou 2015; Liu and Xie 2016; Dhingra 2018). This article contributes to this body of literature by examining how and why Asian American education patterns diverge from classic stratification theory.

Status attainment theory argues that parental education predicts offspring's education (Blau and Duncan 1967; Sewell, Haller, and Portes 1969). Although parental education inequalities between Asian American ethnic groups are well documented, these disparities are also observed within Asian American ethnic groups (Kao 1995; Xie and Goyette 2004; Lee and Zhou 2015). However, recent research (Lee and Zhou 2015)—using qualitative data from Chinese and Vietnamese Americans in the Los Angeles metropolitan area—argues that young Asian Americans achieve high education levels regardless of their parents' education backgrounds, diverging from status attainment theory. Lee and Zhou's claim—described as "high educational mobility" in this manuscript—has not been tested using nationally representative quantitative data with long-term education outcomes. To date, comparable quantitative research has only focused on adolescent academic outcomes (e.g., high school math GPA; Liu and Xie 2016). This article examines and explains the extent to which Asian Americans' educational attainment diverges from classic stratification theory's central claim that parental education predicts offspring's education.

One possible explanation for high educational mobility are the distinct schemas held by Asian Americans (Hsin and Xie 2014; Tao and Hong 2014; Lee and Zhou 2015; Liu and Xie 2016). Recent studies suggest that high levels of internal and external achievement pressure are key mechanisms for Asian Americans' high educational mobility. This hypothesis is compatible with status attainment theory's specification of educational expectations and parental educational pressure as mobility mechanisms (Sewell et al. 1969). High expectations and parental pressure regardless of parental education may account for

assistance in the original design. Information on how to obtain the Add Health data files is available on the Add Health website (http://www.cpc.unc.edu/addhealth). No direct support was received from grant P01-HD31921 for this analysis. I also thank the National Center for Education Statistics for making the National Education Longitudinal Study and Education Longitudinal Study publicly available. I thank Jen'nan Read, S. Philip Morgan, Kate Weisshaar, Robert A. Hummer, Kenneth Bollen, the late Jennifer Buher-Kane, Min Zhou, Robert Crosnoe, Yu Xie, Amy Hsin, Yong Cai, Kathleen M. Harris, Max Reason, Rebecca Bielamowicz, and Iliya Gutin for their helpful comments. Direct correspondence to Samuel H. Fishman, 276 Soc/Psych Building, 417 Chapel Drive, Durham, North Carolina 27708. E-mail: samuel.fishman@duke.edu

Asian Americans' weak relationship between parental and offspring's educational attainment, further diverging from status attainment theory's focus on socioeconomic inequality.

This article falls at the intersection of the stratification, education, immigration, and race/ethnicity literatures, addressing key questions on Asian Americans' educational attainment and the status attainment process using data from the National Longitudinal Study of Adolescent to Adult Health (Add Health) and the National Education Longitudinal Study (NELS): (1) Which Asian American ethnicity-nativity groups attain high average education levels? (2) Do Asian American ethnicity-nativity groups with high average education levels also have a weak association between parental and offspring's education? This joint pattern would indicate high educational mobility. (3) What role do educational schemas—as related to internal and external achievement pressures—play in Asian Americans' educational attainment? (4) How do Asian Americans' educational attainment patterns compare to other racial and ethnic minority groups, such as blacks and Mexican Americans?

## THEORETICAL FRAMEWORK

This article's framework draws on several theoretical traditions to explain Asian American educational attainment patterns. First, it uses the duality of structure (Sewell 1992; Johnson-Hanks et al. 2011) to explain the role of cognitive schemas in educational attainment. Second, it frames status attainment theory within the duality of structure perspective. Third, the framework merges concepts from the race/ethnicity and immigration literature on Asian American education patterns (Xie and Goyette 2003; Louie 2004; Hsin and Xie 2014; Tao and Hong 2014; Lee and Zhou 2015; Feliciano and Lanuza 2017; Dhingra 2018) with status attainment theory and the duality of structure.

### Duality of Structure and Schemas in Educational Attainment

The duality of structure (Giddens 1984; Sewell 1992) explains the role of schemas in educational attainment. Extending Sewell's (1992) work and current cognitive theory, Johnson-Hanks et al.'s (2011) theory of conjunctural action (TCA) contends that both mental constructs and sociodemographic characteristics jointly influence behavior. The TCA outlines three types of social structures: materials, schemas, and identities. Materials are real-world interactable objects or events, whereas schemas are stable ways of thinking about materials.[2] Schemas could be explained as linked, stable

[2] Although Lee and Zhou (2015) make reference to cognitive frames, this paper uses the world "schema" to be consistent with the TCA (Johnson-Hanks et al. 2011).

cognitive constructs through which a people group understands the social world (Brubaker 2004). Schemas are both in the mind and in the world, given stability by external materials and by individual identity—or stable self-concept (Johnson-Hanks et al. 2011). This article describes schemas closely tied to ethnicity as cultural schemas. Cultural schemas among immigrants and their children are not only influenced by schemas from their country of origin but also may be developed by materials and schemas experienced in the United States (e.g., parental education, ethnic community, and racialization).

In turn, these factors may impact adolescent educational schemas, such as those connected to educational expectations and parental educational pressure—markers of internal and external achievement pressure. These more proximate schemas, in turn, may impact educational behaviors (e.g., academic efforts, standardized test preparation, college enrollment; Domina, Conley, and Farkas 2011) and long-term education outcomes (i.e., education years completed, bachelor's completion; Andrew and Hauser 2011). Thus, TCA explains how schemas interact with materials to influence social mobility. In sum, this article uses TCA to explain the development of educational schemas and their relationship to race/ethnicity-nativity and then discusses how these educational schemas influence educational attainment.

## Status Attainment Theory as a Duality of Structure Framework

Status attainment theory contends that parental socioeconomic characteristics, such as parental education, income, and occupation, independently impact education outcomes (Hauser 1972). Parental education is one of the most important socioeconomic indicators, exerting a powerful influence on educational attainment, net of other socioeconomic characteristics (Sewell, Haller, and Ohlendorf 1970; Hauser 1972; Sewell, Hauser, and Wolf 1980). For example, Feliciano and Lanuza (2017) find that each year of parental education is associated with a .27 increase in education years completed, net of parental income, occupation, and other factors.[3] Thus, young adults with parents who have a master's degree or more average more than two more education years than those with parents who have less than a high school degree, when holding social background constant.

Parental education may impact offspring's education through several key mechanisms. Social science theory has suggested that the interrelated factors of *human capital* (Becker 1994; i.e., knowledge and skills), *social capital* (Coleman 1988; i.e., connections and networks), and *cultural capital* (Bourdieu 1984; Lareau 2003; i.e., normative mobility-impacting preferences

[3] See model 1 in table 3 in Feliciano and Lanuza (2017) for the estimate for "highest parental years of schooling completed."

and behaviors) are material and schematic resources through which parental education may impact educational attainment. In turn, these factors may influence adolescents' educational schemas tied to the development of educational expectations and parental pressure, which then influence educational attainment (Hauser 1972; Haller and Portes 1973). Classic status attainment research, however, has primarily focused on the children of U.S.-born parents. It is less clear how and why the association between parental and offspring's education might vary across ethnicity and nativity.

## Explanations for Asian Americans' High Average Education Levels

Much theory on Asian Americans' educational attainment focuses on schematic mechanisms. Xie and Goyette (2003)—and later Lee and Zhou (2015)—argued that Asian Americans "strategically adapt" to labor market discrimination in the United States by adopting a narrow success schema. This schema portrays advanced degrees from prestigious institutions and professional jobs, such as doctors, lawyers, engineers, or scientists, as the sole means to socioeconomic success. The development of this success schema may also relate to increases in Asian immigration and the growth of the U.S. technology sector in the mid-late 20th century. Similarly, Dhingra (2018) and Louie (2004) observed that Indian and Chinese American immigrant parents are not focused on education for its own sake but primarily for its competitive advantage in mobility—possibly stemming from experiences in their origin countries. As a consequence of these narrow success schemas, young Asian Americans may experience high levels of internal and external achievement pressure (Lee and Zhou 2015).

Educational contextual selection—the education of immigrants relative to the population of their native country—partially explains Asian Americans' high average education levels. Although educational selectivity relative to U.S.-born whites can be accounted for in survey-based analyses, innovative methods need to be used to compare immigrants' education with the average education from their countries of origin.[4] Using linked data from the National Longitudinal Study of Adolescent to Adult Health and the Barro-Lee Educational Attainment data set, Feliciano and Lanuza (2017) found that parental educational contextual selection accounted for a small portion of the Asian Americans' high levels of educational attainment. Like

[4] Feliciano's (2005) educational selection net difference index reveals that Mexican immigrants (.20) have low levels of contextual selection, while Korean (.52), Vietnamese (.59), Filipino (.60), Chinese (.67), Japanese (.67), and Indian (.86) immigrants have higher levels of educational selection. For example, a .20 score in this net difference index reveals that the education of an immigrant will be higher than a nonimmigrant 20% more often than a nonimmigrant's education will be higher than an immigrant's education.

the "strategic adaptation" theories, the authors found that internal and external achievement pressure—in the form of adolescent expectations and parental educational pressure—accounts for part of this contextual selection pattern. Although strategic adaptation and contextual selection on their own can (at least partially) explain Asian Americans' high average education attainment, these structural perspectives do not explain racial/ethnic variation in the relationship between parental and offspring's education.

## Explanations for Asian Americans' Weak Association between Parental and Offspring's Education

Recent cultural-schematic theories not only address high average educational attainment but also explain the weak association between parental and offspring's education among Asian Americans. For example, Tao and Hong (2014) and Hsin, Liu, and Xie (Hsin and Xie 2014; Liu and Xie 2016) discussed schemas imported from immigrants' origin countries. On the other hand, Lee and Zhou (2015) focused on Asian American schemas developed as a result of schemas and material resources experienced in the United States.

Tao and Hong (2014) argued that many Asian Americans view educational achievement as a familial obligation. The external pressure from these obligations is internalized—often leading to anxiety and other negative emotions—and is associated with higher academic performance. Moreover, this familial obligation schema would lead young Asian Americans to prioritize educational achievements to negate or avoid the negative emotions connected with underachieving. The authors attributed the familial obligation schema to interdependent identities common in Asian cultures, which contrast with predominant independent identities in Western cultures (Markus and Kitayama 2010; Tao and Hong 2014). Other scholarship emphasizes Confucian schemas on people's malleability and the potential for self-improvement through practice and hard work (Stevenson et al. 1990; Hsin and Xie 2014; Liu and Xie 2016). This scholarship suggests that many disadvantaged Asian Americans believe they can achieve socioeconomic success through effort and education (Liu and Xie 2016).[5] In a test of this theory, Liu and Xie (2016) found a weaker association between socioeconomic status and high school GPA among Asian Americans than among whites. However, this pattern was observed among all Asian Americans in the analysis—rather than just those from Confucian backgrounds (e.g., Chinese, Japanese, Korean, and Vietnamese Americans; Wang 2002; Xie and Goyette 2003; Liu and Xie 2016). Liu and Xie suggested that their results were consistent with a general Asian American cultural effect but

[5] The Confucian malleability schema is one manifestation of Asian interdependent identities (Tao and Hong 2014).

conceded that the findings did not confirm the role of Confucian schemas. These results are more consistent with Tao and Hong's (2014) familial obligation framework, which can be inclusive of more Asian American ethnic groups. In short, the focus on educational attainment as familial obligation may lead to high levels of internal and external achievement pressure. If familial obligation schemas are shared across socioeconomic status, parental education may have less influence on educational attainment for Asian Americans.

Lee and Zhou (2015), in contrast, focused on the intersection of immigrant patterns and ethnic community. In accordance, the authors argued that Asian American educational culture is largely a product of its social structural (both material and schematic) background. Education schemas are transferred from advantaged to disadvantaged Asian Americans within ethnic communities, a "spillover" of contextual selection (Hsin 2016, 2382). To emulate the achievements of advantaged Asian Americans, disadvantaged Asian Americans often treat Asian American professionals as their reference for socioeconomic success (Lee and Zhou 2015). In a discussion of Lee and Zhou's work, Hsin (2016) argues that these "cultural" success schemas are actually "class-based" schemas, a key distinction from essentialist cultural theories. Consistent with the familial obligation schema (Tao and Hong 2014), Lee and Zhou's (2015) interviews revealed high levels of internal and external pressure to meet parents' educational and occupational expectations, regardless of socioeconomic background. Thus, inequality in parental education is partly negated by success schemas common among Asian Americans across parental education levels. Lee and Zhou (2015) argued that this pattern directly contrasts with status attainment theory. In sum, Asian Americans across socioeconomic backgrounds adopt similar mobility schemas focused on the completion of advanced degrees.

These cultural-schematic theories offer complimentary explanations for Asian Americans' education patterns. One possibility is that cultural schemas from origin countries work with spillover effects related to contextual selection. However, it is less clear how a quantitative analysis would empirically test the spillover hypothesis with U.S. population data. Among the current cultural-schematic theories, a combination of the shared class-based education schema and the familial obligation schema is most consistent with prior research and is empirically testable across population data sets (Lee and Zhou 2015; Liu and Xie 2016). The familial obligation schema explains Asian Americans' high levels of internal and external achievement pressure, and the class-based education schema explains why these pressures are salient regardless of parental education. In sum, prior research suggests Asian Americans have high educational mobility (see fig. 1), a joint pattern of higher educational attainment, and a weaker association between parental and

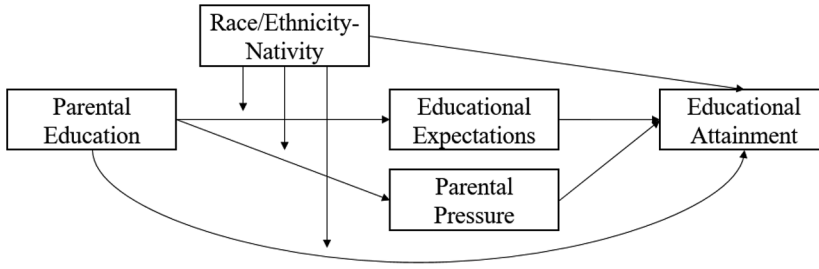


FIG. 1.—Conceptual model showing the variation in the parental-offspring education gradient across race/ethnicity-nativity. Parental education impacts educational attainment directly and via educational expectations and parental pressure. Parental education's association with educational attainment—via direct and indirect effects—is moderated by race/ethnicity-nativity. The conceptual model assumes controls for other sociodemographic characteristics.

offspring's education for Asian Americans than for whites and other racial/ethnic minority groups.

## Expectations and Parental Pressure as Mechanisms

Internal and external educational achievement pressure are conceptualized in status attainment theory as educational expectations and parental educational pressure, mechanisms through which family socioeconomic status influences educational attainment (Sewell et al. 1969). Nevertheless, Asian Americans whose parents have low education levels may have high educational expectations and experience considerable educational pressure. Consistent with the high educational mobility hypothesis, Liu and Xie (2016) found that high educational expectations and parental pressure among Asian American adolescents and their parents partially account for the weaker SES–math achievement association for Asian Americans relative to whites. The authors' work, however, only concentrates on 10th grade academic outcomes. Their theory also does not directly explain Asian Americans' high levels of internal and external achievement pressure.

Although recent research critiques the use of expectations as a cultural mechanism for Asian American education patterns (Lizardo 2017), expectations and parental pressure play a central role in current cultural-schematic theories on Asian American education patterns (Xie and Goyette 2003; Jiménez and Horowitz 2013; Tao and Hong 2014; Lee and Zhou 2015; Liu and Xie 2016). For example, high levels of educational expectations and parental pressure could be seen as shared class-based cultural schemas, possibly connected with cross-socioeconomic imitation and contextual selection (Lee and Zhou 2015; Hsin 2016). At the same time, high levels of personal expectations and parental pressure are consistent with cultural schemas

that portray education as a familial obligation (Tao and Hong 2014). Tao and Hong's framework extends Liu and Xie's (2016) work by explaining the role of internal and external pressure on Asian Americans' academics. Although these mechanisms offer only an indirect test for cultural frameworks, their importance would suggest the key role of mobility schemas in Asian Americans' education patterns. Thus, this article argues that high adolescent educational expectations and parental pressure across parental education may account for Asian Americans' weak relationship between parental and offspring's education.

## HETEROGENEITY AMONG ASIAN AMERICAN ETHNIC GROUPS

Past research observes variation in educational attainment among Asian American ethnic groups (Xie and Goyette 2004; Feliciano and Lanuza 2017), a product of different immigrant selection and experiences within the United States. Aggregating Asian Americans and controlling for generational status (e.g., Kao 1995; Xie and Goyette 2003; Hsin and Xie 2014; Liu and Xie 2016) may ignore heterogeneity among Asian Americans. Rather, correctly specified models of Asian American educational attainment should disaggregate ethnicity by nativity (Sakamoto et al. 2009). Immigration timing and generational status vary by ethnicity. Although some Asian American communities persisted prior to the mid-20th century, most Asian American immigration occurred after the repeal of the Chinese Exclusion Act in 1943 and the passing of the Immigration and Nationality Act in 1965. These acts removed many legal barriers to immigration from Asian countries (Xie and Goyette 2004). Japanese Americans are an exception, as most immigrated in the late 19th and early 20th centuries to settle in the United States, with men eventually bringing their wives and children (Bonacich and Modell 1980; Xie and Goyette 2004). For this reason, most Japanese Americans are third generation or later, while most other Asian American ethnic groups are primarily composed of immigrants and their children.

Considerable heterogeneity in parental education is also observed across Asian American ethnic groups. Although young Asian Americans from many ethnic groups—such as Chinese, Korean, and Indian Americans—have higher average parental education than U.S.-born whites, some Asian American populations—such as Vietnamese Americans—have lower average parental education (Kao 1995; Xie and Goyette 2004; Lee and Zhou 2015). Yet descriptive analyses suggest that young Vietnamese Americans—like those from more advantaged ethnic groups—complete undergraduate and advanced degrees at higher rates than whites (Lee and Zhou 2015). For these reasons, the analysis disaggregates Asian Americans by ethnicity and nativity.

## COMPARISONS ACROSS RACE/ETHNICITY AND NATIVITY

### Qualitative Comparisons of Mobility Schemas across Race/Ethnicity

Lee and Zhou (2015) drew on interviews to compare common success schemas across racial/ethnic groups. In contrast with Asian Americans, whites, blacks, and Mexican Americans adopt more diverse success schemas, which allow for a variety of education and career pathways to success (Lee and Zhou 2015). Lee and Zhou contended that whites and (to a lesser extent) blacks have individualistic success schemas that focus on self-reliance, contrasting with familial obligation schemas among Asian Americans (Tao and Hong 2014). The authors, however, note that many blacks see college degree completion as a particularly important pathway for achieving socioeconomic success. Many young Mexican Americans view a high school degree as a marker of socioeconomic success because it often exceeds the educational attainment of their parents, relatives, and peers. Young Mexican Americans may be less likely to have highly educated coethnics to emulate and thus are constrained by socioeconomic background (Lee and Zhou 2015). In turn, these success schemas exact different mobility pressures on these adolescents compared with those experienced by Asian Americans (Lee and Zhou 2015). The exacting and narrow success schemas of Asian Americans may manifest in higher average levels of internal and external achievement pressure than those experienced by other racial/ethnic groups. These schemas may account for Asian Americans' distinct educational mobility patterns.

### Quantitative Comparisons of Educational Attainment

Much prior research implies that Asian American education patterns are distinct, often with limited comparison with other racial/ethnic groups (Xie and Goyette 2003; Hsin and Xie 2014; Liu and Xie 2016). Yet some research with detailed comparisons of black and Hispanic Americans also notes the distinctness of Asian American patterns (Feliciano and Lanuza 2017; Lee and Zhou 2015). Accordingly, this research uses a unified framework to compare education patterns for a variety of race/ethnicity-nativity groups.

Past research finds lower educational attainment among blacks and Mexican Americans than among whites in the United States, which is connected with patterns of historical disadvantage (Kao and Thompson 2003; Lee and Zhou 2015; Feliciano and Lanuza 2017). Other research, however, suggests the benefits of ethnic community and shared resources for the academic achievement of the children of Hispanic immigrants (Lee and Klugman 2013), demonstrating the possibility for upward mobility. There is also considerable heterogeneity across nativity and place of origin. For example, black immigrants from some nations have higher levels of educational

attainment than U.S.-born whites and blacks (Hernandez and Darke 1999; Thomas 2009).[6] Other research has argued that black and Mexican American immigrants—like Asian American immigrants—have high levels of educational expectations (Feliciano and Lanuza 2016). Thus, it is possible that educational expectations and parental pressure may relate to high-mobility patterns among a variety of immigrant groups. For these reasons, educational attainment is evaluated across race/ethnicity-nativity to contextualize Asian American education patterns.

## DATA

This article uses data from Add Health and NELS, two nationally representative longitudinal studies. Add Health began with an in-school survey (1994–95), which was followed by four waves of in-home interviews. Wave 1 (grades 7–12; 1994–95) and wave 2 (grades 7–12; 1996) were collected during participants' adolescence. Wave 3 (2003–4) and wave 4 (2007–8) were obtained during participants' early (ages 18–26) and late young adulthood (ages 24–32), allowing for effective analysis of change across various life stages. NELS began in 1988 with a first survey wave of eighth grade students. Four follow-up surveys were collected when most participants were in grades 10 (1990) and 12 (1992) and when most participants were out of high school for two (1994) and eight years (2000). Together, these studies offer replication across different cohorts and sampling designs. In addition, replication across both studies offers a degree of robustness to sampling variation when examining relatively small Asian American ethnic samples. Individuals who do not live with at least one biological parent in the first wave are excluded to ensure that this study is not concentrating on adopted children, who may experience different effects of race/ethnicity than those who live with at least one biological parent.

Several attributes of Add Health and NELS make them uniquely suitable for this study. First, Add Health and NELS offer nationally representative data with a rich set of sociodemographic and psychosocial variables. Second, Add Health and NELS feature sizable numbers of Chinese and Filipino Americans. Add Health and NELS also have smaller numbers of Korean, Japanese, Indian (Add Health)/South Asian (NELS), and Vietnamese (Add Health)/Southeast Asian (NELS) American respondents. Third, Add Health and NELS offer replication across distinct study designs and survey instruments. For example, Add Health is from a later birth cohort (on average five years younger) than NELS. Add Health's educational attainment measure was collected at an average age of 29, while NELS's was

[6] Thomas (2009) finds that this pattern only holds for household heads. The education of the spouses of household heads among black immigrant families is lower than the education of the spouses of U.S.-born black household heads.

collected at an average age of 26. This age difference reduces NELS respondents' likelihood of completing advanced degrees. In addition, Add Health and NELS use distinct indicators of educational expectations and parental educational pressure. A multiple imputation (10 rounds) procedure is used to recover missing cases, yielding a final sample size of 11,875 and 8,896 cases from Add Health and NELS, respectively. All remaining cases are from the race/ethnicity-nativity groups specified, have survived survey attrition, live with at least one biological parent in the initial survey wave, and have the outcome and survey weights (see table A5 for the sample construction). Descriptive results are displayed in appendix A.

## MEASURES

First, respondents are disaggregated into eight groups based on self-reported race/ethnicity: white, black, Mexican, Chinese, Filipino, Indian (Add Health)/South Asian (NELS), Japanese, Korean, and Vietnamese (Add Health)/Southeast Asian (NELS). To capture variation across race/ethnicity and nativity, these groups are then disaggregated by nativity: 1.5–2.0 generation and 2.5+ generation. Those labeled as 1.5–2.0 generation are the children of two immigrant parents, born outside the United States. Those who are 2.5+ generation have at least one parent born in the United States (Ramakrishnan 2004). After accounting for attrition, all race/ethnicity-nativity groups with fewer than 15 cases were dropped (2.5+ Indian/South Asian, 1.5–2.0 Japanese, and 2.5+ Vietnamese). This categorization strategy is based on Feliciano and Lanuza's (2017) recent analysis of educational attainment.

The outcome is adult educational attainment, measured in education years completed by the respondent in wave 4 of Add Health and the fourth follow-up survey of NELS. The variable is based on Kane et al.'s (2013) and Feliciano and Lanuza's (2017) coding strategies for Add Health. The ordinal variable is given the following education years values: less than high school (8), some high school (10), high school (12), some vocational (13), some college or vocational degree (14), bachelor's (16), some graduate (17), master's (18), some beyond master's (20), and doctorate or professional degree (22). Unlike Add Health, NELS does not indicate if respondents have completed less than high school. Models are also estimated using bachelor's degree completion and an ordinal, 1–5, measure of degree completion (less than high school, high school, some college, bachelor's, and more than a bachelor's) as sensitivity analyses. Each outcome is treated as linear.[7]

[7] Due to weaknesses in nonlinear models for estimating interaction terms (Mood 2010), these outcomes are treated as linear. The linear model is unproblematic because over 30% of the samples completed a bachelor's degree and the ordinal measure of degree completion is normally distributed.

Adolescent educational expectations are measured on a five-point scale in Add Health and NELS's initial survey waves. Add Health's question is an indicator of surety of college attendance: "On a scale of 1 to 5, where 1 is low and 5 is high, how likely is it that you will go to college?" NELS's question is an indicator of educational attainment: "As things stand now, how far in school do you think you will get?" The NELS indicator is broken into degree completion categories: less than high school (1), high school (2), some college (3), bachelor's degree (4), and more than a bachelor's degree (5). Both indicators are treated as linear.

The indicators of parental educational pressure were obtained from the parent survey of the first survey waves of Add Health and NELS. The Add Health indicator is based on the following question: "How disappointed would you be if {Name} did not graduate from college?" The indicator has three ordinal responses: very disappointed (1), somewhat disappointed (2), and not disappointed (3). The NELS measure, in contrast, is obtained from the question, "How far in school do you expect your eighth grader to go?" These answers are separated into paternal and maternal pressure and divided into five categories: less than high school (1), high school (2), some college (3), bachelor's (4), and more than a bachelor's (5). Again, both indicators are treated as linear.

Parental socioeconomic characteristics in wave 1 of Add Health and the NELS baseline survey are measured as highest parental educational attainment, highest parental occupation, and household income. Parental education is measured in categories: less than a high school degree, high school degree, some college, bachelor's, and more than bachelor's (referent). Parental occupation is divided into seven ordinal categories: professional 1 (referent; doctor, lawyer), professional 2 (teacher, librarian, nurse), manager, white collar/office worker, blue collar, military/farm/other, and unemployed. This categorization is roughly based on the measure used by Feliciano and Lanuza (2017), but with greater detail for high-status occupations. The variable for household income is obtained from the parent surveys in Add Health and NELS. The income variable is transformed to the cubed root to account for right skew, while maintaining meaningful zeros.

## Control Variables

A series of fertility control variables are also included in the models. Birth order, family size, and maternal age at birth predict educational attainment (Booth and Kee 2009; Fishman and Min 2018) and are controlled to account for potential confounding between Asian Americans' lower and delayed fertility (Cai and Morgan 2019) and educational attainment. Birth order and family size are measured using techniques highlighted in Booth and Kee

(2009). Birth order is indexed to purge its correlation with family size.[8] Family size is transformed with a natural log to account for right skew. Maternal age is broken into six categories: 20 or under (referent), 21–25, 26–30, 31–35, 36–40, 41+.

Controls for gender, parental marital status, and census region are also included. Male preference is common in Asian countries (Das Gupta et al. 2003). However, women have higher educational attainment than men (DiPrete and Buchmann 2013). East Asian Americans have lower rates of nonmarital births than other racial/ethnic groups (Cai and Morgan 2019). Likewise, nonmarried status at birth is associated with reduced educational attainment (Addo, Sassler, and Williams 2016). Race/ethnicity groups are unevenly distributed throughout the United States. For example, a large portion of Asian Americans live in the western United States (Pew Research Center 2012). However, western states (e.g., California and Washington) have considerably higher educational attainment than southeastern states (e.g., Arkansas and Georgia) with low rates of Asian Americans (United States Census Bureau 2019).

Gender is a treated as a dichotomous indicator. Information on maternal relationship status is obtained from the first wave of the respective studies. The Add Health indicator has three categories: married, cohabiting, and single. Due to lower numbers of cohabiting mothers, the NELS indicator is dichotomous. Census region is obtained from the first wave of the respective study, broken into four categories: Northeast, Midwest, South, and West. Descriptive statistics for each variable are found in appendix A.

## METHODS

Linear regression models are estimated to examine the relationship between race/ethnicity-nativity and educational attainment. First, several linear regression models of educational attainment are estimated, such that,

$$\mathrm{EdYr} = \alpha + \beta_1 \mathrm{RaEthNat} + \varepsilon, \tag{1}$$

$$\mathrm{EdYr} = \alpha + \beta_1 \mathrm{RaEthNat} + \beta_2 \mathrm{ParEd} + \boldsymbol{\beta_3}\mathbf{SocioDem} + \varepsilon, \tag{2}$$

where model 1 is the bivariate model, including information on race/ethnicity-nativity with 2.5+ generation whites serving as the reference group. Model 2 introduces a covariate for parental education—as a control in this model—and a matrix of sociodemographic control variables for gender, birth

[8] The birth order index, $B$, is the ratio ($B = R/M$) of the respondents' birth order, $R$, to the mean birth order, $M$, of her living biological siblings, $S$. The mean birth order is calculated as $(S + 1)/2$.

order, family size, mother's age at birth, mother's relationship status, census region, household income, and parental occupation.

A third model includes interactions between race/ethnicity-nativity and parental education such that,

$$\begin{aligned} \text{EdYr} = {} & \alpha + \beta_1 \text{RaEthNat} + \beta_2 \text{ParEd} + \beta_3 \text{RaEthNat} \\ & \times \text{ParEd} + \boldsymbol{\beta_4 \text{SocioDem}} + \varepsilon, \end{aligned} \tag{3}$$

where the association between race/ethnicity-nativity and education years varies by parental education. For parsimony, full results are displayed only for Asian American ethnic groups with high average levels of education (aggregated) across Add Health and NELS. The high-mobility hypothesis would be supported if Asian Americans have higher average education years and the association between parental education and offspring's education years is weaker for Asian Americans than for 2.5+ generation whites (i.e., a weak parent-offspring education association).

A fourth model adds covariates for adolescents' educational expectations and parents' educational pressure, such that,

$$\begin{aligned} \text{EdYr} = {} & \alpha + \beta_1 \text{RaEthNat} + \beta_2 \text{ParEd} + \beta_3 \text{RaEthNat} \\ & \times \text{ParEd} + \boldsymbol{\beta_4 \text{SocioDem}} + \beta_5 \text{AExp} + \beta_6 \text{PPress} + \varepsilon, \end{aligned} \tag{4}$$

where the introduction of adolescent expectations and parental pressure is hypothesized to reduce the effect size of the race/ethnicity-nativity by parental education interaction. The standard errors for the indirect effects are estimated using the delta method (Sobel tests).

Next, models with interaction terms between race/ethnicity-nativity (all 15 groups) and parental education are estimated, comparing the parental-offspring education association. These models provide a comparison of the relationship between parental and offspring's education across race/ethnicity-nativity. Because of the focus on the trajectory of the association and small parental education cell sizes for some groups, these models treat parental education as a linear term (1–5). For robustness, the models are estimated as linear probability estimators of bachelor's degree completion. Mediation tests are performed for race/ethnicity-nativity groups that exhibit a different relationship between parental and offspring's education compared with 2.5+ generation whites (i.e., a significant interaction term). See table B12 and for mediation estimates and the notes below for a detailed discussion of results.

The models herein are unweighted to provide tight confidence intervals. Although many studies use survey weights to account for survey design, weighting is often unnecessary in well-specified models. Formal weight

association tests (Bollen et al. 2016) and comparisons across models reveal little meaningful difference in point estimates in weighted and unweighted models See the robustness section for further discussion of weighting.

## RESULTS

Table 1 displays linear regressions of years completed on race/ethnicity-nativity using Add Health and NELS data. Estimates with confidence intervals are displayed in figure 2. Add Health estimates are discussed first. The bivariate Add Health model (model 1) reveals that 2.5+ generation blacks and Mexican Americans average fewer education years than 2.5+ generation whites. On the other hand, 2.5+ generation Chinese Americans and 1.5–2.0 generation Chinese, Filipino, Indian, Korean, and Vietnamese Americans average more education years than 2.5+ generation whites. The inclusion of sociodemographic control variables in model 2 fully attenuates the average

TABLE 1
Linear Regression of Education Years on Race/Ethnicity-Nativity

| | Add Health | | NELS | |
|---|---|---|---|---|
| | Model 1 | Model 2 | Model 1 | Model 2 |
| Race/ethnicity-nativity (white 2.5+): | | | | |
| White 1.5–2.0 | 1.02 (.27)*** | .76 (.24)** | .62 (.20)** | .28 (.17) |
| Black 2.5+ | −.29 (.05)*** | .14 (.05)** | −.68 (.08)*** | .03 (.07) |
| Black 1.5–2.0 | 1.53 (.37)*** | .74 (.32)* | .27 (.32) | .37 (.28) |
| Mexican 2.5+ | −.76 (.10)*** | .00 (.10) | −1.04 (.11)*** | −.24 (.10)* |
| Mexican 1.5–2.0 | −.91 (.12)*** | .58 (.12)*** | −1.07 (.13)*** | .26 (.13) |
| Chinese 2.5+ | 1.71 (.28)*** | .85 (.24)*** | 1.26 (.39)** | .56 (.34) |
| Chinese 1.5–2.0 | 2.34 (.20)*** | 2.19 (.18)*** | 1.62 (.20)*** | 1.41 (.17)*** |
| Filipino 2.5+ | −.12 (.27) | .20 (.23) | −1.18 (.41)** | −.65 (.36) |
| Filipino 1.5–2.0 | .61 (.15)*** | .30 (.14)* | .37 (.22) | −.24 (.20) |
| Indian/South 1.5–2.0 | 2.66 (.54)*** | 1.64 (.47)** | 2.28 (.27)*** | .93 (.24)*** |
| Japanese 2.5+ | .05 (.31) | −.20 (.28) | .41 (.36) | −.09 (.32) |
| Korean 2.5+ | −.30 (.53) | −.17 (.46) | .31 (.49) | .09 (.43) |
| Korean 1.5–2.0 | 2.18 (.59)*** | 1.72 (.52)** | 1.63 (.27)*** | .87 (.24)*** |
| Vietnamese/Southeast 1.5–2.0 | 1.16 (.49)* | 1.61 (.43)*** | 1.07 (.22)*** | 1.65 (.19)*** |
| Controls | No | Yes | No | Yes |
| Observations | 11,875 | 11,875 | 8,896 | 8,896 |

Note.—Data are shown as $\beta$ (SE). Control variables include gender, birth order, sibsize, maternal age at birth, mother's relationship status, parental income, parental education, parental occupation, and region. Add Health includes Indian and Vietnamese as categories, while NELS has broader categories of South and Southeast Asians.

* $P < .05$.

** $P < .01$.

*** $P < .001$.

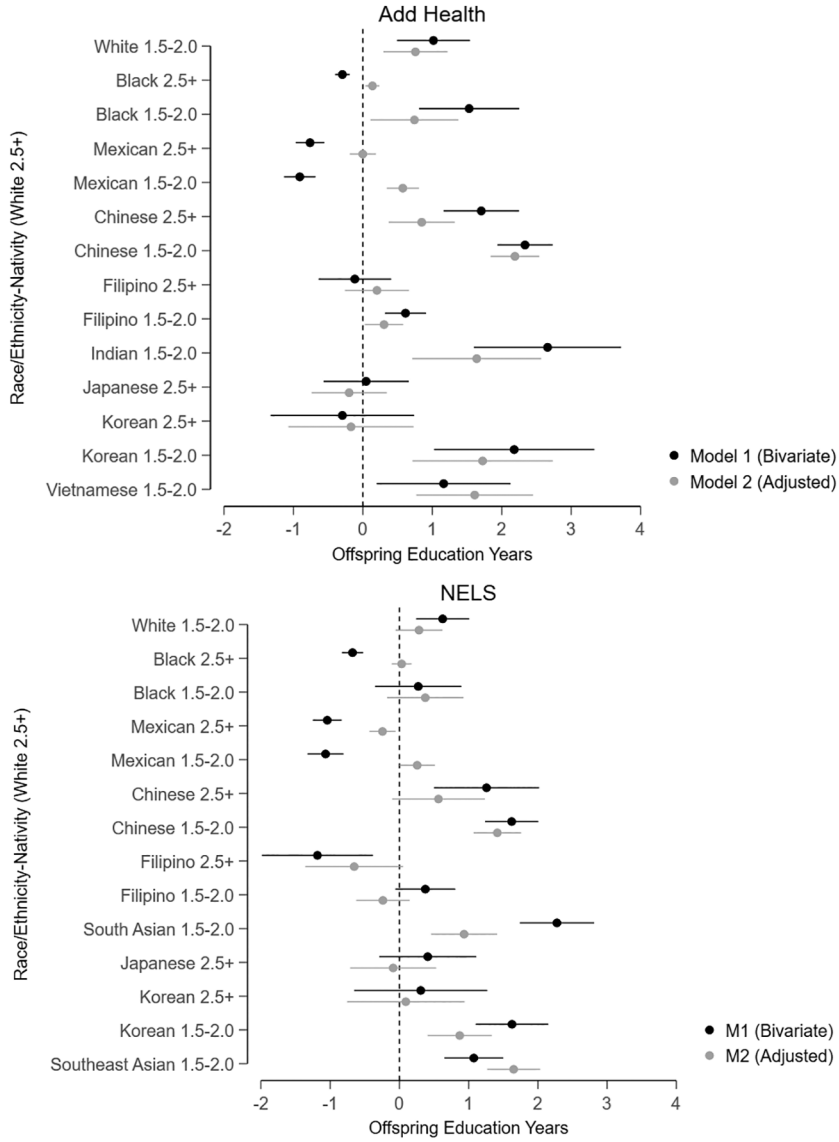


FIG. 2.—Estimates from linear regression of education years on race/ethnicity-nativity with 95% confidence intervals. Estimates are obtained from table 1.

difference between 2.5+ generation blacks—who now have a positive estimate of .14 education years—and Mexican Americans with 2.5+ generation whites in education years completed. In this specification, 1.5–2.0 generation whites, blacks, Mexican Americans, and Filipino Americans average .76,

.74, .58, and .30 more education years, respectively, than 2.5+ generation whites, when holding other covariates constant. This pattern demonstrates some evidence of an immigrant advantage in education outcomes with a relatively tight band of confidence intervals. In contrast, however, 1.5–2.0 generation Chinese, Indian, Korean, and Vietnamese Americans average 2.19, 1.64, 1.72, and 1.61 more education years than 2.5+ generation whites, respectively, in model 2. The confidence intervals for these ethnicity-nativity groups overlap and are considerably higher than those of most other race/ethnicity-nativity groups. In fact, 1.5–2.0 generation Chinese Americans average more education years than 1.5–2.0 generation whites, blacks, Mexican Americans, and Filipino Americans in model 2 (fig. 2).

Results from the NELS models reveal similar patterns to those from Add Health. In model 1, 2.5+ generation blacks, Mexican Americans, and 2.5+ generation Filipino Americans average fewer education years than 2.5+ generation whites. In contrast, Chinese Americans and 1.5–2.0 generation South Asian, Korean, and Southeast Asian Americans average considerably more education years than 2.5+ generation whites, with overlapping confidence intervals. The inclusion of sociodemographic control variables in model 2 results in the attenuation of 2.5+ generation black, Mexican American, and 2.5+ generation Filipino Americans' educational disadvantage relative to 2.5+ generation whites. Like the Add Health estimates, 1.5–2.0 generation Chinese, South Asian, Korean, and Southeast Asian Americans average more education years than 2.5+ generation whites after adjustment. Moreover, the estimates from these ethnicity-nativity groups have tightly overlapping confidence intervals, and 1.5–2.0 generation Chinese and Vietnamese Americans average higher education levels than 1.5–2.0 generation whites, blacks, Mexican Americans, and Filipino Americans when holding other factors constant (fig. 2). Together, the Add Health and NELS models reveal a consistent pattern of high average educational attainment levels among the children of Chinese, Indian/South Asian, Korean, and Vietnamese/Southeast Asian (hereafter CIKV) immigrants that substantially exceed that of other race/ethnicity-nativity groups.

Second, the analysis examines variation in the parental-offspring education association between 2.5+ generation whites and 1.5–2.0 generation CIKV Americans, the groups with higher average education levels across Add Health and NELS analyses. Because these models control for parental income and occupation, they represent the unmediated effects of parental education on offspring's education. Table 2 displays interaction models of educational attainment to test whether Asian American ethnic groups that attain high levels of education also have high levels of educational mobility using Add Health and NELS data. Models from both files reveal interactions between race/ethnicity-nativity and parental education in the relationship with education years completed. This interaction reveals a

TABLE 2
Linear Regression of Education Years with Interaction of Race/Ethnicity-Nativity with Parental Education

| | Add Health | NELS |
|---|---|---|
| CIKV 1.5–2.0 (white 2.5+) | 1.01 (.28)*** | .46 (.18)* |
| Parental education (>BA): | | |
| BA | −.65 (.09)*** | −.55 (.08)*** |
| SC | −1.09 (.09)*** | −1.17 (.09)*** |
| HS | −1.48 (.09)*** | −1.47 (.10)*** |
| <HS | −2.29 (.13)*** | −1.85 (.14)*** |
| CIKV 1.5–2.0 (white 2.5+) × parental education (>BA): | | |
| CIKV 1.5–2.0 × BA | .73 (.43)* | .66 (.32)* |
| CIKV 1.5–2.0 × SC | 1.88 (.62)** | 1.20 (.27)*** |
| CIKV 1.5–2.0 × HS | 1.24 (.41)** | 1.48 (.37)*** |
| CIKV 1.5–2.0 × <HS | 2.56 (.45)*** | 2.15 (.38)*** |
| Controls | Yes | Yes |
| Observations | 7,611 | 7,075 |

Note.—Data are shown as $\beta$ (SE). Control variables include gender, birth order, sibsize, maternal age at birth, mother's relationship status, parental income, parental occupation, and region. HS = high school; SC = some college; BA = bachelor's degree.

* $P < .05$.

** $P < .01$.

*** $P < .001$.

weaker association between parental education and offspring education years completed for 1.5–2.0 generation CIKV relative to 2.5+ generation whites.

Figure 3 visually displays the Add Health and NELS interaction models, revealing similar patterns: 1.5–2.0 generation CIKV complete higher average education years than 2.5+ generation whites, but these differences are considerably wider at lower parental education levels. For example, among those with parents with more than a bachelor's degree, 1.5–2.0 generation CIKV average 1.01 and .46 more education years—in the respective Add Health and NELS models—than 2.5+ generation whites, net of other covariates. In contrast, among respondents with parents who have less than a high school degree, the Add Health and NELS models reveal a 3.57 and 2.62 average education year gap, respectively, when holding other factors constant. These results suggest that 1.5–2.0 generation CIKV received a reduced educational penalty for low levels of resources conferred by parental education—such as human, cultural, and social capital. This pattern is consistent with the high educational mobility hypothesis.

Next, the models test educational expectations and parental pressure as potential mediators for the parental education and race/ethnicity-nativity

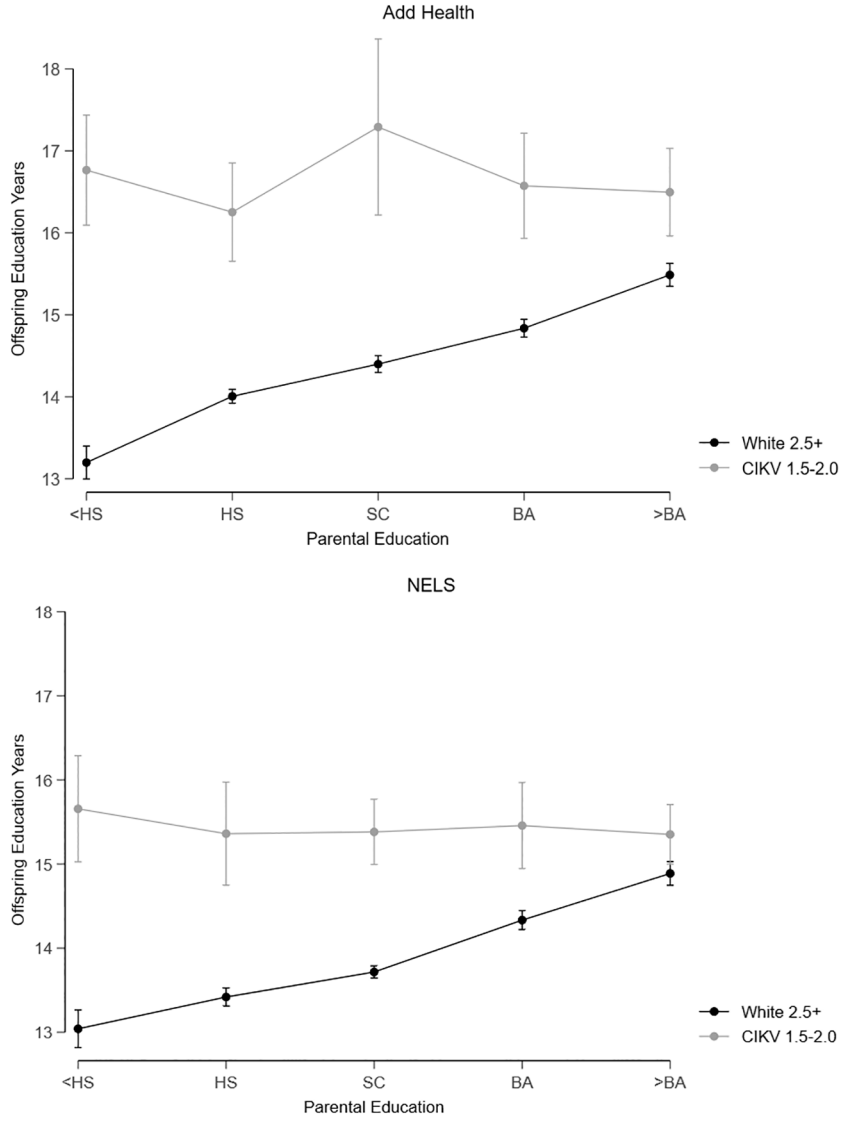


FIG. 3.—Linear regression of education years with interaction of race/ethnicity-nativity with parental education. Estimates obtained from table 2. The reference group is 2.5+ generation whites whose parents have obtained more than a bachelor's degree. Estimates are calculated as average predicted values.

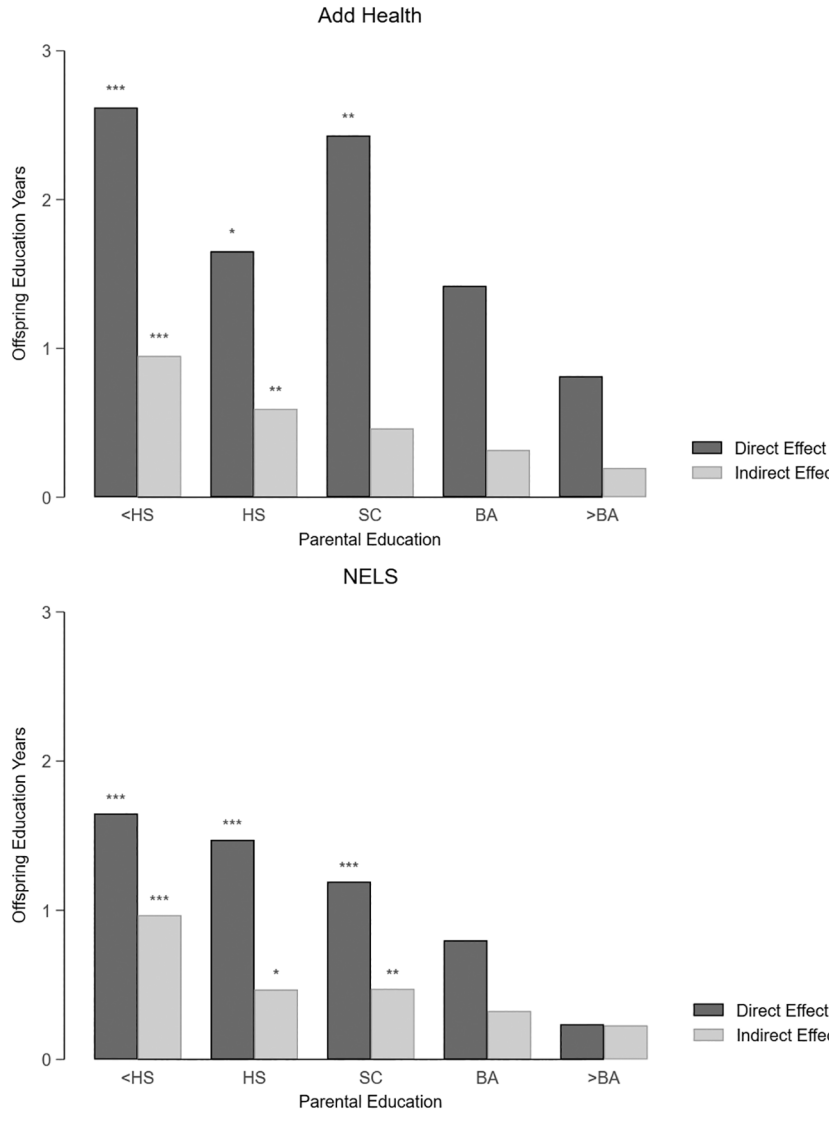


FIG. 4.—Direct and indirect effects of race/ethnicity-nativity on education years across parental education for 2.5+ generation whites and 1.5–2.0 generation CIKV. The reference group is 2.5+ generation whites whose parents have obtained more than a bachelor's degree. The model includes a race/ethnicity-nativity by parental education interaction. Indirect effects are educational expectations and parental pressure–mediated effects of 1.5–2.0 generation CIKV (2.5+ generation whites) on education years. Direct effects are unmediated effects. Estimates are obtained from table B9. See equivalent nested models in table B6. Standard errors for indirect effects are estimated using the delta method; significance denotes the presence of a direct or indirect effect of the interaction. The race/ethnicity-nativity effect is added as a point estimate (see <BA column). Parental education is treated as a covariate. Other control variables include gender, birth order, sibsize, maternal age at birth, mother's relationship status, parental income, parental occupation, and region. *$P < .05$; **$P < .01$; ***$P < .001$.

interaction observed in the prior education years model. The hypothesized mediators are adolescent educational expectations and parental education, two indicators of individual- and family-level education schemas. Figure 4 is a visualization of direct and indirect (expectations/parental pressure–mediated) effects of the difference in education years completed between 2.5+ generation whites and 1.5–2.0 generation CIKV. The stars represent the presence of mediated interactions between race/ethnicity-nativity and parental education. In the Add Health and NELS models, the indirect effects account for a substantial proportion of the total effects at low parental education levels. For example, among those with parents with less than a high school degree, adolescent expectations and parental pressure jointly account for 27% and 37% of the total effects, in the respective Add Health and NELS estimates, of 1.5–2.0 generation CIKV's higher levels of education years completed compared with 2.5+ generation whites, when keeping other covariates constant (see tables B6 and B9). Thus, part of 1.5–2.0 generation CIKV's education advantage relative to 2.5+ whites is connected with internal and external pressures on educational attainment, suggesting the important role of schemas in the high educational mobility pattern.

## Comparisons across Race/Ethnicity-Nativity

Figures 5 (education years) and 6 (bachelor's degree completion) display variation in the relationship between parental and offspring's education across race/ethnicity-nativity. Parental education is treated as a linear education indicator (< high school = 1, high school = 2, some college = 3, bachelor's = 4, >bachelor's = 5). See tables B10 and B11 for point estimates.

For most race/ethnicity-nativity groups, parental education is associated with an increase in offspring's education, consistent with status attainment theory. However, parental education has a flat relationship with offspring's education for 1.5–2.0 generation CIKV, directly contradicting status attainment theory. Thus, the educational attainment gap with other race/ethnicity-nativity groups is somewhat smaller at high parental education levels but is extremely large at low education levels. For example, estimates from the bachelor's degree completion NELS model (fig. 6) show that among those with parents who have less than a high school degree, 1.5–2.0 generation CIKV are more than twice as likely to complete a college degree than all other race/ethnicity-nativity groups. This pattern is quite consistent across Add Health and NELS estimates using both education outcomes.

Nevertheless, some other race/ethnicity-nativity groups also have weaker relationships between parental and offspring's education than 2.5+ generation whites (see tables B10 and B11). For example, 2.5+ generation blacks

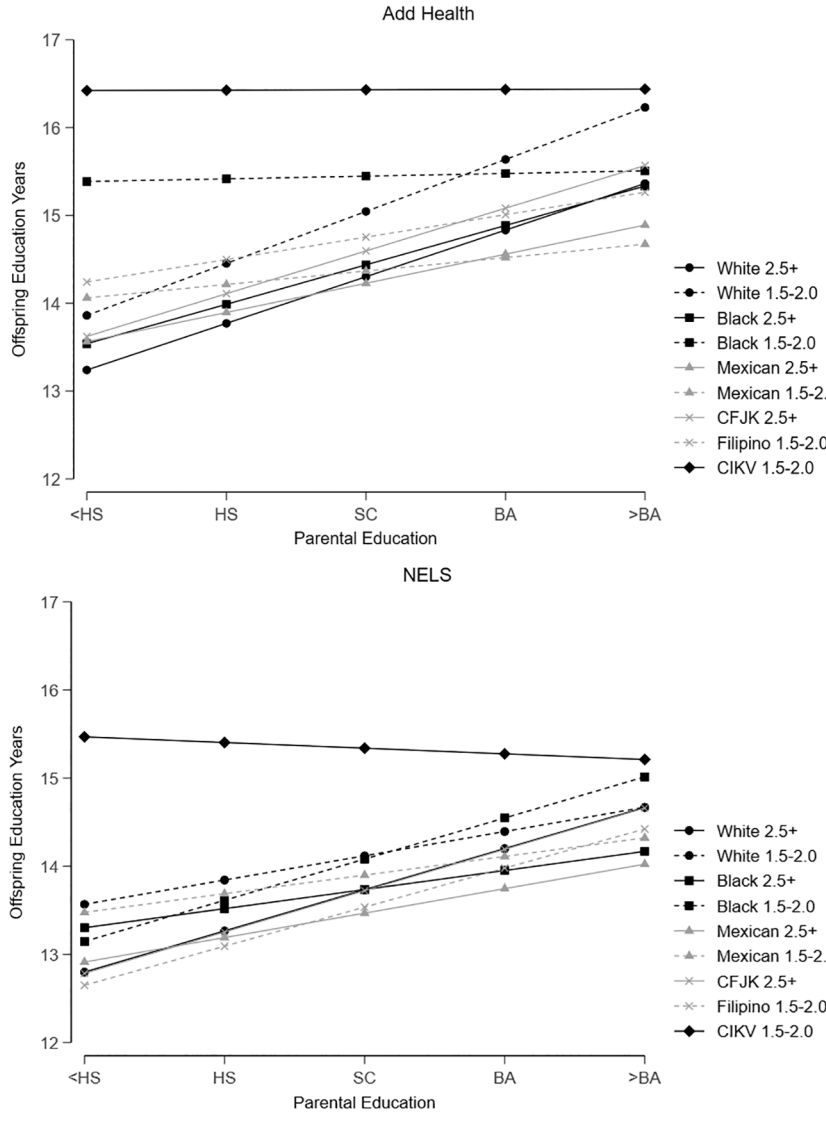


FIG. 5.—The association between parental education and offspring education years across race/ethnicity-nativity. Estimates are obtained from table B10. CFJK refers to aggregated Chinese, Filipino, Japanese, and Korean Americans. Models treat parental education as a linear term (<high school = 1, high school = 2, some college = 3, bachelor's = 4, >bachelor's = 5). Although estimates have the appearance of negative slope for 1.5–2.0 generation CIKV in the NELS model, no negative relationship is revealed in stratified models. Thus, the text refers to this relationship as "flat." Estimates are calculated as adjusted average predicted values.

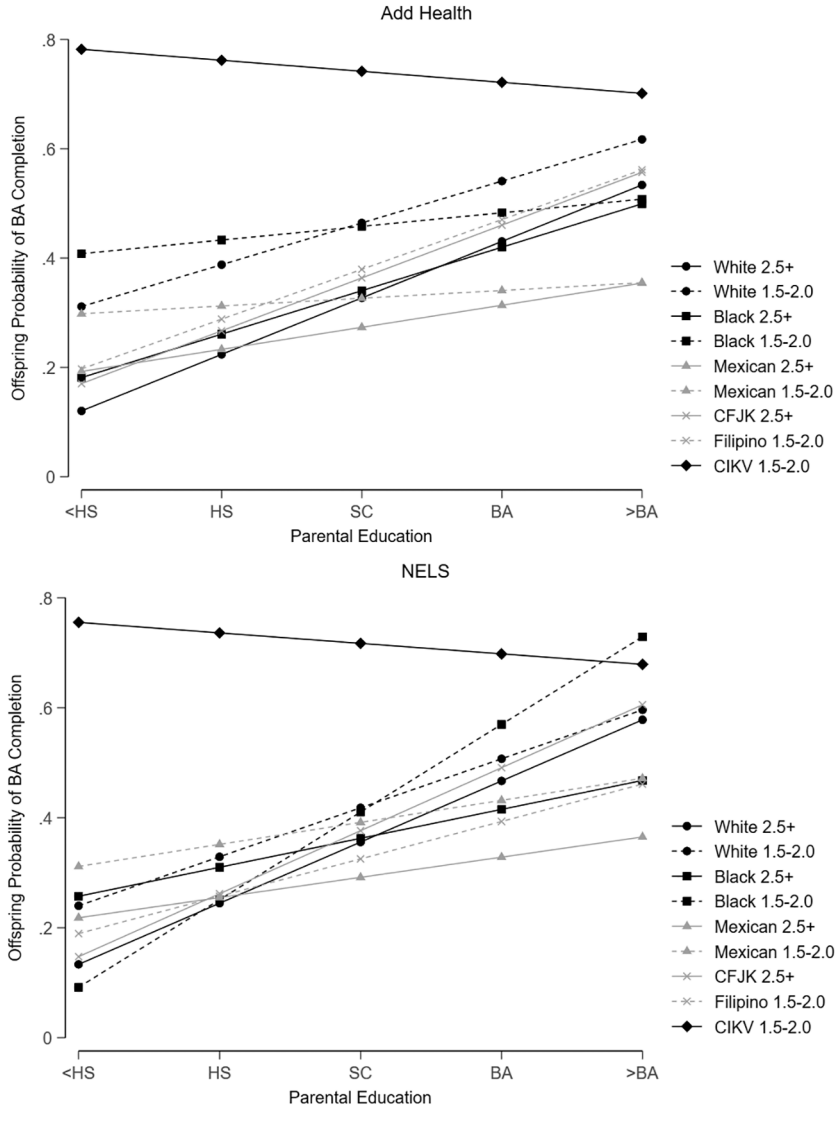


FIG. 6.—The association between parental education and offspring bachelor's degree Completion across race/ethnicity-nativity. Estimates are obtained from table B11. CFJK refers to aggregated Chinese, Filipino, Japanese, and Korean Americans. Models treat parental education as a linear term (<high school = 1, high school = 2, some college = 3, bachelor's = 4, >bachelor's = 5). Although estimates have the appearance of negative slope for 1.5–2.0 generation CIKV, no negative relationship is revealed in stratified models. Thus, the text refers to this relationship as "flat." Estimates are calculated as adjusted average predicted values.

and Mexican Americans and 1.5–2.0 generation blacks, Mexican Americans, and Filipinos in Add Health as well as 2.5+ generation blacks and Mexican Americans and 1.5–2.0 generation Mexican Americans in NELS have significant interaction terms. In the Add Health education years model, 1.5–2.0 generation blacks exhibit a less extreme high-mobility pattern than the 1.5–2.0 generation CIKV. However, this pattern is not observed in the NELS education years model, or in either of the bachelor's completion models.

The Add Health estimates show that educational expectations and parental pressure may mediate this pattern among 2.5+ generation blacks, 1.5–2.0 generation Mexican Americans, and 1.5–2.0 generation Filipino Americans, as observed among 1.5–2.0 generation CIKV (table B12). The NELS estimates, on the other hand, only reveal mediation among 2.5+ generation blacks and 1.5–2.0 generation CIKV. The mediating roles of expectations and parental pressure are generally weaker for other groups than for 1.5–2.0 generation CIKV. For example, the NELS models find that the indirect effects for 2.5+ generation blacks are around one-third the magnitude of those for 1.5–2.0 generation CIKV. Important limitations of these results are discussed in the notes to table B12. In sum, these results suggest the possibility that internal and external pressures may aid in educational mobility for some immigrant and racial/ethnic minority populations. However, these patterns are not as consistent or impactful as those among the children of CIKV immigrants across outcome specifications or data sets. Nor do they result in a complete negation of the relationship between parental and offspring's education.

These analyses reveal the distinct high-mobility pattern among the children of CIKV immigrants, featuring high average education levels and a flat parent-offspring education association. The educational attainment gap between 2.5+ generation whites and the children of CIKV immigrants is less prominent among respondents with high parental education levels but is quite wide among those with lower parental education levels. This pattern is partially mediated by high educational expectations and parental pressure among 1.5–2.0 generation CIKV respondents whose parents have low education levels. Some similar but much less dramatic patterns are observed among other racial/ethnic-minority populations. Again, while these results cannot directly confirm a cultural theory for Asian American education patterns, they suggest that distinct schemas among the children of many Asian American immigrant populations may account for their high educational mobility. These schemas may be connected to cultural patterns, which in turn relate to immigrant contextual selection and social mobility schemas stemming from their origin countries. Applied to the U.S. educational context, these schemas are associated with high educational mobility.

## EXTENSIONS AND ROBUSTNESS TESTS

### Parental Income and Occupation Interactions

Next, linear regressions of education years with interactions between parental income and 1.5–2.0 generation CIKV status were estimated (see table B13). Like the parental education interactions, these models found a relatively flat parental income-offspring's education association among 1.5–2.0 generation CIKV in NELS models (see fig. B1). Models with parental occupation interactions were also estimated, revealing no consistent moderating effect of race/ethnicity-nativity. These models were excluded from the primary analyses for several reasons. First, the parental education and income associations with educational attainment are distinct and require a different framework. For example, income-education associations would likely be mediated by financial mechanisms—such as extracurricular classes or college savings. Second, the current contextual selection frameworks (Lee and Zhou 2015; Feliciano and Lanuza 2017) primarily concentrate on the relationship between parental and offspring's education.

### STEM Models

Preliminary analyses suggest that Chinese Americans and 1.5–2.0 generation Indian/South Asians and Vietnamese/Southeast Asian Americans may also be more likely to complete college degrees in a STEM major than 2.5+ generation whites (see table C1). The analysis accounts for the selection into college completion with a major using a Heckman probit model. Because STEM majors confer higher earnings than alternative majors (Carnevale, Smith, and Melton 2011; Kim, Tamborini, and Sakamoto 2015), the children of these Asian American ethnicity-nativity groups may have even higher earnings than their education patterns would suggest. Unlike the primary analyses, no interaction between parental education and 1.5–2.0 generation CIKV status was observed.

### Additional Tests of Confucian Malleability Theory

Additional tests of the Confucian malleability schemas' effects on educational attainment were performed. First, self-reports of time spent on homework during grades 8, 10, and 12 were tested as mechanisms using the NELS file (see fig. D1). Analyses found that homework-efforts accounted for a small portion of 1.5–2.0 generation CIKV's high-mobility pattern. However, the indirect effects—for the less than high school and high school categories—were negated by accounting for expectations and parental pressure, suggesting that most adolescent homework effects partially reflect these factors. Analyses were also conducted using questions on malleability in math learning

from the Education Longitudinal Study (ELS; see fig. D2). These malleability indicators did not account for the high-mobility pattern. These findings offer further evidence against the Confucian malleability theory. See the limitations section for further discussion.

## Robustness Tests

First, educational attainment models are estimated as using outcome specifications of bachelor's degree completion (binary) and degree completion (five-point scale) in tables B1, B2, and B4. These model specifications reveal similar patterns to those observed in the primary analyses. These model specifications also yield flat parent-offspring education associations. Mediation models were also estimated using these specifications, revealing similar patterns to those from the primary analyses (available on request).

Second, models were tested for bias from eschewing survey weights. Weight association tests determine whether point estimates are biased by forgoing weighting (Bollen et al. 2016). In these tests a weighted covariate [$x_{\text{weight}} = x * (100/\text{weight})$] is introduced for each point estimate of interest along with the corresponding covariate and the survey weight as an independent covariate in hypothesized models. If the weighted beta has an association with the outcome, then the corresponding beta is upward or downward biased. These tests only reveal two possible examples of bias. In the NELS model 2 in table 1, the 2.5+ generation Japanese American estimate in the unweighted model may be upward biased to nonsignificance, while the weighted model has a negative association with education years completed. Similarly, in the Add Health model 2, the 1.5–2.0 generation black estimates may be upward biased. These potential biases were deemed negligible for two reasons. First, the unweighted 2.5+ generation Japanese American NELS estimate is consistent with unweighted Add Health estimates. Similarly, the 1.5–2.0 generation black Add Health estimate is somewhat consistent with the unweighted NELS estimate (although nonsignificant) and almost identical to the weighted NELS estimate (table B3). Thus, the displayed unweighted estimates are consistent with estimates from the other study. Second, the change in estimates does not meaningfully impact the interpretation of results. The Asian American high-mobility pattern does not apply to Japanese Americans. Similarly, use of the unweighted or weighted estimates reveals that the children of black immigrants may average somewhat higher education attainment than 2.5+ generation whites, but average lower educational attainment than the children of CIKV immigrants. No evidence of bias was found in the interaction models for 1.5–2.0 generation blacks (figs. 5 and 6; tables B10 and B11). Thus, the combination of the tests and comparisons with weighted estimates (tables B3–B5, B7) suggest that

unweighted models are not meaningfully biased and offer more precise estimates than weighted models.

Third, mediation tests were estimated in models that control for adolescent GPA (table B8). In both the Add Health and NELS models, the joint mediation impact of expectations and parental pressure accounts for an indirect effect at the .05 alpha level. Thus, educational schemas may account for a portion of the 1.5–2.0 generation CIKV–2.5+ generation white educational attainment gap among those with parents with less than a high school degree even after accounting for academic achievement. Prior status attainment research treats expectations as endogenous to GPA (Sewell et al. 1969; Bozick et al. 2010; Andrew and Hauser 2011; Fishman 2019) and controls for GPA in expectation-attainment models. Prior research on Asian Americans, however, suggests that expectations play a different and earlier role in status attainment processes for Asian Americans than for whites (Xie and Goyette 2003). This pattern is consistent with Lee and Zhou's (2015) emphasis on the central role of mobility schemas in Asian American education patterns and their argument that Asian American patterns do not fit status attainment theory. Moreover, Tao and Hong's (2014) familial obligation framework suggests that internal and externalized pressure from familial obligations predicts academic performance for Asian Americans. For these reasons, the preferred models were estimated without GPA. Potential model misspecification from excluding GPA in mediation tests for other race/ethnicity-nativity groups is discussed in table B12.

Fourth, models were reestimated using school fixed effects to control for geographic and school heterogeneity (available on request). School fixed effects models yielded somewhat lower estimates for the children of Chinese, Korean, and Indian American immigrants. The high educational mobility pattern still held in this model specification. Because prior literature suggests purposeful geographic and school selection among Asian Americans (Lee and Zhou 2015), the hypothesized models excluded school fixed effects.

## DISCUSSION

This study extends the literature on the educational achievements of Asian Americans by developing a parsimonious empirical framework to examine educational mobility patterns. The analysis replicated results across Add Health and NELS, two nationally representative longitudinal studies, and revealed high average educational attainment among the children of CIKV immigrants. This pattern did not extend to later-generation Asian Americans after introducing sociodemographic covariates. Although Add Health estimates suggested that immigrants—in general—may complete higher average education levels than U.S.-origin whites, the effect size was relatively small and was not observed in NELS. In concert with prior research (Feliciano

and Lanuza 2017), the analysis suggests that the children of CIKV immigrants have distinctly high average education levels.

Next, the analysis examined how the relationship between parental and offspring's education varies across race/ethnicity-nativity. In contrast with the children of later-generation whites, the children of CIKV immigrants have a flat parent-offspring education association (i.e., parental education does not predict offspring's education). The educational attainment gap between the children of these Asian American immigrant groups and later-generation whites is considerably wider among those with parents who have low educational attainment levels. For example, the Add Health results reveal a 1.01 average education-years gap between later-generation whites and the children of CIKV immigrants whose parents have more than a bachelor's degree, but a 3.57 average education-years gap among those with parents who have less than a high school degree, when holding other covariates constant. Together with high average education levels, this flat parent-offspring education association confirms the high-mobility hypothesis. This educational attainment pattern is consistent with Lee and Zhou's (2015) qualitative research and Liu and Xie's (2016) findings on high school academic achievement.

Regardless of parental education, the children of CIKV immigrants experience intense internal expectations and parental pressure to obtain high education levels, accounting for a portion of the flat parent-offspring education association. Consistent with the class-based schema framework (Lee and Zhou 2015; Hsin 2016), mobility schemas shared across parental education may account for this high-mobility pattern. At the same time, the high levels of internal and external pressure are consistent with the familial obligations (Tao and Hong 2014) theory. These mobility schemas may be further reinforced by the model minority stereotype, which associates Asian Americans with educational performance, familial values, and socioeconomic success (Xu and Lee 2013; Lee and Zhou 2015). The results are not consistent with the Confucian malleability theory (Hsin and Xie 2014; Liu and Xie 2016). For example, Indian Americans—who have a non-Confucian culture—have higher average education levels than whites, but Japanese Americans—who have a Confucian culture—have similar average education levels. Supplementary analyses find no evidence of adolescent homework efforts and malleability schemas as mechanisms for the high-mobility pattern. However, alternative operationalizations of academic efforts may yield different results (see the limitations section for a detailed discussion). Although the contextual selection spillover effect (Lee and Zhou 2015) is consistent with the high-mobility pattern, the present analyses cannot confirm this theory.

Alternatives to these cultural theories were also considered. Strategic adaptation and contextual selection—on their own—could explain high average

education levels, but not the educational achievements of disadvantaged Asian Americans. Lee and Zhou's (2015) theory extends these theories to also address high mobility. All relevant theories would need to explain how psychosocial resources negate socioeconomic disadvantage. In sum, the results suggest that the children of CIKV immigrants, regardless of parental education, espouse mobility schemas like those that of highly educated CIKV parents.

Lastly, the analysis contextualized Asian American educational mobility patterns among a set of race/ethnicity-nativity groups, a key extension on prior quantitative research on Asian American education patterns (Xie and Goyette 2003; Hsin and Xie 2014; Liu and Xie 2016), which has primarily focused on comparing Asian Americans with the children of U.S.-born whites. First, the article's analysis demonstrates that the children of CIKV immigrants average higher educational attainment than other groups. Second, they have a flat parent-offspring education association. No other race/ethnicity-nativity group has a flat association across all model specifications in Add Health and NELS. The combination of these patterns results in extremely wide educational attainment gaps between the children of CIKV immigrants and all other populations among those whose parents have low education levels. High adolescent expectations and parental educational pressure across parental education partially account for this flat parent-offspring education association. Although it is likely that these factors play similar roles for other immigrant and racial/minority groups (Feliciano and Lanuza 2016), these mediation patterns are less consistent and do not result in a high-mobility pattern—as seen among 1.5–2.0 generation CIKV. These results demonstrate the distinctness of CIKV education patterns among the race/ethnicity-nativity groups included in the analyses.

The present article theoretically and empirically extends Liu and Xie's (2016) article on Asian American academic achievement. First, this article's theoretical framework incorporates current theories on strategic adaptation and contextual selection and differentiates types of schematic-cultural theories. Second, the article directly extends their empirical results to long-term education outcomes, replicating analyses across two longitudinal studies. Liu and Xie (2016) find that socioeconomic status is a weaker predictor of high school academic achievement for Asian Americans than for whites. This article finds more extreme results when disaggregating across ethnicity and nativity, revealing no association between parental and offspring's education among the children of CIKV immigrants. The focus on educational attainment over academic achievement is notable as well, given educational attainment's later place in status attainment and its closer connection to labor market and financial outcomes (Sewell et al. 1970). Both articles affirm the roles of educational expectations and parental pressure in these relationships. However, this article's theoretical framework provides a stronger explanation for the integral role of these mechanisms (Tao and Hong 2014)

and the weaker effects of socioeconomic background (Lee and Zhou 2015; Hsin 2016). Moreover, the analyses cast doubt on the Confucian schema framework and beliefs about malleability as the primary mechanism for high mobility. Lastly, this article's extensive analyses across race/ethnicity in Add Health and NELS offer stronger evidence of the distinctness of the CIKV education pattern than Liu and Xie's supplementary analysis of Hispanic Americans. In sum, this article extends Liu and Xie's (2016) work, offering a clear theoretical framework for Asian Americans' educational attainment.

Although the present article demonstrates this divergent status attainment pattern among the children of CIKV immigrants, the results for most other racial/ethnic groups are generally consistent with the classic stratification theory, featuring an intergenerational transfer of parental education inequality. The observed patterns offer a reminder that these stratification models accurately describe the experiences of the children of U.S.-born parents but often do not capture population-level heterogeneity. Lastly, the analysis offers direct support for Lee and Zhou's (2015) high educational mobility hypothesis, merging their theory with Tao and Hong's (2014) familial obligation framework.

This research inspires questions that are relevant to the intersection of stratification, race/ethnicity, immigration, and education research. First, the analysis demonstrates diversity in educational attainment by race/ethnicity nativity. Although this article primarily concentrates on Asian Americans, it also suggests that the children of black and Mexican American immigrants may have somewhat higher levels of educational mobility than later-generation whites. Educational mobility among the children of CIKV immigrants, however, stands out starkly. The analyses are consistent with aspects of recent cultural-schematic theories on Asian American educational attainment (Hsin and Xie 2014; Tao and Hong 2014; Lee and Zhou 2015; Liu and Xie 2016), suggesting that the immigrant experiences and cultural background of this population may play a core role in abetting high educational mobility levels. Unfortunately, this study cannot directly confirm culture's role in Asian American mobility patterns.

Second, this study extends Lee and Zhou (2015), Hsin, Liu, and Xie (Hsin and Xie 2014; Liu and Xie 2016), and Tao and Hong's (2014) cultural-schematic frameworks using the TCA (Johnson-Hanks et al. 2011). The TCA offers a parsimonious framework for contextualizing schemas as another form of social structure that impacts mobility, constantly interacting with the material resources that sociology has often focused on. In (further) demonstration of the important role of educational schemas in mobility patterns, this article shows the importance of focusing on schematic, as well as material, resources when examining mobility patterns. Future stratification and education research should consider incorporating the TCA framework

and cognitive psychology–informed theory. To extend small sample size cognitive psychology studies (e.g., Tao and Hong 2014), stratification and education scholars should look to the National Study of Learning Mindsets. With a broad set of psychosocial indicators and a large, nationally representative sample, this study may provide key insights on the role of schemas—especially those related to culture—in stratification. Cognitive psychology–informed sociology may offer important insights for research on the role of educational expectations in educational attainment, a core concern in status attainment (Sewell et al. 1969) and an important issue for education policy (Rosenbaum 2001; Morgan 2005).

Third, future research should examine material resources that account for Asian Americans' high-mobility pattern. Prior research has examined academic behaviors, investment resources, and attendance of ethnic language schools as mechanisms for Asian Americans' high school academic achievement (Sun 1998; Zhou and Kim 2006; Hsin and Xie 2014) and explored college saving patterns among Asian American parents (Dondero and Humphries 2016). Future research should test these potential mechanisms for racial/ethnic inequality for a variety of educational attainment outcomes. For example, to what extent do increased rates and levels of parental college payments impact racial/ethnic differences in college enrollment, persistence, and timely graduation? This research could also consider the long-term effects of Asian Americans' high rates of extracurricular education on long-term education outcomes, including undergraduate major selection and postgraduate education. Lastly, this research may benefit from further discussion of the role of contextual mechanisms (e.g., schools and neighborhoods)—another form of material resources—in Asian Americans' education patterns. In their qualitative research, Lee and Zhou (2015) argued that purposeful school and neighborhood selection are key mechanisms for Asian American education patterns. Future research should formally test this hypothesis using national representative data and current statistical methods.

Fourth, results from this study offer a foundation for future research on income mobility among Asian Americans. Preliminary results from this study suggest that Asian Americans may also receive reduced educational penalties from low levels of financial resources. Future research may wish to explore this association in depth, using detailed information on parental income and wealth. In addition, high average educational attainment likely plays an integral role in Asian Americans' adult financial well-being, leading to similar income levels for U.S.-born Asian Americans as among whites (Zeng and Xie 2004). The children of Asian American immigrants from specific ethnic backgrounds—and possibly later-generation Chinese Americans—may receive even more income returns from educational attainment than those from other race/ethnicity-nativity backgrounds because of their propensity for completing STEM majors during college (see table C1). On the

other hand, some research suggests that Asian American men may receive greater penalties than whites for low education levels (Kim and Sakamoto 2014). Future research on racial/ethnic inequality in mobility should consider nuanced mechanisms, such as high school and college coursework (e.g., mathematics or chemistry) achievement, major selection, and college selectivity in income and wealth models. Such mechanisms may provide key insights on and context for Asian Americans' mobility patterns.

Fifth, this research describes Asian American patterns across several important demographic categories. Recent studies of Asian American–white inequality has considered variation across socioeconomic groups (Kim and Sakamoto 2014; Liu and Xie 2016), nativity (Kim and Sakamoto 2010), and ethnicity (Kao 1995; Goyette and Xie 1999, 199; Takei, Sakamoto, and Kim 2013), or even integrating two or more of these axes (Zeng and Xie 2004; Takei and Sakamoto 2011; Lee and Zhou 2015; Feliciano and Lanuza 2017). By extending similarly integrative work, this study examines Asian American education patterns across socioeconomic groups, nativity, and ethnicity, adding nuance and detail to the literature. Focus on interactions across these important categories continues a sociological tradition of extending knowledge beyond linear analyses (Abbott 1988).

Lastly, this study contextualizes Asian American patterns within a broader U.S. setting of racial/ethnic stratification. Socioeconomic background accounts for most race/ethnicity-nativity disparities in educational attainment, suggesting that equalizing material inequality could result in less stratification. In contrast, the high-mobility pattern of the children of CIKV immigrants is distinct, standing out not only among immigrants but also among Asian Americans. While some studies emphasize the distinctness of Asian Americans' education patterns and schemas (Lee and Zhou 2015; Feliciano and Lanuza 2017), others posit that Asian Americans' patterns may be similar to those observed among Hispanics (Liu and Xie 2016) or that the patterns reflect common immigrant schemas (Feliciano and Lanuza 2016). The sole focus on Asian-white differences may—in turn—understate or overstate the distinctness of Asian American education patterns. Future work should continue direct comparisons of Asian Americans with a variety of racial/ethnic groups—rather than solely comparing with native-born whites—to better understand U.S. racial/ethnic stratification.

## Limitations

There are several limitations to this study. First, other forms of immigrant contextual selection aside from education, such as contextual income, occupation, or wealth selection, have not yet been assessed in comparable research. Simultaneously controlling for these different forms of contextual selection may account for a larger portion of Asian Americans' education patterns than

observed in Feliciano and Lanuza's recent work (2017). Second, small sample sizes for specific race/ethnicity-nativity groups may limit the accuracy of estimates, especially for 1.5–2.0 generation Korean and Indian Americans. Replication of results across Add Health and NELS, however, suggests the robustness of the observed patterns. Third, the multivariable analysis in this article does not account for omitted sources of confounding. Thus, other unobserved characteristics, such as familial wealth, could hypothetically drive the patterns revealed in the analysis. Fourth, the data used in this article—like those from Hsin, Liu, and Xie, Lee and Zhou, and Tao and Hong—all focus on patterns among the children of immigrants. These data, however, offer limited information on the immigrant parents. Thus, the analysis assumes that the characteristics (e.g., expectations) of adolescents relate to their parents' influences. This article did, however, use parental reports of educational pressure placed on their children. Fifth, it is possible that the indicators of students' effort and belief in malleability used in the sensitivity analyses may have measurement error, which accounts for the null findings. One possibility is that internal and external pressures impact different types of efforts other than adolescent homework, such as more studying time for standardized tests, the submission of more college and scholarship applications, and persistence through hardships and distractions in college. Analysis using data from the National Study of Learning Mindsets—with its focus on learning attitudinal indicators—may provide a more accurate evaluation of the effort and malleability hypotheses. Therefore, this article cannot disconfirm the possible role of (alternative) academic efforts in Asian Americans' social mobility—a key aspect of the model minority concept. Rather, the analysis provides stronger evidence against the role of Confucian schemas in Asian Americans' social mobility, with less focus on disconfirming the role of efforts.

## CONCLUSION

This study reveals a distinct stratification pattern among the children of CIKV immigrants, one that features high educational attainment levels and a flat parent-offspring education association. Thus, the educational attainment gap with later-generation whites is considerably wider among respondents with parents who have low educational attainment levels. The flat parent-offspring education association is partially mediated by high levels of educational expectations and parental pressure. These results are observed in both Add Health and NELS. This high educational mobility pattern is distinct among all race/ethnicity-nativity groups examined in the analyses. The analysis cannot directly confirm the role of culture in Asian American education patterns. However, the observed pattern is consistent with a merger of the shared class-based schema (Lee and Zhou 2015; Hsin 2016) and familial obligation (Tao and Hong 2014) frameworks. Future research will need

detailed exploration using a wider variety of psychosocial indicators than are available in most current population studies to thoroughly examine cultural-schematic theories on Asian American educational attainment. Among a diverse set of stratification outcomes of race/ethnicity-nativity groups, the patterns of the children of Chinese, Indian/South Asian, Korean, and Vietnamese/Southeast immigrants stand out. These patterns are not only surprising because of the high levels of educational attainment, but also because many of the most disadvantaged members of this population complete bachelor's and graduate degrees.

## APPENDIX A

### Descriptive Statistics

TABLE A1
DESCRIPTIVE STATISTICS FROM ADD HEALTH AND NELS (Unweighted)

| | ADD HEALTH ($N$ = 11,875) | | | NELS ($N$ = 8,896) | | |
|---|---|---|---|---|---|---|
| | Mean/% | Min | Max | Mean/% | Min | Max |
| Education years | 14.38 | 8.00 | 22.00 | 13.85 | 10.00 | 22.00 |
| Race/ethnicity-nativity: | | | | | | |
| White 2.5+ | 62.45 | | | 75.87 | | |
| White 1.5–2.0 | .66 | | | 1.29 | | |
| Black 2.5+ | 22.57 | | | 8.95 | | |
| Black 1.5–2.0 | .35 | | | .48 | | |
| Mexican 2.5+ | 4.56 | | | 4.65 | | |
| Mexican 1.5–2.0 | 3.72 | | | 2.88 | | |
| Chinese 2.5+ | .61 | | | .33 | | |
| Chinese 1.5–2.0 | 1.15 | | | 1.28 | | |
| Filipino 2.5+ | .67 | | | .29 | | |
| Filipino 1.5–2.0 | 2.13 | | | 1.01 | | |
| Indian/South 1.5–2.0 | .16 | | | .65 | | |
| Japanese 2.5+ | .48 | | | .38 | | |
| Korean 2.5+ | .17 | | | .20 | | |
| Korean 1.5–2.0 | .13 | | | .69 | | |
| Vietnamese/Southeast 1.5–2.0 | .19 | | | 1.05 | | |
| Female | .53 | | | 53.12 | | |
| Parental education: | | | | | | |
| >BA | 15.08 | | | 15.10 | | |
| BA | 19.42 | | | 16.06 | | |
| Some college | 20.69 | | | 41.75 | | |
| High school | 34.07 | | | 19.11 | | |
| <High school | 10.74 | | | 7.98 | | |
| Adolescent expectations | 4.19 | 1.00 | 5.00 | 3.87 | 1.00 | 5.00 |
| Parental pressure | 1.73 | 1.00 | 3.00 | 3.76 | 1.00 | 5.00 |
| High school GPA | 2.64 | .00 | 4.00 | 3.03 | .50 | 4.00 |
| Parental income ($1,000) | 48.33 | .00 | 999.00 | 41.66 | .00 | 200.00 |
| Parental occupation: | | | | | | |
| Professional 1 | 5.81 | | | 12.20 | | |
| Professional 2 | 17.39 | | | 11.03 | | |

TABLE A1 (*Continued*)

| | Add Health ($N$ = 11,875) | | | NELS ($N$ = 8,896) | | |
|---|---|---|---|---|---|---|
| | Mean/% | Min | Max | Mean/% | Min | Max |
| Manager | 9.73 | | | 10.31 | | |
| White collar/office | 20.86 | | | 30.12 | | |
| Blue collar | 29.76 | | | 26.65 | | |
| Military/farm/other | 10.95 | | | 8.29 | | |
| Unemployed | 5.50 | | | 1.39 | | |
| Maternal age at birth: | | | | | | |
| <21 | 20.00 | | | 8.53 | | |
| 21–25 | 35.00 | | | 9.45 | | |
| 26–30 | 29.35 | | | 28.83 | | |
| 31–35 | 12.50 | | | 34.17 | | |
| 36–40 | 2.89 | | | 18.35 | | |
| 41+ | .56 | | | 0.67 | | |
| Mother's relationship status: | | | | | | |
| Married or cohabiting (NELS) | | | | 83.36 | | |
| Married (Add Health) | 72.76 | | | | | |
| Single | 5.69 | | | 16.64 | | |
| Cohabiting (Add Health) | 21.55 | | | | | |
| Sibsize | 2.61 | 1.00 | 10.00 | 3.20 | 1.00 | 7.00 |
| Birth order index | 1.01 | .18 | 1.82 | 1.04 | .25 | 1.75 |
| Region: | | | | | | |
| Northeast | 22.25 | | | 18.09 | | |
| Midwest | 28.25 | | | 29.20 | | |
| South | 37.36 | | | 34.49 | | |
| West | 12.13 | | | 18.22 | | |

TABLE A2

Cross-Tabulations of Education Years, Expectations, and Parental Pressure by Race/Ethnicity-Nativity with 95% Confidence Intervals (Unweighted)

| | Education years | | | Expectations | | | Parental pressure | | |
|---|---|---|---|---|---|---|---|---|---|
| Add Health: | | | | | | | | | |
| White 2.5+ | 13.91 | 13.86 | 13.97 | 4.18 | 4.16 | 4.21 | 1.82 | 1.81 | 1.84 |
| White 1.5–2.0 | 14.54 | 14.15 | 14.93 | 4.49 | 4.30 | 4.68 | 1.47 | 1.32 | 1.62 |
| Black 2.5+ | 13.24 | 13.11 | 13.37 | 4.24 | 4.20 | 4.28 | 1.58 | 1.55 | 1.61 |
| Black 1.5–2.0 | 14.19 | 13.64 | 14.74 | 4.66 | 4.40 | 4.92 | 1.27 | 1.08 | 1.46 |
| Mexican 2.5+ | 12.87 | 12.71 | 13.04 | 3.84 | 3.74 | 3.94 | 1.78 | 1.71 | 1.85 |
| Mexican 1.5–2.0 | 12.85 | 12.64 | 13.06 | 3.76 | 3.65 | 3.86 | 1.45 | 1.38 | 1.51 |
| Chinese 2.5+ | 15.17 | 14.58 | 15.77 | 4.75 | 4.62 | 4.89 | 1.52 | 1.37 | 1.67 |
| Chinese 1.5–2.0 | 15.54 | 15.13 | 15.94 | 4.74 | 4.63 | 4.84 | 1.18 | 1.08 | 1.27 |
| Filipino 2.5+ | 12.73 | 12.13 | 13.33 | 4.16 | 3.93 | 4.40 | 1.72 | 1.55 | 1.88 |
| Filipino 1.5–2.0 | 14.29 | 13.81 | 14.77 | 4.49 | 4.39 | 4.60 | 1.19 | 1.12 | 1.25 |
| Indian/South 1.5–2.0 | 16.19 | 15.67 | 16.71 | 5.00 | 5.00 | 5.00 | 1.00 | 1.00 | 1.00 |
| Japanese 2.5+ | 14.32 | 13.49 | 15.16 | 4.28 | 4.03 | 4.54 | 1.83 | 1.62 | 2.03 |
| Korean 2.5+ | 14.22 | 13.26 | 15.18 | 4.05 | 3.45 | 4.65 | 1.71 | 1.31 | 2.10 |
| Korean 1.5–2.0 | 15.54 | 15.04 | 16.05 | 4.56 | 4.23 | 4.90 | 1.00 | 1.00 | 1.00 |
| Vietnamese/ Southeast 1.5–2.0 | 14.99 | 14.52 | 15.45 | 4.74 | 4.47 | 5.01 | 1.15 | 0.93 | 1.38 |

TABLE A2 (*Continued*)

| | Education years | | | Expectations | | | Parental pressure | | |
|---|---|---|---|---|---|---|---|---|---|
| NELS: | | | | | | | | | |
| White 2.5+ | 13.91 | 13.86 | 13.97 | 3.86 | 3.84 | 3.88 | 3.73 | 3.71 | 3.75 |
| White 1.5–2.0 | 14.51 | 14.12 | 14.90 | 4.11 | 3.95 | 4.28 | 4.11 | 3.94 | 4.27 |
| Black 2.5+ | 13.24 | 13.11 | 13.37 | 3.87 | 3.81 | 3.94 | 3.77 | 3.70 | 3.84 |
| Black 1.5–2.0 | 14.18 | 13.64 | 14.72 | 4.09 | 3.83 | 4.36 | 4.12 | 3.82 | 4.42 |
| Mexican 2.5+ | 12.87 | 12.71 | 13.04 | 3.64 | 3.54 | 3.74 | 3.59 | 3.49 | 3.68 |
| Mexican 1.5–2.0 | 12.82 | 12.62 | 13.03 | 3.61 | 3.48 | 3.73 | 3.54 | 3.40 | 3.67 |
| Chinese 2.5+ | 15.17 | 14.58 | 15.77 | 4.21 | 3.93 | 4.48 | 4.24 | 3.94 | 4.54 |
| Chinese 1.5–2.0 | 15.49 | 15.09 | 15.90 | 4.33 | 4.18 | 4.49 | 4.49 | 4.35 | 4.62 |
| Filipino 2.5+ | 12.73 | 12.13 | 13.33 | 3.92 | 3.65 | 4.20 | 3.48 | 3.14 | 3.82 |
| Filipino 1.5–2.0 | 14.31 | 13.83 | 14.78 | 4.10 | 3.93 | 4.27 | 4.13 | 3.96 | 4.30 |
| Indian/South 1.5–2.0 | 16.19 | 15.67 | 16.70 | 4.59 | 4.42 | 4.76 | 4.59 | 4.40 | 4.78 |
| Japanese 2.5+ | 14.32 | 13.49 | 15.16 | 4.26 | 4.00 | 4.53 | 4.09 | 3.79 | 4.39 |
| Korean 2.5+ | 14.22 | 13.26 | 15.18 | 4.33 | 3.99 | 4.67 | 3.83 | 3.41 | 4.26 |
| Korean 1.5–2.0 | 15.48 | 14.97 | 15.99 | 4.64 | 4.51 | 4.77 | 4.57 | 4.38 | 4.77 |
| Vietnamese/ Southeast 1.5–2.0 | 14.96 | 14.49 | 15.42 | 4.24 | 4.07 | 4.42 | 4.18 | 3.98 | 4.39 |

NOTE.—The Add Health parental pressure is reverse coded from the NELS indicator. While the Add Health indicator represents parental disapproval for hypothetical noncompletion of a college degree, the NELS indicator represents parental expectations.

TABLE A3
CROSS-TABULATIONS OF PARENTAL EDUCATION BY RACE/ETHNICITY-NATIVITY (Unweighted)

| | <HS | HS | SC | BA | >BA | Sum |
|---|---|---|---|---|---|---|
| Add Health: | | | | | | |
| White 2.5+ | 6.32 | 35.79 | 21.68 | 19.74 | 16.46 | 100.00 |
| White 1.5–2.0 | 17.95 | 23.08 | 14.10 | 28.21 | 16.67 | 100.00 |
| Black 2.5+ | 10.78 | 35.67 | 21.64 | 19.07 | 12.84 | 100.00 |
| Black 1.5–2.0 | 4.88 | 19.51 | 7.32 | 21.95 | 46.34 | 100.00 |
| Mexican 2.5+ | 23.66 | 35.49 | 22.92 | 10.54 | 7.39 | 100.00 |
| Mexican 1.5–2.0 | 73.30 | 17.19 | 4.98 | 3.62 | .90 | 100.00 |
| Chinese 2.5+ | 2.74 | 16.44 | 12.33 | 26.03 | 42.47 | 100.00 |
| Chinese 1.5–2.0 | 21.17 | 22.63 | 9.49 | 20.44 | 26.28 | 100.00 |
| Filipino 2.5+ | 5.06 | 36.71 | 31.65 | 20.25 | 6.33 | 100.00 |
| Filipino 1.5–2.0 | 2.37 | 11.07 | 16.60 | 55.34 | 14.62 | 100.00 |
| Indian/South 1.5–2.0 | 10.53 | 5.26 | 5.26 | 15.79 | 63.16 | 100.00 |
| Japanese 2.5+ | .00 | 38.60 | 19.30 | 15.79 | 26.32 | 100.00 |
| Korean 2.5+ | .00 | 25.00 | 40.00 | 15.00 | 20.00 | 100.00 |
| Korean 1.5–2.0 | .00 | 37.50 | .00 | 25.00 | 37.50 | 100.00 |
| Vietnamese/ Southeast 1.5–2.0 | 26.09 | 34.78 | .00 | 21.74 | 17.39 | 100.00 |
| NELS: | | | | | | |
| White 2.5+ | 15.81 | 17.34 | 42.33 | 20.02 | 4.50 | 100.00 |
| White 1.5–2.0 | 27.83 | 17.39 | 28.70 | 9.57 | 16.52 | 100.00 |
| Black 2.5+ | 8.92 | 8.54 | 50.25 | 20.73 | 11.56 | 100.00 |
| Black 1.5–2.0 | 13.95 | 11.63 | 53.49 | 13.95 | 6.98 | 100.00 |

TABLE A3 (*Continued*)

| | <HS | HS | SC | BA | >BA | Sum |
|---|---|---|---|---|---|---|
| Mexican 2.5+ | 3.38 | 6.52 | 48.55 | 21.26 | 20.29 | 100.00 |
| Mexican 1.5–2.0 | .78 | .78 | 21.09 | 10.55 | 66.80 | 100.00 |
| Chinese 2.5+ | 34.48 | 31.03 | 13.79 | 20.69 | .00 | 100.00 |
| Chinese 1.5–2.0 | 30.70 | 14.91 | 25.44 | 15.79 | 13.16 | 100.00 |
| Filipino 2.5+ | 3.85 | 15.38 | 50.00 | 30.77 | 0.00 | 100.00 |
| Filipino 1.5–2.0 | 21.11 | 60.00 | 17.78 | .00 | 1.11 | 100.00 |
| Indian/South 1.5–2.0 | 70.69 | 12.07 | 15.52 | .00 | 1.72 | 100.00 |
| Japanese 2.5+ | 20.59 | 41.18 | 35.29 | 0.00 | 2.94 | 100.00 |
| Korean 2.5+ | 11.11 | 27.78 | 50.00 | 11.11 | .00 | 100.00 |
| Korean 1.5–2.0 | 42.62 | 26.23 | 18.03 | 9.84 | 3.28 | 100.00 |
| Vietnamese/ Southeast 1.5–2.0 | 10.75 | 11.83 | 46.24 | 12.90 | 18.28 | 100.00 |

NOTE.—HS = high school; SC = some college.

TABLE A4
RACE/ETHNICITY-NATIVITY FREQUENCIES

| | ADD HEALTH | NELS |
|---|---|---|
| White 2.5+ | 7,416 | 6,749 |
| White 1.5–2.0 | 78 | 115 |
| Black 2.5+ | 2,680 | 796 |
| Black 1.5–2.0 | 41 | 43 |
| Mexican 2.5+ | 541 | 414 |
| Mexican 1.5–2.0 | 442 | 256 |
| Chinese 2.5+ | 73 | 29 |
| Chinese 1.5–2.0 | 137 | 114 |
| Filipino 2.5+ | 79 | 26 |
| Filipino 1.5–2.0 | 253 | 90 |
| Indian/South 1.5–2.0 | 19 | 58 |
| Japanese 2.5+ | 57 | 34 |
| Korean 2.5+ | 20 | 18 |
| Korean 1.5–2.0 | 16 | 61 |
| Vietnamese/Southeast 1.5–2.0 | 23 | 93 |

TABLE A5
SAMPLES FROM ADD HEALTH AND NELS

| Sample Exclusion | *N* |
|---|---|
| Add Health: | |
| Original | 20,765 |
| Attrition-race/ethnicity | 13,538 |
| Lives with biological parent(s) | 12,601 |
| Outcome | 12,600 |
| Parental education | 11,939 |
| Survey weighted | 11,875 |

TABLE A5 (*Continued*)

| Sample Exclusion | *N* |
|---|---|
| NELS: | |
| Original | 24,599 |
| Four-panel sample | 12,144 |
| Race/ethnicity | 9,439 |
| Lives with biological parent(s) | 9,145 |
| Outcome | 8,898 |
| Parental education | 8,896 |

## APPENDIX B

## Regressions of Educational Attainment

TABLE B1
Linear Regression of Educational Attainment on Race/Ethnicity-Nativity for Different Outcome Specifications

| | Add Health | | NELS | |
|---|---|---|---|---|
| | BA completion | Degrees | BA completion | Degrees |
| Race/ethnicity-nativity (white 2.5+): | | | | |
| White 1.5–2.0 | .13 (.05)** | .31 (.11)** | .04 (.04) | .15 (.08) |
| Black 2.5+ | .01 (.01) | .07 (.02)** | .01 (.02) | .02 (.04) |
| Black 1.5–2.0 | .06 (.07) | .42 (.15)** | .07 (.06) | .16 (.13) |
| Mexican 2.5+ | −.04 (.02) | −.02 (.04) | −.05 (.02)* | −.13 (.05)** |
| Mexican 1.5–2.0 | .08 (.02)** | .29 (.06)*** | .06 (.03) | .13 (.06)* |
| Chinese 2.5+ | .15 (.05)** | .31 (.11)** | .20 (.08)* | .28 (.16) |
| Chinese 1.5–2.0 | .42 (.04)*** | 1.02 (.08)*** | .34 (.04)*** | .63 (.08)*** |
| Filipino 2.5+ | −.01 (.05) | .12 (.11) | −.12 (.08) | −.35 (.17)* |
| Filipino 1.5–2.0 | .05 (.03) | .12 (.07) | −.08 (.04) | −.12 (.09) |
| Indian/South 1.5–2.0 | .17 (.10) | .43 (.22) | .19 (.06)** | .40 (.12)** |
| Japanese 2.5+ | −.04 (.06) | −.13 (.13) | −.05 (.07) | −.10 (.15) |
| Korean 2.5+ | −.07 (.09) | −.05 (.21) | .05 (.10) | .02 (.21) |
| Korean 1.5–2.0 | .28 (.10)** | .72 (.24)** | .18 (.05)*** | .42 (.11)*** |
| Vietnamese/ Southeast 1.5–2.0 | .31 (.09)*** | .75 (.20)*** | .35 (.04)*** | .76 (.09)*** |
| Controls | Yes | Yes | Yes | Yes |
| Observations | 11,875 | 11,875 | 8,896 | 8,896 |

Note.—Data are shown as $\beta$ (SE). Control variables include gender, birth order, sibsize, maternal age at birth, mother's relationship status, parental income, parental education, parental occupation, and region.

* $P < .05$.

** $P < .01$.

*** $P < .001$.

TABLE B2

LINEAR REGRESSION OF EDUCATIONAL ATTAINMENT WITH INTERACTION OF RACE/ETHNICITY-NATIVITY WITH PARENTAL EDUCATION

| | ADD HEALTH | | NELS | |
|---|---|---|---|---|
| | BA completion | Degrees | BA completion | Degrees |
| CIKV 1.5–2.0 (white 2.5+) | .12 (.06)* | .27 (.13)* | .06 (.04) | .16 (.09) |
| Parental education (>BA): | | | | |
| BA | −.15 (.02)*** | −.28 (.04)*** | −.12 (.02)*** | −.24 (.04)*** |
| SC | −.27 (.02)*** | −.54 (.04)*** | −.28 (.02)*** | −.53 (.04)*** |
| HS | −.32 (.02)*** | −.75 (.04)*** | −.35 (.02)*** | −.67 (.05)*** |
| <HS | −.39 (.03)*** | −1.15 (.06)*** | −.40 (.03)*** | −.85 (.07)*** |
| CIKV 1.5–2.0 (white 2.5+) × parental education (>BA): | | | | |
| CIKV 1.5–2.0 × BA | .23 (.09)** | .48 (.20)* | .20 (.07)** | .36 (.15)* |
| CIKV 1.5–2.0 × SC | .51 (.12)*** | 1.18 (.28)*** | .34 (.06)*** | .65 (.13)*** |
| CIKV 1.5–2.0 × HS | .30 (.08)*** | .87 (.19)*** | .39 (.08)*** | .74 (.17)*** |
| CIKV 1.5–2.0 × <HS | .57 (.09)*** | 1.39 (.21)*** | .47 (.09)*** | 1.06 (.18)*** |
| Controls | Yes | Yes | Yes | Yes |
| Observations | 7,611 | 7,611 | 7,075 | 7,075 |

NOTE.—Data are shown as $\beta$ (SE). Control variables include gender, birth order, sibsize, maternal age at birth, mother's relationship status, parental income, parental occupation, and region.

* $P < .05$.

** $P < .01$.

*** $P < .001$.

TABLE B3

LINEAR REGRESSION OF EDUCATION YEARS ON RACE/ETHNICITY-NATIVITY WITH SURVEY WEIGHTS

| | ADD HEALTH | | NELS | |
|---|---|---|---|---|
| | Model 1 | Model 2 | Model 1 | Model 2 |
| Race/ethnicity-nativity (white 2.5+): | | | | |
| White 1.5–2.0 | .84 (.42)* | .80 (.38)* | .82 (.27)** | .50 (.24)* |
| Black 2.5+ | −.64 (.08)*** | .06 (.08) | −.82 (.19)*** | .08 (.15) |
| Black 1.5–2.0 | .80 (.29)** | −.09 (.28) | .30 (.27) | .77 (.35)* |
| Mexican 2.5+ | −.84 (.14)*** | .01 (.14) | −1.15 (.20)*** | −.22 (.12) |
| Mexican 1.5–2.0 | −.96 (.14)*** | .60 (.16)*** | −1.15 (.13)*** | .10 (.19) |
| Chinese 2.5+ | 1.62 (.64)* | 1.00 (.42)* | 1.59 (.38)*** | 1.63 (.81)* |
| Chinese 1.5–2.0 | 2.26 (.31)*** | 2.17 (.31)*** | 1.60 (.31)*** | 1.53 (.24)*** |
| Filipino 2.5+ | −.11 (.26) | .04 (.28) | −1.06 (.35)** | −.72 (.44) |
| Filipino 1.5–2.0 | .60 (.21)** | .37 (.20) | .41 (.32) | −.15 (.30) |
| Indian/South 1.5–2.0 | 3.04 (.83)*** | 1.86 (.83)* | 2.25 (.37)*** | .98 (.37)** |
| Japanese 2.5+ | .33 (.28) | −.07 (.24) | −1.15 (.44)** | −.46 (.19)* |
| Korean 2.5+ | −.10 (.74) | .17 (.71) | .71 (.60) | .87 (.65) |
| Korean 1.5–2.0 | 2.26 (.45)*** | 1.80 (.54)** | 1.74 (.25)*** | .71 (.27)* |
| Vietnamese/ Southeast 1.5–2.0 | 1.26 (.40)** | 1.49 (.49)** | 1.12 (.33)** | 1.53 (.34)*** |

TABLE B3 (*Continued*)

| | Add Health | | NELS | |
|---|---|---|---|---|
| | Model 1 | Model 2 | Model 1 | Model 2 |
| Controls | No | Yes | No | Yes |
| Observations | 11,875 | 11,875 | 8,896 | 8,896 |

Note.—Data are shown as $\beta$ (SE). Control variables include gender, birth order, sibsize, maternal age at birth, mother's relationship status, parental income, parental education, parental occupation, and region.

* $P < .05$.

** $P < .01$.

*** $P < .001$.

TABLE B4
Linear Regression of Educational Attainment on Race/Ethnicity-Nativity for Different Outcome Specifications with Survey Weights

| | Add Health | | NELS | |
|---|---|---|---|---|
| | BA completion | Degrees | BA completion | Degrees |
| Race/ethnicity-nativity (white 2.5+): | | | | |
| White 1.5–2.0 | .17 (.08)* | .37 (.17)* | .09 (.06) | .29 (.11)* |
| Black 2.5+ | .01 (.01) | .04 (.03) | .02 (.03) | .06 (.08) |
| Black 1.5–2.0 | −.10 (.09) | .07 (.15) | .06 (.05) | .34 (.17)* |
| Mexican 2.5+ | −.03 (.02) | −.01 (.07) | −.03 (.03) | −.13 (.06)* |
| Mexican 1.5–2.0 | .07 (.03)* | .29 (.08)*** | .01 (.03) | .05 (.09) |
| Chinese 2.5+ | .15 (.07)* | .33 (.12)** | .48 (.20)* | .79 (.39)* |
| Chinese 1.5–2.0 | .43 (.07)*** | 1.05 (.14)*** | .29 (.07)*** | .68 (.10)*** |
| Filipino 2.5+ | −.05 (.07) | .07 (.15) | −.15 (.10) | −.38 (.22) |
| Filipino 1.5–2.0 | .03 (.05) | .14 (.09) | −.06 (.08) | −.02 (.14) |
| Indian/South 1.5–2.0 | .29 (.11)** | .53 (.26)* | .22 (.06)*** | .45 (.17)** |
| Japanese 2.5+ | .03 (.07) | −.05 (.12) | −.13 (.04)** | −.25 (.09)** |
| Korean 2.5+ | .01 (.14) | .14 (.39) | .26 (.17) | .39 (.32) |
| Korean 1.5–2.0 | .42 (.10)*** | .91 (.28)** | .21 (.06)*** | .36 (.12)** |
| Vietnamese/ Southeast 1.5–2.0 | .35 (.13)** | .65 (.20)** | .31 (.07)*** | .69 (.15)*** |
| Controls | No | Yes | No | Yes |
| Observations | 11,875 | 11,875 | 8,896 | 8,896 |

Note.—Data are shown as $\beta$ (SE). Control variables include gender, birth order, sibsize, maternal age at birth, mother's relationship status, parental income, parental education, parental occupation, and region.

* $P < .05$.

** $P < .01$.

*** $P < .001$.

TABLE B5

Linear Regression of Education Years with Interaction of Race/Ethnicity-Nativity with Parental Education with Survey Weights

| | Add Health | NELS |
|---|---|---|
| CIKV 1.5−2.0 (white 2.5+) | 1.23 (.44)** | .42 (.27) |
| Parental education (>BA): | | |
| BA | −.71 (.11)*** | −.60 (.15)*** |
| SC | −1.16 (.11)*** | −1.17 (.15)*** |
| HS | −1.53 (.11)*** | −1.34 (.16)*** |
| <HS | −2.41 (.17)*** | −1.85 (.20)*** |
| CIKV 1.5−2.0 (white 2.5+) × parental education (>BA): | | |
| CIKV 1.5−2.0 × BA | −.25 (.61) | .59 (.49) |
| CIKV 1.5−2.0 × SC | 1.56 (.80) | 1.35 (.36)** |
| CIKV 1.5−2.0 × HS | .95 (.55) | .97 (.54) |
| CIKV 1.5−2.0 × <HS | 2.62 (.71)*** | 2.10 (.55)*** |
| Controls | Yes | Yes |
| Observations | 7,611 | 7,075 |

Note.—Data are shown as $\beta$ (SE). Control variables include gender, birth order, sibsize, maternal age at birth, mother's relationship status, parental income, parental occupation, and region. HS = high school.

* $P < .05$.

** $P < .01$.

*** $P < .001$.

TABLE B6

NESTED MODELS OF LINEAR REGRESSION OF EDUCATION YEARS WITH RACE/ETHNICITY-NATIVITY AND PARENTAL EDUCATION INTERACTIONS WITH MEDIATION TESTS

| | ADD HEALTH | | | | | | | | NELS | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Model 1 | | Model 2 | | | Model 3 | | | Model 1 | | Model 2 | | | Model 3 | | |
| | B | S | B | S | M | B | S | M | B | S | B | S | M | B | S | M |
| Asian 1.5–2.0 (white 2.5+) | 1.01 | *** | .91 | ** | | .81 | ** | *** | .46 | * | .33 | | * | .24 | .18 | *** |
| Asian 1.5–2.0 (white 2.5+) × parental education (>BA): | | | | | | | | | | | | | | | | |
| Asian 1.5–2.0 × BA | .73 | | .64 | | | .61 | | | .66 | * | .59 | | | .56 | | |
| Asian 1.5–2.0 × SC | 1.88 | ** | 1.65 | ** | | 1.62 | ** | | 1.20 | *** | 1.06 | *** | * | .96 | *** | ** |
| Asian 1.5–2.0 × HS | 1.24 | ** | .93 | * | * | .84 | * | * | 1.48 | *** | 1.45 | *** | | 1.24 | *** | *** |
| Asian 1.5–2.0 × <HS | 2.56 | *** | 1.85 | *** | *** | 1.81 | *** | | 2.15 | *** | 1.65 | *** | *** | 1.41 | *** | *** |
| Controls | Yes | | Yes | | | Yes | | | Yes | | Yes | | | Yes | | |
| GPA | No | | No | | | No | | | No | | No | | | No | | |
| Educational expectations | No | | Yes | | | Yes | | | No | | Yes | | | Yes | | |
| Parental pressure | No | | No | | | Yes | | | No | | No | | | Yes | | |

NOTE.—Control variables include gender, birth order, sibsize, maternal age at birth, mother's relationship status, parental income, parental education, parental occupation, and region. Model 1 is equivalent to estimates from table 2. Model 2 adds a covariate for adolescent educational expectations. Model 3 adds a covariate for parental educational pressure. The column S represents if the coefficient B has a statistically significant association. The column M represents if mediation occurred in this specification via added covariates.

* $P < .05$.

** $P < .01$.

*** $P < .001$.

TABLE B7

NESTED MODELS OF LINEAR REGRESSION OF EDUCATION YEARS WITH RACE/ETHNICITY-NATIVITY AND PARENTAL EDUCATION INTERACTIONS WITH MEDIATORS WITH SURVEY WEIGHTS

| | ADD HEALTH | | | | | | NELS | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Model 1 | | Model 2 | | Model 3 | | Model 1 | | Model 2 | | Model 3 | |
| | B | S | B | S | B | S | B | S | B | S | B | S |
| Asian 1.5–2.0 (white 2.5+) | 1.23 | ** | 1.11 | * | 1.00 | * | .42 | | .25 | | .15 | |
| Asian 1.5–2.0 (white 2.5+) × parental education (>BA): | | | | | | | | | | | | |
| Asian 1.5–2.0 × BA | −.25 | | −.21 | | −.26 | | .59 | | .52 | | .51 | |
| Asian 1.5–2.0 × SC | 1.56 | | 1.27 | | 1.25 | | 1.35 | ** | 1.32 | ** | 1.09 | ** |
| Asian 1.5–2.0 × HS | .95 | | .54 | | .43 | | .97 | | .97 | * | .74 | |
| Asian 1.5–2.0 × <HS | 2.62 | *** | 2.02 | ** | 1.97 | ** | 2.10 | *** | 1.66 | ** | 1.45 | ** |
| Controls | Yes | | Yes | | Yes | | Yes | | Yes | | Yes | |
| GPA | No | | No | | No | | No | | No | | No | |
| Educational expectations | No | | Yes | | Yes | | No | | Yes | | Yes | |
| Parental pressure | No | | No | | Yes | | No | | No | | Yes | |

NOTE.—Control variables include gender, birth order, sibsize, maternal age at birth, mother's relationship status, parental income, parental education, parental occupation, and region. Model 1 is equivalent to estimates from table 2. Model 2 adds a covariate for adolescent educational expectations. Model 3 adds a covariate for parental educational pressure. The column S represents if the coefficient B has a statistically significant association. No formal mediation tests are included.

* $P < .05$.

** $P < .01$.

*** $P < .001$.

TABLE B8

NESTED MODELS OF LINEAR REGRESSION OF EDUCATION YEARS WITH RACE/ETHNICITY-NATIVITY AND PARENTAL EDUCATION INTERACTIONS WITH MEDIATION TESTS WITH GPA CONTROLS

| | ADD HEALTH | | | | | | | | NELS | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Model 1 | | Model 2 | | | Model 3 | | | Model 1 | | Model 2 | | | Model 3 | | |
| | B | S | B | S | M | B | S | M | B | S | B | S | M | B | S | M |
| Asian 1.5–2.0 (white 2.5+) | .68 | ** | .67 | ** | | .61 | * | ** | .23 | | .19 | | * | .14 | .42 | ** |
| Asian 1.5–2.0 (white 2.5+) × parental education (>BA): | | | | | | | | | | | | | | | | |
| Asian 1.5–2.0 × BA | .38 | | .37 | | | .35 | | | .72 | * | .67 | * | | .65 | * | |
| Asian 1.5–2.0 × SC | 1.21 | * | 1.15 | * | | 1.14 | * | | .98 | *** | .93 | *** | | .88 | ** | * |
| Asian 1.5–2.0 × HS | .68 | | .58 | | | .53 | | * | 1.13 | ** | 1.16 | ** | | 1.04 | ** | ** |
| Asian 1.5–2.0 × <HS | 1.56 | *** | 1.30 | ** | *** | 1.28 | ** | | 1.57 | *** | 1.38 | *** | *** | 1.25 | *** | *** |
| Controls | Yes | | Yes | | | Yes | | | Yes | | Yes | | | Yes | | |
| GPA | Yes | | Yes | | | Yes | | | Yes | | Yes | | | Yes | | |
| Educational expectations | No | | Yes | | | Yes | | | No | | Yes | | | Yes | | |
| Parental pressure | No | | No | | | Yes | | | No | | No | | | Yes | | |

NOTE.—Control variables include gender, birth order, sibsize, maternal age at birth, mother's relationship status, parental income, parental education, parental occupation, and region. Model 1 is equivalent to estimates from table 2. Model 2 adds a covariate for adolescent educational expectations. Model 3 adds a covariate for parental educational pressure. The column "S" represents if the coefficient "B" has a statistically significant association. The column "M" represents if mediation occurred in this specification via added covariates.

* $P < .05$.

** $P < .01$.

*** $P < .001$.

TABLE B9

Decomposition of Direct and Indirect Effects of Differences in Education Years Completed between 2.5+ Generation Whites and 1.5–2.0 Generation Chinese, Indian, Korean, and Vietnamese Americans across Parental Education

| | Add Health | | NELS | |
|---|---|---|---|---|
| | Direct Effect | Indirect Effect | Direct Effect | Indirect Effect |
| CIKV 1.5–2.0 (white 2.5+) | .81 (.26)** | .20 (.08)* | .24 (.18) | .23 (.05)*** |
| CIKV 1.5–2.0 (white 2.5+) × parental education (>BA): | | | | |
| CIKV 1.5–2.0 × BA | .61 (.41) | .12 (.13) | .56 (.31) | .10 (.09) |
| CIKV 1.5–2.0 × SC | 1.62 (.59)** | .27 (.19) | .96 (.26)** | .25 (.07)** |
| CIKV 1.5–2.0 × HS | .84 (.39)* | .40 (.13)** | 1.24 (.35)*** | .24 (.10)* |
| CIKV 1.5–2.0 × <HS | 1.81 (.43)*** | .75 (.14)*** | 1.41 (.37)*** | .74 (.11)*** |
| Controls | Yes | Yes | Yes | Yes |
| Observations | 7,611 | | 7,075 | |

Note.—Data are shown as β (SE). Control variables include gender, birth order, sibsize, maternal age at birth, mother's relationship status, parental income, parental occupation, and region. Indirect effects treat educational expectations and parental pressure as mechanisms.

* $P < .05$.

** $P < .01$.

*** $P < .001$.

TABLE B10

Linear Regression of Education Years with Race/Ethnicity-Nativity and Parental Education Interactions

| | Add Health | NELS |
|---|---|---|
| Race/ethnicity-nativity (white 2.5+): | | |
| White 1.5–2.0 | .56 (.57) | .96 (.44)* |
| Black 2.5+ | .38 (.13)** | .75 (.20)*** |
| Black 1.5–2.0 | 2.65 (.99)** | .35 (.89) |
| Mexican 2.5+ | .52 (.21)* | .30 (.26) |
| Mexican 1.5–2.0 | 1.20 (.21)*** | .93 (.25)*** |
| CFJK 2.5+ | .43 (.41) | −.02 (.65) |
| Filipino 1.5–2.0 | 1.28 (.53)* | −.13 (1.13) |
| CIKV 1.5–2.0 | 3.71 (.35)*** | 3.20 (.30)*** |
| Parental education degrees | .53 (.02)*** | .47 (.03)*** |
| Race/ethnicity-nativity (white 2.5+) × parental education: | | |
| White 1.5–2.0 × parental education | .06 (.17) | −.19 (.12) |
| Black 2.5+ × parental education | −.08 (.04)* | −.25 (.07)*** |
| Black 1.5–2.0 × parental education | −.50 (.24)* | .00 (.27) |
| Mexican 2.5+ × parental education | −.20 (.08)* | −.19 (.09)* |
| Mexican 1.5–2.0 × parental education | −.38 (.12)** | −.26 (.13)* |
| CFJK 2.5+ × parental education | −.04 (.11) | .00 (.18) |
| Filipino 1.5–2.0 × parental education | −.28 (.14)* | −.02 (.28) |
| CIKV 1.5–2.0 × parental education | −.53 (.10)*** | −.53 (0.08)*** |

TABLE B10 (*Continued*)

| | Add Health | NELS |
|---|---|---|
| Controls | Yes | Yes |
| Observations | 8,896 | 11,875 |

NOTE.—Data are shown as β (SE). Control variables include gender, birth order, sibsize, maternal age at birth, mother's relationship status, parental occupation, and region. CFJK = aggregated Chinese, Filipino, Japanese, and Korean Americans.

* $P < .05$.

** $P < .01$.

*** $P < .001$.

TABLE B11
LINEAR REGRESSION OF BACHELOR'S DEGREE COMPLETION WITH RACE/ETHNICITY-NATIVITY AND PARENTAL EDUCATION INTERACTIONS

| | Add Health | NELS |
|---|---|---|
| Race/ethnicity-nativity (white 2.5+): | | |
| White 1.5–2.0 | .22 (.11) | .13 (.10) |
| Black 2.5+ | .08 (.03)** | .18 (.05)*** |
| Black 1.5–2.0 | .37 (.20) | −.09 (.20) |
| Mexican 2.5+ | .14 (.04)** | .16 (.06)** |
| Mexican 1.5–2.0 | .27 (.04)*** | .25 (.06)*** |
| CFJK 2.5+ | .06 (.08) | .01 (.15) |
| Filipino 1.5–2.0 | .09 (.11) | .10 (.26) |
| CIKV 1.5–2.0 | .72 (.07)*** | .75 (.07)*** |
| Parental education degrees | .10 (.00)*** | .11 (.01)*** |
| Race/ethnicity-nativity (white 2.5+) × parental education: | | |
| White 1.5–2.0 × parental education | −.03 (.03) | −.02 (.03) |
| Black 2.5+ × parental education | −.02 (.01)** | −.06 (.02)*** |
| Black 1.5–2.0 × parental education | −.08 (.05) | .05 (.06) |
| Mexican 2.5+ × parental education | −.06 (.02)*** | −.07 (.02)*** |
| Mexican 1.5–2.0 × parental education | −.09 (.02)*** | −.07 (.03)* |
| CFJK 2.5+ × parental education | −.01 (.02) | .00 (.04) |
| Filipino 1.5–2.0 × parental education | −.01 (.03) | −.04 (.06) |
| CIKV 1.5–2.0 × parental education | −.12 (.02)*** | −.13 (.02)*** |
| Controls | Yes | Yes |
| Observations | 8,896 | 11,875 |

NOTE.—Data are shown as β (SE). Control variables include gender, birth order, sibsize, maternal age at birth, mother's relationship status, parental occupation, and region. CFJK = aggregated Chinese, Filipino, Japanese, and Korean Americans.

* $P < .05$.

** $P < .01$.

*** $P < .001$.

TABLE B12

MEDIATION TESTS FOR THE ROLE OF EXPECTATIONS AND PARENTAL PRESSURE ACROSS RACE/ETHNICITY-NATIVITY

| | NO GPA CONTROLS | | GPA CONTROLS | |
|---|---|---|---|---|
| | Direct Effect | Indirect Effect | Direct Effect | Indirect Effect |
| Add Health: | | | | |
| Black 2.5+ ($N$ = 10,093): | | | | |
| Black 2.5+ (white 2.5+) | .06 (.12) | .34 (.04)*** | .56 (.11)*** | .21 (.02)*** |
| Black 2.5+ × parental education | −.02 (.04) | −.07 (.01)*** | −.00 (.03) | −.03 (.01)*** |
| Black 1.5–2.0 ($N$ = 7,456): | | | | |
| Black 1.5–2.0 (white 2.5+) | 2.04 (.95)* | .63 (.31)* | 2.43 (.87)** | .34 (.15)* |
| Black 1.5–2.0 × parental education | −.41 (.23) | −.11 (.08) | −.41 (.21) | −.05 (.04) |
| Mexican 2.5+ ($N$ = 7,955): | | | | |
| Mexican 2.5+ (white 2.5+) | .42 (.21)* | .08 (.07) | .63 (.19)** | .07 (.04) |
| Mexican 2.5+ × parental education | −.17 (.07* | −.03 (.02) | −.14 (.07* | −.01 (.01) |
| Mexican 1.5–2.0 ($N$ = 7,955): | | | | |
| Mexican 1.5–2.0 (white 2.5+) | .74 (.21)*** | .39 (.07)*** | .80 (.19)*** | .20 (.04)*** |
| Mexican 1.5–2.0 × parental education | −.26 (.12)* | −.11 (.04)** | −.21 (.11)* | −.04 (.02)* |
| Filipino 1.5–2.0 ($N$ = 7,668): | | | | |
| Filipino 1.5–2.0 (white 2.5+) | .57 (.52) | .68 (.17)*** | .46 (.46) | .30 (.08)*** |
| Filipino 1.5–2.0 × parental education | −.15 (.13) | −.11 (.04)** | −.09 (.12) | −.04 (.02)* |
| CIKV 1.5–2.0 ($N$ = 7,611): | | | | |
| CIKV 1.5–2.0 (white 2.5+) | 3.69 (.33)*** | .96 (.11)*** | 1.98 (.31)*** | .36 (.06)*** |
| CIKV 1.5–2.0 × parental education | −.35 (.09)*** | −.16 (.03)*** | −.26 (.08)** | −.06 (.02)*** |
| NELS: | | | | |
| Black 2.5+ ($N$ = 7,545): | | | | |
| Black 2.5+ (white 2.5+) | .41 (.20)* | .34 (.06)*** | .54 (.19)** | .20 (.03)*** |
| Black 2.5+ × parental education | −.20 (.06)** | −.05 (.02)** | −.20 (.06)** | −.02 (.01)* |
| Mexican 2.5+ ($N$ = 7,163): | | | | |
| Mexican 2.5+ (white 2.5+) | .18 (.25) | .15 (.07)* | .16 (.24) | .07 (.04) |
| Mexican 2.5+ × parental education | −.17 (.09) | −.02 (.02) | −.13 (.09) | −.00 (.01) |
| Mexican 1.5–2.0 ($N$ = 7,005): | | | | |
| Mexican 1.5–2.0 (white 2.5+) | .59 (.24)* | .35 (.07)*** | .59 (.23)* | .17 (.04)*** |
| Mexican 1.5–2.0 × parental education | −.24 (.13)* | −.00 (.03) | −.21 (.12) | −.00 (.02) |

TABLE B12 (*Continued*)

| | NO GPA CONTROLS | | GPA CONTROLS | |
|---|---|---|---|---|
| | Direct Effect | Indirect Effect | Direct Effect | Indirect Effect |
| CIKV 1.5–2.0 ($N$ = 7,075): | | | | |
| CIKV 1.5–2.0 (white 2.5+) | 2.25 (.30)*** | .94 (.09)*** | 1.95 (.29)*** | .40 (.05)*** |
| CIKV 1.5–2.0 × parental education | −.38 (.08)*** | −.15 (.02)*** | −.33 (.08)*** | −.07 (.01)*** |
| Controls | Yes | Yes | Yes | Yes |

NOTE.—Data are shown as β (SE). Control variables include gender,birth order, sibsize, maternal age at birth, mother's relationship status, parental education, parental occupation, and region. Several important limitations must be recognized for these models. For one, there is the issue of causal ordering—which would determine whether models should adjust for GPA. Classic status attainment theory contends that GPA is an input for educational expectations and parental pressure (Sewell et al. 1969; Fishman 2019). This would suggest GPA should be included as a control variable. On the other hand, Tao and Hong's (2014) theory contends that familial and individual-level pressures impact educational performance, suggesting that GPA controls should not be included for Asian Americans. Liu and Xie (2016) and Feliciano and Lanuza (2017) also treat expectations and parental pressure as inputs for GPA for Asian Americans and for the children of immigrants, respectively. Moreover, Xie and Goyette (2003) demonstrate substantial deviations between classic status attainment theory and patterns among Asian Americans. These results suggest the possibility that Asian Americans—and possibly immigrants in general—may have a distinct educational attainment model from U.S.-born populations. On the other hand, there is cause for skepticism that GPA controls should be excluded for U.S.-born blacks. For example, Bozick and et al.'s (2010) panel data fixed effects models reveal that academic achievement likely impacts educational expectations. Given that 55% of their Baltimore-based sample is black, it is likely that GPA impacts expectations for this population. Thus, the first columns (no GPA controls) may be appropriate for the children of immigrants, while estimates from the next columns (GPA controls) may be more appropriate for 2.5+ generation blacks. In turn, the mediating role of expectations and parental pressure for 2.5+ generation blacks would be negligible compared with the other populations. The second issue is cell size for parental education across race/ethnicity-nativity. For example, few 1.5–2.0 generation Mexican Americans have parents with a bachelor's degree or more. Models designed to address nonlinearities may provide more accurate estimates for modeling education patterns among these populations. For example, it may be more appropriate to include only respondents with some college or less in models comparing 2.5+ generation whites and 1.5–2.0 generation Mexican Americans.

* $P < .05$.

** $P < .01$.

*** $P < .001$.

TABLE B13

LINEAR REGRESSION OF EDUCATION YEARS WITH RACE/ETHNICITY-NATIVITY AND PARENTAL INCOME INTERACTIONS

| | Add Health | NELS |
|---|---|---|
| 1.5–2.0 CIKV (2.5+ white) | 3.19 (.63)*** | 3.19 (.36)*** |
| Parental income$^{1/3}$ | .47 (.03)*** | .44 (.04)*** |
| 1.5–2.0 CIKV (2.5+ white) × parental income$^{1/3}$ | −.33 (.17) | −.56 (.10)*** |
| Controls | Yes | Yes |
| Observations | 7,611 | 7,075 |

NOTE.—Data are shown as β (SE). Control variables include gender, birth order, sibsize, maternal age at birth, mother's relationship status, parental education, parental occupation, and region. The Add Health income interaction is significant at the .10 alpha level.

* $P < .05$.

** $P < .01$.

*** $P < .001$.

TABLE B14

LINEAR REGRESSION OF EDUCATION YEARS WITH RACE/ETHNICITY-NATIVITY AND PARENTAL OCCUPATION INTERACTIONS

| | Add Health | NELS |
|---|---|---|
| 1.5–2.0 CIKV (2.5+ white) | 1.92 (.39)*** | 1.10 (.26)*** |
| Parental occupation (professional 1): | | |
| Professional 2 | −.04 (.11) | .05 (.10) |
| Manager | −.20 (.13) | −.04 (.10) |
| White collar/office | −.47 (.12)*** | −.18 (.08)* |
| Blue collar | −.86 (.12)*** | −.61 (.09)*** |
| Military/farm/other | −.78 (.13)*** | −.33 (.11)** |
| Unemployed | −1.27 (.17)*** | −.25 (.27) |
| 1.5–2.0 CIKV (2.5+ white) × parental occupation (professional 1): | | |
| 1.5–2.0 CIKV × professional 2 | −.57 (.67) | −.53 (.37) |
| 1.5–2.0 CIKV × manager | .49 (.54) | .29 (.45) |
| 1.5–2.0 CIKV × white collar/office | −.81 (.51) | .24 (.33) |
| 1.5–2.0 CIKV × blue collar | .79 (.47) | .56 (.33) |
| 1.5–2.0 CIKV × military/farm/other | −.13 (.57) | −.06 (.57) |
| 1.5–2.0 CIKV × unemployed | −1.85 (1.53) | 1.68 (.65)*** |
| Controls | Yes | Yes |
| Observations | 7,611 | 7,075 |

NOTE.—Data are shown as β (SE). Control variables include gender, birth order, sibsize, maternal age at birth, mother's relationship status, parental education, parental income, and region. Note that unemployment in NELS is a rare outcome (1.39%).

* $P < .05$.

** $P < .01$.

*** $P < .001$.

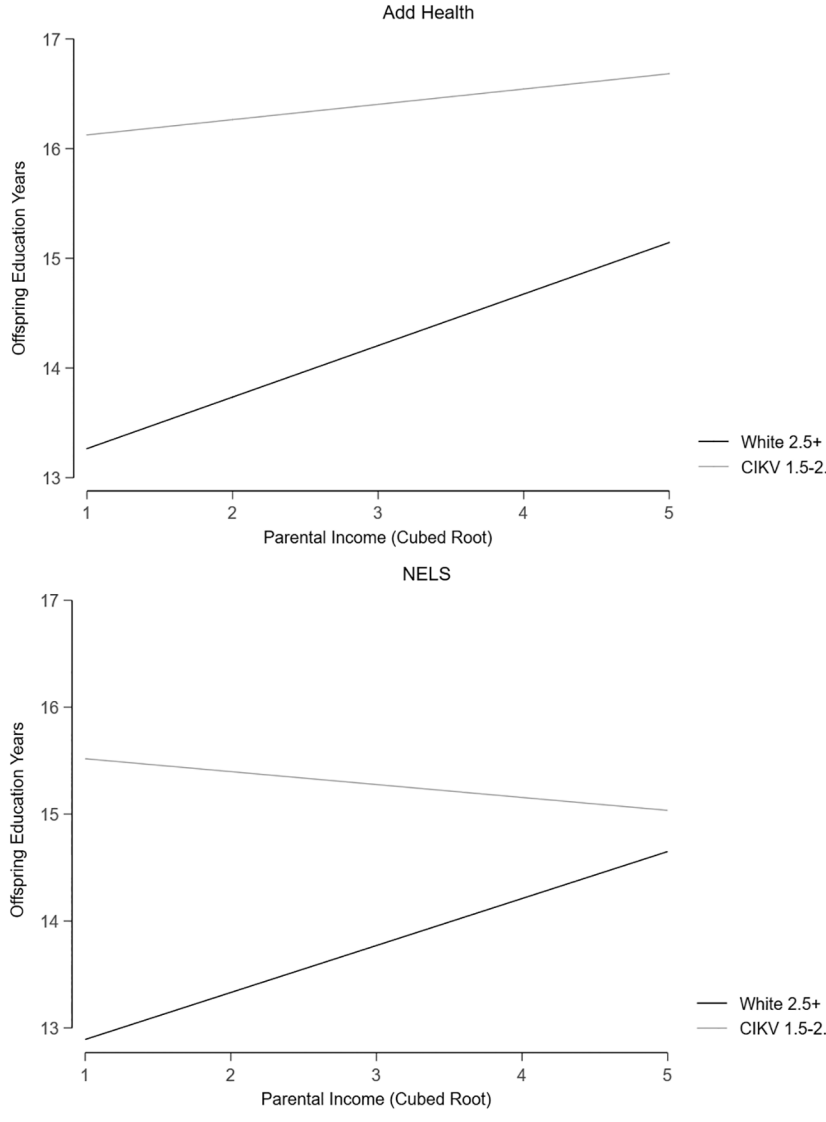


FIG. B1.—Linear regression of education years with race/ethnicity-nativity and parental incomeinteractions. Estimates obtained from table B11. Reference group is 2.5+ generation whiteswhose parents have obtained more than a bachelor's degree. Estimates are calculated as averagepredicted values.

## APPENDIX C

## Regressions of the STEM Major in College

TABLE C1
BINARY REGRESSIONS OF STEM MAJOR IN COLLEGE ON RACE/ETHNICITY-NATIVITY AND SELECTED COVARIATES IN NELS

| | Probit | Heckman probit |
|---|---|---|
| Race/ethnicity-nativity (white 2.5+): | | |
| White 1.5–2.0 | .26 (.16) | .28 (.16) |
| Black 2.5+ | .16 (.09) | .16 (.09) |
| Black 1.5–2.0 | .20 (.28) | .24 (.29) |
| Mexican 2.5+ | .08 (.13) | .06 (.14) |
| Mexican 1.5–2.0 | .02 (.19) | .04 (.19) |
| Chinese 2.5+ | .65 (.27)* | .69 (.28)* |
| Chinese 1.5–2.0 | .32 (.15)* | .38 (.18)* |
| Filipino 2.5+ | .59 (.54) | .48 (.58) |
| Filipino 1.5–2.0 | .29 (.19) | .28 (.19) |
| South 1.5–2.0 | .60 (.18)** | .63 (.19)** |
| Japanese 2.5+ | .15 (.32) | .13 (.32) |
| Korean 1.5–2.0 | .29 (.20) | .34 (.22) |
| Southeast 1.5–2.0 | .71 (.16)*** | .80 (.23)** |
| Controls | Yes | Yes |
| Observations | 4,697 | 4,697 |

NOTE.—Data are shown as $\beta$ (SE). Control variables include gender, birth order, sibsize, maternal age at birth, mother's relationship status, parental income, parental education, parental occupation, and region. The Heckman probit model accounts for selection into degree completion with a major. For example, model 2 should be interpreted in the following way: 1.5–2.0 generation South Asian Americans have a 12% higher probability of declaring a STEM major than 2.5+ generation whites, net of sociodemographic controls and selection into degree completion. Tests reveal no evidence of sample selection bias. Thus, the probit estimates are representative to the broader NELS sample. The Heckman selection equation uses 8,802 observations. Additional models (not shown) reveal no variation in the relationship between parental education and offspring's probability of declaring a STEM major, in contrast with educational attainment models displayed earlier.

* $P < .05$.

** $P < .01$.

*** $P < .001$.

## APPENDIX D

## Confucian Theory Tests Using NELS and ELS

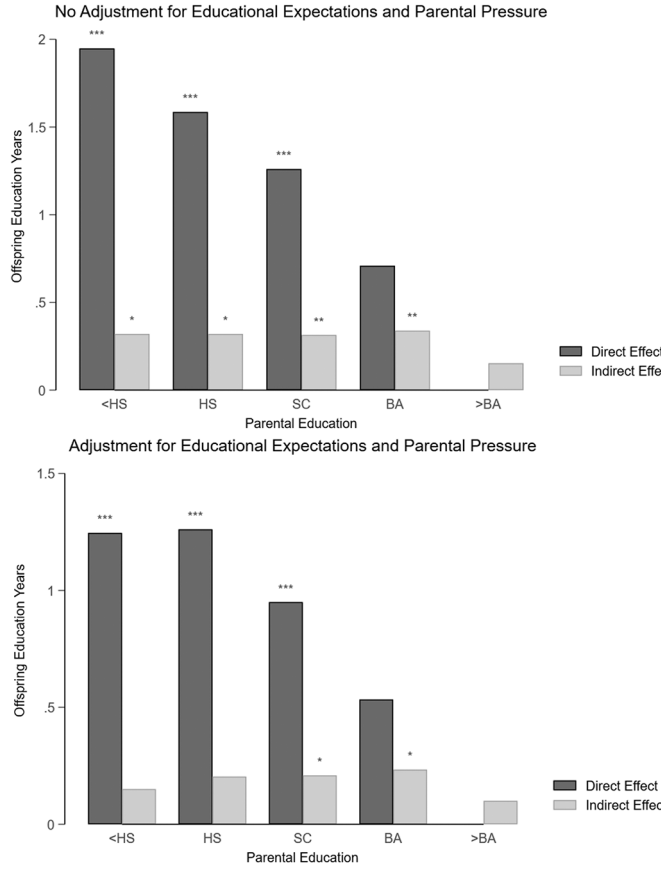


FIG. D1.—Direct and indirect effects of race/ethnicity-nativity on education years across parental education for 2.5+ generation whites and 1.5–2.0 generation CIKV: mechanism tests of homework time in NELS. The reference group is 2.5+ generation whites whose parents have obtained more than a bachelor's degree. The model includes a race/ethnicity-nativity by parental education interaction. Indirect effects are homework time—in and out of school—mediated effects of 1.5–2.0 CIKV (2.5+ whites) on education years. Direct effects are unmediated effects. Confidence intervals are calculated using the delta method. The race/ethnicity-nativity effect is added as a point estimate. Parental education is treated as a covariate. Other control variables include gender, birth order, sibsize, maternal age at birth, mother's relationship status, parental income, parental occupation, and region. The second model adjusts for educational expectations and parental pressure as prior research has found that expectations likely influence academic efforts (Domina et al. 2011). *$P < .05$; **$P < .01$; ***$P < .001$.

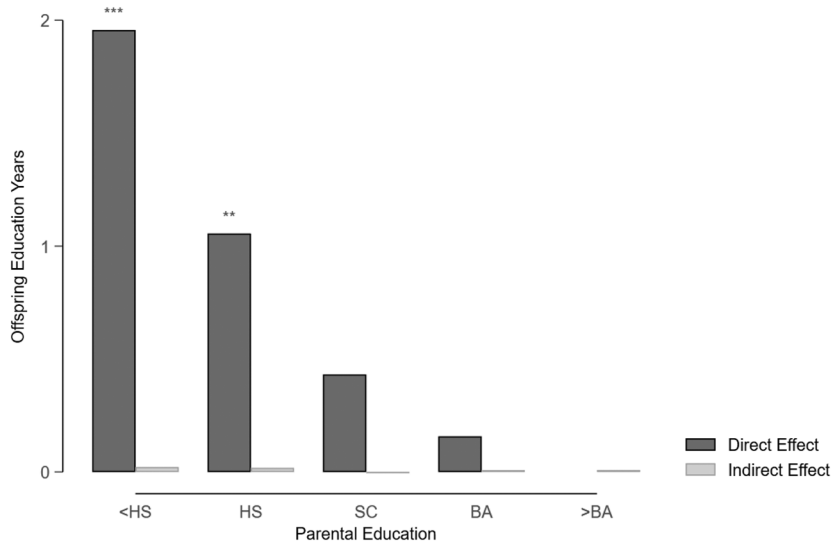


FIG. D2.—Direct and indirect effects of race/ethnicity-nativity on education years across parental education for 2.5+ generation whites and 1.5–2.0 generation Asian and Pacific Islanders: mechanism tests of belief in mathematics malleability in ELS ($N$ = 5,636). The reference group is 2.5+ generation whites whose parents have obtained more than a bachelor's degree. The model includes a race/ethnicity-nativity by parental education interaction. Indirect effects are mediated effects of the belief in malleability in mathematics ability of 2.5+ generation Asian and Pacific Islanders (2.5+ generation whites) on education years. Ethnicity was not specified because it is not available in the public access ELS data. Direct effects are unmediated effects. Confidence intervals are calculated using Sobel tests. The race/ethnicity-nativity effect is added as a point estimate. Parental education is treated as a covariate. Other control variables include gender, sibsize, mother's relationship status, parental income, and parental occupation. Belief in mathematics malleability is measured using two indicators. The first question asks how much the respondent agrees with this statement: "Most people can learn to be good at math." The second question asks how much the respondent agrees with this statement: "You have to be born with the ability to be good at math." Both indicators use a 1–4 scale of strongly agree to strongly disagree. Supplementary analyses included identical malleability indicators asked of the respondents' parents, resulting in no change in results. *$P$ < .05; **$P$ < .01; ***$P$ < .001

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