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Is hyper-selectivity a root of Asian American children's success?

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A R T I C L E I N F O

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A B S T R A C T

Asian immigrants' children, even those from lower-backgrounds, tend to acquire higher levels of education than other ethnoracial groups, including White natives. Asian culture is often cited as a conventional explanation. The hyper-selectivity hypothesis challenges conventional wisdom by arguing that Asian American culture is an outcome of the community resources associated with hyper-selectivity. In this study, we assess the validity of the hyper-selectivity theory by examining the association between the magnitude of hyper-selectivity measured by the proportion of the BA + degree holders among the 1st generation Asian immigrants across communities and the likelihood of school enrollment for 1.5 and 2nd + generation Asian American children. Our results cast doubt on the hyper-selectivity theory. Asian American children's school enrollment is associated with the magnitude of educational selectivity among Asian immigrants for neither high school nor college. The benefits of hyper-selectivity do not seem to be cross-class or cross Asian ethnic groups. The higher the hyper-selectivity in a community is, the larger the education gap between upper- and lower-background Asian American children. The implications of these findings are discussed.

1. Introduction

Asian Americans are labeled as the Model Minority because of their high educational and socioeconomic (SES) achievements (Chou and Feagin 2015; Kao 1995; Sakamoto et al., 2012; Xu and Lee 2013). Although 1st generation Asian immigrants do not reach parity with native-born whites in terms of education, earnings, and wealth (Kim and Sakamoto 2010; Kim and Zhao 2014; Zeng and Xie 2004), their children, 1.5 and 2nd + generation Asian Americans, exceed even native-born Whites. The control of family backgrounds, such as parent's education and family income, cannot fully account for Asian American children's success (Harris et al., 2008). Asian American family practice is cited as a root cause of their success (Lee and Zhou 2015; Sakamoto and Wang 2021). In media, Asian Americans, the first ethnoracial minority in America to surpass the success of native-born Whites despite a history of explicit discrimination, are often pitted against other less successful ethnoracial minorities (Hsin 2016). The Model Minority Image has been criticized as an oversimplified myth that does not reflect the diversity of Asian Americans (Chou and Feagin 2015; Wong et al., 1998).

Lee and Zhou's (2015) award-winning book, *The Asian American Achievement Paradox*, and subsequent papers with their colleagues (Tran et al., 2018, 2019; Zhou and Lee 2017) go beyond the diversity aspect of Asian Americans in criticizing the Model Minority Myth, suggesting a new explanation: Asian Americans' success is an outcome of hyper-selectivity. Asian immigrants after the Immigration and Nationality Act of 1965 are "not only highly selected but also more highly educated than the average American" (Lee and Zhou 2015, p. 6). According to them, Asian American culture and ethnic community resources are derivatives of hyper-selectivity. Asian

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American children from lower-SES families can overcome the disadvantage of their background by sharing unique ethnic resources available only to Asian Americans. Other ethnoracial minorities, who are not hyper-selected, cannot imitate Asian Americans' success strategy.

Although the hyper-selectivity theory has quickly gained popularity in sociology, this theory has not been tested empirically with robust methods. Lee and Zhou (2015) juxtapose the hyper-selectivity theory with the cultural explanation throughout their book, acknowledging that Asian American culture differs from other groups and culture is at least a part of their success story. Two perspectives do not describe the practices of Asian American culture differently. This similarity is one of the reasons why it is hard to compare two perspectives empirically. In this paper, we pay attention to the key difference between the two. The hyper-selectivity perspective regards Asian American culture, specified as a unique mindset and a success frame in Lee and Zhou (2015), as a by-product of hyper-selectivity. Asian American mindset and success frame is a function of the proportion of the hyper-selected 1st generation Asian immigrants. Contrary to this, the cultural perspectives consider Asian American family practices and students' behaviors as an independent factor from the selectivity of Asian immigrants. However, what is the sources of the unique attitudes and behavioral choices are murky.

If Asian American culture is a function of the immigrants' selectivity, Asian American children's educational performance will vary across regional communities. The more Asian immigrants are highly selective in a place, the more Asian American children will be successful. This association will be particularly salient among children of lower-SES families. In this regard, the hyper-selectivity perspective is, in essence, the argument for social capital. Contrary to this, if Asian American family practice and students' behaviors are independent of immigrant selectivity, regional variations in the proportion of highly selective Asian immigrants will not be related to Asian American children's performance.

To test these hypotheses, we utilize the 2005–2019 American Community Survey. We measure the children's educational performance in two ways: (1) whether children aged 15–18 without a high school diploma are currently enrolled in school and (2) whether aged 18–22 with a high school diploma but have not yet acquired a bachelor's degree are in-school. The 15–18 aged children who are not enrolled in school are likely to be high school dropouts. Thus, this is a measurement of lower-level educational achievement. We assess the upper-level educational achievement with the 18-22-year-old sample's college enrollment. A series of logit models are estimated and predicted probabilities by the levels of hyper-selectivity are computed.

This study advances the literature in several ways. First, this study provides a first-ever empirical assessment of the hyper-selectivity hypothesis. To our knowledge, no prior studies examine whether hyper-selectivity actually accounts for Asian immigrant children's prominent educational achievement. Some will worry that empirical tests on cultural explanations could potentially lend racially biased implications. We are well aware of this concern. Cultural explanations on Asian American children's success, however, have been widely discussed in sociology (e.g., Hsin and Xie 2014; Liu and Xie 2016; Sakamoto and Wang 2021) and Lee and Zhou's book itself compares their perspective with cultural explanations. In this paper, we do not measure or test culture directly. Instead, we treat it as a residual. By doing so, our results clarify what versions of explanations can be dismissed and what versions warrant further sociological investigations. Second, we disclose the unexpected consequences of hyper-selectivity and raise the possibility that hyper-selectivity operates as a closure rather than a spillover (Hsin 2016). We enrich our understanding of how behavioral and attitudinal choices interact with structural forces. Third, methodologically, we offer a way to test the association of immigrant selectivity with children's educational performance. Our analytical strategy can be extended to the study of other small populations. In the following sections, we review previous literature about Asian immigrant children's educational attainment, focusing on the key difference between the cultural explanation and the hyper-selectivity theory. Next, we examine the association between hyper-selectivity and Asian Americans' education. Discussions on the implications of our findings follow.

2. Literature review

The average socioeconomic attainments of Asian Americans are higher than any other ethnoracial group. As of 2020, the median household income of Asian Americans ($94,903) is substantially higher than not only other minority groups ($55,321 for Hispanics and $45,870 for Blacks) but also native-born non-Hispanic Whites ($74,912).[1] The proportion of Asian American adults who acquired at least a bachelor's degree is 49 percent, while that of non-Hispanic Whites is 30 percent (Sakamoto et al., 2009). Asian immigrants are reaching parity with native-born Whites in earnings the longer they stay in the U.S., while other minorities are not (Villarreal and Tamborini 2018).

Asian Americans are, however, a diverse group. Not only do their languages, phenotype, and immigration contexts differ by ethnicity, but also their levels of education, average income, wealth, and poverty levels (Min 2006). Intragroup competition among Asian Americans is not uncommon (Okamoto 2003). Not all Asian American subgroups fit the Model Minority Image, and those who don't often suffer because this image prevents them from receiving adequate support (Kim and Sakamoto 2014). For instance, the poverty rate of Bangladeshi Americans (24.4%) is three times higher than that of non-Hispanic Whites (Sakamoto et al., 2009). The college-educated account for only 12 percent of the Hmong and Laotian Americans (Takei et al., 2013).

Despite these diversities in family-SES backgrounds, children of lower-background Asian immigrants tend to be equally successful as their upper-background counterparts (Fishman 2020). Contrary to the expectation of the status attainment theory (Blau and Duncan 1967; Sewell et al., 1970), parents' education and family income do not seem to strongly predict Asian American children's

[1] https://www.census.gov/content/dam/Census/library/visualizations/2021/demo/p60-273/figure2.pdf Accessed on July 5th, 2022

educational success (Fishman 2020; Hsin and Xie 2014; Liu and Xie 2016). Lower-background Vietnamese 1.5 and 2nd + generation Americans are as successful as upper-background Chinese children in obtaining higher education and ensuing labor market performances (Lee and Zhou 2015; Takei et al., 2013). Lee and Zhou (2015) call this phenomenon "the 2nd generation convergence."

2.1. Hyper-selectivity versus culture

The educational success of lower-background immigrants' children has been a puzzle to sociologists. The status attainment theory that family background is an important predictor of children's educational attainment has been certified repeatedly over time and across places and has become well-established sociological common sense. In Fig. 1(I), the association between family SES and children's educational achievement is positive (i.e., $a > 0$). However, the association is weaker for immigrants' children, especially Asian immigrants', if not zero (i.e., $a \approx 0$). The latter association is labeled as the immigrant paradox (Feliciano and Lanuza 2017). Even among immigrants, Asian immigrants' children are more successful than other groups, and the association between SES and educational achievement is weak. How Asian American children can overcome the debacles of family background and whether other ethnoracial minority groups can copy Asian Americans' success strategy are theoretically important for the sociology of immigration, education, and stratification and have relevant policy implications.

There are two competing hypotheses. The first hypothesis pays attention to the unique Asian culture, especially East Asian Confucian culture (Hsin and Xie 2014; Jiménez and Horowitz 2013; Lee and Zhou 2015; Liu and Xie 2016), which manifests as a differentiated individual and family practice such as students' work ethic, attitude toward the malleability of ability by effort, parental expectations, parental pressure, and family resource allocations (Goyette and Xie 1999; Hao and Bonstead-Bruns 1998; Kao and Tienda 1998; Sakamoto et al., 2009; Sakamoto and Wang 2021). Net of family backgrounds and community characteristics, Asian American children exert greater academic efforts than Whites and other minority groups (Hsin and Xie 2014; Harris et al., 2008; Kao and Thompson, 2003; Liu and Xie 2016). Asian parents invest more resources in their children's educational success (Louie 2001). The Confucian cultural explanation, however, cannot account for the success of Asian children from non-Confucian cultures. Without drawing from Confucian culture, upper-middle-class Asian parents guide their children to excel in school as it is their experience and strategy to be successful in their origin and destination countries (Dhingra 2018; Warikoo 2022).

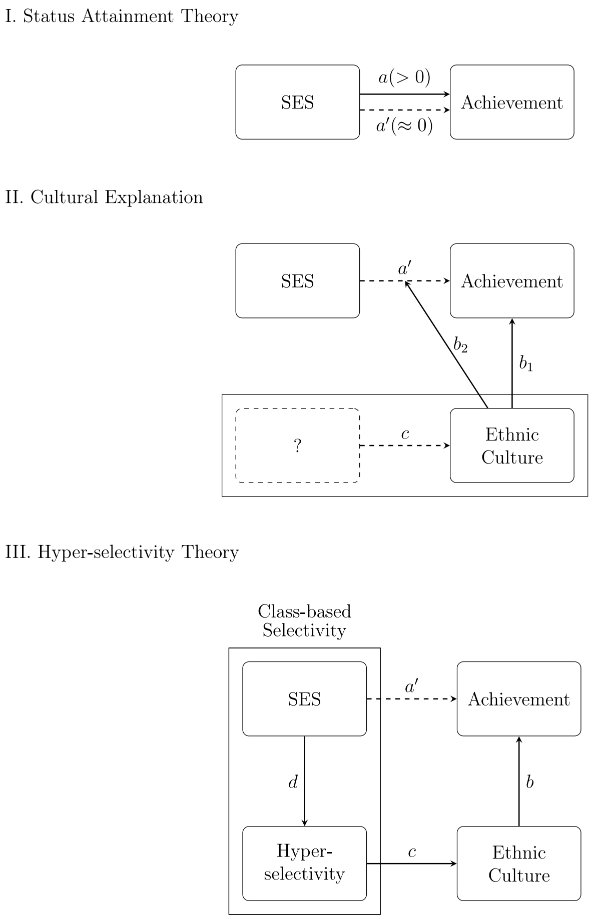

Fig. 1. Theories of Asian American educational Achievement

Although widely mentioned, there is no consensus on how culture operates and where it originates (Hsin 2016). Culture can be parental expectation and pressure (Goyette and Xie 1999; Feliciano and Lanuza 2017), children's effort levels (Hsin and Xie 2014; Liu and Xie 2016), and/or the mindset and frame shared by both parents and children (Lee and Zhou 2015). In the cultural explanation, the origin of such culture is in a black box, implicitly assuming that culture is associated with one's country of origin. Because of this murky theoretical development, the sociological explanation of the immigrant paradox based on culture had stalled (Hsin 2016). Methodologically, culture is often reserved as a last resort after exhausting all plausible explanations (Goyette and Xie 1999; Kao and Tienda 1998; Yamamoto and Holloway 2010). Some admit that culture interacts with structure (Liu and Xie 2016; Feliciano and Lanuza 2017) and consider culture as a moderating factor between structure and educational achievement (Liu and Xie 2016) rather than treating it as an exogenous variable. In Fig. 1(II), culture can affect educational achievement directly through the path of b_1 or indirectly by moderating family background through the path of b_2. In most cultural explanations, culture is regarded as a net-independent factor that cannot be fully regressed to other forces. This paper also uses culture as a residual factor, net of demographic and structural covariates.

The second perspective offers a drastically different view (Lee and Zhou 2015, 2017; Tran et al., 2018, 2019; Zhou and Lee 2017). Lee and Zhou and their colleagues do not deny the role of Asian culture in bolstering Asian American children's educational attainment. Instead, they suggest that Asian American culture is a derivative of the factors associated with hyper-selectivity. By hyper-selectivity, Asian 1st generation immigrants are doubly positively selected. They are relatively more educated than the general population of their origin societies and are even more educated than people in America. According to Lee and Zhou (2015), the hyper-selectivity of Asian immigrants started after the passage of the Immigration and Nationality Act of 1965. Unlike Asian immigrants, Mexican immigrants, the largest immigrant group in America, is hypo-selected, meaning that Mexican immigrants' educational level is lower than American adults and people in Mexico. According to Feliciano (2005, 2020), however, the description of Mexican immigrants as a hypo-selected group may not be accurate as Mexican immigrants are more educated than non-migrants. Nevertheless, from the comparative perspective, Asian immigrants look more positively selected than other immigrants. Lee and Zhou contend that the hyper-selectivity of Asian immigrants is a fundamental cause of the Asian immigrant children's success (Lee and Zhou 2015; Zhou and Lee 2017).

Lee and Zhou (2015) argue that the hyper-selectivity of Asian immigrants is a class-based phenomenon. Doubly positively selected Asian immigrants bring their upper-class culture to the destination society. The mechanism that transforms the class-based culture of the hyper-selected Asian immigrants to a broad ethnic-based culture is the development of the ethnic community. In Fig. 1(III), through the path of *c*, ethnic communities transmit class-based selectivity into a culture. Hyper-selectivity enables Asian Americans "to create distinctive ethnic institutions and adaptation strategies that support a strict success frame across class lines" (Lee and Zhou 2015, p. 191). One such ethnic institution is supplementary education. Asian ethnic entrepreneurship led by hyper-selected groups opens "new business ventures including a sophisticated ethnic system of supplementary education" (p. 37). While the children of Mexican Americans rely exclusively on the resources available in public schools, such as College Board programs, Asian Americans, regardless of their class backgrounds, enjoy the opportunities of diverse supplementary classes and tutoring. Ethnic homophily in friendship networks for Asian American children facilitates the cross-class sharing of ethnic resources (pp. 88–91). Through cross-class interactions within an ethnic community, Asian American children from lower backgrounds can access tangible and intangible resources usually unavailable to the working class. Because Asian Americans share ethnic resources across class lines, the Asian success frame is consistent regardless of class backgrounds and countries of origin.

Contrary to this, all other ethnoracial groups, including native-born non-Hispanic Whites and Mexican immigrants, have differentiated success frames depending on class backgrounds. On top of these ethnic resources, the positive stereotype of Asian Americans helps them to succeed. The positive Model Minority Image is also an outcome of hyper-selectivity. Zhou and Lee (2017) claims that hyper-selectivity is a "root" of the cultural practices such as the success frame, the community mechanism that transforms upper-class culture into the cross-class ethnic culture, and the host society's positive ethnic stereotyping.

Compared to the cultural explanation, hyper-selectivity theory neither denies the existence of unique Asian American culture nor outlines different patterns regarding Asian American families' strategic choices. The main difference between the two perspectives is whether Asian American culture (a set of behavioral and attitudinal patterns) is unique in and of itself and independent of those who migrate to America or a by-product of hyper-selectivity. According to Lee and Zhou, the former is cultural essentialism, and the latter is a structuralistic view of Asian American culture. Lee and Zhou (2015) claim that when it comes to student performance, "there is nothing essential about Asian culture," and "culture operates through ethnic institutions, frames, and mindsets that are formed and reformed through immigrant selectivity" (p. 20). Although Lee and Zhou (2015) contrast their view with cultural explanations, ironically, the hyper-selectivity hypothesis is cultural in that it relies on the assumption that shared middle-class culture can explain the success of Asian American children.[2] Furthermore, considering the duality of structure (Giddens 1986; Fishman 2020) and culture as a toolkit of actions (Swidler 1986; Polavieja 2015), the sharp dualism of culture and structure deviates from the recent sociological discussion.

As shown in Fig. 1, in both the cultural explanation and hyper-selectivity theory, culture affects children's educational achievement through the same path of *b*. In the cultural explanation, culture is a moderating or exogenous factor, while culture is a mediating factor in the hyper-selectivity theory. Because of the similarity between the two views in describing behavioral patterns, attitude (success frame and mindset), and strategic choices in allocating family resources, the typical regression results that show the positive coefficient

[2] We thank the reviewer pointing this out.

of Asian American children or the significant coefficients of the culture-related covariates do not lend more support for one view over the other (Fishman 2020). To our knowledge, no study examines the validity of the hyper-selectivity theory using a statistical method. In his critical review, Sakamoto (2017) describes the hyper-selectivity perspective as an extended exercise in Orwellian doublethink (p. 2013) in that Asian American culture in the hyper-selectivity theory is not culture in itself but rather a spurious covariate completely explained away by demographic changes–i.e., hyper-selectivity of Asian immigrants. However, even in a more extensive critique (Sakamoto and Wang 2021), no empirical test of the hyper-selectivity theory is provided. The empirical assessment of the hyper-selectivity hypothesis remains an elusive task in sociology.

In this paper, we aim to fill this gap. We pay attention to the social capital aspect of the cross-class ethnic resource created by hyper-selectivity. Hyper-selectivity operates in favor of all Asian Americans through the ethnic community. This is the same mechanism by which lower-background children benefit from shared community resources. Previous studies show that lower-background children who have grown up in dense urban areas where resources are concentrated and shared across class lines are more likely to experience upward mobility than their counterparts who have lived in rural areas in which resources are spread out across regions (Chetty et al., 2014; Chetty and Hendren 2018a, 2018b; Choi and Green 2022). These studies utilize the regional variation in assessing the role of the community resource. The same strategy can be applied in examining the validity of the hyper-selectivity hypothesis.

Contrary to the community resources shared by all members, according to hyper-selectivity theory, Asian ethnic resources are supposed to be available almost exclusively to Asian American children. This is partly because Asian Americans maintain more homogeneous ethnic friendship networks than other groups (Kao and Joyner 2006; Quillian and Campbell 2003). Lee and Zhou (2015) argue that the Asian success frame is not superior to the Mexican one, but Asians have better access to supplemental resources. Suppose other racial and ethnic groups had access to the shadow education system built by Asian immigrants, for example. In that case, supplementary education could be a community resource boosting the educational performance of all groups.

In Fig. 1(III), the transition from class-based resources to culture is mediated by local ethnic communities. The effect of hyper-selectivity on children's achievement is mediated by culture. Thus, the association between hyper-selectivity and children's achievement will be positive without controlling for cultural covariates. Because ethnic institutions are created and nurtured as a result of hyper-selectivity, we can reasonably assume that the positive effect of Asian culture is a function of the proportion of highly-educated Asian immigrants in a community. That is, omitting culture from Fig. 1, hyper-selectivity will be positively associated with Asian American children's educational achievement.

Indeed, this is a shared analytical strategy between two perspectives. Lee and Zhou (2015) discuss the variation in the hyper-selectivity of Chinese Americans across regions (pp. 38–41), suggesting that "With no access to ethnic resources, their prospects for mobility may be just as precarious as those of working-class children from non-Asian and non-hyper-selected ethnoracial backgrounds" (p. 192). That is, they suggest that Asian American children's success will vary across regions depending on the magnitude of the hyper-selectivity. Contrary to this, Sakamoto repeatedly mentions that Asian children in College Station, Texas, are as successful as Asian children in Los Angeles (Sakamoto 2017; Sakamoto and Wang 2021), implying that Asian American children's success does not vary across regions because Asian American culture is an independent factor in itself and not the second moment of the hyper-selectivity (although Asian Americans in College Station, Texas, the town of Texas A&M University, can be hyper-selected).[3] Under this backdrop, we test the following two hypotheses.

Hypothesis 1. If the hyper-selectivity perspective is valid, the higher the proportion of highly-educated 1st generation Asian immigrants in a community, the more Asian American children will be successful academically.

Hypothesis 2. If the benefits of the resources created by hyper-selectivity are shared across class lines within the Asian American ethnic community, Asian American children from lower-family backgrounds will be more successful in a community of higher hyper-selectivity than in a community of lower hyper-selectivity.

The hyper-selectivity theory has an implication on the main coefficient of being Asian American as well. According to the hyper-selectivity theory, the net positive coefficient of being Asian American is the outcome of access to ethnic resources. Thus, a strong version of the hyper-selectivity hypothesis will predict the null effect of being Asian American after controlling for the magnitude of hyper-selectivity. Asian American children from lower backgrounds or non-hyper-selected ethnic groups will be as precarious as non-Asian children if the proportion of Asian immigrants with a bachelor's degree in the community is similar to other ethnoracial minorities.

Hypothesis 3. If the strong version of the hyper-selectivity perspective is valid, after controlling for the hyper-selectivity of Asian immigrants in a community, the net educational performance of Asian American children will be similar to other groups. At a minimum, a noticeable portion of the positive coefficient of being Asian American will be accounted for by the hyper-selectivity of Asian immigrants.

Contrary to the hyper-selectivity theory, the cultural perspective will predict the null association between the proportion of highly-educated 1st generation Asian immigrants and Asian American children's performance. It will also predict that no alteration to the extent to which Asian American children perform better than other groups before and after the control of the hyper-selectivity. The null findings do not directly support cultural explanations but imply that cultural explanations cannot be dismissed.

Other than immigrant selectivity and ethnic capital, the attitude of the host society, including teachers' evaluation and attitude

[3] Wang and Sakamoto (2021) show that intergenerational educational mobility among Hispanics tends to be higher in areas with a larger college-educated population.

toward Asian American students, contributes to the gap between Asian Americans and other groups (Lee and Zhou 2015). Hyper- and hypo-selectivity of immigrants affect the formation of the host society adaptation (Tran et al., 2018; Zhou and Lee 2017). From Lee and Zhou (2015), it is unclear whether the host society's attitude varies across communities because it is formed through and influenced by local ethnic communities or the attitude is constant across regions because the overall selectivity at the national level shapes the attitude of the host society. Given that Whites' attitudes toward ethnoracial minorities, including Asian Americans, vary across broad regions (Ho and Jackson 2001; Taylor and Mateyka 2011), we tentatively assume that local hyper-selectivity influences the attitude of the host community. Nevertheless, as we discuss later, we are cautious in the interpretation of our results because there is a possibility that the universal attitude of the host society toward Asian Americans can boost Asian American children's performance.

3. Research strategy

3.1. Data and dependent variables

The biggest challenge in testing two contrasting perspectives is finding a dataset with enough sample sizes and all the necessary information. We need demographic information, family backgrounds, and children's educational performance. Several datasets provide such information, including the Panel Study of Income Dynamics (PSID) and the National Longitudinal Surveys of Youth (NLSY). However, the overall sample size of Asian children in these surveys is small. Because of that, many studies employing these datasets do not analyze Asian Americans in their racial comparisons (e.g., Ferrare 2016). Furthermore, we need enough observations of Asian American children within each community, not just enough national Asian American samples. The National Education Longitudinal Study of 1988 (NELS:88) and the National Longitudinal Study of Adolescent to Adult Health (Add Health) are the other datasets to consider. However, NELS:88 and Add Health do not provide detailed area information such as county even in the restricted-access data. The only way to obtain such data is by combining multi-year American Community Survey (ACS) datasets. To this end, we utilize the 2005 to 2019 Integrated Public Use Microdata Series (IPUMS) ACS (Ruggles et al., 2022). The 2001–2004 ACS are excluded because of the lack of information to identify the community. We stop at 2019 because the onset of COVID-19 can influence school enrollment and how college students respond to the residency question.

There are several limitations to this combined dataset. First, we can observe family backgrounds only if children are co-residing with their parents. Second, the effects of hyper-selectivity operate through communities in which students are growing up. When respondents move to another community after completing their education or while attending college, their current residency does not reflect the community's hyper-selectivity that influences the respondents' educational performance.

We construct two datasets by limiting the sample, first, to 15-18-year-olds who had not completed high school education at the time of the survey (we call this the high school sample) and, second, to 18-22-year-olds who had completed a high school education[4] but had yet to earn a bachelor's degree (we call this the college sample). We limit our analytical sample to those currently living with at least one parent (live w/parents sample). Our final target population is 2nd + generation Whites and 1.5 or 2nd + generation Asian Americans and Hispanics living with at least one parent (target sample). We refer to those who migrated before age 13 as 1.5 generation and those born in the U.S. as 2nd + generation. As for ethnoracial groups, we restrict our sample to Asian Americans, Hispanics, and native-born non-Hispanic Whites (Whites hereafter), setting Whites as the reference group. These are all self-identified single-race groups.

Our main dependent variable is whether the respondent is currently enrolled in school (1) or not (0). Our dependent variable does not measure the completed educational attainment. However, the school enrollment pattern by race is the same as educational attainment by race (National Center for Education Statistics, 2020). Two samples enable us to test the role of hyper-selectivity at both the high- and low-ends of the educational distribution. Our sample restriction and dependent variable are similar to Choi and Green (2022), which studies the association between MSA-level college share and children's school enrollment.

For the high school sample, there would not be much concern about the sample restriction to those who live with their parents as most respondents live with their parents. For the college sample, the selection into living with parents can bias our results. However, we argue that this is unlikely. As we will discuss in detail later, our main interest is the interaction coefficient between being Asian American and hyper-selectivity across communities. If living with parents has a similar association with school enrollment regardless of race, our estimates, which compare Asian Americans to other ethnoracial groups, will not be biased. Even though the associations between living with parents and school enrollment differ by race, as long as it is not systematically associated with hyper-selectivity across communities, our main variables of interest would not be biased. To further examine whether our results are sensitive to selection bias, we calculate the probability of living with parents based on the observable and apply the inverse of that probability as a weight. Understandably, coefficients differ slightly, but importantly our conclusions about hyper-selectivity hold regardless of data settings. Nevertheless, we are cautious in interpreting our findings.

3.2. Main independent variables

The main independent variable is the proportion of bachelor's degree holders (*pBA*) among the 1st generation Asian immigrants within the community where the respondents live. We calculate this measure for those who are 22 or older adults. Some may wonder

[4] Including those who did not earn a high school diploma does not alter the conclusion.

whether selectivity can vary depending on the origin country. It should be noted that hyper-selectivity means that Asian Americans are more educated not only compared to the people in the origin country but also compared to the US White population. Thus, our measure is consistent with the definition of hyper-selectivity: the higher *pBA* among Asian immigrants, the more hyper-selected they are. A caveat is that *pBA* among Asians across communities can be correlated with *pBA* in the general population. For example, in a small college town, most Asian Americans would be highly educated not because of the immigrant hyper-selectivity but because of the characteristics of the town. Indeed, Asian immigrants tend to be concentrated in highly-educated towns, and the correlation coefficient between *pBA* in general and *pBA* among Asian immigrants is relatively high (see Appendix Table A2 for detail). It is important to estimate the net impact of the hyper-selectivity after taking care of the overall characteristics of the town. Also, Hispanic immigrant children's educational performance can be associated with *pBA* among Hispanic immigrants. To take care of these issues, we add two additional community-level proportions of the BA + holders in our regression models: *pBA* among the total 22+ year old population and *pBA* among 1st-generation Hispanic immigrants.

To define the community, we adopt the idea of commuting zones (CZs). CZs are developed to define the local economy and labor market areas that are not necessarily bounded by administrative borders such as county or state (Tolbert and Sizer 1996). CZs are constructed without regard to minimum population size. The central objective of CZs is to develop a geographic unit that captures the economic and social diversity. As long as the ethnic institutions and communities are developed along the local labor market, CZs are a good unit of the ethnic community. We also argue that students are likely to perform various academic and non-academic activities within the same geographic boundaries where their parents do daily labor market activities. Previous studies such as Chetty et al. (2014) utilized CZs in examining the effect of geography on intergenerational mobility. The procedure of allocating individuals into CZs follows Autor and Dorn (2013) and VanHeuvelen (2018). Those who live in counties or Public Use Microdata Areas (PUMAs) that do not belong to one CZ exclusively are split into the overlapping CZs. Survey weights are multiplied by the adjustment factor to obtain correct CZ-level estimates. The total number of CZs in our analysis is 722, covering the contiguous U.S.

The sample size of the Asian population within each CZ is not large enough in a one-year ACS to compute *pBA* among the 1st generation Asian immigrants. Thus, we combine annual ACS datasets into three 5-year samples: 2005–2009, 2010–2014, and 2015–2019. Survey weights are adjusted so that each 5-year sample represents the contiguous U.S. as a whole. With this sample, we estimate the local magnitude of hyper-selectivity as *pBA* in each CZ. The total number of CZ observations over three periods is 2166.

3.3. Statistical models and control variables

Using the variables discussed above, we estimate the following logit models:

$$\begin{aligned} \ln\left(\frac{pijct}{1-pijct}\right) &= \alpha + \beta_j R_{ijct} \\ &+\gamma^a pBA_{ct}^{All} + \sum \gamma_j^b \left(pBA_{ct}^{All} \times R_{ijct}\right) \\ &+\delta^a pBA_{ct}^{ASN} + \sum \delta_j^b \left(pBA_{ct}^{ASN} \times R_{ijct}\right) \\ &+\zeta^a pBA_{ct}^{HSP} + \sum \zeta_j^b \left(pBA^{HSP} \times R_{ijct}\right) \\ &+ \sum \lambda_k C_{kct} + \sum \eta_l C_{ilct} + \sum \theta_m H_{tmct} + T_t + R_r \end{aligned} \tag{1}$$

where p_{ijct} is the probability of enrolling in a school for individual *i* of race *j* in CZ *c* at period *t*. Logit models are preferred to the Linear Probability Models (LPM) in this study. Because the probability of school enrollment for the high school sample is near perfect, the expected probabilities of the LPM estimates can be outside the possible probability range. R_{ijct} is a set of ethnoracial group dummies, setting Whites as a reference group. As noted above, pBA_{ct} refers to the proportion of BA+. pBA^{All} is the proportion of BA + among the total 22 or older population; pBA^{ASN} and pBA^{HSP} are those among 1st generation Asian and Hispanic immigrants. All *pBA* variables are centered on the national average. Thus, β_j quantifies the relative log odds of enrolling in a school for Asian American and Hispanic children relative to Whites when all three *pBA*s equal the national average. The strong version of the hyper-selectivity hypothesis predicts non-significant β_{ASN} compared to either Whites or Hispanics, net of all covariates.

All *pBA* are multiplied by 100. A unit change in *pBA* is a 1 percentage point increase in the proportion of BA+. Thus, γ_j^a, the main effects of the proportion of BA+, measures the expected changes in log odds that all ethnoracial groups share as the proportion of BA + increases by 1 percentage point in the community. The coefficients of the proportions of BA + among immigrants, δ_j^a and ζ_j^a, assess whether the concentration of well-educated immigrants brings additional advantages to the community beyond the benefit of living in a highly educated local community. It should be noted that a statistically significant positive δ^a (or ζ^a) connotes that the benefits of cultural institutions such as supplementary education are not exclusively applied to immigrants' children. Instead, they are shared with other groups. Our main interest is whether δ_{Asn}^b, the interaction between pBA^{ASN} and R_{ASN}, is statistically significantly positive or not. If hyper-selectivity of Asian immigrants benefits Asian American children exclusively or more than other groups, δ_{Asn}^b should be statistically significantly positive.

To test the cross-class nature of the hyper-selectivity, we examine three-way interactions: the interactions of *pBA* and *R*, with household SES variables. Household SES is measured in two ways: first, whether respondents' household is below the poverty threshold (1) or not (0),[5] and second, whether the highest level of the parents' education is not college educated (1) or college educated (0). If hyper-selectivity contributes to the 2nd generation convergence, the three-way interaction will be significantly positive to offset the negative coefficient of the lower household backgrounds.

We also estimate equation (1) after desegregating Asian American population by ethnicity: Chinese (including Taiwanese), Filipino, Korean, Vietnamese, Other South East Asian, Asian Indian, and Other Asians.[6] If hyper-selectivity benefits non-hyper-selected Asian ethnic groups, children of the non-hyper-selected ethnic groups, such as Vietnamese and Other South East Asians, will perform better in CZs with higher pBA^{ASN} after controlling for parental education.

Equation (1) controls for an extensive set of the individual-, household-, and CZ-level covariates. Individual-level covariates, X_{ilct}, include gender and age. Family-level variables, H_{imct}, consist of a single mother, single father, father's age, mother's age, the highest levels of education for parents, and log-transformed family income after adjusting inflation. CZ-level covariates, C_{kct}, are log total population size of the CZ, the proportion of finance sector employment, the proportion of manufacturing sector employment, employment rate, median family inflation-adjusted income, poverty rate, the proportion of Whites, the proportion of Blacks, the proportion of Asian Americans, the proportion of Hispanics, and the proportion of native-born. Unless specified otherwise, all CZ-level covariates are computed using the total population. All CZ-level variables are measured separately in three periods. On top of these covariates, period fixed effects, T_t, and nine Census region fixed effects, R_r, are added. Because our main variable of interest is a group-level covariate, robust cluster standard errors by CZ × Period are reported. All estimates are weighted.

4. Empirical findings

Table 1 shows the descriptive statistics. It is well-known that Asian Americans and Hispanics are concentrated in areas where the same ethnic groups live. Indeed, the proportion of Asian Americans in the U.S. is around 5.7%, while the proportion of Asian Americans in the CZs where Asian Americans live is 8.9%. A similar pattern is evident for Hispanics. While the proportion of Hispanics in the U.S. is 18.0%, the population density of Hispanics in the CZs where Hispanics live is 31.8%.

The proportion of BA + holders among 1st generation Asian immigrants, pBA^{ASN}, is noticeably higher at 49.7% than the national average of 28.4%, let alone compared to Hispanic immigrants (9.5%). More than 94% of 1.5 and 2nd + generation Asian American children are living in CZs where pBA^{ASN} is higher than the national average, while almost the entire 1.5 and 2nd + generation Hispanic children are living in communities where pBA^{HSP} is lower than the national average. Nevertheless, there are substantial variations in pBA across CZs. In the 2015–2019 ACS, 167 CZs out of the total 722 show that pBA^{ASN} is lower than the national average. There are 30 CZs in which pBA^{HSP} is greater than the national average.

Asian Americans are heavily concentrated in the CZs of high education. The correlation coefficient between Asian American density and pBA^{All} across CZs is .561, while that for Hispanics is .013 (see Appendix Table A2 for details). The correlation between Asian American density and pBA^{ASN} is near zero. That is, Asian Americans are not concentrated in communities where the magnitude of hyper-selectivity is high. Instead, they tend to live in places where the general population is well-educated. While the West is the region with high Asian American density, as seen in Fig. 2, its degree of hyper-selectivity appears relatively lower than that in other regions. The only dark spot in the West is the San Jose area in Fig. 2(A). For Hispanics, the association of Hispanic density with pBA^{HSP} is negative (−0.314), and that with pBA^{All} is virtually zero (0.013). Interestingly, White density is negatively correlated with pBA^{All}, but positively correlated with pBA^{HSP}. This indicates that well-educated Hispanic immigrants are not sharing the same CZs with less-educated co-ethnics. Instead, highly-educated Hispanic immigrants are likely to live in the CZs with a high density of Whites. As visibly evident in Appendix Figure A1, Hispanic density and immigrant selectivity across CZs are starkly separated.

As for the proportion of in-school, most 15-18-year-old respondents in the high school sample attend a school. There are small differences across races. Asian Americans (98.2%) are slightly more likely to enroll than the other two groups (95.0% for Hispanics and 96.3% for Whites). As for college enrollment, there is a substantial variation across ethnoracial groups. While 54.9% of Hispanics and 63.7% of Whites are currently in-school, a whopping 84.6% of 18–22-year-old Asian Americans attend school after obtaining a high school diploma. Some of these ethnoracial gaps reflect the differences in family background. Among respondents who live with their parents, around half of Asian parents are college educated, while White and Hispanic parents are one-third and one-eighth, respectively.

A concern when we limit our sample to those who live with parents is the possibility that our estimates are biased because school enrollment rates differ substantially by the status of living with parents. As expected, the proportion of respondents who live with parents is much smaller in the college sample than in the high school sample and varies by race. Six-tenth of 18–22-year-old Asian Americans live with their parents. The incidence for Whites is 10 percentage points lower than Asian Americans, while that for Hispanics is 7 percentage points higher. In the high school sample, in-school rates are remarkably consistent regardless of whether they live with parents or not. In the college sample, the gaps in in-school rates between all respondents and those who live with parents are larger than those in the high school sample but still quite small for all three ethnoracial groups.

Next, we explore the associations between school enrollment and the proportion of BA + across CZs. Fig. 3 presents the association between pBA^{ASN} and school enrollment. Most respondents in the high school sample are in-school, so the associations between high

[5] We also used the 125 percent of the poverty threshold, finding the same results.

[6] We classify Japanese Americans to Other Asians because of their small sample size. Models combining Japanese with other East Asians yield the same results.

Table 1
Descriptive statistics.

	Asian Americans	Hispanics	Whites
I. CZ Characteristics			
% BA: 1st Gen Immig/National Mean[a]	0.497	0.095	0.284
(10th percentile CZ)	0.375	0.050	0.178
(90th[b]percentile CZ)	0.662	0.156	0.393
Population Density[b]	0.089	0.318	0.705
(10th percentile CZ)	0.021	0.079	0.459
(90th percentile CZ)	0.210	0.532	0.912
II. High School Sample: 15–18 Years Old			
Live w/Parents	0.963	0.931	0.953
School Enrollment: All	0.982	0.950	0.963
(Live w/Parents)	0.984	0.959	0.968
Female	0.492	0.481	0.477
Age	16.1	16.2	16.2
Both Parents Present	0.837	0.746	0.763
Household Income ($)	124,306	63,032	118,789
College Educated Parents	0.567	0.132	0.435
Poverty	0.112	0.262	0.092
Sample Size of All Respondents	82,313	488,180	2,239,650
Sample Size of Live w/Parents	79,026	449,292	2,119,290
Sample Size of Target Population	74,142	260,170	2,021,050
III. College Sample: 18–22 Years Old			
Live w/Parents	0.590	0.690	0.517
School Enrollment: All	0.846	0.549	0.637
(Live w/Parents)	0.831	0.567	0.606
Female	0.466	0.484	0.457
Age	19.9	20.0	19.9
Both Parents Present	0.806	0.735	0.742
Household Income ($)	112,959	75,400	120,143
College Educated Parents	0.467	0.127	0.372
Poverty	0.097	0.149	0.054
Sample Size of All Respondents	107,638	478,804	2,488,538
Sample Size of Live w/Parents	57,100	297,442	1,230,360
Sample Size of Target Population	53,970	187,145	1,168,843

Note: All personal and family characteristics are estimated using the target sample, which limits to 1.5 and 2nd + gene[a]ation Asian American and Hispanic children living with their parents and 2nd + generation white children.

[a] The proportion of BA + for Whites is not the proportion of BA + among Whites, but that among the whole American population.

[b] Population density is estimated based on the whole population regardless of migration status.

school enrollment and *pBA* are mostly flat. Regarding college enrollment, the rates are positively associated with Asian immigrants' hyper-selectivity in Fig. 3(B). This positive association is, however, not unique to Asian Americans. The school enrollment rates for Hispanics and Whites are also higher in CZs, where Asian immigrants are more hyper-selected. The tendency that respondents are more likely to enroll in a school where *pBA* is higher is evident not only when pBA^{ASN} is used but also when pBA^{All} and pBA^{HSP} are applied (see Appendix Fig. A3). All three ethnoracial groups show a similar pattern. The interesting point is that the slope for each ethnoracial group seems to be relatively steeper to *pBA* of their own race than to *pBA* of the other groups. Another noteworthy point is that regardless of which *pBA* is applied, Asian Americans tend to show higher school enrollment rates than other groups across all *pBA* levels. A research question is whether the higher likelihood of school enrollment for Asian Americans is still evident after controlling for family background and CZ characteristics.

4.1. Hyper-selectivity and Asian American Children's school enrollment

Table 2 presents the main results.[7] Before investigating the association between *pBA* and school enrollment, we first check whether the estimated coefficients of ethnoracial groups show the same pattern when we use school enrollment as a dependent variable compared to the previous studies using the highest degree or college completion as their dependent variables. Model 1 is without, and Model 2 is with family background controls. Both high school and college samples exhibit that before controlling for family background, 1.5 and 2nd + generation Asian Americans are advantaged relative to White natives while Hispanics are disadvantaged. Net of family SES backgrounds, both Asian American and Hispanic immigrants' children become advantaged compared to White natives. The disadvantage of the Hispanic immigrants' children is fully accounted for by family backgrounds. These results are consistent with the immigrant paradox reported in previous studies (Feliciano 2020). Between Asian Americans and Hispanics, Asian Americans are more advantaged in the college sample, and no difference is evident in the high school sample, which is again consistent with previous studies (Feliciano 2020; Fishman 2020; Lee and Zhou 2015; Sakamoto et al., 2009).

[7] The full results are presented in Appendix Table A3.

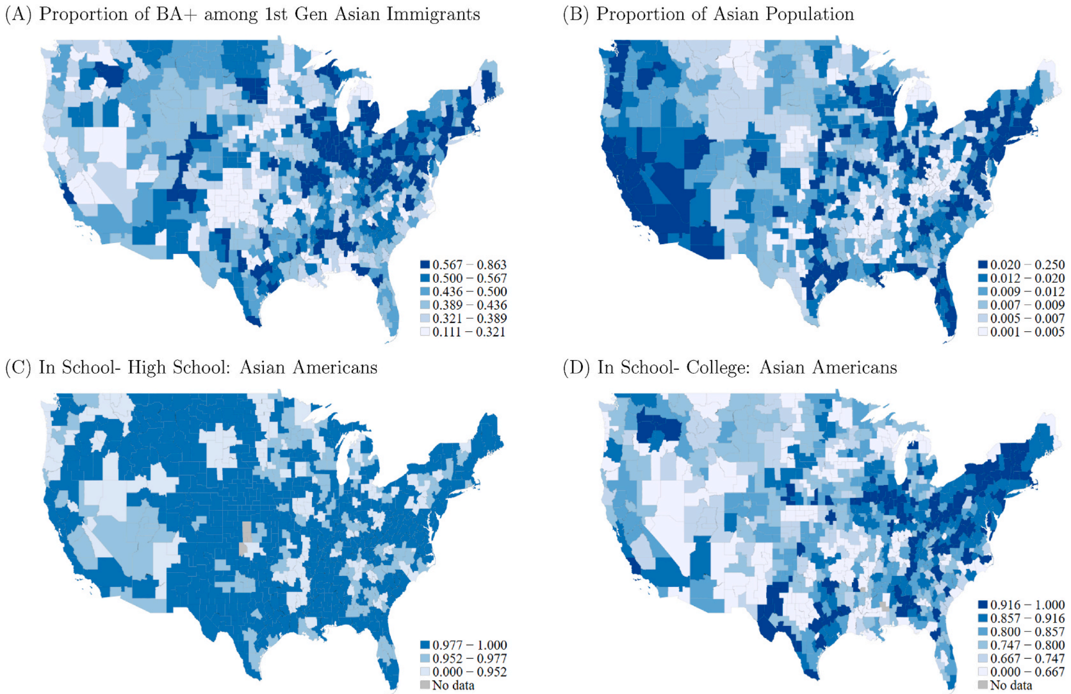

Fig. 2. Asian Americans: Immigrant Selectivity, Population Density, and School Enrollment
(A) Proportion of BA + among 1st Gen Asian Immigrants, (C) In School- High School: Asian Americans, (B) Proportion of Asian Population, (D) In School- College: Asian Americans, *Note*: The proportion of BA is among the 1st generation Asian immigrants who are 22 or older. The proportion of the Asian population is the proportion of the entire Asian population in the CZ. The high school enrollment rate refers to the proportion of those who are in-school among 15–18 years old 1.5 and 2nd + generation Asian children who did not earn a high school diploma yet. The college enrollment rate is the proportion of those who are in-school among 18–22 years old 1.5 and 2nd + generation Asian children who graduated from high school but yet earn a BA. All time periods are combined.

Next, we add the proportions of BA + holders in Models 3 and 4, interacting them with ethnoracial groups. Our main interest is to assess whether Asian immigrants' hyper-selectivity, pBA^{ASN}, is significantly positively associated with the likelihood of school enrollment for Asian American children. For both high school and college samples, the interaction terms look positive in Model 3, which, thus, seems to support the hyper-selectivity hypothesis. However, after controlling for family backgrounds in Model 4, the interaction terms become statistically zero or even negative. In the high school sample, the statistically significant positive interaction coefficient in Model 3 becomes statistically significantly negative in Model 4. In the college sample, the strongly positive interaction coefficient in Model 3 disappears in Model 4. This implies that the positive impact of hyper-selectivity for Asian Americans is fully accounted for by family background covariates. That is, Asian American parents in the CZs of high hyper-selectivity tend to be highly educated, and their children are likely to attend school. Beyond this individualistic association, residing in a higher pBA^{ASN} CZs does not raise the probability of school enrollment.

Some will wonder whether the change in the interaction coefficient in the college sample from .014 in Model 3 to 0.001 in Model 4 is a pure statistical coincidence. Upon close inspection, while the interaction terms between pBA^{ASN} and Asian Americans move from positive to non-significant, the interaction terms between pBA^{All} and Asian Americans move from non-significant to positive. That is, they seem to offset each other. To address this concern, we estimate a new model removing the interaction terms between pBA^{All} and ethnoracial groups from Models 3 and 4 (not shown here[8]). The result is not altered. The interaction between pBA^{ASN} and Asian Americans is strongly positive ($\alpha < 0.001$) before the control of family covariates but becomes statistically null after the control.

In Model 4, the main effect of pBA^{ASN} is significantly positive, which indicates that if Asian immigrants build a supplementary educational system in a community, its benefits are shared by all members rather than monopolized by Asian Americans. That is, contrary to the hyper-selectivity theory, Asian American community resources do not seem to be ethnic-specific. Interestingly, the interaction between pBA^{All} and Asian Americans is positive in Model 4. This implies that 1.5 and 2nd + generation Asian Americans perform better in places where the general population is more educated, while they do not perform better in places where Asian immigrants are more hyper-selected. Asian Americans appear to utilize tangible and intangible community resources to their favor, which are not limited to Asian Americans but are accessible to all groups in that community. These results are at odds with the hyper-selectivity perspective and do not support Hypothesis 1.

[8] The results not shown here can be obtained from the authors upon request.

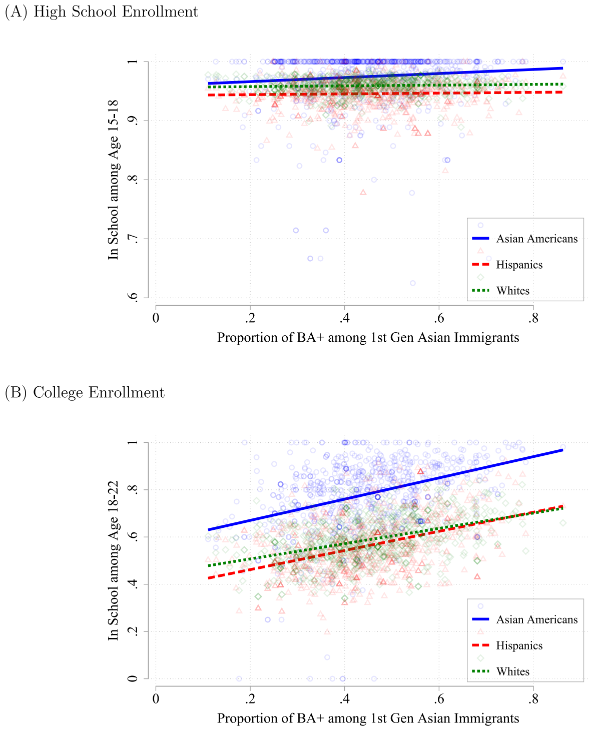

Fig. 3. Association between School Enrollment and the Proportion of Bachelor's Degree Holders (BA+) among Asian immigrants across CZs (A) High School Enrollment, (B) College Enrollment, *Note*: The proportions of BA+ is among 22 or older 1st generation Asian immigrants. The high school enrollment rate refers to the proportion of those who are in-school among 15–18 years old 1.5 and 2nd + generation Asian/Hispanic and 2nd + generation White children who did not earn a high school diploma yet. The college enrollment rate is the proportion of those who are in-school among 18–22 years old 1.5 and 2nd + generation Asian/Hispanic and 2nd + generation White children who graduated from high school but yet earn a BA. All time periods are combined.

Table 2
Logistic regression estimates on the probability of school enrollment.

	High School Sample: 15–18 Years Old				College Sample: 18–22 Years Old			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Control Variables								
Technical	O	O	O	O	O	O	O	O
Demographic	O	O	O	O	O	O	O	O
CZ-level	O	O	O	O	O	O	O	O
Household-level		O		O		O		O
(Ref: 2nd + Gen non-Hisp. Whites)								
Asian American	0.371***	0.625***	0.439	1.045***	1.063***	1.195***	0.715***	1.056***
Hispanic	−0.448***	0.565***	0.413***	0.731***	−0.307***	0.276***	0.367***	0.509***
pBA^{All}			0.024***	0.010			0.013***	0.001
pBA^{All} × Asian Am.			−0.020**	−0.002			−0.001	0.014**
pBA^{All} × Hispanic			−0.018***	−0.001			−0.002	0.011***
pBA^{ASN}			0.000	0.000			0.001	0.002**
pBA^{ASN} × Asian Am			0.010*	−0.008*			0.014***	0.001
pBA^{ASN} × Hispanic			−0.006**	−0.006**			−0.007***	−0.007***
pBA^{HSP}			−0.000	0.000			−0.000	0.000
pBA^{HSP} × Asian Am.			0.012	0.014			−0.005	−0.005
pBA^{HSP} × Hispanic			0.036***	0.003			0.027***	0.006
Log Likelihood	−3566,076	−3376,846	−3562,259	−3376,284	−12,044,219	−11,392,588	−12,034,656	−11,389,608
N	2,355,362	2,355,362	2,355,362	2,355,362	1,409,958	1,409,958	1,409,958	1,409,958

Note: Technical variables are 3 survey periods and 9 Census regions; Demographic covariates are gender and age; Household-level covariates include single motherhood, single fatherhood, father's age, mother's age, parents' highest education (less than high school, high school, some college, BA, MA, Professional and PhD, log adjusted household income; CZ-level covariates consist of log population size, % finance sector employment, % manufacturing sector employment, employment rate, median household income, poverty rate, % White population, % Black population, % Asian American population, % Hispanic population, and % Native-born.
$^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$ (two-tailed tests).

In Table 3, we present the predicted probabilities based on four assumptions regarding parents' education and immigrant selectivity. First, we assume that (A) the distributions in parents' education and immigrant selectivity vary by ethnoracial groups, and all other variables are fixed at their grand means. Second, (B) the distributions in parents' education vary by ethnoracial groups, but not by immigrant selectivity. Both pBA^{ASN} and pBA^{HSP} are fixed at the same level with pBA^{All}. Thus, the difference between (A) and (B) quantifies the role of immigrant selectivity in accounting for school enrollment. Third, (C) the distributions in parents' education are fixed at the grand means for all three groups, but immigrant selectivity varies between Asian Americans and Hispanics. The gap between (A) and (C) measures how much school enrollment is associated with the difference in parents' education. Fourth, (D) there is no difference in parents' education or in immigrant selectivity. (D) Is the expected enrollment rate when all variables are equal across groups. In a residual approach, the difference between ethnoracial groups in (D) can be attributed to culture.

In the high school sample, all three groups show near-perfect probabilities of enrollment. Nevertheless, that for Asian Americans is slightly higher than the other two groups. In the college sample, the predicted enrollment for Asian Americans is .808 in (D), which is 0.214 and 0.099 points higher than Whites and Hispanics, respectively. These gaps are statistically significant at any conventional alpha level. These findings do not support the strong version of the hyper-selectivity hypothesis (Hypothesis 3). Even when immigrant selectivity, family background, and other community-level covariates are equal for all three groups, Asian Americans are still significantly more likely to attend school than their White and Hispanic counterparts. The net advantage of being Asian American in (D) is consistent with the cultural perspective.

The difference between (A) and (D) depicts how much school enrollment can change due to immigrant selectivity and parents' education. For Asian Americans, the difference is relatively small. When we assume pBA^{ASN} is the same as pBA^{All}, the predicted probability in the college sample is reduced only by a 0.7% point, which is not statistically significant. If the distribution of parents' education for Asian Americans is the same as the other groups (i.e., fixed at the grand means), a mere 1.7% point reduction is expected. In both high school and college samples, Asian Americans' school enrollment is not elastic to coethnic immigrants' selectivity.

For Asian Americans and Whites, the expected enrollment varies little across the four scenarios, but that is not the case for Hispanics. There are several noteworthy findings about Hispanics. First, the main reason why Hispanics are behind Whites in school enrollment is related to the difference in family backgrounds. When the distribution of parents' education is assumed to be the same in (C), Hispanics are more likely to enroll in school than Whites, which is consistent with the immigrant paradox. Second, the strong positive interaction term between pBA^{HSP} and Hispanics in Model 3 of Table 2 evaporates when household covariates are added in Model 4. Third, the interactions between pBA^{ASN} and Hispanics are consistently negative both in high school and college samples before and after the control of household covariates. Hispanic children's educational performance is worse in CZs where Asian immigrants are more positively selected. Put differently, the educational gaps between 1.5 and 2nd + generation Asian Americans and their Hispanic counterparts are wider in places where Asian immigrants' selectivity is higher. This is not because Asian American children perform better in such communities but because Hispanic children are doing worse.

4.2. *Is hyper-selectivity more beneficial to lower-background children?*

The hyper-selectivity perspective claims that the prominent educational achievement of lower-background Asian American children is an outcome of hyper-selectivity and shared ethnic resources. We assess the three-way interaction effects between *pBA*,

Table 3
Predicted School Enrollment Assuming No Differences in Parents' Education and/or No Immigrants Selectivity.

	Predicted Probability[a]			Δ from Asian Am		%Δ relative to (A)	
	Asian Am	Hispanics	Whites	Hispanics	Whites	Hispanics	Whites
I. High School Sample							
(A) Diff in Parents' Edu & Immig Selectivity	0.989	0.974	0.979	0.015***	0.010***		
(B) Diff in Parents' Edu & No Immig Selectivity	0.992*	0.978	0.979	0.015***	0.014***	1.3	−39.7
(B1) No Asian Hyper-selectivity	0.990	0.977	0.979	0.014***	0.012***	7.5	−18.7
(B2) No Hispanic Hyper-selectivity	0.991	0.975	0.979	0.016***	0.012***	−7.8	−24.7
(C) No Diff in Parents' Edu & Immig Selectivity	0.987	0.986***	0.976***	0.001	0.011***	93.7 ***	−15.4
(D) No Diff in Parents' Edu & No Immig Selectivity	0.991	0.988***	0.976**	0.003	0.016***	78.9 ***	−61.1 *
II. College Sample							
(A) Diff in Parents' Edu & Immig Selectivity	0.843	0.581	0.623	0.262***	0.220***		
(B) Diff in Parents' Edu & No Immig Selectivity	0.825	0.633**	0.616	0.193***	0.209***	26.4 *	4.7
(B1) No Asian Hyper-selectivity	0.836	0.609***	0.615	0.228***	0.221***	13.0 **	−0.6
(B2) No Hispanic Hyper-selectivity	0.832	0.605	0.624	0.227***	0.208***	13.5	5.1
(C) No Diff in Parents' Edu & Immig Selectivity	0.826*	0.662***	0.601***	0.165***	0.225***	37.2 ***	−2.5
(D) No Diff in Parents' Edu & No Immig Selectivity	0.808	0.709***	0.594***	0.099**	0.214***	62.2 ***	2.7

Note: Predicted probabilities are estimated based on Model 4 of Table 2. Unless specified otherwise, parents' educations are set to ethnoracial group specific means and *pBA* are set to the each mean value of pBA^{All}, pBA^{ASN}, and pBA^{HSP}. No difference in parents' education assume that all three groups have the same parents' educational distribution at their grand means. No immigrant selectivity assumes that pBA^{ASN} and pBA^{HSP} are equal to the mean of pBA^{All}.

[a] Significance levels for predicted probability columns indicate the statistically significant difference from (A). All predicted probabilities are statistically different from zero at $p < 0.001$.

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$ (two-tailed tests).

ethnoracial groups, and family backgrounds to test this hypothesis. Table 4 presents the results.

There is no evidence that the good educational performance of lower-background Asian Americans can be explained by hyper-selectivity. We measure family backgrdouns with two variables: parent edcuation and poverty. Let's discuss the parent education models first. In the high school sample, no three-way interaction for Asian Americans is statistically significant. In the college sample, Asian Americans with less-educated parents are more likely to enroll in a school in CZs where *pBA* is higher. However, *pBA* that matters is not pBA^{ASN} but pBA^{All}. The two-way interaction between pBA^{All} and less-educated parents are negative, but the three-way interactions between pBA^{All}, less-educated parents and Asian Americans/Hispanics are substantially largely positive to offset the negative two-way interaction coefficient. It seems that what matters for lower-background immigrants' children is the general community resources rather than Asian Americans' ethnic-specific resources.

Table 4 reveals an unexpected dynamic of hyper-selectivity. In the college sample, the two-way interaction between pBA^{ASN} and Asian Americans is significantly positive. The coefficient size is 0.012. Interestingly, however, the three-way interaction between pBA^{ASN}, less-educated parents, and Asian Americans is negative at −0.009 (significant at 0.10 alpha-level). If hyper-selectivity contributes to the 2nd generation convergence, the three-way interaction should be positive or, at least, should not be negative. The current result suggests that the resources brought by hyper-selected Asian immigrants may benefit children of well-educated of Asian Americans exclusively rather than shared with less-educated co-ethnics.

A similar phenomenon is observed with pBA^{HSP}. The two-way interaction of pBA^{HSP} and Hispanics is positive, but the three-way interaction including lower-educated parents is, albeit statistically insignificant, negative. It is noteworthy that all three-way interactions with immigrant selectivity are negative.[9] In contrast, the two-way interactions between ethnoracial minorities and their own immigrant selectivity are statistically significantly positive. These results raise doubt about the cross-class nature of the resources brought by hyper-selected immigrants. The sharing of ethnic resources across class lines is evident neither among Asian Americans nor among Hispanics.

In the poverty model, none of the three-way interactions are significant. The proportion of BA + among all populations is positively associated with school enrollment for lower-background children and ethnoracial minority children, but it does not have a stronger association with poor Asian Americans or Hispanics. The differences between the poverty and parents' education models may indicate that well-educated yet poor White parents mobilized the community resources more effectively than less-educated yet not-poor white parents. These outcomes reject Hypothesis 2.

4.3. Asian ethnic groups and hyper-selectivity

Next, we investigate whether Asian immigrants' hyper-selectivity is beneficial to not-so-hyper-selected Asian ethnic groups. In Table 5, we estimate the same model as Model 4 of Table 2, but this time we desegregate Asians by their country of origin. Out of the eight groups, the proportions of BA + among 1st generation immigrants is the highest among Asian Indians at 72.4% and the lowest among Vietnamese at 20.0%. That among Other South East Asians is also lower than the national average at 24.7%. All other groups show a similar rate at around 45–52%. Our analysis here focuses on whether Vietnamese and Other South East Asians are doing better at higher pBA^{ASN} CZs.

In Table 5, all main coefficients of Asian ethnic groups are positive, while none of the interaction terms between pBA^{ASN} and Asian ethnic groups are statistically significantly positive. That is, all Asian American ethnic groups are more likely to attend school than Whites when the levels of Asian immigrant selectivity are the same as the national average, and no ethnic groups are doing better in the community where Asian immigrant selectivity is higher. The only significant interaction term is between Vietnamese and pBA^{ASN} in the high school sample, but it is negative.

4.4. Robustness checks

There can be concerns with regard to how to measure hyper-selectivity. One of them is the possibility that hyper-selectivity can be CZ-specific. For example, in a college town or hi-tech industry CZs, *pBA* beyond the national average would not be considered hyper-selected, while in an industrial town, even *pBA* below the national average can function as hyper-selectivity. Thus, we measure hyper-selectivity as a gap between 1st generation Asian immigrants and all populations in the CZ (i.e., $pBA^{ASN} - pBA^{All}$). Our results do not change (see Appendix Table A4 for details). The other possibility is that the role of hyper-selectivity might not be linear. To check this possibility, we add a squared term of pBA^{ASN} and interact it with being Asian American. The interaction term is very close to zero and statistically insignificant. We also measure the hyper-selectivity with a dummy variable by defining CZs in which pBA^{ASN} is more than one standard deviation higher than the national average as a hyper-selective community (1), and the other CZs as a non-hyper-selective community (0). Again, the interaction terms are statistically zero. Next, we re-estimate all models by adding 722 CZ fixed effects rather than controlling for CZ-level covariates. Our conclusions hold. Gender-segregated models yield the same, consistent results (Appendix Table A5).

A CZ-level covariate that can interfere with the role of hyper-selectivity might be the size of the Asian American population. Population size is not an indicator of hyper-selectivity, but it is possible that without a critical mass, ethnic institutions would not develop. To explore this possibility, we create a dummy variable indicating that the population size of Asian Americans in a CZ is at

[9] None of them are statistically significant at the conventional alpha levels, but three of them are significant at 0.10 alpha level.

Table 4
Logistic regression estimates on the probability of school enrollment by family status.

	High School Sample: 15–18 Years Old		College Sample: 18–22 Years Old	
	Poverty	Parent Edu	Poverty	Parent Edu
Control Variables				
Technical	O	O	O	O
Demographic	O	O	O	O
CZ-level	O	O	O	O
Household-level	O	O	O	O
(Ref: 2nd + Gen non-Hisp. Whites)				
Asian American	0.948***	0.543	0.966***	0.765***
Hispanic	0.617***	0.293	0.468***	0.406***
Lower	−0.409***	−1.104***	−0.202***	−0.928***
Lower × Asian Am.	0.335	0.112	0.590	0.368
Lower × Hispanic	0.388	0.597*	0.147	0.351**
pBA^{All}	0.010	0.009	−0.000	0.005
pBA^{All} × Asian Am.	−0.002	−0.009	0.013**	0.001
pBA^{All} × Hispanic	−0.004	−0.011*	0.009**	0.001
pBA^{All} × Lower	−0.002	0.003	0.011***	−0.005***
pBA^{All} × Asian Am. × Lower	0.002	0.010	0.002	0.023**
pBA^{All} × Hispanic × Lower	0.013*	0.008	0.000	0.013***
pBA^{ASN}	0.001	0.001	0.002**	0.002**
pBA^{ASN} × Asian Am.	−0.006	0.007	0.002	0.012**
pBA^{ASN} × Hispanic	−0.005	−0.003	−0.006***	−0.004
pBA^{ASN} × Lower	−0.000	0.000	−0.002	−0.000
pBA^{ASN} × Asian Am. × Lower	−0.006	−0.010	−0.007	−0.009
pBA^{ASN} × Hispanic × Lower	−0.004	−0.004	−0.002	−0.005
pBA^{HSP}	−0.001	0.001	0.000	0.000
pBA^{HSP} × Asian Am.	0.018	0.021	−0.004	−0.001
pBA^{HSP} × Hispanic	0.006	0.025**	0.007	0.016***
pBA^{HSP} × Lower	0.005**	−0.001	0.001	−0.000
pBA^{HSP} × Asian Am. × Lower	−0.019	−0.025	−0.006	−0.014
pBA^{HSP} × Hispanic × Lower	−0.010	−0.001	−0.010	−0.005
Log Likelihood	−3370,891	−3431,380	−11,393,085	−11,540,952
N	2,355,362	2,355,362	1,409,958	1,409,958

Note: Technical variables are 3 survey periods and 9 Census regions; Demographic covariates are gender and age; Household-level covariates include single motherhood, single fatherhood, father's age, mother's age, parents' highest education (less than high school, high school, some college, BA, MA, Professional and PhD, log adjusted household income; CZ-level covariates consist of log population size, % finance sector employment, % manufacturing sector employment, employment rate, median household income, poverty rate, % White population, % Black population, % Asian American population, % Hispanic population, and % Native-born. The Poverty model excludes log-adjusted household income from the control variables. Parent Edu model excludes parents' highest education from the control variables. "Lower" indicate being in poverty for the Poverty model and non-college educated for the Parent Edu model.
*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$ (two-tailed tests).

least 100,000 (80% of the Asian respondents in the high school sample and 75% in the college sample live in such CZs) and add the three-way interaction between pBA^{ASN}, the dummy variable of a large Asian American population, and being Asian American. We find hyper-selectivity does not matter in the CZs with a large Asian American population as well.

Some may suspect that the impact of hyper-selectivity is lagged as it takes time for hyper-selected immigrants to build ethnic communities and resources. To address this concern, we re-estimate models with one time period lagged *pBA* variables, finding basically the same results (Appendix Table A4). We also change the age range from 18 to 22 to 18–20 for the college sample as younger respondents are more likely to live with their parents. Our results are unswayed. We also estimate LPM models with the college sample, finding the same results[10].

Lastly, we check whether the sample restriction to those living with parents biased our results. To do this, we apply the inverse probability of treatment weighting (IPTW) technique (Austin and Stuart 2015). First, we estimate a logit model with living with parents as a dependent variable. Independent variables include all covariates included in our main models except parent information. Two-way interactions between CZs and ethnoracial groups and those between CZs and in-school are also added. Slightly different model specifications at this stage do not alter the final results. Second, we compute the expected probability of living with parents. Third, if the respondents are living with parents, the inverse of this probability is multiplied by the original weight. If they are not living with at least one of their parents, the inverse of the probability of a failure to live with parents (= 1 - the probability of living with parents) is applied. Fourth, we re-estimate Model 3 of Table 2 with three samples: all respondents, everyone who lives with parents including 1st generation immigrants, and our target sample. By doing this, we eliminate the differences between those who live with

[10] The interaction between pBA^{ASN} and Asian Americans is statistically significantly negative in LPM models.

Table 5
Logistic regression estimates on the probability of school enrollment with detailed ethnicity.

	High School Sample: 15–18 Years Old	College Sample: 18–22 Years Old
Control Variables		
Technical	O	O
Demographic	O	O
CZ-level	O	O
Household-level	O	O
(Ref: 2nd + Gen non-Hisp. Whites)		
Chinese	1.134**	1.673***
Filipino	0.750	0.611**
Korean	2.045	0.276
Vietnamese	1.345**	1.371***
Other South East Asian	0.772	0.513
Asian Indian	0.734	1.510***
Other Asian	1.114*	1.072**
Hispanic	0.735***	0.525***
pBA^{All}	0.010	0.000
pBA^{All} × Chinese	0.009	0.012
pBA^{All} × Filipino	−0.021	−0.001
pBA^{All} × Korean	−0.030	0.019*
pBA^{All} × Vietnamese	0.003	0.019*
pBA^{All} × Other South East Asian	−0.022	0.002
pBA^{All} × Asian Indian	0.009	−0.001
pBA^{All} × Other Asian	−0.010	0.023
pBA^{All} × Hispanic	−0.001	0.010***
pBA^{ASN}	0.000	0.002**
pBA^{ASN} × Chinese	−0.019	−0.007
pBA^{ASN} × Filipino	−0.005	0.004
pBA^{ASN} × Korean	0.007	−0.001
pBA^{ASN} × Vietnamese	−0.024*	−0.008
pBA^{ASN} × Other South East Asian	0.010	0.004
pBA^{ASN} × Asian Indian	−0.003	0.001
pBA^{ASN} × Other Asian	−0.005	−0.003
pBA^{ASN} × Hispanic	−0.006*	−0.007***
pBA^{HSP}	0.000	0.000
pBA^{HSP} × Chinese	−0.004	−0.014
pBA^{HSP} × Filipino	0.015	−0.002
pBA^{HSP} × Korean	0.077	−0.032*
pBA^{HSP} × Vietnamese	0.007	−0.028**
pBA^{HSP} × Other South East Asian	0.013	−0.006
pBA^{HSP} × Asian Indian	0.019	0.002
pBA^{HSP} × Other Asian	0.024	0.009
pBA^{HSP} × Hispanic	0.003	0.006
Log Likelihood	−3375,654	−11,374,589
N	2,355,362	1,409,958

Note: Technical variables are 3 survey periods and 9 Census regions; Demographic covariates are gender and age; Household-level covariates include single motherhood, single fatherhood, father's age, mother's age, parents' highest education (less than high school, high school, some college, BA, MA, Professional and PhD, log adjusted household income; CZ-level covariates consist of log population size, % finance sector employment, % manufacturing sector employment, employment rate, median household income, poverty rate, % White population, % Black population, % Asian American population, % Hispanic population, and % Native-born.
$*p < 0.05$, $**p < 0.01$, $***p < 0.001$ (two-tailed tests).

parents and those who do not in terms of the observables. It should be noted that the coefficients of *pBA* in this analysis must be upwardly biased as college attendants who do not live with parents are likely to move to college towns where *pBA* is high. Despite this problem, as shown in Appendix Table A.6, our conclusions are not altered.[11] We also re-estimate Table 4 with this weight, getting the same result.

5. Discussion and conclusions

This paper investigates whether the hyper-selectivity of 1st generation Asian immigrants can explain Asian American children's

[11] Number of observations in Appendix Table A6 differ from Table 2 because there were some empty cells in two-way interactions. Excluding those cases altogether did not alter the results.

prominent educational performance. We measure hyper-selectivity as a proportion of the bachelor's degree holders among 1st generation immigrants. According to the hyper-selectivity theory, immigrants' hyper-selectivity benefits coethnic children by building ethnic institutions and creating tangible and intangible ethnic resources within ethnic communities. Given the limited data resources, we exploit the benefits of large sample sizes of the multi-year ACS and use the commuting zone as a unit of community. Specifically, we assess the association between the likelihood of school enrollment and the proportion of BA + among the 1st generation Asian immigrants across commuting zones.

Our results do not lend much support to the hyper-selectivity hypothesis. Net of the immigrants' selectivity, 1.5 and 2nd + generation Asian American children still perform better than White natives and 1.5 and 2nd + generation Hispanic children. In both high school and college samples, the probability of school enrollment for Asian American respondents is not associated with hyper-selectivity. No empirical evidence supports the argument that ethnic resources are shared across class lines. Regardless of how to measure the lower background, the likelihood of school enrollment for lower-background Asian American children is not associated with hyper-selectivity. If hyper-selectivity has any positive impact, it is enjoyed by upper-background Asian American children. The association between hyper-selectivity and upper-background Asian American children's college enrollment is positive, while that for lower-background children is flat. As a result, the class gap between upper- and lower-SES Asian immigrants' children is wider in higher hyper-selectivity CZs than in lower hyper-selectivity CZs.

Net of hyper-selectivity, family background, and community characteristics, the coefficients of being Asian American are consistently positive regardless of gender or country of origin. Although we do not directly measure culture, this finding looks consistent with cultural explanations. Culture is not necessarily an exogenous factor outside social structure, but two factors are intertwined (Feliciano and Lanuza 2017; Liu and Xie 2016; Patterson 2016). Our results indicate that it is at least premature to discredit cultural explanations.[12]

International comparisons also do not lend support to the hyper-selectivity theory. If hyper-selectivity is the root of Asian American success, no such success would be evident outside the U.S. However, by comparing three East Asian societies with three Western societies, Li and Xie (2020) conclude that parents' educational expectations are less dependent on family background in East Asia than in Western societies. By analyzing immigrant students across 48 countries who migrated from 58 countries, Hanushek et al. (2022) demonstrates that students who came from countries emphasizing the value of patience perform better in the math test of the Programme for International Student Assessment (PISA). They propose that cultural differences across countries are "deep determinants of student learning and skill investment" (p. 2305).

The hyper-selectivity hypothesis assumes that the cross-class success frame is unique to Asian American communities. In many Asian countries, however, the upward mobility strategy based on academic tests is shared across class lines. Although stratified by family background, many lower background students in Korea (Park and Kim 2014) and Japan (Matsuoka 2018) are participating in supplementary education. This behavior is practiced across Asia. The proportion of students who take supplementary education in Southeast countries is even higher than that in East Asian countries (Byun et al., 2018). Taking supplementary education is not a unique strategy for lower-background Asian immigrants in America. Future studies may need to pay attention to the affinity between Asian success strategies and the American educational system.

As discussed in the previous studies (Feliciano and Lanuza 2017; Liu and Xie 2016; Warikoo 2022), Swidler (1986) defines culture as "habits, skills, and styles from which people construct 'strategies of action'" that influence actions. In her framework, culture can, directly and indirectly, affect actions. Swindler's culture as cultural repertories is relevant to the tension between agents' actions and structure (Giddens 1986). Culture manifests in respondents' attitudes and aspirations, parental expectations, pressure, and other family practices (Sakamoto and Wang 2021). All of them are agents' attitudes and actions. The dominant perspective of culture as a toolkit or repertoire does not share the strong motivational connotation of cultural essentialism (Polavieja 2015). Critiquing all cultural explanations as cultural essentialism is a straw man argument. We are unaware of any study explaining Asian American children's success solely due to Asian culture. Instead, the hyper-selectivity hypothesis that regresses culture as a by-product of hyper-selectivity is in danger of the over-socialized view of the agent (Wrong 1961), which is the same fallacy of cultural essentialism (Polavieja 2015).

In this study, we treat culture as a residual factor. In future studies, it is warranted for researchers to devise a method to measure culture, which is challenging due to its embeddedness in social structures, institutions, and the actions of agents themselves. Recent developments in the instrumental variable (IV) approach (Chen et al., 2020; Polavieja 2015; Lee et al., 2022) may offer a means of measuring culture as an exogenous variable. For instance, Chen et al. (2020) demonstrate that individuals who originated from regions with high success rates in the traditional civil examination system during the 14th to early 20th centuries are more educated than those from regions with low success rates, even though such civil examinations have long since been discontinued. Chen et al. (2020) assures that culture can influence the average level of education of a subset of the population even within the same country. The question is, what can be an IV that captures the cultural character of Asian immigrants. To study the impact of culture properly, researchers need to identify the cultural characteristic that can theoretically explain the educational success of Asian American children.

Our findings have implications for the Model Minority Myth (MMM) thesis. The MMM thesis rests on two main arguments: firstly,

[12] The other explanation for the immigrant paradox other than the hyper-selectivity theory is parental contextual attainment (Feliciano 2020; Feliciano and Lanuza 2017). Feliciano and Lanuza (2017) argue that US immigrants migrated from higher social class in their origin country. Net of the contextual rank, immigrants' children do not show higher intergenerational mobility. Future research needs to measure Asian children's educational performance after controlling for both hyper-selectivity and parental contextual attainment. Nevertheless, it is worth noting that in their study, the positive coefficients of 1.5 and 2nd + generation Asian Americans remain strongly positive while that of their Mexican counterparts becomes statistically zero even though the coefficient between the two groups was similar before the control of the parental contextual attainment.

the diversity among Asian Americans, not all of whom conform to the Model Minority image, and secondly, the negative consequences for those who do not fit this image due to the stereotype's harmful impact (Chou and Feagin 2015; Kao 1995; Sakamoto et al., 2012). However, the hyper-selectivity hypothesis diverges from these arguments by asserting that the unique success frame and favorable treatment of the host society benefit all Asian Americans regardless of their ethnic group or social class. According to this perspective, the MMM is a fallacy, not because of the diversity of Asian Americans or its harmful effects, but because their educational success results from hyper-selectivity that other minority groups cannot emulate. Our results, which indicate that the advantage of Asian American children persists even after controlling for family background and hyper-selectivity, challenge the hyper-selectivity version of the critique of the MMM. Our results, however, do not counter all MMM arguments. A new question raised by the hyper-selectivity hypothesis is whether Asian Americans who do not conform to the model minority image benefit from hyper-selectivity in local labor markets or whether they experience greater disadvantages. Future research should extend the hyper-selectivity study to labor markets beyond educational outcomes.

As mentioned briefly, the hyper-selectivity hypothesis finds the historical origin of hyper-selectivity from the Immigration and Nationality Act of 1965 (Lee and Zhou 2015). This aspect of the hyper-selectivity perspective is worth further empirical investigation. That is, local Asian communities may not be a focal point forming an Asian success frame and culture with hyper-selectivity. Instead, the hyper-selectivity of Asian immigrants boost Asian American children's performance at the national level by forging positive ethnoracial stereotype and teachers' differentiated treatments (Okura 2022). The current study tests the regional variation but does not examine the temporal variation. We cannot rule out the possibility that the hyper-selectivity hypothesis can explain the temporal variation of Asian American success. The historical fact that Asian American children were academically successful before the influx of hyper-selected Asian immigrants since the passage of the Immigration and Nationality Act (Hirschman and Wong 1986) seems discordant with hyper-selectivity theory. However, Hirschman and Wong's (1986) study did not control for family backgrounds, and thus it is insufficient as a test of the hyper-selectivity hypothesis regarding the temporal variation of Asian American success. Longitudinal analyses in the US and/or cross-country examinations on this issue are warranted in future studies.

Although the hyper-selectivity hypothesis cannot explain the higher educational performance of 1.5 and 2nd + generation Asian American children, this theory is useful in understanding the complicated dynamics between immigrant selectivity, the paradox of immigrant children's educational achievement, and culture. Thanks to the hyper-selectivity theory, researchers can now connect immigrants' selectivity to the formation of ethnic communities and study their influence on the immigrant paradox more systematically than before. The hyper-selectivity theory stimulates many recent studies, including the current one.

In her review of Lee and Zhou's book, Hsin (2016) describes the hyper-selectivity hypothesis as a spillover effect by which upper-class culture is shared across class lines. Our results, however, hint that hyper-selectivity may work as a closure rather than a spillover. It can be a double closure. First, the positive association of hyper-selectivity to education is evident among upper-background Asian Americans but no such evidence among lower-background Asian Americans. As more upper-background Asian Americans move to suburban areas (Kye 2018; Lung-Amam and Willow, 2017), the benefits of the community resources built by hyper-selected Asian Americans are more likely to be exclusively entertained by upper-background Asian immigrants and their children. Hispanics are not an exception. In Table 4, the coefficient of pBA^{HSP} is significantly positive for Hispanics, but the interaction effects with lower-background Hispanics are, albeit statistically non-significant, all negative. Considering that the density of the Hispanic population is negatively correlated with the proportion of highly educated Hispanic immigrants (Appendix Table A2), the advantages of living in a highly educated Hispanic town are enjoyed mainly by upper-background Hispanics. Upper-background Asian immigrants are moving into affluent, mostly White-dominated suburban areas and trying to enhance their children's education rather than mingle with lower-background coethnic Asian Americans (Warikoo 2022). In this case, hyper-selectivity and ethnic resources work for upper-background Asian immigrants exclusively. This is a class-based closure. The closure hypothesis is congruent with the previous studies that the Model Minority Image is not beneficial to all Asian groups (Kim and Sakamoto 2014).

Second, hyper-selectivity can be an ethnoracial group-based closure. The proportion of highly educated Asian immigrants is statistically significantly associated with worse educational performance for 1.5 and 2nd + generation Hispanic children (Model 4 of Table 2). The current study does not provide an explanation of the mechanisms that bring about this association, but Warikoo's (2022) qualitative research offers a clue. Facing heightened competition brought by Asian Americans, Whites try to counter it by fleeing the town, reducing the number of homework assignments, and/or blaming Asian parenting as an anomaly. That is, Whites have material resources and cultural strategies to maintain their children's educational performance at a high level. Unlike Whites, other ethnoracial minorities do not have such resources and may suffer from the enhanced competition that is not a part of their cultural repertoire.

There are several other limitations to this study. First, our target sample is limited to those who live with parents, and the educational outcome is measured as school enrollment. Various sensitivity analyses regarding the sample limitation yield the same conclusion, and ethnoracial variations in school enrollment patterns are the same as that of the highest degree attainments. Nevertheless, future studies need to reassess the hyper-selectivity hypothesis with a complete dataset. To do so, it is necessary to link ACS to the previous Census or to add CZ or county-level hyper-selectivity information to panel datasets such as NELS:88 or Add Health. Second, because of the data limitation, the current study does not explore the impact of hyper-selectivity on the higher end of educational achievements, such as attending prestigious colleges. We cannot rule out the possibility that hyper-selectivity does matter when it comes to the likelihood of attending elite colleges. Third, this study does not quarry the difference in the impact of hyper-selectivity across immigrant generations. Whether the 3rd generation decline (Figlio and Özek 2020) is related to hyper--selectivity's impact is a worthwhile topic. Fourth, in future research, it is desirable to incorporate contextual parental education in measuring hyper-selectivity (Feliciano and Lanuza 2017). Fifth, the impact of hyper- and hypo-selectivity beyond Asian Americans and Hispanics is not studied. One topic to study is how Asian immigrants' selectivity is associated with Black and other ethnoracial minority groups' performance. Another topic is how the selectivity of recent Black immigrants is associated with their children's performance. In particular, a study on the association between the hyper-selectivity of Nigerian immigrants (Tran et al., 2018) and their children's education is required. Sixth, previous studies show that not only community but also school characteristics matter for the educational performance of immigrant children (Hsin and Xie 2014; Okamoto et al., 2013). Both theoretical and empirical developments regarding the complex interplay between community, school, and family are necessary. We certainly hope that our study will inspire further empirical research on this topic.

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Appendix

Table A.1
School Enrollment

	Asian Americans	Hispanics	Whites
I. High School Sample: 15–18 Years Old			
Ethnicity			
Chinese	0.988	.	.
Filipino	0.987	.	.
Korean	0.988	.	.
Vietnamese	0.978	.	.
Other South East Asian	0.970	.	.
Asian Indian	0.987	.	.
Other Asian	0.983	.	.
Poverty			
Not Poverty	0.985	0.963	0.972
Poverty	0.972	0.950	0.925
Parents' Education			
No College	0.977	0.956	0.953
College Educated	0.989	0.982	0.986
II. College Sample: 18–22 Years Old			
Ethnicity			
Chinese	0.908	.	.
Filipino	0.816	.	.
Korean	0.829	.	.
Vietnamese	0.866	.	.
Other South East Asian	0.660	.	.
Asian Indian	0.898	.	.
Other Asian	0.813	.	.
Poverty			
Not Poverty	0.839	0.581	0.606
Poverty	0.835	0.575	0.462
Parents' Education			
No College	0.792	0.557	0.505
College Educated	0.893	0.740	0.756

Note: All statistics are based on the target sample.

Table A.2
Correlation Coefficient Matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) % BA+	1.000								
(2) % BA + among 1st Gen Asian	0.368***	1.000							
(3) % BA + among 1st Gen Hispanic	0.159***	0.337***	1.000						
(4) % White	−0.233***	0.018***	0.290***	1.000					
(5) % Asian	0.561***	0.022***	−0.160***	−0.593***	1.000				
(6) % Hispanic	0.013***	−0.081***	−0.314***	−0.856***	0.410***	1.000			
(7) % 1st Gen Asian	0.579***	0.062***	−0.140***	−0.600***	0.994***	0.404***	1.000		
(8) % 1st Gen Hispanic	0.119***	−0.077***	−0.271***	−0.850***	0.507***	0.894***	0.511***	1.000	
(9) In-School (1 = Yes, 0 = No)	0.076***	0.053***	0.025***	−0.019***	0.048***	0.001**	0.051***	0.017***	1.000
(9) In-School: High School	0.044***	0.017***	0.008***	−0.019***	0.034***	0.010***	0.033***	0.013***	1.000
(9) In-School: College	0.108***	0.090***	0.052***	−0.006***	0.057***	−0.017***	0.062***	0.004***	1.000

Note: (1) through (8) are measured at CZ-level.
*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$ (two-tailed tests).

Table A.3
Logistic Regression Estimates on the Probability of School Enrollment, Full

	High School Sample: 15–18 Years Old	College Sample: 18–22 Years Old
(Ref: 2nd + Gen non-Hisp. Whites)		
Asian American	1.045***	1.056***
Hispanic	0.731***	0.509***
pBA^{All}	0.010	0.001
pBA^{All} × Asian Am.	−0.002	0.014**
pBA^{All} × Hispanic	−0.001	0.011***
pBA^{ASN}	0.000	0.002**
pBA^{ASN} × Asian Am.	−0.008*	0.001
pBA^{ASN} × Hispanic	−0.006**	−0.007***
pBA^{HSP}	0.000	0.000
pBA^{HSP} × Asian Am.	0.014	−0.005
pBA^{HSP} × Hispanic	0.003	0.006
Technical Controls		
2010–2014	0.185***	−0.152***
2015–2019	0.065	−0.299***
Middle Atlantic	−0.153	0.040
East North Central	−0.012	0.016
West North Central	0.050	0.028
South Atlantic	−0.150*	−0.167***
East South Central	0.076	−0.120*
West South Central	−0.066	−0.256***
Mountain	−0.372***	−0.366***
Pacific	−0.034	−0.232***
Demographic Controls		
Female	0.138***	0.537***
Age 16	−0.226***	
Age 17	−0.688***	
Age 18	−1.905***	
Age 19		−0.523***
Age 20		−0.850***
Age 21		−1.163***
Age 22		−1.559***
CZ-Level Controls		
Log Population Size	−0.020	0.019*
% Finance Sector Employment	−0.721	0.490
% Manufacturing Sector Employment	0.739	−0.028
Employment Rate	−1.363*	−1.025*
Median Household Income	0.000*	0.000
Poverty Rate	0.237	0.941*
% White	−0.002	0.001
% Black	−0.002	0.008**
% Asian	0.015	0.013*
% Hispanic	0.007	0.008**
% US Born	1.100*	−0.445
Household-Level Controls		
Single Motherhood	0.092	0.088**
Single Fatherhood	−0.177*	0.590***
Father's Age	0.005***	0.006***
Mother's Age	−0.001	0.018***
Parent's Highest Education		
LTHS	−1.027***	−0.115***
SC	0.494***	0.518***
BA	1.007***	1.111***
MA	1.214***	1.434***
Prof./Doc.	1.211***	1.564***
Log Adjusted Family Income	0.068***	0.075***
Constant	2.254**	−1.098**
Log Likelihood	−3376,284	−11,389,608
N	2,355,362	1,409,958

Note: Full specification of Model 4 in Table 2.
$*p < 0.05$, $**p < 0.01$, $***p < 0.001$ (two-tailed tests).

Table A.4
Logistic Regression Estimates on the Probability of School Enrollment, Alternate Hyper-Selectivity Measures

	High School Sample: 15–18 Years Old			College Sample: 18–22 Years Old		
	Gap from *pBA*	Dummy Coding	Lagged *pBA*	Gap from *pBA*	Dummy Coding	Lagged *pBA*
Control Variables						
Technical	O	O	O	O	O	O
Demographic	O	O	O	O	O	O
CZ-level	O	O	O	O	O	O
Household-level	O	O	O	O	O	O
(Ref: 2nd + Gen non-Hisp. Whites)						
Asian American	1.008***	0.665***	1.222***	0.837***	1.095***	1.097***
Hispanic	0.674***	0.683***	0.684***	0.403***	0.301***	0.392***
pBA^{All}	0.010	0.008		0.003	0.001	
pBA^{All} × Asian Am.	0.002	−0.005		0.001	0.011*	
pBA^{All} × Hispanic	−0.006	−0.002		0.005	0.008**	
$(pBA^{ASN} - pBA^{All})$	0.000			0.002**		
$(pBA^{ASN} - pBA^{All})$ × Asian Am.	−0.008*			−0.001		
$(pBA^{ASN} - pBA^{All})$ × Hispanic	−0.006**			−0.008***		
$(pBA^{HSP} - pBA^{All})$	−0.000			−0.000		
$(pBA^{HSP} - pBA^{All})$ × Asian Am.	0.011			−0.013*		
$(pBA^{HSP} - pBA^{All})$ × Hispanic	0.001			0.002		
$pBA^{ASN,D}$		0.075			0.026	
$pBA^{ASN,D}$ × Asian Am.		−0.034			0.075	
$pBA^{ASN,D}$ × Hispanic		−0.140			−0.044	
$pBA^{HSP.D}$		0.092			0.077	
$pBA^{HSP,D}$ × Asian Am.		−0.107			0.128	
$pBA^{HSP,D}$ × Hispanic		0.723			−0.147	
$pBA^{All,t-1}$			0.007			−0.000
$pBA^{All,t-1}$ × Asian Am.			−0.002			0.009
$pBA^{All,t-1}$ × Hispanic			−0.010*			0.008*
$pBA^{ASN,t-1}$			0.000			0.002**
$pBA^{ASN,t-1}$ × Asian Am.			−0.014**			0.003
$pBA^{ASN,t-1}$ × Hispanic			−0.004			−0.006***
$pBA^{HSP,t-1}$			−0.002			0.000
$pBA^{HSP,t-1}$ × Asian Am.			0.019			−0.004
$pBA^{HSP,t-1}$ × Hispanic			−0.004			−0.000
Log Likelihood	−3376,254	−3376,247	−2083,445	−11,388,833	−11,390,898	−7887,447
N	2,355,362	2,355,362	1,630,268	1,409,958	1,409,958	992,016

Note: Technical variables are 3 survey periods and 9 Census regions; Demographic covariates are gender and age; Household-level covariates include single motherhood, single fatherhood, father's age, mother's age, parents' highest education (less than high school, high school, some college, BA, MA, Professional and PhD, log adjusted household income; CZ-level covariates consist of log population size, % finance sector employment, % manufacturing sector employment, employment rate, median household income, poverty rate, % White population, % Black population, % Asian American population, % Hispanic population, and % Native-born.
$*p < 0.05$, $**p < 0.01$, $***p < 0.001$ (two-tailed tests).

Table A.5
Logistic Regression Estimates on the Probability of School Enrollment by Gender

	High School Sample: 15–18 Years Old		College Sample: 18–22 Years Old	
	Women	Men	Women	Men
Control Variables				
Technical	O	O	O	O
Demographic	O	O	O	O
CZ-level	O	O	O	O
Household-level	O	O	O	O
(Ref: 2nd + Gen non-Hisp. Whites)				
Asian American	1.421***	0.739*	1.045***	1.077***
Hispanic	0.780***	0.695***	0.358**	0.634***
pBA^{All}	0.013*	0.007	−0.003	0.004
pBA^{All} × Asian Am.	−0.004	−0.001	0.015	0.013**
pBA^{All} × Hispanic	−0.002	0.000	0.012**	0.010**
pBA^{ASN}	0.000	0.001	0.002**	0.001
pBA^{ASN} × Asian Am.	−0.013	−0.004	−0.002	0.002

(*continued on next page*)

Table A.5 (*continued*)

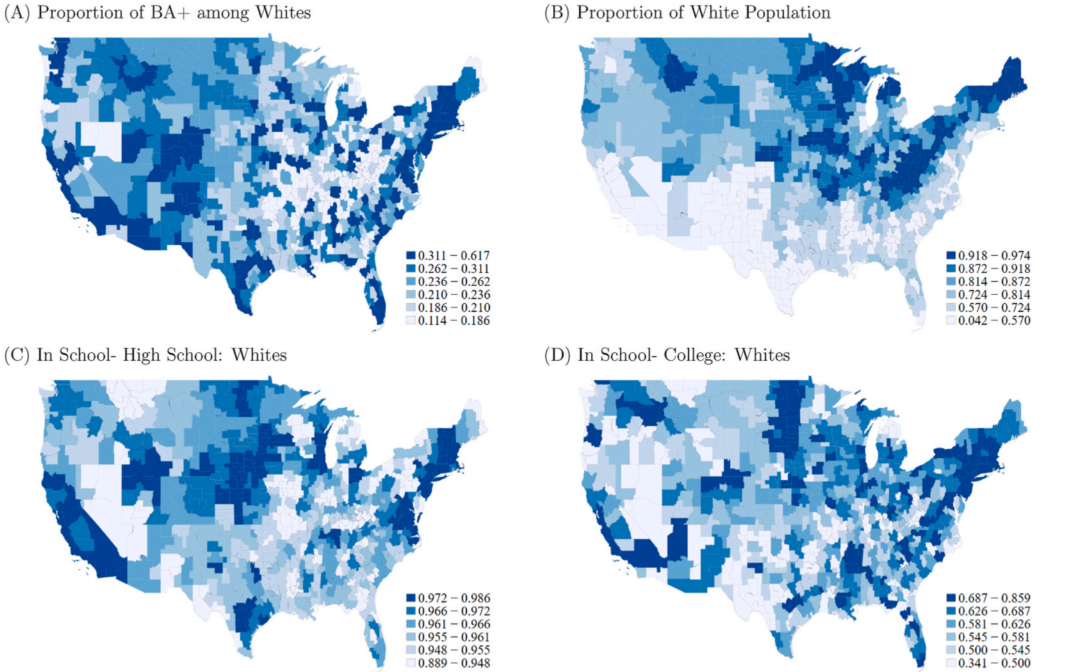
	High School Sample:		College Sample:	
	15–18 Years Old		18–22 Years Old	
	Women	Men	Women	Men
pBA^{ASN} × Hispanic	−0.009**	−0.004	−0.006***	−0.008***
pBA^{HSP}	0.000	0.000	0.001	−0.001
pBA^{HSP} × Asian Am.	0.029	0.003	−0.005	−0.004
pBA^{HSP} × Hispanic	−0.001	0.005	−0.000	0.010**
Log Likelihood	−1509,495	−1864,354	−5100,991	−6281,496
N	1,120,758	1,234,604	641,690	768,268

Note: Technical variables are 3 survey periods and 9 Census regions; Demographic covariates are gender and age; Household-level covariates include single motherhood, single fatherhood, father's age, mother's age, parents' highest education (less than high school, high school, some college, BA, MA, Professional and Ph.D., log adjusted household income; CZ-level covariates consist of log population size, % finance sector employment, % manufacturing sector employment, employment rate, median household income, poverty rate, % White population, % Black population, % Asian American population, % Hispanic population, and % Native-born.
*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$ (two-tailed tests).

Table A.6
Logistic Regression Estimates on the Probability of College Enrollment among 18–22 Year Olds

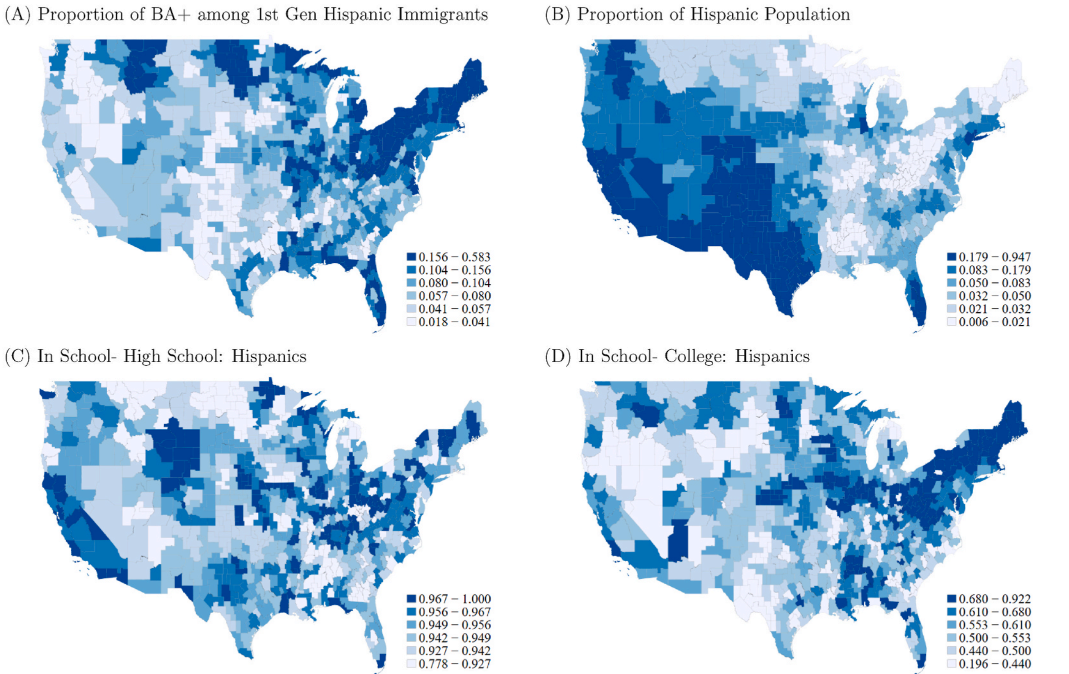
	All Resp.	w/Parents	Target Sample	
	Model 3	Model 3	Model 3	Model 4
Control Variables				
Technical	O	O	O	O
Demographic	O	O	O	O
CZ-level	O	O	O	O
Household-levelO				
(Ref: 2nd + Gen non-Hisp. Whites)				
Asian American	0.605***	0.685***	0.734***	1.072***
Hispanic	−0.027	0.156	0.432**	0.568***
pBA^{All}	0.036***	0.035***	0.035***	0.023***
pBA^{All} × Asian Am.	−0.013*	−0.009	−0.010	0.005
pBA^{All} × Hispanic	−0.013*	−0.005	−0.002	0.010
pBA^{ASN}	0.008***	0.008***	0.007***	0.008***
pBA^{ASN} × Asian Am.	0.018***	0.016***	0.016***	0.004
pBA^{ASN} × Hispanic	−0.008*	−0.008**	−0.011**	−0.010**
pBA^{HSP}	−0.002	−0.002	−0.002	−0.002
pBA^{HSP} × Asian Am.	−0.004	−0.001	−0.004	−0.003
pBA^{HSP} × Hispanic	0.018***	0.019***	0.026***	0.004
Log Likelihood	−48,510,796	−24,675,874	−21,422,744	−20253,185
N	3,074,851	1,584,884	1,409,941	1,409,941

Note: Technical variables are 3 survey periods and 9 Census regions; Demographic covariates are gender and age; Household-level covariates include single motherhood, single fatherhood, father's age, mother's age, parents' highest education (less than high school, high school, some college, BA, MA, Professional and Ph.D., log adjusted household income; CZ-level covariates consist of log population size, % finance sector employment, % manufacturing sector employment, employment rate, median household income, poverty rate, % White population, % Black population, % Asian American population, % Hispanic population, and % Native-born.
*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$ (two-tailed tests).



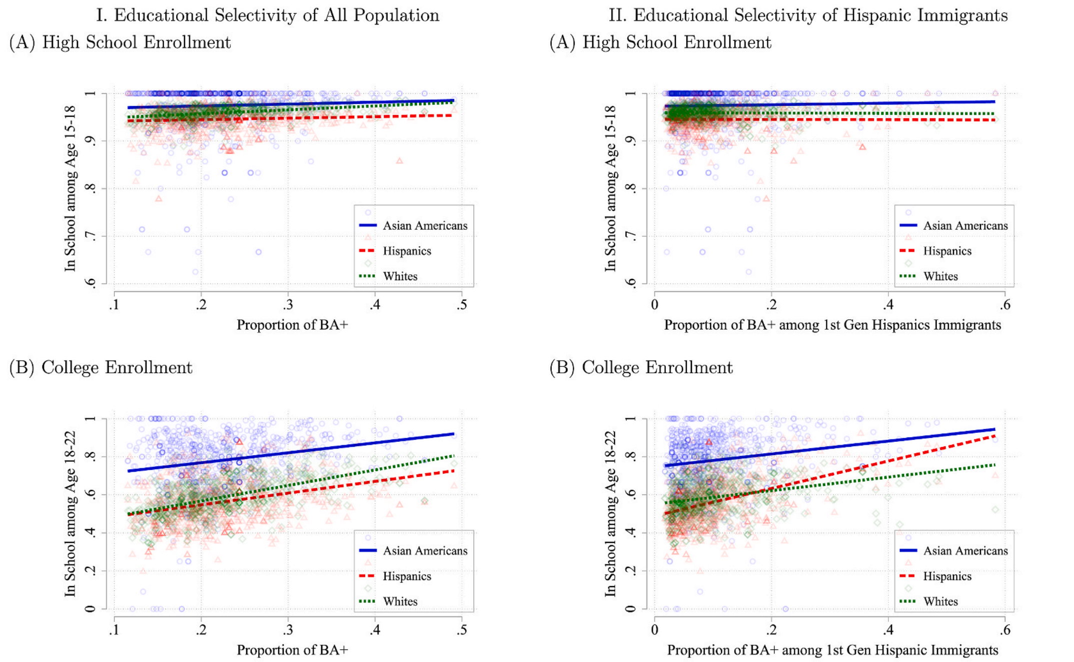
Note: The proportion of BA+ is among all Whites who are 22 or older. The proportion of White population is based on whole population. The high school enrollment rate refers to the proportion of those who are in-school among 15-18 years 2nd+ generation White children who did not earn a high school diploma yet. The college enrollment rate is the proportion of those who are in-school among 18-22 years 2nd+ generation White children who graduated from high school but yet earn a BA. All time periods are combined.

Fig. A.1. Whites: Regional Levels of Education, Population Density, and School Enrollment



Note: The proportion of BA+ is among the 1st generation Hispanic immigrants who are 22 or older. The proportion of the Hispanic population is the proportion of the 1st generation Hispanic immigrants in the CZ. The high school enrollment rate refers to the proportion of those who are in-school among 15-18 years old 1.5 and 2nd+ generation Hispanic children who did not earn a high school diploma yet. The college enrollment rate is the proportion of those who are in-school among 18-22 years old 1.5 and 2nd+ generation Hispanic children who graduated from high school but yet earn a BA. All time periods are combined.

Fig. A.2. Hispanics: Immigrant Selectivity, Population Density, and School Enrollment



Note: The proportions of BA+ is among all 22 or older population or among 22 or older 1st generation Hispanic immigrants. The high school enrollment rate refers to the proportion of those who are in-school among 15-18 years old 1.5 and 2nd+ generation Asian/Hispanic and 2nd+ generation White children who did not earn a high school diploma yet. The college enrollment rate is the proportion of those who are in-school among 18-22 years old 1.5 and 2nd+ generation Asian/Hispanic and 2nd+ generation White children who graduated from high school but yet earn a BA. All time periods are combined.

Fig. A.3. Association between School Enrollment and the Proportion of Bachelor's Degree Holders (BA+) across CZs

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