2023

Social Capital and the Transition to College for Asian Americans

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Approval of the Dissertation Committee

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Abstract

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Asian Americans are generally perceived to be disproportionately enrolled in four-year postsecondary education institutions despite evidence of Asian Americans being concentrated at both two-year and four-year postsecondary education institutions. This perception of Asian Americans has contributed to limited attention to Asian Americans' transition to college. To better understand the transition to college for Asian Americans, this study explored if social capital is related to four-year college enrollment and the highest level of educational expectation. Whites were included in the study for comparative purposes.

The main research question focuses on the extent demographic characteristics, access to, and mobilization of social capital from the social networks of family, peers, and school predict enrollment in a four-year postsecondary education institution. This study also examined the strongest predictors for the highest level of education expected three years after completion of high school. Lin's Network Theory of Social Capital served as the theoretical framework.

The data came from the public-use file of the High School Longitudinal Studies of 2009 (HSLS:09). Logistic regression and discriminant function analysis were employed in the analyses. Balanced Repeated Replication variance estimation and replicate weights were used to able to generalize from the Asian American subpopulation sample size of 1,952 to a nationally

representative Asian American sample size of 142,405 and from the White subpopulation sample size of 12,082 to a nationally representative White sample size of over 2.1 million.

The results suggest that socioeconomic status partly explains the educational enrollment patterns of Asian Americans and Whites. Asian Americans and Whites from the highest socioeconomic status are more likely to enroll in a four-year postsecondary than Asian Americans and Whites from the lowest socioeconomic status. Socioeconomic status also partly explains the highest level of education Asian Americans and Whites expected three years after completing high school. In general, Asian Americans and Whites from higher socioeconomic status have higher educational expectations.

The results also suggest that access to social capital is a significant predictor of four-year college enrollment. However, access to the form of social capital matters, particularly for Asian Americans. Access to family social capital in the form of congruent degree expectations, where parents and students share the same educational expectations of the student earning at least a bachelor's degree, increased the odds of a four-year college enrollment for both Asian Americans and Whites. However, it was the only form of social capital that was significant in explaining the four-year college enrollment for Asian Americans. The forms of social capital that were significant in explaining four-year college enrollment for Whites, specifically access to family social capital in the form of family involvement, access to peer social capital, and access to school social capital were not significant predictors for Asian Americans.

The findings suggest that the student-parent relationship is important in the transition to college, especially so for Asian Americans. Additionally, the combination of the findings suggests that practices and policies that take socioeconomic status into account and are racially and culturally informed are important in supporting Asian Americans in the transition to college.

Dedication

For my family,

for helping shape me to be who I am and keeping me grounded through this process.

To my siblings, Ge, Der, Pheng, Fong, Mine, and Deng,

thank you for your encouragement and support.

Niam thiab txiv,

kuv sau phav ntawv no qhia rau neb paub tias neb coj peb khiav khiav tuaj txoj tebchaws no, tsis

paub ib los lus ib tug ntawv li. Hnub no neb menyuam kawm tau ntawv lawm os. Ua tshaug neb

qhuab neb qhia thiaj kawm tau.

Gene and Meilani,

thank you for your love and the sacrifices you both made.

Acknowledgements

This dissertation would not have been possible without the guidance, unwavering support, and encouragement from those around me.

I would like to extend my deepest gratitude to my committee for sharing their wisdom and time with me. Dr. David Drew, thank you for your patience, steadfast support, and understanding of the doctoral experience for nontraditional doctoral students. Dr. Tom Luschei, I would like to express my sincere gratitude to you for serving on my committee. I appreciate your thoughtful recommendations and suggestions. Dr. Luke Duesbery, thank you for your encouragement and timely doses of reality to help keep me moving forward. Dr. Aaron Iffland, thank you for the generosity of your time and for your confidence in me. I am so appreciative that you saved me from working on this dissertation alone in the basement of the EBA building. Dr. Valerie Pang, thank you for pushing me to the finish line. More importantly, thank you for caring and believing in me.

To my Saturday morning dissertation support group, Diane Ewards-LiPera, Steve Pell, and Ewa Burchard, thank you for being a part of my journey. It would have been a difficult and lonely journey without our weekly meetings. I look forward to us crossing the stage together. Dr. Deborah Marsing, thank you for being my cheerleader and coach.

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Chapter 1

A higher education offers both private benefits, such as higher wages, higher

employment, and better health conditions; and public benefits, such as higher civic involvement,

less reliance on public assistance programs, and lower crime rates (Hermannsson et al., 2017; Ma

et al., 2016). The benefits of higher education have led to numerous studies on how to support

and promote college enrollment, particularly for students from backgrounds that are perceived to

less likely to pursue and attain a higher education. Prior research has concluded that the process

of deciding and preparing to enroll in college, also known as the college choice process (Hossler

& Gallagher, 1987), is challenging due to the information, knowledge, and networking required

to navigate the process (Cabrera & La Nasa, 2001). However, studies have shown that social

capital is related to college enrollment by providing students with the necessary information and

resources to navigate the process (Cabrera & La Nasa, 2001; Dika & Singh, 2002; Klevan et al.,

2016; Perna, 2000; Plank & Jordan 2001; Simmons, 2011). According to Lin (2001), social

capital refers to resources, such as information and connections to others, which are available

through social networks. During the college choice process, social networks enable the exchange

of critical information, resources, and contacts such as financial aid information and assistance

with college applications (Plank & Jordan, 2001).

Despite the vast body of research on college preparation and participation, Asian

Americans are rarely included. Asian Americans' preparation for, transition to, and enrollment in

postsecondary education institutions, for the most part, have not received much attention because

of the perception that Asian Americans are educationally successful (Covarrubias & Liou, 2014;

Museus & Vue, 2013) and overrepresented in higher education (Wang, 2007). This perception of

Asian Americans as highly educated and overrepresented in higher education has been

perpetuated by the model minority stereotype, which portrays a monolithic view of Asian Americans as a racial group that, despite similar structural and social barriers as other racial groups, has achieved educational and economic success through hard work and determination in comparison to other racialized minoritized groups (Poon, Squire, et al., 2016; Sue & Okazaki,1990). In essence, the model minority stereotype is used as a political and racial tool to drive wedges among and between minoritized groups while upholding a White dominant hierarchical social structure (S. J. Lee & Kumashiro, 2005; Poon, Squire, et al., 2016). The model minority stereotype has contributed to the misperception that research on an already successful racial group is not necessary (Museus & Chang, 2009), resulting in Asian Americans being under-researched in comparison to other racial groups (Covarrubias & Liou, 2014). As such, there is limited information about Asian Americans' preparation, transition, aspirations, and the effects these have on Asian Americans' college enrollment (Teranishi, 2010).

The effectiveness of the model minority stereotype in diverting attention from the educational experiences and outcomes of Asian American students is evident with the relative obscurity of the bimodal educational patterns of Asian Americans, which reflects both high- and low-level of educational attainment (Covarrubias & Liou, 2014; Hune & Chan, 1997; Pang, 1995; Wang, 2007; Wing, 2007). Using U.S. Bureau of Census data, Hune and Chan (1997) reported that the bimodal education pattern reflects a socioeconomically bifurcated Asian American population, particularly with immigrants and refugees who arrived after the Immigration and Nationality Act of 1965, which replaced immigration policies that had previously restricted Asian immigration to the United States. Covarrubias and Liou's (2014) analysis of the 2010 Current Population Survey provided more recent evidence that a bimodal education pattern continues to reflect income and educational disparities by revealing that Asian

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Americans with the lowest incomes are less likely to earn a college degree than Asian Americans with the highest incomes at all levels of the educational pipeline.

The bimodal education pattern of Asian Americans is not only restricted to educational attainment. The college enrollment of Asian Americans also reflects a bimodal pattern. Asian Americans' enrollment at two-year postsecondary education institutions increased at a faster rate than in any other sectors of higher education in the twenty-five year span between 1980 and 2005 (Teranishi, 2010). While two-year colleges offer access to a higher education, researchers have expressed concerns about the retention, transfer, and bachelor's degree attainment rates of students who start their postsecondary education at two-year colleges (Dougherty, 1992; Eckland & Henderson, 1981; Schneider & Yin, 2011).

Despite evidence of a bimodal education within the Asian American community, there are limited studies that examine if social capital is associated with the bimodal educational patterns, particularly with college enrollment, of Asian Americans. The studies that have focused on social capital and the educational outcomes of Asian Americans have been mostly qualitative in nature. Additionally, conclusions about the influence of social capital on the educational outcomes for Asian Americans, particularly college enrollment, are mixed in part because most studies focused on Asian Americans' parental access and utilization of social capital rather than students' access and utilization of social capital. In other words, studies have been more focused on what parents of Asian Americans have done to help their students get into college, and less on what students have done themselves.

The conclusions of researchers who focused on parental access and utilization of social capital were somewhat inconsistent. In their study, J. Lee and Zhou (2014) found that Asian American immigrant parents, regardless of social class, were able to successfully tap into social

capital, particularly by networking in their ethnic communities, to help their students realize academic success. Louie (2001) and Lew (2006), however, found that while Asian American parents from middle-class backgrounds were able to access and utilize social capital from inside and outside of their ethnic communities, the outcomes for Asian Americans parents from working-class backgrounds were not comparable. The working-class Chinese American parents in Louie's (2001) study not only had limited access to social capital, but also limited opportunities to utilize social capital due to constraints with their work schedules. The efforts of working-class Chinese American parents in Louie's (2001) study helped their students enroll in a commuter public higher education institution that is part of the City University of New York (CUNY) system. In comparison, parents from middle-class backgrounds in Louie's (2001) study not only had access to more expansive social capital networks, but also had the time to utilize those resources, which contributed to their students' attendance at the private and prestigious Columbia University.

Lew's (2006, 2010) studies on Korean American students are some of the few studies that focused on social capital and the educational outcomes from the student perspective. The Korean American participants from working-class income background had limited access to social capital in their ethnic community, peer, family, and school networks, which made it difficult for them to navigate through the education system (Lew 2006, 2010). Consequently, many of those students dropped out of high school. In comparison, Korean American participants in Lew's (2006, 2010) studies who were from middle-class backgrounds had access to more expansive social capital from their ethnic community, peer, family, and school networks, which they used to successfully navigate through the college choice process and prepare for college.

Although the findings from these studies are mixed, they suggest that social capital may be associated with the transition from high school to college for Asian Americans. The limited studies on this issue are an indicator of the need for more research on the relationship between social capital and college preparation and college participation of Asian Americans.

Statement of Problem

Despite the prevailing perception that Asian Americans are educationally and economically successful, a bimodal educational pattern exists within the Asian American population. Studies have found that social capital is positively related to educational attainment, high school graduation, and college enrollment (Dika & Singh, 2002). However, there have been few studies that focused on the relationship between social capital and the transition to college for Asian Americans to help better understand the bimodal educational attainment and enrollment patterns in the Asian American community. More importantly, as social capital is positively associated with college enrollment (Dika and Singh, 2002), it is unclear if access to and mobilization of social capital explain the college enrollment patterns and educational expectations of Asian Americans.

Purpose

The purpose of this study was to explore if there is a relationship between social capital from the social networks of family, peers, and schools and the transition to college for Asian Americans. This research study explored social capital as a form of support and information from social networks as they relate to the transition to college of Asian Americans. More specifically, this study explored if access to and mobilization of social capital from the social networks of family, peers, and schools are associated with a four-year college enrollment for Asian Americans. To better understand the outcomes, Whites were included in the study for

comparative purposes. This study also explored if access to and mobilization of social capital explain educational aspirations for Asian Americans and Whites three years after high school.

As the literature suggests that college preparation and participation differ for those from lower and higher socioeconomic backgrounds, where possible, this study investigated outcomes for those from the highest and lowest socioeconomic statuses. Investigating outcomes for the highest and lowest socioeconomic statuses aligns with prior studies, such as Reardon's (2011) study that examined the educational equity gap between children with family incomes from the 90th percentile and children with family income from the 10th percentile.

To address the purpose of this study, a quantitative correlational study was performed using the public-use National Center for Education Studies' (NCES) High School Longitudinal Studies 2009 (HSLS:09) to explore the relationships between social capital and the transition to college for Asian Americans and Whites. The HSLS:09 is a nationally representative, longitudinal study of over 23,000 ninth graders from 944 public and private schools in 2009 and follows them into their postsecondary years.

This data set was appropriate for this study because one of the foci of the HSLS:09 was to explore students' decisions in the transition from high school to adulthood and the contextual factors that influence those decisions (Ingels et al., 2011). Typically, data on Asian Americans, Pacific Islanders, and Native Hawaiians are lumped together. The public-use HSLS:09 data set, however, has separated out Asian Americans from Pacific Islanders and Native Hawaiians, allowing for analyses for just Asian Americans. The separation of Asian Americans from Pacific Islanders and Native Hawaiians is helpful due to the differing history and experiences of Asian Americans and Pacific Islanders and Native Hawaiians (Poon, Squire, et al., 2016). Additionally, the oversampling of Asian Americans with the HSLS:09 (Ingels, et al., 2011) allowed for a

sufficient sample size for analyses of Asian Americans. Furthermore, since the HSLS:09 data set is a national representation of ninth graders in the United States, findings from the study can be generalizable to the general population who were ninth grade students in 2009.

Research Questions

The research questions guiding this study are:

1. What are the four-year college and two-year college enrollment rates for Asian Americans and Whites?

2. What is the highest level of education expected for Asian Americans and Whites three years after high school?

3. To what extent do student characteristics, in particular socioeconomic status (SES), and access to social capital through the social networks of family, peers, and school predict four-year college enrollment for Asian Americans and Whites?

4. To what extent do student characteristics, in particular SES, access to, and *mobilization* of social capital through the social networks of family, peers, and school predict college enrollment in a four-year postsecondary education institution for Asian Americans and Whites?

5. What are the strongest predictors for the highest level of education expected for Asian Americans and Whites?

Summary of Theoretical Framework

The theoretical framework guiding this study was based on Lin's (1999a, 2001, 2008) Network Theory of Social Capital. According to Lin (2001) social capital are "resources embedded in a social structure that are accessed and/or mobilized in purposive actions" (p. 41). Based on this definition of social capital, Lin (1999a, 1999b, 2001, 2008) theorized that

embeddedness in a structure, access to, and mobilization or use of social capital, are interrelated through purposive actions. Lin (1999a, 2001, 2008) also theorized that inequality due to structural and social positions in the social hierarchy contributes to inequitable access to and mobilization of social capital. Access to and mobilization of social capital are linked to two forms of returns: instrumental and expressive (Lin, 1999a, 2001). Instrumental returns reflect acquisition of new resources (Lin, 1986; 1999a; 2001; 2008). Expressive returns reflect the maintenance and preservation of existing resources (Lin, 1986; 1999a; 2001; 2008).

Definitions

The following list of terms are used in this study and are defined as follow:

Asian or **Asian Americans** refers to individuals having origins from the Far East, Southeast Asia, or the Indian subcontinent. This term reflects the definition of Asian used in the NCES HSLS:09.

College enrollment refers to whether the individuals continued their education beyond the high school level by enrolling in college.

Ethnic Group or Asian Ethnic Group refers to a group with shared values, norms, language, culture, or tradition based on national or geographic origin. (Suyemoto, 2003). Examples of Asian ethnic groups include Burmese, Cambodian, Chinese, Hmong, Korean, and Japanese.

Ethnicity refers to "Hispanic or Latino" and "Not Hispanic or Latino" (Office of Management and Budget, 1997).

Gender is a social construct that encompasses an individual's identity, such as woman, man, trans, and nonbinary with corresponding societal norms, roles, and expectations.

Immigration status refers to whether an individual was born in the United States and its territories, or born outside of the United States and its territories.

Pacific Islanders is categorized by the United States' Office of Management and Budget (OMB) as "Native Hawaiian or Other Pacific Islander" and refers to individuals with origins from Hawaii, Guam, Samoa, or other Pacific Islands (Hixon et al., 2012)

Race is a sociopolitical construct that makes distinctions among individuals or groups based on physical characteristics (Pang & Valle, 2004; Suyemoto, 2003). The OMB requires federal agencies to use a minimum of five categories for race: American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, and White with the option for respondents to identify with more than one race (Hoeffel et al., 2012; Office of Management and Budget, 1997).

Sex refers to the biological or physiological characteristics of the individual, such as male or female. For the HSLS:09, the sex of the sample member was taken from the base year student questionnaire, parent questionnaire, and/or school-provided sampling roster.

Social capital refers to resources, such as information, which are accessible and embedded in social networks (Lin, 2001).

Social networks refer to direct or indirect social connections that can be accessed by an individual (Lin, 2001).

Socioeconomic status (SES) is a measure of social status that takes into consideration education, occupation, and income.

Whites refers to individuals having origins from Europe, the Middle East, or North Africa. This term reflects the definition of Whites used in the NCES HSLS:09.

Significance

This study is significant for several reasons. Asian Americans are often excluded from educational discussions, policies, and practices (Hune, 2002; S. J. Lee & Kumashiro, 2005; Teranishi, 2007; Teranishi, 2010). This study contributes to the literature on the college enrollment of Asian Americans for policymakers and educational practitioners to consider when discussing and addressing educational policies and practices that include race.

The existing literature on the role of social capital on the educational goals and transition to college for Asian Americans is sparse. This study contributes to the literature on social capital and the Asian American educational experience. The findings from this study can also help practitioners and the Asian American community better understand if social capital can and should be harnessed as a tool to help address the bimodal educational patterns in the Asian American community.

This study is also significant because the findings may be helpful for policymakers and educational practitioners when addressing policies and practices related to college admissions, including around the issue of affirmative action. Affirmative action in higher education centers around the issue of race and college admissions. Asian Americans' role in affirmative action has been tangential with past legal cases in the debate on affirmative action. However, with the *Students for Fair Admissions vs. President and Fellows of Harvard College,* Asian Americans have found themselves at the center of this contentious issue as the plaintiffs of a legal case, which argued that Harvard's admissions policy unfairly discriminates against Asian Americans (Arcidiacono et al., 2022; J. Lee, 2021). Asian Americans themselves are divided on the issue, with some in support of and others in opposition of affirmative action (J. Lee, 2021; Poon, Segoshi, et al., 2019, Wang, 2007). While the issue of affirmative action is beyond the scope of

this study, the findings of this study could raise awareness of the need to address Asian American educational issues that affect educational equity, while contributing to discussions, practices, and policies that strive for a more equitable educational system in a racial hierarchical structure with a history of discriminating against minoritized groups.

Organization of the Study

This study is organized as follows. A review of the literature relevant to social capital as well as the theoretical framework is presented in Chapter Two. In Chapter Three, the methodology and research design of the study is discussed. The findings of the study is presented in Chapter Four. Chapter Five includes discussions of the study's findings, limitations, recommendations for policy and practice, and recommendations for future studies.

Summary

While a higher education offers many benefits (Hermannsson et al., 2017; Ma et al., 2016), navigating the college choice process to enter a four-year college is often challenging for many students (Cabrera & La Nasa, 2001). Prior studies suggest that social capital from social networks could help guide students to enroll in a four-year college (Cabrera & La Nasa, 2001; Dika & Singh, 2002; Klevan et al., 2016; Perna, 2000; Plank & Jordan 2001; Simmons, 2011).

Asian Americans' enrollment at two-year colleges have been outpacing enrollment at four-year colleges (Teranishi, 2010). However, there have been limited studies that explore if Asian Americans' bimodal educational pattern could be explained with social capital.

The intent of this study was to explore if there is a relationship between access to and mobilization of social capital and Asian Americans' college enrollment and highest educational expectation. More specifically, this study explored access to and mobilization of social capital from the family, peers, and school networks. This study also included Whites to serve as a point

of reference in understanding the relationships between social capital and the educational

outcomes being studied.

Chapter 2

Literature Review

The overarching purpose of this study was to investigate the relationship between social capital from the social networks of family, peers, and schools and the transition to college for Asian Americans in comparison with Whites. As such, this chapter provides an overview and history of Asian Americans and an overview of prominent conceptualizations of social capital. Included in this chapter is a discussion of the theoretical framework used for this study, Lin's (1999a, 2001, 2008) Network Theory of Social Capital. The chapter concludes with a review of the literature on how social networks of family, peers, and schools influence college enrollment.

Asian Americans

The term "Asian American" originated in the late 1960s during the Civil Rights Movement by activists who rebuffed the derogatory term "Oriental" that had previously been used to describe Asians and Asian Americans (Espiritu, 2019; Hune & Chan, 1997). The origin of the Asian American term reflects a pan-Asian ethnic group approach in a social movement, alongside other minoritized groups, to address racism, community development, and educational equity issues (Hune & Chan, 1997). Under this umbrella term, Asian American represents a diverse population with regards to several characteristics, including ethnic groups, language, immigration status, and socioeconomic status (S. J. Lee, 2006; Museus & Vue, 2013). The diversity within the Asian American population has contributed to discussions of how data on Asian Americans should be collected to influence policies and practices that would affect Asian Americans (Budiman & Ruiz, 2021; Teranishi, 2007).

Asian Ethnic Group Diversity

Asian group differences are one of the more recognized diversities among Asian Americans. Using U.S. Census Bureau data, Budiman and Ruiz (2021) identified at least 20 different Asian American groups in the United States within the category of "Asian." Six groups, Asian Indian, Chinese, Filipino, Japanese, Korean, and Vietnamese make up 85% of the nation's Asian American population (Budiman & Ruiz, 2021). The remaining 15% include Bangladeshi, Bhutanese, Burmese, Cambodian, Hmong, Indonesian, Laotian, Malaysian, Mongolian, Nepalese, Okinawan, Pakistani, Sri Lankan, Taiwanese, and Thai (Budiman & Ruiz, 2021).

Asian American vs Asian American Pacific Islander

A review of the literature on Asian American often includes the terms "Asian American Pacific Islander" (AAPI), "Asian Pacific Islander" (API), or "Asian Pacific American" (APA). The grouping of Asians and Pacific Islanders dates to 1977 when the Office of Management and Budget (OMB) grouped Asians and Pacific Islanders under the "Asian/Pacific Islander" category due to the push for civil rights based on racially protected group status (King, 2000). However, the Pacific Islander community, has a different history from that of Asian Americans. While the history of Asian Americans typically describes their arrival to the United States as immigrants or refugees, the history of Pacific Islanders typically reflects colonization by the United States (King, 2000; Perez, 2002; Poon, Squire, et al., 2016). At the 1994 federal hearings on how the 2000 United States Census would enumerate race, Pacific Islander and Native Hawaiian activists successfully lobbied to split Pacific Islander and Native Hawaiian from the "Asian" group (King, 2000).

Additionally, there have been movements, particularly from within the Pacific Islander community, which recommend researchers not conflate the Asian American and Pacific Islander

communities (Perez, 2002; Poon, Squire, et al., 2016). Poon, Squire, et al. (2016) argued that research on Asian American and Pacific Islanders or Asian Pacific Islanders may have used the AAPI term but may not necessarily have included Pacific Islanders in a meaningful way. Furthermore, they argued that the use of the AAPI term when addressing the model minority myth does not accurately portray the history and significance of the model minority term, which is used to racialize the experiences of Asian Americans, not Pacific Islanders (Poon, Squire, et al., 2016). For these reasons, this study uses the term Asian Americans to represent individuals with origins from the Far East, Southeast Asia, or the Indian subcontinent. The terms Asian American and Pacific Islander (AAPI), Asian Pacific Islander (API), or Asian Pacific American (APA) in this study shall henceforth be abbreviated as such and is only used when referencing works that have used one of these terms.

Immigration

The immigration pattern and history reflect another aspect of the diversity in the Asian American population. The Asian American immigration pattern is typically characterized as two waves. The first wave of Asian American immigration occurred pre-1965 with immigration from Asian countries of origin dating to the 1840s (Takaki, 1989). The Asian immigrants in the first wave consisted of Chinese, Japanese, Koreans, Filipinos, and Asian Indians, with Chinese and Japanese immigrants being the largest groups (Takaki, 1989). Despite the diversity in Asian ethnic groups, the Asian immigrants of this period shared similar characteristics; they came seeking employment opportunities in the United States due to political and economic turmoil in their countries of origin with many of them working as plantation or farm workers in the United States and hoping to eventually return to their home nations (Budiman & Ruiz, 2021; Takaki, 1989). However, the Asian immigrants of this wave were met with resistance and discriminatory

national policies, such as the Chinese Exclusion Act of 1882 and the Gentlemen's Agreement of 1908, which restricted entry to the United States for all individuals from China and limited Japanese immigration respectively (Takaki, 1989). As the 1790 Naturalization Law restricted citizenship to Whites only (Takaki, 1989), the passage of the Immigration Act of 1924 effectively ended Asian immigration by denying entry to individuals who were ineligible for citizenship (E. Lee, 1999).

The second wave of Asian immigration occurred after the United States repealed its discriminatory and restrictive policies. Although the 1952 McCarran-Walter Act nullified the 1790 Naturalization Law, making Asian immigrants born outside of the United States eligible for United States naturalized citizenship, it was not until the passage of the 1965 Immigration Act, which repealed prior discriminatory immigration policies, that immigrants were permitted to enter the United States (Takaki, 1989). The 1965 Immigration Act allowed for family reunification, skilled and unskilled laborers, and refugees (Takaki, 1989). A second wave of Asians immigrated after the 1965 Immigration Act contributed to an exponential growth of the Asian American population. Takaki (1989) reported that the Asian American population in 1965 was one million, or less than one percent of the United States population; but by 1985, 20 years after the passage of the 1965 Immigration Act, the Asian American population was five million, or 2% of the United States population. By 2020, the Asian American population was 24 million or 7% of the population (U.S. Census, 2022). The Asian American population is projected to surpass 46 million by 2060, making Asian Americans the fastest-growing racial or ethnic group in the United States (Budiman & Ruiz, 2021).

While Asian immigrants in the first wave share somewhat similar characteristics despite ethnic group differences, the Asian immigrants in the second wave were diverse in their country

of origin, English language proficiency, education attainment, and prior occupations. Unlike the Asian immigrants in the first wave whose original intent was to return to their country of origin, post-1965 Asian immigrants immigrated to the United States with the intent of making the United States their permanent residence (Takaki, 1989). Additionally, while most of the pre-1965 Asian immigrants were from lower-class and farming backgrounds, the post-1965 immigrants were diverse in their backgrounds, ranging from college-educated professionals to refugees (Takaki, 1989). The immigrants of the second wave consisted of working class and entrepreneurial-professional middle-class Chinese; English-speaking college-educated and medically trained professional Filipinos, who became blue collar workers as they were not allowed to practice in the United States due to strict licensing procedures; college-educated white-collar workers and trained medical professional Koreans, who became underemployed blue-collar workers in the United States due to discrimination and limited English language skills; and English-speaking and college-educated Asian Indians from the professional class, many who went into the service industry operating travel agencies, sari shops, motels, newsstands, and ethnic fast food restaurants (Takaki, 1989).

Included in this second wave were also Southeast Asian refugees who migrate to the United States after 1975 when the Vietnam War ended. As with other post-1965 Asian immigrants, the Southeast Asian refugees were diverse in their backgrounds. The first wave of these refugees included Vietnamese refugees who were generally college educated and English-speaking (Takaki, 1989). The second wave of refugees was more diverse. Included in the second wave were Vietnamese refugees, some were college-educated individuals, but many were generally fishermen, farmers, and storekeepers and did not speak English (Takaki, 1989). The refugees also included Lao, Mien, and Hmong who were mostly farmers and did not speak

English; and Cambodians who were mostly farmers with low levels of education because the Pol Pot regime in Cambodia had executed most of the educated and professional Cambodians (Takaki, 1989).

The latest Asian refugees in the post-1965 wave era are Burmese and Bhutanese who began arriving in 2009 due to political turmoil in Burma and Bhutan (Trieu & Vang, 2015). Like many of the refugees that arrived after the Vietnam War, many Burmese and Bhutanese arrived with limited knowledge of the English language (Trieu & Vang, 2015).

The history of Asian immigrants and refugees who migrated to the United States in the second wave revealed that these Asian immigrants were diverse in terms of their countries of origin, educational attainment, English language proficiency, and prior occupations. However, once they arrived in the United States, many of their economic situations were similar due to discrimination, language barriers, and limited economic and employment opportunities.

Based on the immigration history of Asian Americans, it is apparent that while some Asian Americans have been in the United States for several generations, many Asian Americans are recent immigrants. Budiman and Ruiz (2021) reported that in 2019, 57% of all Asian Americans were foreign-born, suggesting that more than half of Asian Americans are recent immigrants and most are likely first-generation Americans. Furthermore, the immigration history suggests that some Asian Americans, even within the same Asian ethnic groups, arrived in the United States equipped with more skills and resources than other Asian Americans.

Income Disparity and Poverty Rates

The income of Asian Americans reflects a bimodal pattern (Akee et al., 2019; Kochhar & Cilluffo, 2018). Kochhar and Cilluffo (2018) found that the incomes of Asian Americans at the top 10% and at the 90% bottom have steadily widened between 1970 and 2016. This gap means

Asian Americans have displaced Blacks as the most economically divided group in the United States (Kochhar & Cilluffo, 2018). During this period, the income for higher-income Asian Americans increased by 96% while income for lower-income Asian Americans increased by only 11%, which was even less than the increase for lower-income Blacks (67%), Whites (45%), and Hispanics (37%) (Kochhar & Cilluffo, 2018). Akee et al. (2019) noted similar findings in their study that examined IRS tax data, but added that White, Asian Americans, and other racial groups have the lowest levels of within-group income mobility while Hispanics, Blacks, American Indians, and Pacific Islanders have higher levels of within-group income mobility. The findings by Akee et al. (2019) suggest that over time, the income inequality within the Asian American population will continue to widen.

Kochhar and Cilluffo (2018) noted that the income disparity among Asian Americans is in large part, a reflection of the influx of Asian immigrants in recent decades. This conclusion reached by Kochhar and Cilluffo (2018) is consistent with the findings by Takei and Sakamoto (2011) who compared Asian Americans poverty rates with Whites. Takei and Sakamoto (2011) found that Asian American poverty rates are slightly higher than Whites. When Asian Americans are disaggregated by America-born Asian Americans and recent immigrants, America-born Asian Americans have lower poverty rates than Whites (Takei &Sakamoto, 2011). Takei and Sakamoto (2011) also found that recent Asian American immigrants have higher poverty rates than America-born Asian Americans, suggesting that immigration is a factor in the poverty rates of Asian Americans. The role of immigration in the poverty rates of Asian Americans can be understood from a historical perspective as many post-1965 Asian American migrants were underemployed due to discrimination (Takaki, 1989). Additionally, due to limited English language proficiency, many of them took blue-collar jobs even though they were white-collar

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workers in their country of origin with high levels of prior education (Takaki, 1989). Therefore, the conclusion that immigration is a factor in the poverty rates of Asian Americans reflects the challenges Asian American immigrants have had to overcome in their new home country.

Studies on income disparity in the Asian American population have mostly focused on specific Asian ethnic groups in poverty, particularly Southeast Asian Americans, which make up a small percentage of the Asian American population (Sakamoto, et al., 2009). Despite the emphasis on specific Asian ethnic groups in poverty, groups that are typically perceived to have high income also have members who are in poverty. According to Budiman and Ruiz (2021), as an aggregate group, 10% of all Asians live in poverty in comparison to 13% of the United States average in 2019. Of the 12 Asian American groups they examined, Budiman and Ruiz (2021) found that in 2019, nine of the Asian American groups have poverty rates as high or higher than the United States average. Within the Asian American group, only three Asian ethnic groups have poverty rates below the aggregate Asian group poverty rate: Japanese (8%), Asian Indian (6%), and Filipino (7%). Most Asian ethnic groups have poverty rates above that of the aggregate group, such as Korean (11%), Vietnamese (12%), and Chinese (13%) (Budiman and Ruiz, 2021). Some Asian groups have poverty rates that are higher than that of the United States' average, such as Pakistani (15%), Nepalese (17%), Bangladeshi (19%), Burmese (25%), and Mongolian (25%) (Budiman and Ruiz, 2021). The poverty rates by Asian ethnic groups suggest that a few groups are doing well economically. However, the aggregate for each group still hides that within each group there are members who are struggling financially, including members of groups that are considered to have high income (Covarrubias & Liou, 2014).

Suburban vs. Urban Schools

Urban public high schools are typically portrayed as resource-limited due to their locations in lower socioeconomic neighborhoods attended predominantly by students of color (Kozol, 1992). In contrast, suburban public schools are viewed as resource-rich due to their higher socioeconomic neighborhood locations and are attended predominately by Whites (Kozol, 1992). As McDonough (1997) noted, the amount and quality of school resources influence students' educational opportunities and choices as they transition from high school to college.

According to Teranishi (2010), approximately 70% of Asian Americans and Pacific Islanders are concentrated in urban schools that are predominately attended by minority students. As with the overall American population, Asian Americans from higher socioeconomic status often attend resource-rich suburban public schools, while Asian Americans from lower socioeconomic status often attend resource-limited urban public schools (S. J. Lee, 2006; Louie, 2001). Asian Americans who attend suburban middle-class neighborhoods have access to schools that focus on college attendance along with dedicated institutional agents who provide students with resources and opportunities to assist them with the transition to college (Teranishi, 2010). In comparison, the access to resources for Asian American students who reside in poor urban areas and attend the local public schools are like other lower status minoritized students who attend urban public schools (Teranishi, 2010). The challenges of attending urban public schools are portrayed in Lew's (2004, 2010) studies, which described the experiences of Korean Americans who grew up in working-class families, attended urban high schools that consisted primarily of poor minorities and immigrants, and eventually dropped out of high school. Asian American parents' awareness of the advantages of resource-rich schools by has led some of them to take strategic actions to ensure their children attend resource-rich schools, such as transferring

guardianship of their children to co-ethnic friends who reside in resource-rich schools to gain the corresponding advantages (J. Lee & Zhou, 2014).

Postsecondary Education Access and Enrollment

Although there has been limited attention paid to the college access and college destinations of Asian Americans (Teranishi et al., 2004), the studies that do exist about Asian Americans' college enrollment are inconsistent. For example, Plank and Jordan (2001) found that Asian/Pacific Islanders are significantly more likely than Whites to attend a four-year postsecondary education institution than enroll part-time in a two-year postsecondary education, or not enroll in a postsecondary education institution at all. Such finding, coupled with the model minority stereotype, contribute to the perception that Asian Americans are overrepresented in higher education, and particularly at elite universities (Wang, 2007). However, as Wang (2007) pointed out, the postsecondary education enrollment of Asian Americans reflects a unique bifurcation pattern that is indicative of the complex socioeconomic statuses within the Asian American population. While Asian Americans enrollment at selective higher education institutions is high, the Asian American enrollment at state universities and two-year community colleges is also high (Wang, 2007). Teranishi (2010) noted that the AAPI enrollment at community colleges increased by 370% between 1980 and 2005, faster than AAPI enrollment at four-year postsecondary higher education institutions. Yet, the AAPI enrollment at community colleges is rarely mentioned (Teranishi, 2010). The conflicting existing literature is an indication that more research is needed about Asian Americans' college enrollment.

English Language Proficiency

English language proficiency affects social well-being as it influences educational, employment, and naturalization opportunities as well as access to healthcare and treatments from

others related to issues of civil rights (Siegel, 2018). Furthermore, individuals who are proficient in the language are often viewed as having more positive characteristics than those who are not proficient (Siegel, 2018). The importance of English language proficiency on job opportunities is evident with Asian Americans, such as Koreans, who were college-educated or professionally trained but were relegated to blue-collar jobs after they immigrated to the United States due to their limited English language proficiency (Takaki, 1989).

Among Asian Americans, English language proficiency is often reflective of whether Asian Americans are foreign or native born. Overall, in 2019, 72% of Asian Americans were proficient in English, with 34% of Asian Americans speaking only English at home (Budiman & Ruiz, 2021). When place of birth is considered, 95% of Asian Americans who were native born were proficient in English with 65% speaking only English at home (Budiman & Ruiz, 2021). In comparison, 57% of Asian Americans who were foreign born were proficient in English and 14% speak only English at home, 22% speak Chinese at home, and 25% speak another language at home (Budiman & Ruiz, 2021). Thus, for Asian Americans English language proficiency reflects length of immigration to the United States with more recent immigrants having a lower level of English language proficiency.

Sex

Sex and gender roles influence life experiences and educational expectations for many AAPI (S. J. Lee, 2006; S. J. Lee & Kumashiro, 2005). Among many AAPI immigrants, upholding gender roles is a prominent expectation (S. J. Lee, 2006). For example, Tang and Kao (2015) pointed out that Cambodian American boys are expected to support the family and Cambodian American girls are expected to get married and take care of the family.

Familial and cultural expectations and norms could hinder girls' educational pursuit (S. J. Lee, 2006; S. J. Lee & Kumashiro, 2005). Indeed, the educational outcomes for Asian American males appears to be different from that of Asian American females. In their examination of the March 2010 US Census Supplement data, Covarrubias and Liou (2014) found that among all income groups, Asian American women have lower high school completion and college enrollment than Asian American men. Among all income groups, except the highest income group, men earn fewer baccalaureate degrees than women because men are more likely to leave college without a degree (Covarrubias & Liou, 2014). When immigration generation is controlled for, the educational attainment of women who were born in the United States outperform men who were born in the United States at most levels of the educational pipeline (Covarrubias & Liou, 2014). Thus, while more men enroll in college, more women complete college.

The educational outcomes of Asian American males and females might be explained by differential access to social capital. S. J. Lee and Kumashiro (2005) noted that the in-school experience for girls has been more supportive as school staff, also known as institutional agents (Stanton-Salazar, 2011), are typically more receptive to helping girls. Thus, Asian American girls appear to have more access to social capital than Asian American boys at school.

S. J. Lee and Kumashiro's (2005) conclusion that Asian American boys and girls have differential access to social capital, may apply to girls in general, not just Asian American girls. In comparing access to social capital for Hispanic and White women, Riegle-Crumb (2010) found that both Hispanic and White high school girls have higher levels of social capital, including friends who are academically focused and interactions with high school counselors, which increases the odds of Hispanic and White girls' college enrollment. Similarly, Klevan et

al., (2016), using the 2002 Educational Longitudinal Studies, found that girls have greater access to social capital. However, Klevan et al. (2016) concluded that social capital does not fully explain the gender gap in college enrollment. Thus, more research is needed on the relationship between social capital and college enrollment by gender.

Disaggregation vs Pan-Asian Ethnicity

Due to the diversity in language proficiency, immigration history, and socioeconomic status between Asian American ethnic groups, some researchers recommended disaggregating Asian Americans by Asian ethnic groups to help illuminate Asian American issues (De La Cruz-Viesca, 2011; Maramba, 2011; Teranishi et al., 2015). However, not all researchers agree that disaggregating by Asian ethnic groups is the best approach to addressing issues, policies, and practices affecting Asian Americans. Poon, Squire, et al. (2016) argued that disaggregating by Asian ethnic groups to highlight the low academic success of some Asian ethnic groups in an attempt to counter the model minority myth reinforces a deficit framework. Indeed, researchers have noted that focusing on the low academic success of some Asian American ethnic groups have led to students internalizing the negative messages about their Asian ethnic groups (Chhuon, 2014; Tang & Kao, 2015). Still, other researchers have suggested that instead of formulating research questions on Asian Americans based on national origins, to allow the data to highlight the differences and similarities among ethnic groups (Drouhot & Garip, 2021).

Researchers whose perspectives differ from that of disaggregating by Asian ethnic groups argued that it is not that disaggregating by Asian ethnic group is unimportant, but that Asian Americans' issues could be advanced through other means (Poon, Squire, et al., 2016). One mean of advancing issues for all Asian American is through a pan-Asian ethnicity approach as suggested by Espiritu (1992). According to Espiritu (1992), a pan-Asian ethnicity can form if it

is recognized that despite their diversity, the similarity among Asian Americans include a shared history of exploitation, oppression, and discrimination. Suyemoto (2003) agreed that identifying racially as Asian American in addition to one's ethnic or multi-ethnic identities indicates an understanding and awareness of the existence of a racial hierarchy of power and privilege that contributes to racism. Thus, focusing on Asian ethnic group differences to address politics and policy demands contribute to policies, economics, and resources based on Asian ethnic group differences (Espiritu, 1992), detracting awareness from a racial hierarchy. Instead, by taking a pan-Asian ethnicity approach, Asian American issues could be advanced within the context of a racial hierarchy and contribute to policies, economics, and resources for all Asian Americans. For the reasons listed above, this study examined Asian Americans as an aggregate.

Social Capital

Social capital has its origins in sociology based on the works of Durkheim and Marx (Portes, 1998). Social capital has since migrated and gained popularity in other social sciences, including education (Dika & Singh, 2002; Portes, 1998). At the core, social capital focuses on power and social influence in society (Portes, 1998). Of the many conceptualizations of social capital that migrated from sociology, Pierre Bourdieu's and James Coleman's concepts of social capital are perhaps the most referenced in education (Dika & Singh, 2002). Less frequently cited in education is Nan Lin's (2001) Network Theory of Social Capital. This section will include a brief overview of all three.

Bourdieu's Concept of Social Capital

Bourdieu has been recognized as the first contemporary sociologist to develop the concept of social capital (Dika & Singh, 2002; Portes, 1998). Bourdieu (1986) defined social capital as actual or potential resources linked to a network of relationships and group

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membership. The networks of relationships represent investments in social relationships through social roles and can be directly used in the short or long term through implied obligations, such as feelings of respect and gratitude, or through rights (Bourdieu, 1986). The volume of an individual's social capital is based on the size of an individual's network and the volume of all forms of capital the individual possesses (Bourdieu, 1986). Thus, for Bourdieu, social capital is made up of two elements: social relationships that allow individual access to resources through those relationships and the amount and quality of those resources (Portes, 1998).

According to Bourdieu (1986), social capital is one of three forms of capital: economic, cultural, and social. These forms of capital are fungible, meaning one form of capital can be converted to the other forms of capital (Bourdieu, 1986; Portes, 1998). As cultural capital serves to reproduce the dominant group's value and symbols (Bourdieu, 1986; Lin, 1999a), social capital by extension, is a tool for the dominant group to reproduce inequality (Dika & Singh, 2002; Field, 2016). For critics, Bourdieu's relatively static model on social hierarchy with his concept of social capital is a limitation as it is not necessarily reflective of contemporary society's more fluid social hierarchy (Field, 2016).

Coleman's Concept of Social Capital

Similar to Bourdieu's concept of social capital, Coleman's conceptualization of social capital also refers to resources available through relationships between actors (Dika & Singh, 2002). While Bourdieu's conceptualization of social capital in which resource for the dominant class contributes to the reproduction of inequality (Dika & Singh, 2002; Field, 2016), Coleman's conceptualization of social capital is not limited to the dominant class so poor and marginalized groups also benefit from it (Field, 2016). According to Coleman (1988), social capital consists of norms accompanied by sanctions, trust, and intergenerational closures, providing the structure

for individuals to take rational action. Furthermore, Coleman's conceptualization of social capital suggests that social capital contributes to human capital, which Coleman (1988) associated with remaining in school instead of dropping out. Coleman's concept of social capital has so greatly influenced educational research that it is widely used by most educational researchers (Dika & Singh, 2002).

As Coleman's (1988) conceptualization of social capital consists of norms, sanctions, trust, and intergenerational closure, it can be viewed as a form of social control (Dika & Singh, 2002; Portes, 1998). Portes (1998) pointed out that community networks, social control, and collective sanctions have negative side effects, which are often not discussed. These negative side effects include restricting entry to the community network for outsiders, hindering successful business initiatives, demanding conformity, restricting individual freedom, and maintaining the status quo for an already repressed community (Portes, 1998). In addition, critics argued that Coleman's conceptualization of social capital as both the sources of resources and the benefits acquired is tautological (Dika & Singh, 2002; Field, 2016; Lin, 1999a; Portes, 1998), leading critics to argue that it is too vague to be testable (Dika & Singh, 2002). Critics also argued that Coleman's conceptualization of social capital neglects to address differences in social statuses of individuals (Rogošić & Baranović, 2016) and ignores the individual's agency in accessing social capital (Dika & Singh, 2002).

Lin's Concept of Social Capital

As with Bourdieu and Coleman, Lin (2001, 2008) viewed social capital as resources that can be accessed through social relationships. Similar to Bourdieu, Lin (2001, 2008) emphasized relationships in social networks as the source of social capital. While both Bourdieu and Coleman implied that access to social capital translates to utilization of social capital, Lin

(1999a, 2001, 2008) explained that outcomes or returns are directly influenced by access to and mobilization, or use, of social capital. Thus, Lin's conceptualization of social capital addresses the issue of individual agency. Additionally, Lin's (1999a, 2001, 2008) conceptualization of social capital addresses how inequality in a social structure through variations in social positions contribute to unequal access to social capital. Although Lin's (1999b, 2001) conceptualization of social capital, Network Theory of Social Capital, is primarily focused on occupation and status attainment, it has been used alone or in combination with other social capital theories to explain educational outcomes. For example, it has been used to examine entry to engineering majors (Martin et al., 2013; Martin, 2015), postsecondary entry and baccalaureate degree attainment of low-income students (Ashtiani & Feliciano, 2018), and college enrollment by racial groups (Perna & Titus, 2005). Lin's (1999a, 2001, 2008) Network Theory of Social Capital was utilized as the theoretical framework to guide this study. The following section provides an in-depth discussion of the theory.

Theoretical Framework

The theoretical framework guiding this study is based on Lin's (1999a, 2001, 2008) Network Theory of Social Capital. Lin (2001, 2008) traced the foundation of social capital to classical capital theory established by Karl Marx. Lin (2001, 2008) asserted capital represents investments in social relationships that are accessed and mobilized to attain a goal. As such, Lin defined social capital as "resources embedded in a social structure that are accessed and/or mobilized in purposive actions" (2001, p. 41). Lin (2001) further clarified that constraints and opportunities available for actions are based on a social structure with a pyramid-shaped hierarchy. Based on this definition, Lin (1999a; 2001; 2008) theorized a model that connects in causal sequencing to represent the conditions of where individuals are within the social structure,

actions that lead to access and mobilization or use of resources, and the possible returns from the actions. The theoretical framework rendering in Figure 1 is based on Lin's (1999a; 2001; 2008) Network Theory of Social Capital that is used for this study. An individual's positions in the social structure is linked to capitalization, specifically access to and mobilization or use of social capital, which through instrumental or expressive actions produce the resulting returns (Lin, 1999a, 2001, 2008).

Figure 1

Theoretical framework based on Lin's (1999a; 2001; 2008) Network Theory of Social Capital.
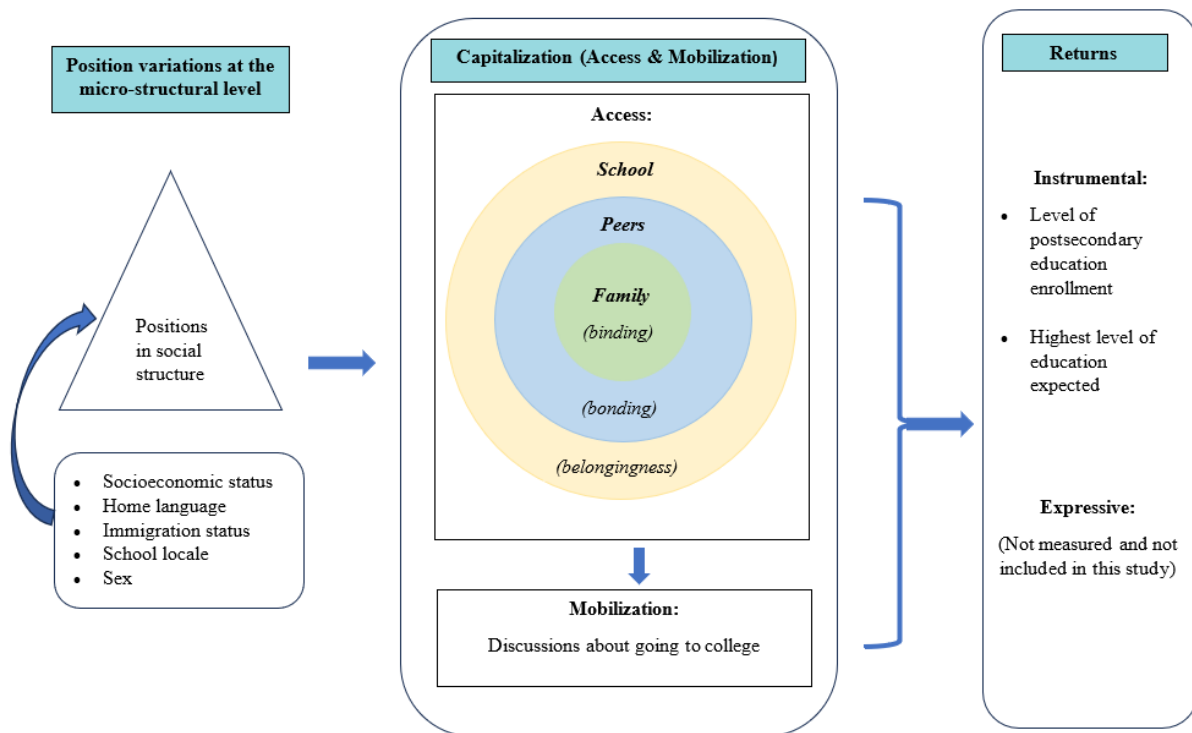
Lin (2008) proposed that social capital can be analyzed at the macro-structural level or the micro-structural level. At the macro-structural level, the focus is on social capital for the collective, such as organizations (Lin, 2008). At the micro-structural level, the focus is on how

resources are mobilized by individuals with specific actions for the desired return (Lin, 1999a). This study focused on social capital at the micro-structural level to explore how Asian American and White students access and mobilize resources in their social networks to attain returns, specifically level of college enrollment and expected level of education.

Regardless of whether the focus is at the macro-structural or microstructural level, Lin (1999a, 2001, 2008) proposed that individual's positions in the hierarchical social structure, shaped like a pyramid, either hinder or facilitate access to resources embedded in the social structure. Positions in the social structure are ranked and characterized along three dimensions: 1) social, i.e., the reputation of the individual or the status (prestige) of the individual's position; 2) economic, i.e., the wealth of the individual or the class of the individual's position; and 3) political, i.e., the power of the individual or the authority of the individual's position (Lin, 2001). This means that individuals whose position is higher on the hierarchy will have access and better use of social capital (Lin, 2001). Additionally, positions in the hierarchical social structure can be inherited, typically from parents, attained, or acquired by individuals (Lin, 2001).

Inequality in the social structure contributes to inequitable access to and mobilization of social capital (Lin, 1999a, 2001, 2008). Individuals have inequitable access to social capital because of the principle of homophily, the idea that social interactions typically occur among individuals who share similar lifestyles and socioeconomic characteristics (Lin, 2001, 2008). Based on homophilous interactions, individuals would continue to have access to similar resources through the groups or networks the individuals are members of (Lin, 2001, 2008). To access dissimilar resources, heterophilous interactions are necessary. However, as there is a general inclination for homophilous interactions and as heterophilous interactions require more effort, heterophilous interactions are less likely to occur (Lin, 2001). Individuals whose positions

are higher in the social structure will continue to have access to better social capital that can be mobilized (Lin, 2001). Individuals whose positions are lower on the social structure could access and mobilize better social capital, but it would take more efforts to do so (Lin, 2001).

Social networks thus provide the condition for individuals to access and use resources based on social relations (Lin, 2008). According to Lin (1986; 2008), social relations are represented by three different layers. The social relations in the outermost layer are represented by shared membership and a collective identity formed through social institutions, such as church, school, and political and social associations (Lin, 1986; 2008). Although members may or may not interact among themselves, the social ties at this layer provide members with a sense of belonging (Lin, 1986; 2008). In this study, the outermost layer is represented by teachers and counselors who represent "institutional agents" at school (Stanton-Salazar, 2011).

The middle layer consists of social relations that are formal or informal, such as kinship, shared work environment, or friendship (Lin, 1986; 2008). This layer is characterized by the sharing of information and resources (Lin, 1986; 2008). Interactions may be direct or indirect and thus the relationships in this layer may not be equally strong or reciprocal (Lin, 1986; 2008). The social ties in this layer reflect bonding relationships based on shared interests or characteristics (Lin, 1986; 2008). In this study, the middle layer is represented by peers.

The innermost layer of social relationships can be characterized as intimate, strong, and trusting (Lin, 1986; 2008). The social ties in this layer reflect binding relationships based on trust, shared sentiments, and expectations to exchange or reciprocate support (Lin, 1986; 2008). In this study, the innermost layer is represented by family.

By accessing and mobilizing social contacts in their networks and the contacts' resources, the process generates returns or yields, as shown in Figure 1. Social capital generates two forms

of returns: instrumental and expressive (Lin, 1986, 2001, 2008). Instrumental returns reflect new resources that contribute to the dimensions of wealth, power, and reputation, such as getting a better job, a promotion, or an education credential (Lin, 1986; 2001; 2008). Expressive returns reflect the maintenance and preservation of existing resources along the dimensions of physical health, mental health, and life satisfaction (Lin, 1986; 2001; 2008). Lin (1986; 2008) exemplified expressive returns as preserving a relationship, sharing emotional problems, and keeping the neighborhood safe. This study focused on instrumental returns so expressive returns were not measured and not included in the study.

For this study, position variations in the hierarchical social structure were represented by SES, home language, immigration status, school locale, and sex. These five demographic characteristics contribute to determining the positions in the social structure based on the dimensions of wealth, power, and reputation. For example, SES reflects the education, occupation, and income of an individual. A higher level of SES is a typical indicator of higher wealth, power, and reputation. Individuals with higher SES tend to be towards the top of the social hierarchy. Immigration status is another example of how social positions are determined. Immigrants are subject to policies, such as past US discriminatory immigration policies, which negatively affected immigrants. Home language may represent English language proficiency. Limited English proficiency can pose a barrier to educational, job, and economic opportunities (Siegel, 2018), which can be determining factors of an individual's social position. Due to historical, institutional, and social discriminations, sex also shapes one's position in a hierarchical social structure (Cross & Lin, 2008). The resulting effect is that White men typically occupy higher positions on the socioeconomic hierarchy than women and minorities (Cross & Lin, 2008). Finally, parents' educational and income level influences the place of residence,

which in turn influences their children's school locale, that is if their children attend school in an urban, suburban, or rural setting. School locale is an example of how individuals' position of origin may be inherited based on parents' educational and income level, influencing the parents' and their children's statuses in the social hierarchy.

Structural and position variations are connected to capitalization, which reflects access to and mobilization of the social relationships in the family, peers, and school social networks. For returns, this study focused on instrumental returns of social capital, more specifically, students' post-high school educational enrollment and highest educational expectation.

Social Capital from Social Networks and its Relationship to Education

This section focuses on social capital through social networks, specifically the networks of family, peers, and school. Social capital can influence the transition from high school to college, including high school graduation, and college enrollment (Dika & Singh, 2002; Hébert et al., 2004; Plank & Jordan, 2001; Kao, 2004). For most students, their relationships with their families, friends, counselors, and high school teachers, are most influential as they prepare and make the transition from high school to college (Kim & Gasman, 2011).

Families

Of the significant people in students' lives, family, particularly, parents are perhaps the most influential. Past studies (Rimkute, et al., 2012; Trusty, 1998) agree that parents influence the educational expectations of their children. One way is through communication of their educational expectations.

Parental educational expectations communicate parents' values and shape students' college opportunities (Rowan-Kenyon et al., 2008). Researchers have pointed out that regardless of immigration generation status or SES, Asian American parents have high educational

expectations for their children (Goyette & Xie, 1999; J. Lee & Zhou, 2014). Furthermore, Asian American parents' educational expectations are higher than their White counterparts (Liu & Xie, 2016). Analyzing data from the National Educational Longitudinal Study, Goyette and Xie (1999) concluded that Asian Americans' parental educational expectations had a strong positive effect on children's educational expectations. This may reflect the pressure many Asian American students reported about living up to parental expectations (S. Lee et al., 2009). It may also be an indicator of the relationship Lin (2001) described of the innermost layer, which are binding, reciprocal, and strong.

Parental expectations appear to have more impact when they are congruent with students' own expectations. According to Kim and Schneider (2005), the alignment, or matching, of parental expectations and adolescents' educational aspirations is a measure of social capital. Using the National Education Longitudinal Study of 1988-1994, Kim and Schneider (2005) found that when parental expectations and adolescents' educational aspirations are aligned, the odds of enrolling in a four-year college, as opposed to a two-year college or no college at all, increase.

In addition, parental involvement can influence their students' educational plans and outcomes. Parental involvement is typically defined as engagement by parents in their children's education, including the preparation for college (Museus & Vue, 2013; Wells et al., 2011). Researchers typically classify parental involvement as a form of social capital (Perna & Titus, 2005; Wells et al., 2011). Parental involvement indirectly affects college enrollment by increasing the likelihood that students meet the minimum qualifications to be eligible for college (Cabrera & La Nasa, 2001). However, parental involvement is strongly influenced by SES with parents from high socioeconomic backgrounds having higher levels of parental involvement than

parents from lower socioeconomic backgrounds (Rowan-Kenyon et al., 2008). Rowan-Kenyon et al. (2008) pointed out that low level of parental involvement is not necessarily reflective of parents, but of structures and policies that may have hindered parental involvement, such as the lack of school resources to reach out to parents and the geographic location of postsecondary education institutions that encourage attendance at the local postsecondary education institution, typically a community college.

SES influences parental involvement for Asian Americans in particular. Lew (2006) and Louie (2001) noted that working-class Asian American parents' limited involvement can be attributed to their limited English proficiency, lack of formal schooling, and long work schedules that do not permit them to be as engaged as their middle- and upper-class counterparts. For example, middle-class parents in Louie's (2001) study had time to explore the best school options by connecting with friends, teachers, and school administrators because the parents either did not have to work or worked on a part-time basis. Using the 2002 Educational Longitudinal Studies, Museus and Vue (2013) likewise found that parental involvement directly affected the transition to college for low socioeconomic Asian Americans while parental involvement had an indirect effect on college transition through increased academic performance for middle- and high-socioeconomic status Asian Americans.

Parental involvement for Asian Americans, however, might not be limited to just parents, but may also include extended families and co-ethnic group members. In their study on low-income Chinese American students, Li et al. (2008) concluded that Chinese Americans' high achievement is not correlated with parental involvement because there was no direct parental involvement as with typical middle-class families. However, as Li et al. (2008) found in their study, Chinese immigrant families developed social networks in which parents may charge one

person in the family or extended family to guide or co-parent in their child's learning. The study by Li et al. (2008) suggests that parental involvement in Asian American families might take on a familial approach, which might not be readily recognized as a form of parental involvement.

Prior research has found discussions between students and their parents about college to be beneficials in the transition to college. Myers and Myers (2012) argued that not only are discussions about college between parents and high school students a form of social capital, but they also should be considered a college-planning activity. Using the 1999 Wave of the National Household Education Survey, Myers and Myers (2012) performed an ordered logistic regression to examine the relationship between being informed and prepared, college aspirations, parent and student involvement as the predictor variables and number of discussion topics on college preparation as the outcome variable. From their models, Myers and Myers (2012) found that parents and students are statistically more likely to discuss more topics when both have prepared and are informed by gathering information about college, have higher levels of student and parent college aspirations, and have higher levels of parental and student involvement in school and community activities. Myers and Myers (2012) concluded that parent-student discussions can be viewed as a form of social capital that is an integral part of the college planning process. Plank and Jordan (2001) who analyzed the NELS:88 and found that higher level of parent-student discussions in the early years of high school increased the odds of attending a four-year postsecondary education institution instead of a two-year postsecondary institution or not enrolling at all.

Peers

According to Ryan (2000), peers serve as socializing agents. The influence of friends on college enrollment is strong. Students whose friends are academically oriented appear to have

higher odds of enrolling in college. In their study of students whose parents did not attend college, Choy et al. (2000) found that the odds of attending college are higher if their peers plan to attend college and if their peers are engaged in learning. Bedsworth et al.(2006) also reached a similar conclusion that having friends who value learning increases the odds of attending college, but they also noted that the effect is less pronounced than having friends who plan to attend college. These findings are similar to Riegle-Crumb's (2010) findings that Hispanic and White girls with academically oriented friends have increased odds of college enrollment.

The influence of peers is also evident among Asian Americans, including among lower status Asian Americans. In Louie's (2001) study, the working-class Chinese American students strategically gleaned information from their friends, or followed their friends when they did not have access to or did not know how to access information to help them identify high schools that would help them be academically competitive. Similarly, Lew (2006) reported that peer network provided school information and emotional support for middle-class Korean American students. Korean American students from lower status backgrounds also relied on peer networks, but their outcomes differ from that of their middle-class peers because of the resources in the different networks (Lew, 2006) Thus, connecting with peers is important. Peers provide students with support and information to navigate the educational system, while also possibly influencing their participation in college.

Schools

A student's sense of belonging within a school environment is important. Sense of school belonging refers to the social and emotional connection the student has with their school and with people at their school (Neel & Fuligni, 2013). Through a meta-analysis study, Korpershoek et al. (2020) concluded that school belonging is positively associated with academic

achievement, motivation, engagement with teachers and others in the school environment, educational aspirations and attitudes, self-esteem, and self-efficacy, while being negatively associated with dropping out. However, rather than being one directional, students' sense of school belonging appears to be bi-directional. As Allen et al. (2018) pointed out, students' positive relationships with their teachers and perception that their teachers are caring, fair, empathic, and helpful in resolving problems could help students feel a greater sense of belonging. Through regular contacts with teachers and counselors, who Stanton-Salazar (2011) referred to as institutional agents, meaningful relationships could be developed to provide students with guidance and support in the transition to college (McDonough, 1997; Museus & Vue, 2013; Teranishi & Briscoe, 2006).

Studies have shown that students who talk to institutional agents are more likely to apply to and attend college (Bryan, Moore-Thomas, et al., 2011; Bryan, Farmer-Hinton, et al., 2018). However, many Asian American students may not ask for help, especially if they do not connect with institutional agents (Teranishi, 2010). Thus, for many Asian Americans mere access to available resources may not be enough. As Lew (2006; 2010) noted, caring institutional agents matter for Asian Americans, particularly low status Asian Americans. As exemplified in Lew's (2006, 2010) studies, lower status Asian Americans, particularly those who change schools often in search of a good school, described feeling isolated and alone. Caring institutional agents allow for trust to be formed and meaningful relationships to develop (Pang et al., 2000) and contribute to students' sense that they belong at school and in the school community.

Summary

This chapter provided an overview of Asian Americans and social capital. The Asian American population is diverse with regards to Asian ethnic groups, immigration history,

socioeconomic status, and educational attainment. While Asian Americans appear to be economically and educationally successful overall, Asian Americans represent a bifurcated population with a bimodal distribution of SES and educational outcomes. To assess if social capital from the social networks of family, peers, and school could also explain the bimodal educational outcomes of Asian Americans, Lin's (1999a, 2001, 2008) Network Theory of Social Capital was used to help guide the study.

Chapter 3

Methodology

This chapter describes the research methodology and design. This chapter includes information about the data source, analytic sample, variables of the study, and analytical approach and data analysis of the study. The chapter concludes with a summary of the chapter.

Data Source

This study used a quantitative approach by examining and analyzing data from the National Center for Education Statistics (NCES) High School Longitudinal Study of 2009 (HSLS:09). NCES, which is part of the U.S. Department of Education's Institute of Education Sciences, collects, analyzes, and reports education related data. The HSLS:09 is the fifth longitudinal study conducted by NCES as part of the Secondary Longitudinal Studies Program. The purpose of the HSLS:09 is to explore students' transition from secondary to postsecondary, entry into and out of the STEM pipeline, and the factors that contribute to students' educational plans and outcomes (Ingels et al., 2011). The HSLS:09 data set is available in public-use and restricted-use files. The public-use file, however, altered or suppressed some of the original data to minimize the risks of disclosing the identity of respondents. This study utilized the public-use data file, which can be downloaded from the NCES website.

The HSLS:09 is a nationally representative, longitudinal study of over 23,000 ninth graders from 944 public and private schools in 2009, and it follows them into their postsecondary years. The HSLS:09 data was created using a stratified, two-stage random sample design. Schools were the primary sampling units (PSU) in the first stage, and students were randomly selected from the sampled schools in the second stage by race/ethnicity.

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As the sampling is not based on a simple random sample, but a stratified, two-stage random sample design, Taylor series linearization and Balanced Repeated Replication (BRR) for variance estimation methods are available for use with the HSLS:09 dataset (Ingels et al., 2011). Using the Taylor series linearization requires data with analytic strata and PSU identifiers, which increases the risks of disclosures for respondents (Ingels et al., 2011). To minimize disclosure risks, analytic strata and PSU identifiers are not available with the public-use file, which means the Taylor series linearization variance estimation is not an option with the public-use data file. In comparison, the BRR variance estimation method uses replicate weights and the main analytic weight for variance estimation so it does not require use of analytic strata and PSU identifiers (Ingels et al., 2011). The BRR variance estimation method is available for use with both the restricted and the public-use data file. Despite offering both options, NCES recommends the replicate variance estimation method over the linearization variance estimation method as additional random variability from the analytic weight adjustment is captured with the BRR method (Ingels et al., 2011). Since the source of the data for this study was the public-use data file, the BRR variance estimation method was employed.

According to Kish and Frankel (1970), the BRR method creates replications by randomly taking one-half of the sample from two PSU for each stratum. The replication, in turn, reproduces the entire sample (Kish & Frankel, 1970). Kish and Frankel (1970) further clarified that to increase the precision of the sample, repeated replications are needed. Thus, new replications are drawn from pairs of half-samples. Balancing, which Heeringa et al. (2017) described as a process of cancelling "unwanted between-stratum cross-product terms" (p. 80), reduces the number of repetitions needed (Kish & Frankel, 1970).

Applying the BRR variance estimation method with statistical software requires the use of replicate weights (Heeringa et al., 2017). For the HSLS:09, a fully orthogonal balanced set of 200 replicates were formed with two PSUs within 199 BRR strata (Ingels et al., 2011). The HSLS:09 data documentation includes samples of codes to specify statistical software to produce BRR variance estimation and standard errors.

Data Collection Waves

There have been five waves of data collection, starting in 2009 when students were in the ninth grade. The most recent data collection occurred during the 2017-2018 academic year with the collection of postsecondary transcripts. The other waves of data collection are as follows:

Base Year

The base-year data collection occurred between September 2009 and February 2010, with follow-ups through April 2010 (Ingels et al., 2011). Students completed an in-person mathematics assessment and a web-based survey. Students' parents, principals, science and mathematics teachers, and school's lead counselors completed questionnaires on the phone or online.

First Follow-Up

The first follow-up occurred in spring of 2012 when most of the sample members were in the eleventh grade. The students completed another mathematics assessment and a questionnaire on topics including high school attended, school experiences, extracurricular participation, and post-high school plans. Parents, counselors, and administrators were surveyed again during the first follow-up.

2013 Update

During the summer/fall of 2013, the 2013 update collected information about the cohort's postsecondary plans and choices upon completion of high school. High school transcripts during the 2013-2014 academic year were collected. College admissions test scores, Free Application for Federal Student Aid (FAFSA), and GED data were also included.

Second Follow-Up

The second follow-up occurred in 2016, which was approximately three years after what would have been the cohort's high school completion date. Topics from this survey included high school completion and experiences, college enrollment history and future enrollment plans, employment history, family and home life, and personal characteristics.

Analytic Sample

Data for this study were drawn primarily from student and parent surveys from the base year when students were in the ninth grade. The model's criterion variables that measured college enrollment and highest education expected were drawn from the second follow-up, three years after high school for most students in the cohort. This study focuses on subpopulations of students identified as Asian, non-Hispanic, and White, non-Hispanic.

As the HSLS:09 survey is a complex survey due to the stratified, two-stage random sample design, cases that do not meet the subpopulation of Asian, non-Hispanic and White, non-Hispanic were not deleted to avoid underestimating standard errors (Heeringa et al., 2017). This study instead followed the recommendation of Heeringa et al. (2017) to generate indicator variables for each subpopulation of interests and code the case with a one if it is a member of the subpopulation of interest and a zero if the case is not a member of the subpopulation of interest.

Asian, non-Hispanic and White, non-Hispanic students were identified from the

HSLS:20009 data set using the X1RACE variable, which is a composite variable derived from

six dichotomous race/ethnicity composites. To identify Asian, non-Hispanic respondents, a

dummy variable, Asian, was created using the X1RACE variable (0 = Not Asian, 1 = Asian). To

identify White, non-Hispanic respondents, another dummy variable, White, was created using

the X1RACE variable (0 = Not White, 1 = White). Through these two dummy variables, students

who do not identify as Asian or White were coded as zero.

Table 1

Samples to be Used in Study

Variable Name	Description	HSLS:09 Label
Asian	This is a dummy variable recoded from the composite variable X1RACE. 0 = Not Asian 1= Asian	X1RACE
White	This is a dummy variable recoded from the composite variable X1RACE. 0 = Not White 1 = White	X1RACE

Variables for Study

Criterion Variables

The criterion variables are from the second follow-up. The criterion variables are shown

in Table 2.

Postsecondary Educational Enrollment

The first criterion variable is the level of the first postsecondary education institution

attended after high school using the X4PS1LEVEL composite variable. Responses for

X4PS1LEVEL were coded as 1= 4 year; 2= 2 year; 3 = less than 2-year. For this study,

responses that include two-year and less than two-year were combined to reflect enrollment in a two-year or less than two-year postsecondary education institution. Thus, responses were recoded to reflect 0 = Two year or less postsecondary education institution, 1= four-year postsecondary education institution.

The X4PS1LEVEL variable only applied to students who responded in the survey that they had ever attended college. Thus, respondents who responded that they have never enrolled in a postsecondary education institution were not included.

Highest Level of Education Expected

The second criterion variable is the highest level of education expected three years after what would have been the cohort's high school completion (S4EDUEXP). Responses were originally coded into twelve levels from 1= less than high school completion to 12 = complete PhD/MD/JD etc. For this study, the responses were recoded to collapse the 12 categories into three: 1 = less than a bachelor's degree; 2 = bachelor's degree; 3 = master's degree or higher.

Table 2

Criterion Variables

Variable Name	Description	HSLS:09 Label
Postsecondary Education Enrollment	Level of the first postsecondary education institution attended. 0 = 2-year or less than 2-year 1 = 4-year	X4PS1LEVEL
Highest Level of Education Expected	Highest level of education expected 1 = Less than bachelor's degree 2 = Bachelor's degree 3 = Master's degree or higher	S4EDUEXP

Predictor Variables

The predictor variables are from the base year and include socioeconomic status quintile, sex, school locale, home language, and immigration status. Also included as predictor variables are items that measure access to family social capital, mobilization of family social capital, access to peer social capital, mobilization of peer social capital, access to school social capital, and mobilization of school social capital. A list of the predictor variables is shown in Table 3.

Several of the predictor variables were recoded. Sex was recoded to reflect 0 = Male and 1= Female. School locale was recoded to combine town and rural. Immigration status was recoded from the P1USBORN9 variable to combine the responses born in the United States, and born in Puerto Rico or another U.S. territory, to born in the United States.

Three of the predictor variables were generated from multiple items. The Congruent Degree Expectations variable was generated to assess if parents and students have a binding and reciprocal relationship by comparing if parental educational expectation (X1PAREDEXPCT) is congruent with student's educational expectation (S1EDUEXPECT) to attain a bachelor's degree or higher. Responses were coded zero if either or both the parent's and student's educational expectations do not reflect attaining a college degree or higher, and coded one if the parent's and student's educational expectations both reflect a bachelor's degree or higher. The Parental Discussions variable was computed from the S1MOMTALKCLG variable, which asked if the student talked with their mother about going to college, and the S1DADTALKCLG variable, which asked if the student talked with their father about going to college. Responses were coded zero if students did not talk with either their mother or father. Responses were coded one if the student talked with their mother, father, or both. The Institutional Agents Discussions variable was computed from the S1TCHTALKCLG variable, which asked if the student talked with a

favorite teacher about going to college, and the S1CNSLTLKCLG variable, which asked if the student talked with a school counselor about going to college. Responses were coded zero if the students did not talk with either a teacher or counselor. Responses were coded one if students talked with a teacher, counselor, or both. The intent of the Parental Discussions, Peer Discussions, and Institutional Agent Discussions was to measure if students talked with an individual in each of these category, not the number of individuals they talked with.

This study operationalized access to school social capital with the variable, Sense of School Belonging. This is a composite variable created by NCES from other items in the survey, which included whether respondents feel safe at school, feel proud of their school, have an adult at school they can talk with about problems, feel that school is a waste of time, and earn good grades. Higher values represent a greater sense of school belonging.

Table 3

Predictor Variables

Variable Name	Description	HSLS:09 Label
Socioeconomic status (SES) quintile	1 = First quintile (lowest) 2 = Second quintile 3 = Third quintile 4 = Fourth quintile 5 = Fifth quintile (highest)	X1SESQ5
Sex	0 = Male 1 = Female	X1SEX
School locale	1 = City 2 = Suburb 3 = Town or rural	X1LOCALE
Home language	0 = Language other than English is not regularly spoken in home 1 = Language other than English is regularly spoken in home.	P1HOMELANG

Immigration status	0 = Student is foreign-born (first-generation) 1 = Student is born in the United States (second generation or higher)	P1USBORN9
Access to Family Social Capital		
Congruent degree expectations	0 = Parent's and student's educational expectations are not congruent for bachelor's degree or higher 1 = Parent's and student's educational expectations are congruent for bachelor's degree or higher	Computed from: X1PAREDEXPCT S1EDUEXPECT
Family involvement	0 = Family did not contact teacher or counselor about college admissions requirements 1 = Family contacted teacher or counselor about college admissions requirements	P1ADMITREQ
Access to Peer Social Capital		
Academically orientated peer	0 = Student's closest friend is not interested in school 1 = Student's closest friend is interested in school	S1FRNDSCHOOL
Access to School Social Capital		
School belonging	This composite variable, created by NCES through principal components factor analysis (weighted by W1STUDENT) and standardized to a mean of 0 and standard deviation of 1, is a scale of students' perception of school belonging with higher values representing a greater sense of school belonging.	X1SCHOOLBEL
Mobilization of Family Social Capital		
Parental discussions	0 = Student did not talk to mother and father about going to college 1 = Student talked to mother, father, or both about going to college	Computed from: S1MOMTALKCLG S1DADTALKCLG
Mobilization of Peer Social Capital		
Peer discussions	0 = Student did not talk to friends about going to college 1 = Student talked to friends about going to college	S1FRNDTLKCLG

Mobilization of School Social Capital		
Institutional agents discussions	0 = Student did not talk to teacher and counselor about going to college 1 = Student talked to teacher, counselor, or both about going to college	Computed from: S1TCHTALKCLG S1CNSLTLKCLG

Missing Data

Missing data is a common issue for surveys. Missing data includes unit non-response, where none of the responses are available from a respondent, and item non-response, where some of the responses are available (Kalton, & Kasprzyk, 1986; Wang & Singh, 2021). Weighing adjustments are primarily used to compensate for unit non-response, which increase the weights of specific respondents to represent the non-respondents (Kalton & Kasprzyk, 1986).

The HSLS:09 data set offers analytic weights that can be used with statistical software programs to account for the complex survey design and address unit non-response to produce estimates for the target population (Ingels et al., 2011). For the public-use data set, the Balanced Repeated Replication (BRR) analytic weights were available for researchers' use.

NCES' standards also dictate that a unit non-response bias analysis be performed when weighted response rates fall below 85% (Ingels et al., 2011). A unit non-response bias analysis for certain domains, such as school type, region, student sex, student race/ethnicity, was performed with the HSLS:09 base year data set even though the weighted student response rate of 85.7% (Ingels et al., 2011). After the unit non-response bias analysis was performed, the student base weights were adjusted, reducing unit non-response bias to insignificant levels (Ingels et al., 2011).

The weighted student response rate for the second follow-up was 67.9% (Duprey et al., 2018). As with the base year, a unit non-response bias analysis was performed, and weights created for the second follow-up were calibrated (Duprey et al., 2018).

Similar to the unit non-response, NCES also performed item non-response bias analyses for all study items with response rates less than 85% (Ingels et al., 2011, Duprey et al., 2018). For the base year, only 10 student questionnaire items (2.7% of 376 questions) had weighted response less than 85% (Ingels et al., 2011). A total of 70 parent questionnaire items (26.3% of 266 questions) had weighted response less than 85% (Ingels et al., 2011). The higher item non-response for parents was due to the use of abbreviated questionnaires to reduce unit nonresponse (Ingels et al., 2011). For the second follow-up, a total of 106 student questionnaire items had response rate below 85% (Duprey et al., 2018). The two criterion variables (X4PS1LEVEL and S4EDUEXP) for this study were from the second follow-up but were not part of the list of student questionnaire items with response rates below 85%.

NCES concluded that in general the HSLS:09 data set, particularly the base year, does not have high levels of item non-response (Ingels et al., 2011). Nevertheless, 18 key variables from the base year and ten key variables from the second follow-up were identified to perform single imputation. For the base year, deterministic methods were first used where values were logically imputed based on information on enrollment list, responses to other questions within the questionnaire, or linked questionnaire (Ingels et al., 2011). After deterministic methods were used, a weighted sequential hot-deck was applied to the remaining values for the variables that were identified for imputation (Ingels et al., 2011). Multiple imputation was also performed for three of the continuous variables in the base year (Ingels et al., 2011). For the second follow-up, a weighted sequential hot-deck was applied to all the variables identified for imputation (Duprey et al., 2018).

While researchers can investigate additional adjustments to the weights or data to address item nonresponse, such as imputation, the public-use file has limited information for such

adjustments (Duprey et al., 2018). Thus, NCES cautioned that such adjustments could introduce more bias, not less, compared to using the data and the weights as published (Duprey et al., 2018). As NCES pointed out, the item non-response rate for the base year student response was low and the parent item non-response was higher due to the use of abbreviated questionnaires. As this study uses the public-use version of the HSLS:09 data set, the analytic weights will be used in the study with complete case analysis.

<div align="center">**Analytical Approach and Data Analyses**</div>

Due to the complex sample design of HSLS:09, the use of analytic weights was necessary to produce estimates for the target population of students who were in the ninth grade in 2009. As this study implements the public-use data set, the BRR variance estimation method along with corresponding BRR replicate weights were employed. For example, for analyses with student data from the second follow-up, student data from the base year, and parents' data from the base year, the W4W1STUP1 weight and corresponding BRR replicate weights (W4W1STUP1001- W4W1STUP1200) were used. For analyses with both student and parent data from just the base year, the W1PARENT weight and corresponding BRR replicate weights (W1PARENT001- W1PARENT200) were used. For analyses with only student data from the base year, the W1STUDENT weight and corresponding BRR replicate weights (W1STUDENT001-W1STUDENT200) were used. As noted in the HSLS:09 data documentation, the BRR variance estimation takes into account the complex design of the HSLS:09 survey for estimated variance and confidence intervals to avoid incorrectly rejecting the null hypothesis for statistical test of differences (Ingels, et al., 2011). Furthermore, the large number of replicate weights ensure sufficient degree of freedoms for complex analyses (Ingels,

et al., 2011). Additionally, as previously mentioned, the analytical weights adjust for unit non-responses and account for the complex survey design (Ingels, et al., 2011; Duprey et al., 2018).

Statistical analyses were performed primarily using Stata/SE version 17. Stata can handle numerous sample design structures, account for variance estimation methods, and perform correct subpopulation analyses (Heeringa et al., 2017). A distinguishing feature of Stata is the ability to specify the complex design variables and weights using the svyset command prior to analyses (Heeringa et al., 2017). Once the complex design variables and weights are declared, they remained in effect for the duration of the data analysis session or until changed (Heeringa et al., 2017).

Despite the robustness of Stata with performing statistical analyses, there are limitations. Stata's svyset command currently does not support the multivariate estimation commands that are usually reserved for discriminant function analysis (P. Lai, personal communication, May 5, 2022). Analyses that require discriminant function analysis were performed without analytic weights or the BRR variance estimation method using IBM SPSS version 29.

Analysis for Research Question One

Analysis started by exploring the data with descriptive statistics. The first research question explored the college enrollment rate for Asian Americans and Whites. This question was answered by performing cross tabs and chi-square analyses to examine the enrollment at four-year colleges and two-year colleges for Asian Americans and Whites based on SES, sex, school locale, home language, and immigration status, access to social capital of the three social networks, and mobilization of social capital of the three social networks. As the sense of school belonging variable is a continuous variable, a binary logistic regression was used to examine the relationship between sense of school belonging and level of postsecondary education enrollment.

Analysis for Research Question Two

The second research question was answered through descriptive statistics and by performing cross tabs and chi-square analyses to examine the educational expectations for Asian American and White high students based on SES, sex, school locale, home language, and immigration status, access to social capital of the three social networks, and mobilization of social capital of the three social networks. As the criterion variable, highest level of education expected is ordinal, an ordinal logistic regression was used to examine the relationship between sense of school belonging and highest level of education expected.

Analysis for Research Question Three

To answer the third research question, logistic regressions were performed to analyze if student characteristics and access to social capital from the three social networks predict the odds of enrollment in a four-year postsecondary education institution for Asian Americans and Whites. A logistic regression was appropriate because the criterion variable was binary (Daniels & Minot, 2020).

Analysis for Research Question Four

To answer the fourth research question, logistic regressions were performed to analyze if student characteristics, SES, access to social capital from the three social networks, and mobilization of social capital from the three social networks predict enrollment in a four-year postsecondary education institution for Asian Americans and Whites

Analysis for Research Question Five

The fifth research question examined the strongest predictors for the educational expectations of Asian Americans and Whites three years after high school. The predictor variables selected in the design of this study included SES, sex, locale, immigration status,

school belonging, and a composite variable for mobilization of social capital from all three social networks. The composite variable for mobilization of social capital was created by summing the values for parental discussions, peer discussions, and institutional agent discussions. Values for the composite variable for mobilization of social capital ranged from zero to three with higher values representing higher mobilization of social capital. As the dependent variable for educational expectation was ordinal (less than bachelor's degree, bachelor's degree, master's degree or higher), discriminant function analysis was performed for Asian Americans and Whites. Discriminant analysis is an adaptation of regression analysis for situations in which the criterion variable is categorical (Kachigan, 1986).

Summary

To answer the research questions for this study, the public-use NCES High School Longitudinal Studies of 2009 (HSLS:09) was used. The sample of this study included the subpopulations of Asian Americans and Whites. While there are limitations with using secondary data, the benefits of the data set included a large nationally representative sample of Asian Americans that allows for generalizability. As HSLS:09 follows a cohort of ninth graders over time, the data set also allows for the examination of students' transition to college.

Chapter 4

Results

This chapter presents the findings of the study. This chapter starts off describing the sample for the HSLS:09 with descriptive statistics for the predictor and criterion variables followed by a description of the entire sample, the Asian American subpopulation, and then the White subpopulation. Bivariate analyses for each predictor variable with each of the criterion variable for Asian Americans and Whites are then presented. Finally, results from logistic regressions and discriminant function analyses for Asian Americans and Whites are presented. The chapter concludes with a summary of the results.

Description of Sample

Demographic Descriptions

The total respondents for the HSLS:09 is 23,503. Shown in Table 4 are the unweighted and weighted demographic descriptive statistics of all the respondents. Missing values due to unit non-response and item non-response are not included.

The HSLS:09 respondents consist of 1,952 Asian American (9% unweighted). However, as Asian Americans were oversampled (Ingels et al., 2011), Asian Americans represented 142,405 respondents or approximately 3% of the sample once the complex survey design with the BRR weights are taken into account. The total unweighted number of respondents who were White was 12,082 (54% unweighted), with the weighted number of respondents reflecting 2,133,480 respondents (52% weighted).

Table 4

Demographics of All Respondents for the HSLS:09

	Unweighted		Weighted with BRR	
Variable	Frequency	Percent	Frequency	Percent
Socioeconomic quintile				
First quintile	3,434	16.01%	807,133	19.61%

	Second quintile	3,705	17.28%	817,667	19.87%
	Third quintile	4,233	19.74%	821,698	19.97%
	Fourth quintile	4,553	21.23%	833,234	20.25%
	Fifth quintile	5,519	25.74%	835,228	20.3%
	Total	21,444	100%	4,114,960	100%
Asian					
	Asian	1,952	8.68%	142,405	3.46%
	Non-Asian	20,545	91.32%	3,972,554	96.54%
	Total	22,497	100%	4,114,960	100%
White					
	White	12,082	53.70%	2,133,480	51.85%
	Non-White	10,415	46.30%	1,981,480	48.15%
	Total	22,497	100%	4,114,960	100%
Sex					
	Female	11,524	49.04%	2,043,719	49.67%
	Male	11,973	50.96%	2,071,241	50.33%
	Total	23,497	100%	4,114,960	100%
School locale					
	City	6,689	28.46%	1,311,029	31.86%
	Suburb	8,467	36.03%	1,371,818	33.34%
	Town or rural	8,347	35.51%	1,432,113	34.8%
	Total	23,503	100%	4,114,960	100%
Immigration Status					
	U.S. born	14,745	92.25%	3,630,178	93.01%
	Foreign born	1,239	7.75%	272,807	6.99%
	Total	15,984	100%	3,902,985	100%
Other language spoken at home					
	Yes	3,504	21.92%	921,744	23.62%
	No	12,481	78.08%	2,981,425	76.38%
	Total	15,985	100%	3,903,169	100%

Note. BRR = Balanced Repeated Replication

Shown in Table 5 are the unweighted and weighted demographic descriptive statistics for the Asian American and White subpopulations. To better understand the sample of the Asian American subpopulation in the study, the demographic descriptive statistics of the Asian American subpopulation were compared to that the demographics of the White subpopulation, and the demographics for all the respondents in the study.

Table 5

Demographics of Asian American and White Subpopulations

Subpopulation	Variable	Unweighted		Weighted with BRR	
		Frequency	Percentage	Frequency	Percentage
	Socioeconomic quintile				
Asian	First quintile	183	10.94%	16,900	11.87%
	Second quintile	195	11.66%	14,925	10.48%
	Third quintile	245	14.65%	27,315	19.18%
	Fourth quintile	346	20.69%	31,175	21.89%
	Fifth quintile	703	42.05%	52,091	36.58%
	Total	1,672	100%	142,405	100%
White	First quintile	1,145	9.66%	203,212	9.53%
	Second quintile	1,862	15.71%	351,784	16.49%
	Third quintile	2,439	20.58%	455,141	21.33%
	Fourth quintile	2,824	23.82%	529,111	24.80%
	Fifth quintile	3,584	30.23%	594,232	27.85%
	Total	11,854	100%	2,133,480	100%
	Sex				
Asian	Female	962	49.28%	70,277	49.35%
	Male	990	50.72%	72,129	50.65%
	Total	1,952	100%	142,405	100%
White	Female	5,941	49.17%	1,042,958	48.89%
	Male	6,141	50.83%	1,090,522	51.11%
	Total	12,082	100%	2,133,480	100%
	School locale				
Asian	City	598	30.64%	68,232	47.91%
	Suburb	744	38.11%	53,114	37.30%
	Town or rural	610	31.25%	21,059	14.79%
	Total	1,952	100%	142,405	100%
White	City	3,271	27.07%	449,491	21.07%
	Suburb	4,236	35.06%	740,708	34.72%
	Town or rural	4,575	37.87%	943,280	44.21%
	Total	12,082	100%	2,133,480	100%
	Immigration status				
Asian	U.S. born	741	60.99%	90,386	67.46%
	Foreign born	474	39.01%	43,598	32.54%
	Total	1,215	100%	133,984	100%

White	U.S. born	9,005	98.36%	2,037,103	98.34%
	Foreign born	150	1.64%	34,373	1.66%
	Total	9,155	100%	2,071,476	100%
	Other language spoken at home				
Asian	Yes	980	80.66%	107,648	80.35%
	No	235	19.34%	26,331	19.65%
	Total	1,215	100%	133,979	100%
White	Yes	442	4.83%	104,123	5.03%
	No	8,711	95.17%	1,967,020	94.97%
	Total	9,153		2,071,143	

Note. BRR = Balanced Repeated Replication

As can be seen in Table 4, the respondents for the full HSLS:09 sample were approximately equally distributed among the five socioeconomic quintiles, with each socioeconomic quintile being represented by about 20% of the respondents. In comparison to the full sample, the distribution of the Asian American subpopulation, shown in Table 5, was unequally distributed among the five socioeconomic quintiles. More than one-third (37% weighted) of the respondents in the Asian American subpopulation were from the fifth (highest) socioeconomic quintile while approximately 12% (weighted) were from the first (lowest) socioeconomic quintile. The distribution for the White subpopulation also had more Whites from the fifth quintile (28% weighed) than from the first quintile (10% weighted). Thus, the Asian American subpopulation was more reflective of Asian Americans from the highest socioeconomic quintile. To a somewhat lesser degree, the White subpopulation was also more reflective of Whites from the highest socioeconomic quintile.

The weighted percentage of male and female respondents for the full HSLS:09 sample was approximately equal. The weighted percentages of male and female respondents for the Asian and White subpopulations were also almost equally distributed.

The weighted percentages of students in the full sample who attended a high school in the city (32%), suburb (33%), or town or rural setting (35%) were approximately equal. In comparison, the weighted percentages of the Asian American subpopulation indicate that more Asian Americans attended high school in the city (48%) and the suburbs (37%) than in a town or rural setting (15%). For the White subpopulation, more respondents attended high schools in a town or rural setting (44%) and the suburbs (35%), than in a city (21%).

Almost all the respondents for the full HSLS:09 sample were born in the United States (93% weighted). For the Asian American subpopulation, a little over one-third (67% weighted) were born in the United States. In comparison, almost all (98%) of the respondents for the White subpopulation were born in the United States. Thus, there are fewer U.S. born Asian Americans compared to Whites and the full sample, meaning that the Asian American subpopulation consisted of more immigrants than the full sample and the White subpopulation.

Similar to the immigration status, more Asian Americans spoke a language other than English at home (80% weighted) than Asian Americans who only spoke English at home (20% weighted). In comparison, approximately three-quarters (76% weighted) of the respondents for the full sample and 95% (weighted) of respondents for the White subpopulation spoke English at home. This means that the Asian American subpopulation consisted of more immigrants and more individuals who spoke another language at home than Whites and the full sample.

Description of Access to Social Capital

This study examined social capital from the social networks of family, peers, and schools. Access to family social capital was assessed with two variables: Congruent Degree Expectations, which measured if the student and parents expected the student to earn a bachelor's degree or higher, and Family Involvement, which measured if students have access to social capital in the

form of a family that has talked with a teacher or counselor about college admissions requirements. Access to peer social capital was assessed with the variable Academically Oriented Peer, which measured if the student's closest friend was interested in school. Access to school social capital was assessed with the variable Sense of School Belonging. Shown in Table 6 are the descriptive statistics for all respondents of the HSLS:09 for the variables representing access to family and peer social capital for the full sample. Access to school social capital was not included in Table 6, but rather in Table 7 because the Sense of School Belonging variable is a continuous variable.

Table 6

Descriptive Statistics of Access to Social Capital for All Respondents

	Unweighted		Weighted with BRR	
Variable	Frequency	Percentage	Frequency	Percentage
Congruent degree expectations				
Congruent expectations	8,412	51.92%	1,944,741	48.03%
Expectations not congruent	7,790	48.08%	2,103,885	51.97%
Total	16,202	100%	4,048,626	100%
Family involvement				
Family talked with teacher or counselor about college admission requirements	6,780	43.84%	1,579,317	42%
Family did not talk with teacher or counselor about college admission requirements	8,685	56.16%	2,181,171	58%
Total	15,465	100%	3,760,488	100%
Academically oriented peer				
Closest friend interest in school	13,977	67.01%	2,659,754	66.61%
Closest friend not interested in school	6,880	32.99%	1,333,224	33.39%
Total	20,857	100%	3,992,978	100%

Note. BRR = Balanced Repeated Replication

The summary statistics for the variable Sense of School Belonging for the full sample is displayed in Table 7. Although analysis of the Sense of School Belonging variable suggested that the variable is left-skewed, the variable is a predictor variable and meets the assumptions for logistic regression analysis (Mehmetoglu & Jakobsen, 2022).

Table 7

Summary Statistics of Access to School Social Capital for All Respondents

	Unweighted			Weighted with BRR		
	Frequency	Mean	SD	Frequency	Mean	Standard Error
Sense of school belonging	20,680	0.07	1.01	3,962,700	0.00	0.02

Note: BRR = Balanced Repeated Replication

Presented in Table 8 are the weighted and unweighted frequencies for the variables representing access to family and peer social capital for the Asian American and White subpopulations. The summary statistics for the variable that represented access to school social capital, Sense of School Belonging, for the Asian American and White subpopulations are shown in Table 9.

Table 8

Descriptive Statistics of Access to Social Capital for Asian American and White Subpopulations

Subpop	Variable	Unweighted		Weighted with BRR	
		Frequency	Percentage	Frequency	Percentage
	Congruence degree expectations				
Asian	Congruent expectations	760	61.99%	86,362	62.06%
	Expectations not congruent	466	38.01%	52,798	37.94%
	Total	1,226	100%	139,160	100%
White	Congruent expectations	4,976	53.61%	1,108,207	51.73%
	Expectations not congruent	4,305	46.39%	1,034,284	48.27%
	Total	9,281	100%	2,142,490	100%
Asian	Family involvement				

	Family talked with teacher or counselor	394	34.11%	41,721	32.55%
	Family did not talk with teacher or counselor	761	65.89%	86,458	67.45%
	Total	1,155	100%	128,179	100%
White	Family talked with teacher or counselor	4,197	47.13%	926,662	45.89%
	Family did not talk with teacher or counselor	4,709	52.87%	1,092,544	54.11%
	Total	8,906	100%	2,019,206	100%
	Academically orientated peer				
Asian	Closest friend interest in school	1,213	74.46%	103,762	74.50%
	Closest friend not interested in school	416	25.54%	35,517	25.50%
	Total	1,629	100%	139,279	100%
White	Closest friend interest in school	7,538	65.11%	1,332,182	63.91%
	Closest friend not interested in school	4,040	34.89%	752,217	36.09%
	Total	11,578	100%	2,084,399	100%

Note. Subpop = Subpopulation; BRR = Balanced Repeated Replication

Table 9

Summary Statistics of Access to School Social Capital for Asian American and White

Subpopulations

		Unweighted			Weighted with BRR		
Subpop	Variable	Frequency	Mean	*SD*	Frequency	Mean	*SE*
Asian	Sense of school belonging	1,619	0.17	0.95	138,553	0.06	0.04
White	Sense of school belonging	11,499	0.09	1.01	2,071,633	0.04	0.02

Note. Subpop = Subpopulation; BRR = Balanced Repeated Replication

When examining access to family social capital in the form of congruent degree expectations between the students and parents, the percentage of Asian Americans (62% weighted) whose degree expectations was congruent with their parents was higher than that of Whites (52% weighted) and that of the full sample (48% weighted). However, when family social capital in the form of family involvement, that is if the family talked with a teacher or counselor about college admission requirements, was examined, 67% (weighted) of the respondents for the Asian American subpopulation reported their family did not talk with a teacher or counselors. In comparison, 58% (weighted) of the respondents for the full HSLS:09 sample and 54% (weighted) of the respondents for the White subpopulation reported that of their family did not talk with a teacher or counselor about college admission requirements. This suggests that while there were more Asian Americans with degree expectations congruence with their parents, there were more Asian American families that did not talk with a teacher or counselor about college admission requirements than families in the White subpopulation and the full sample.

Approximately two-thirds (67% weighted) of the respondents for the full sample reported that their closest friend was interested in school. In comparison, three-quarters of respondents (75%) for the Asian American subpopulation reported that their closest friend was interested in school. Respondents for the White subpopulation who reported their closest friend was interested in school (64% weighted) was similar to the full sample. Thus, the Asian American subpopulation reflected more respondents whose closest friend was interested in school than the White subpopulation and the full sample.

In examining access to school social capital, the BRR weighted mean for Sense of School Belonging for the full sample was 0.00 (SE = 0.02). For the Asian American subpopulation, the

BRR weighted mean was 0.06 (*SE* = 0.04). The BRR weighted mean was 0.04 (*SE* = 0.02) for the White subpopulation. This suggests that Sense of School Belonging was higher for Asian American and White subpopulations than the full sample. Furthermore, Asian Americans' Sense of School Belonging was higher than Whites.

Description of Mobilization of Social Capital

Mobilization or use of social capital in this study was defined as students' discussions about going to college with individuals in the social networks of family, peers, and schools. Mobilization of family social capital was assessed with the variable Parental Discussions, which measured if the student discussed going to college with their mother, father, or both their mother and father. Mobilization of peer social capital was assessed with the variable Peer Discussions, which measured if the student discussed going to college with friends. Mobilization of school social capital was assessed with the variable Institutional Agents Discussions, which measured if the student discussed going to college with a teacher, counselor, or both teacher and counselor. Since the intent was to determine if students mobilized social capital, the variables for mobilization of social capital measured if students talked with an individual in each of the social networks and not the number of individuals the students talked with.

Shown in Table 10 are the descriptive statistics for all respondents of the HSLS:09 for the variables representing mobilization of family, peer, and school social capital. Approximately 83% of all respondents for the full sample discussed going to college with their parents, 53% discussed going to college with their friends, and only 29% discussed going to college with a teacher or counselor. This suggests that more ninth graders in 2009 discussed going to college with their parents, and with their peers, and fewer of them discussed going to college with a teacher or counselor.

Table 10

Descriptive Statistics of Mobilization of Social Capital for All Respondents

Variable	Unweighted		Weighted with BRR	
	Frequency	Percent	Frequency	Percent
Parental discussions				
Discussed going to college with mom or dad	17,176	82.52%	684,211	82.93%
Did not discussed going to college with mom or dad	3,638	17.48%	3,323,492	17.07%
Total	20,814	100%	4,007,703	100%
Peer discussions				
Discussed going to college with friends	11,223	53.70%	2,106,616	52.6%
Did not discuss going to college with friends	9,675	46.30%	1,898,167	47.4%
Total	20,898	100%	4,004,783	100%
Institutional agents discussions				
Discussed going to college with teacher or counselor	6,048	28.94%	1,172,919	29.29%
Did not discussed going to college with teacher or counselor	14,850	71.06%	2,831,864	70.71%
Total	20,898	100%	4,004,783	100%

Note: BRR = Balanced Repeated Replication

The descriptive statistics of the variables for mobilization of social capital for the Asian American and White subpopulations are displayed in Table 11. Similar to the respondents in the full sample, a high percentage of Asian Americans (84% weighted) and Whites (84% weighted) reported discussing going to college with their parents. While the percentages of Asian Americans and Whites who discussed going to college with their parents were about the same, a slightly higher percentages of ninth grade Asian Americans discussed going to college with their friends (59% weighted) and teacher or counselor (29% weighted) than White respondents who discussed going to college with their friends (54%) and teacher or counselor (27% weighted). As with the respondents in the full sample, Asian American and Whites discussed going to college with teachers or counselor the least among the three social networks.

Table 11

Descriptive Statistics of Mobilization of Social Capital for Asian American and White

Subpopulations

Subpop	Variable	Unweighted		Weighted with BRR	
		Frequency	Percent	Frequency	Percent
	Parental discussions				
Asian	Discussed college with mom or dad	1373	84.44%	115,513	84.02%
	Did not discussed going to college with mom or dad	253	15.56%	21,971	15.98%
	Total	1,626	100%	137,484	100%
White	Discussed college with mom or dad	9,601	83%	1,788,907	84.28%
	Did not discussed going to college with mom or dad	1,966	17%	333,743	15.72%
	Total	11,567	100%	2,122,650	100%
	Peer discussions				
Asian	Discussed going to college with friends	950	58.14%	82,384	59.17%
	Did not discuss going to college with friends	684	41.86%	56,853	40.83%
	Total	1,634	100%	139,237	100%
White	Discussed going to college with friends	6,289	54.23%	1,126,779	53.94%
	Did not discuss going to college with friends	5,308	45.77%	962,203	46.06%
	Total	11,597	100%	2,088,981	100%
	Institutional agents discussions				
Asian	Discussed going to college with teacher or counselor	456	27.91%	40,209	28.88%
	Did not discussed going to college with teacher or counselor	1,178	72.09%	99,027	71.12%
	Total	1,634	100%	139,237	100%
White	Discussed going to college with teacher or counselor	3,203	27.62%	571,012	27.33%
	Did not discussed going to college with teacher or counselor	8,394	72.38%	1,517,970	72.67%
	Total	11,597	100%	2,088,981	100%

Note. Subpop = Subpopulation; BRR = Balanced Repeated Replication

Description of Criterion Variables

The first criterion variable in this study was the level of postsecondary education institution the student enrolled in, either a four-year college or a two-year college. The second criterion variable was the highest level of education expected at what is three years after high school for most respondents.

The descriptive statistics for both criterion variables for all respondents of the HSLS:09 are displayed in Table 12. Approximately 58% (weighted) of the respondents for the full sample reported they enrolled in a four-year college. A slightly higher percentage of respondents for the full sample expected to earn a master's degree or higher (35% weighted) compared to a bachelor's degree (33% weighted), with expectations for less than a bachelor's degree (32% weighted) being the lowest.

Table 12

Descriptive Statistic of Criterion Variables for All Respondents

Criterion Variable	Unweighted		Weighted with BRR	
	Frequency	Percent	Frequency	Percent
Level of postsecondary education enrolled				
2-year or less than 2-year	4,356	33.62%	1,222,035	41.88%
4-year	8,601	66.38%	1,695,880	58.12%
Total	12,957	100%	2,917,915	100%
Educational expectation				
Less than bachelor's degree	4,159	27.32%	1,154,376	32.01%
Bachelor's degree	5,089	33.43%	1,204,884	33.41%
Master's degree or higher	5,975	39.25%	1,246,753	34.57%
Total	15,223	100%	3,606,014	100%

Note. BRR = Balanced Repeated Replication

Shown in Table 13 are the descriptive statistics for the criterion variables for the Asian American and White subpopulations. Compared to the full sample, more respondents in the

Asian American and White subpopulations reported enrollment in a four-year college. While the

unweighted percentage of Asian Americans who enrolled in a four-year higher education

institution appeared to be much higher (79%) than the unweighted percentage of Whites (69%),

the weighted percentage of Asian Americans who enrolled in a four-year postsecondary

education institution (68%) was only slightly higher than Whites (64%), suggesting that

enrollment at a four-year higher education institution for Asian Americans and Whites who were

in ninth grade in 2009 may be comparable.

Table 13

Descriptive Statistics of Criterion Variables for Asian American and White Subpopulations

		Unweighted		Weighted	
Subpop	Variable	Frequency	Percentage	Frequency	Percentage
	Level of postsecondary education enrolled				
Asian	2-year or less than 2-year	284	21.42%	40,264	31.72%
	4-Year	1,042	78.58%	86,653	68.28%
	Total	1,326	100%	126,917	100%
White	2-year or less than 2-year	2,135	30.87%	527,662	35.62%
	4-Year	4,781	69.13%	953,795	64.38%
	Total	6,916	100%	1,481,458	100%
	Educational expectation				
Asian	Less than bachelor's degree	172	12.58%	23,907	17.15%
	Bachelor's degree	469	34.31%	54,370	39.01%
	Master's degree or higher	726	53.11%	61,104	43.84%
	Total	1,367	100%	139,381	100%
White	Less than bachelor's degree	2,152	27.04%	522,246	30.05%
	Bachelor's degree	2,747	34.51%	595,919	34.29%
	Master's degree or higher	3,060	38.45%	619,794	35.66%
	Total	7,959	100%	1,737,959	100%

Note. Subpop = Subpopulation; BRR = Balanced Repeated Replication

Bivariate Analyses

The descriptive statistics helped describe the full sample, the Asian American subpopulation, and the White subpopulation. After performing descriptive statistics, bivariate analyses were performed with the Asian American and White subpopulation to examine if there were statistically significant relationships between each predictor variable and the two criterion variables. Cross tabs and chi-square analyses were performed for the Asian American and White subpopulations for all the demographic predictor variables, for two of the access to social capital variables, and all the mobilization of social capital variables with both criterion variables. Logistic regressions were performed for the variable measuring access to school social capital.

Typically, the Pearson chi-square test statistics indicate if there is a significant relationship between two categorical variables. However, since the HSLS:09 was not based on simple random sampling, but on a stratified, two-stage random sampling, the Rao-Scott F-Test was used in place of the Pearson chi-square test statistics. The Rao-Scott F-Test is a design-corrected version of the Pearson chi-square statistics (Heeringa et al., 2017), which accounts for surveys with complex sampling designs, such as the HSLS:09 survey.

The variable, Sense of School Belonging, which measured access to school social capital, is a continuous variable so logistic regressions were performed to examine the relationships with the criterion variables. The bivariate analyses for demographics, access to social capital, and mobilization of social capital for the first criterion variable, the level of higher educational enrollment, are presented first. The bivariate analyses for the second criterion variable, the highest level of educational expected, are then presented afterwards.

Bivariate Analyses of Postsecondary Education Enrollment and Demographics for Asian

American and White Subpopulations

Bivariate analyses were performed for the demographic variables and the first criterion variable, the level of postsecondary education institution enrollment. As shown in Table 14, the relationship between socioeconomic quintile and the level of college enrollment was statistically significant for Asian Americans, $F(2.65, 528.22) = 5.09$, $p = 0.003$. Enrollment in a four-year higher education institution was the lowest for Asian Americans from the first socioeconomic quintile (51% weighted) while enrollment in a four-year higher education institution was the highest for Asian Americans from the fifth socioeconomic quintile (88% weighted). Additionally, for the Asian American subpopulation, the relationship between school locale and level of college enrollment was significant, $F(1.99, 395.86) = 3.24$, $p = 0.04$. More Asian Americans who attended schools in the suburb (78% weighted) enrolled in a four-year higher education institution than Asian Americans who attended schools in a town or rural setting (67% weighted) and the city (61% weighted).

As with the Asian American subpopulation, the relationship between socioeconomic quintile and the level of college enrollment was significant for Whites, $F(3.51, 698.06) = 57.81$, $p < 0.001$. The pattern of postsecondary education institution enrollment by socioeconomic quintile for Whites mirrored that of the Asian American subpopulation in that more Whites from the fifth socioeconomic quintile enrolled in a four-year higher education institution (81% weighted) than Whites from the first socioeconomic quintile (42% weighted). The relationship between school locale and level of college enrollment was also significant for Whites, $F(1.85, 368.47) = 6.05$, $p = 0.003$. Unlike the Asian American subpopulation, more Whites who attended high school in the city (69% weighted) enrolled in a four-year postsecondary education

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institution than those who attended high school in a suburban (66% weighted) or rural or town

setting (59% weighted). Thus, while more Asian Americans who enrolled in a four-year higher

education college attended a school in a suburban setting, slightly more Whites who enrolled in a

four-year college attended a high school in an urban setting.

Table 14

Bivariate Associations of Demographics and Four-year College Enrollment for Asian American

and White Subpopulations Weighted With BRR

Subpop	Predictor	Designed Adjusted Rao-Scott F-Test	2-year enrollment	4-year enrollment	Total
Asians	Socioeconomic quintile	$F(2.65, 528.22) = 5.09$, $p = 0.003$			
			6,175	6,383	12,559
	First quintile		49.17%	50.83%	100%
	Second quintile		4,421	8,238	12,660
			34.92%	65.08%	100%
			9,554	12,962	22,516
	Third quintile		42.43%	57.57%	100%
	Fourth quintile		12,943	17,046	29,988
			43.16%	56.84%	100%
			5,285	37,689	42,973
	Fifth quintile		12.30 %	87.70%	100 %
			38,378	82,318	120,696
	Total		31.80%	68.2%	100%
Whites	Socioeconomic quintile	$F(3.51, 698.06) = 57.81$, $p < 0.001$			
			52,976	38,303	91,279
	First quintile		58.04%	41.96%	100%
	Second quintile		108,156	92,975	201,131
			53.77%	46.23%	100 %
			148,240	156,415	304,655
	Third quintile		48.66%	51.34%	100%
	Fourth quintile		151,712	263,618	415,330
			36.53%	63.47%	100%
			106,848	451,787	558,635
	Fifth quintile		19.13%	80.87%	100%
			567,931	1,003,099	1,571,030
	Total		36.15%	63.85%	100%
Asians	Sex	$F(1, 199) = 2.80$, $p = 0.10$			

			Male	22,279	39,626	61,905
				35.99%	64.01%	100%
			Female	16,099	42,692	58,790
				27.38%	72.62%	100%
			Total	38,378	82,318	120,696
				31.80%	68.20%	100 %
Whites	Sex	$F(1, 199) =1.07$, $p = 0.30$				
			Male	287,319	485,653	772,972
				37.17%	62.83%	100%
			Female	280,612	517,446	798,058
				35.16%	64.84%	100%
			Total	567,931	1,003,099	1,571,030
				36.15%	63.85%	100%
Asians	School locale	$F(1.99, 395.86) = 3.24$, $p = 0.04$				
			City	23,379	36,494	59,873
				39.05%	60.95%	100%
			Suburb	97,99	35,090	44,889
				21.83%	78.17%	100%
			Town or rural	5,200	10,734	15,934
				32.64%	67.36%	100%
			Total	38,378	82,318	120,696
				31.80%	68.20%	100%
Whites	School locale	$F(1.85, 368.47) = 6.05$, $p = 0.003$				
			City	107,129	235,028	342,158
				31.31%	68.69%	100%
			Suburb	193,422	377,637	571,059
				33.87%	66.13%	100%
			Town or rural	267,380	390,434	657,814
				40.65%	59.35%	100%
			Total	567,931	1,003,099	1,571,030
				36.15%	63.85%	100%
Asian	Immigration	$F(1, 199) = 1.18$, $p = 0.28$				
			Foreign born	7,104	33,407	40,511
				17.54%	82.46%	100%
			Native born	22,850	63,830	86,680
				26.36%	73.64%	100%
			Total	29,954	97,237	127,191
				23.55%	76.45%	100%
Whites	Immigration	$F(1, 199) = 0.29$, $p = 0.59$				
			Foreign born	5,509	13,696	19,205
				28.69%	71.31%	100%
			Native born	393,194	815,790	1,208,984
				32.52%	67.48%	100%

	Total		398,703	829,486	1,228,189
			32.46%	67.54%	100%
Asian	Home language	$F(1, 199) = 0.33$, $p = 0.57$			
	English		4,056	17,572	21,628
			18.75%	81.25%	100%
	Other language		25,899	79,678	105,577
			24.53%	75.47%	100%
	Total		29,954	97,250	127,205
			23.55%	76.45%	100%
Whites	Home language	$F(1, 199) = 0.13$, $p = 0.85$			
	English		378,739	789,256	1,167,995
			32.43%	67.57%	100%
	Other language		19,965	40,007	59,971
			33.29%	66.71%	100%
	Total		398,703	829,263	1,227,966
			32.47%	67.53%	100%

Note. Subpop = Subpopulation; BRR = Balanced Repeated Replication; Frequency is the top line and percentage is the bottom line for each cell

Bivariate Analyses of Postsecondary Education Enrollment and Access to Social Capital for Asian American and White Subpopulations

Next, cross tabs and chi-square were preformed to examine the relationships between the variables for access to family social capital and peer social capital with the level of postsecondary education enrollment. The results for the Asian American and White subpopulations are displayed in Table 15.

Since the variable Sense of Belonging, which measured access to school social capital, is continuous, a binary logistic regression was performed for each subpopulation to assess the bivariate relationship between Sense of Belonging and enrollment in a four-year postsecondary education institution. The results for the bivariate logistic regressions for Sense of School Belonging and four-year college enrollment for Asian Americans was not statistically significant, $F(1, 199) = 3.72$, $p = 0.06$. The results for the bivariate logistic regressions for Sense of School Belonging and four-year college enrollment for Whites was statistically significant, $F(1, 199) =$

76.10, $p < 0.001$. The odds ratio of 1.41 suggests that for every one unit increase in Sense of School Belonging, the odds of Whites enrolling in a four-year postsecondary education institution increased by an estimated 41% with a 95% confidence interval of [1.31, 1.53].

In reviewing the bivariate relationships for each of the predictor variables that measured access to social capital with the level of postsecondary education institution of enrollment, only one of the bivariate relationships was statistically significant for the Asian American subpopulation. More Asian Americans whose degree expectations were congruent with that of their parents' enrolled in a four-year postsecondary educational institution (84% weighted) compared to Asian Americans whose bachelor's degree expectation were not congruent with their parents (62% weighted), $F(1, 199) = 11.16$, $p < 0.001$). In comparison, all the bivariate relationships between level of postsecondary education institution enrolled and the predictor variables that measured access to social capital - congruent degree expectations, family involvement, academically oriented friend, and sense of school belonging - were statistically significant for Whites. This suggests that for Asian Americans, the level of postsecondary educational enrollment was related to access to family social capital in the form of congruent degree expectations while for Whites, the level of postsecondary educational enrollment was related to access to all forms of social capital from all three social networks.

Table 15

Bivariate Associations of Access to Family and Peer Social Capital and Four-year College Enrollment for Asian American and White Subpopulations Weighted With BRR

Subpop	Predictor	Designed Adjusted Rao-Scott F-Test	2-year enrollment	4-year enrollment	Total
Asian	Congruent degree expectations	$F(1, 199) = 11.16$, $p < 0.001$			
	Not congruent		18,903	30,426	49,328
			38.32%	61.68%	100%
	Congruent		13,204	69,871	83,076

			15.89%	84.11%	100%
	Total		32,106	100,298	132,404
			24.25%	75.75%	100%
White	Congruent degree expectations	$F(1, 199) = 110.61$, $p < 0.001$			
	Not congruent		231,855	257,980	489,835
			47.33%	52.67%	100%
	Congruent		185,298	584,548	769,846
			24.07%	75.93%	100%
	Total		417,153	842,527	1,259,680
			33.12%	66.88%	100%
Asian	Family involvement	$F(1, 199) = 0.14$, $p = 0.70$			
	No		16,731	63,140	79,871
			20.95%	79.05%	100%
	Yes		9,809	30,658	40,467
			24.24%	75.76%	100%
	Total		26,540	98,798	120,338
			22.05%	77.95%	100%
White	Family involvement	$F(1, 199) = 24.65$, $p < 0.001$			
	No		227,916	386,480	614,396
			37.10%	62.90%	100%
	Yes		160,761	429,406	590,167
			27.24%	72.76%	100%
	Total		388,677	815,886	1,204,563
			32.27%	67.73%	100%
Asian	Academically oriented friend	$F(1, 199) = 1.22$, $p = 0.27$			
	No		11,352	19,430	30,782
			36.88%	63.12%	100%
	Yes		25751	62104	87856
			29.31%	70.69%	100%
	Total		37104	81535	118638
			31.27%	68.73%	100%
White	Academically oriented friend	$F(1, 199) = 58.26$ $p < 0.001$			
	No		218,295	270,685	488,980
			44.64%	55.36%	100%
	Yes		341,171	716,721	1,057,892
			32.25%	67.75%	100%
	Total		559,465	987,406	1,546,872
			36.17%	63.83%	100%

Note: Subpop = Subpopulation; BRR = Balanced Repeated Replication; Frequency is the top line and percentage is the bottom line for each cell

Bivariate Analyses of Postsecondary Education Enrollment and Mobilization of Social

Capital for Asian American and White Subpopulations

To assess the bivariate relationships of the variables that measured mobilization of social capital with the first criterion variable, level of postsecondary education enrollment, another set of cross tabs and chi-square was performed. The results of the bivariate analyses for both the Asian American and White subpopulations are displayed in Table 16.

For Asian Americans, the variable that measured parental discussions, $F(1, 199) = 1.53$, $p = 0.22$; peer discussions, $F(1, 199) = 0.30$, $p = 0.59$; and institutional agent discussions, $F(1, 199) = 1.20$, $p = 0.28$ were not statistically significant. This means that for Asian Americans, none of the bivariate relationships for mobilization of social capital were statistically significant. For Whites, the bivariate relationships for parental discussions, $F(1, 199) = 21.48$, $p < 0.001$, and peer discussions, $F(1, 199) = 9.49$, $p = 0.002$, were both statistically significant but the bivariate relationship for institutional agents discussions was not significant, $F(1, 199) = 1.20$, $p = 0.28$. This suggests that for Asian Americans who were ninth graders in 2009, the mobilization of their social capital by discussing going to college with those in their family, peers, and school social networks was not associated with their level of postsecondary education institution enrollment. In comparison, White students' mobilization of their social capital by discussing going to college with those in their family and peer networks were associated with their level of postsecondary education institution enrollment. Interestingly, mobilization of school social networks by discussing going to college with teachers or counselors was not associated with the level of postsecondary education institution enrollment for either Asian Americans or Whites.

Table 16

Bivariate Associations of Mobilization of Social Capital and Four-year College Enrollment for

Asian American and White Subpopulations Weighted With BRR

Subpop	Predictor	Designed Adjusted Rao-Scott F-Test	2-year enrollment	4-year enrollment	Total
Asian	Parental discussions	$F(1, 199) = 1.53$, $p = 0.22$			
	No		6,170	10,980	17,150
			35.98%	64.02%	100%
	Yes		24,111	89,353	113,464
			21.25%	78.75%	100%
	Total		30,281	100,332	130,614
			23.18%	76.82%	100%
White	Parental discussions	$F(1, 199) = 21.48$, $p < 0.001$			
	No		96,683	108,285	204,968
			47.17%	52.83%	100%
	Yes		458,663	878,719	1,337,382
			34.30%	65.70%	100%
	Total		555,346	987,005	1,542,351
			36.01%	63.99%	100%
Asian	Peer discussions	$F(1, 199) = 0.30$, $p = 0.59$			
	No		15,048	30,232	45,280
			33.23%	66.77%	100%
	Yes		21,915	51,597	73,512
			29.81%	70.19%	100%
	Total		36,963	81,829	118,792
			31.12%	68.88%	100%
White	Peer discussions	$F(1, 199) = 9.49$, $p = 0.002$			
	No		261,378	398,594	659,972
			39.60%	60.40%	100%
	Yes		295,522	588,505	884,027
			33.43%	66.57%	100%
	Total		556,899	987,100	1,543,999
			36.07%	63.93%	100%
Asian	Institutional agents discussions	$F(1, 199) = 0.65$, $p = 0.42$			
	No		25,442	59,959	85,401
			29.79%	70.21%	100%
	Yes		11,521	21,871	33,392
			34.50%	65.50%	100%
	Total		36,963	81,829	118,792

			31.12%	68.88%	100%
White	Institutional agents discussions	$F(1, 199) = 1.20$, $p = 0.28$			
	No		403,330	696,779	1,100,110
			36.66%	63.34%	100%
	Yes		153,569	290,320	443,889
			34.60%	65.40%	100%
	Total		556,899	987,100	1,543,999
			36.07%	63.93%	100%

Note. Subpop = Subpopulation; BRR = Balanced Repeated Replication; Frequency is the top line and percentage is the bottom line for each cell

Bivariate Analyses of Educational Expectations Three Years After High School

This study was not only interested in the level of postsecondary education institution Asian Americans enrolled in, but also in the highest level of education the respondents expected to earn after they have completed high school. After performing the bivariate analyses of the predictor variables with the first criterion variable, another set of bivariate analyses was performed to examine the relationships between each predictor variable with the second criterion variable, the highest level of education expected three years after what would have been the completion of high school for most respondents in the cohort. The results from the bivariate analyses for the second criterion variable are discussed and presented next.

Bivariate Analyses of Educational Expectations and Demographics for Asian American and White Subpopulations

The relationships between the second criterion variable and the demographic predictor variables were examined first with chi-square and crosstabs. Afterwards, the relationships with the second criterion variable and the variables that measured access to social capital were examined with chi-square, crosstabs, and an ordinal logistic regression. An ordinal logistic regression was performed for the variable, Sense of School Belonging, because it is a continuous variable and the criterion variable is an ordinal categorical variable. Finally, the relationships of

the second criterion variable were examined with predictor variables that measured mobilization of social capital with crosstabs and chi-square.

The results of the bivariate analyses for the demographic variables and the second dependent variable, educational expectation, are displayed in Table 17. The design adjusted Rao-Scott F-Tests indicated that the relationship between socioeconomic quintile and highest level of education expected, $F(6.08, 1209.06) = 2.53$, $p = 0.02$, and the relationship between sex and highest level of education expected, $F(1.96, 389.51) = 6.52$, $p = 0.002$, were the only bivariate relationships that were significant for Asian Americans. In comparison, the relationships between socioeconomic quintile and highest level of education expected, $F(7.37, 1466.79) = 70.39$, $p < 0.001$, the relationship between sex and highest level of education expected, $F(2, 397.48) = 33.24$, $p < 0.001$, and school locale and highest level of education expected, $F(3.59, 713.83) = 9.52$, $p < 0.001$, were all statistically significant for Whites.

The results of the bivariate analyses suggest that the pattern of the relationship between socioeconomic quintile and highest level of education expected for both Asian Americans and Whites were similar in that the percentages of respondents who expected to earn a master's degree or higher increased as the socioeconomic quintile increased, except for Asian Americans in the fourth socioeconomic quintile, which showed a slighted drop in master's degree expectation in comparison to Asian Americans in the third socioeconomic quintile. Similarly, the results of the bivariate analyses also suggest that in general more females expected a master's degree or higher than males for both Asian Americans and Whites

Table 17

Bivariate Associations of Demographics and Educational Expectations for Asian American and White Subpopulations Weighted With

BRR

Subpopulation	Predictor	Designed Adjusted Rao-Scott F-Test	Less than Bachelor's Degree	Bachelor's Degree	Master's Degree or Higher	Total
Asian	Socioeconomic quintile	$F(6.08, 1209.06) = 2.53$, $p = 0.02$				
	First quintile		4,418	6,283	5,006	15,706
			28.13%	40%	31.87%	100%
	Second quintile		3,908	5,012	5,346	14,267
			27.39%	35.13%	37.47%	100%
	Third quintile		5,506	7,546	9,761	22,812
			24.13%	33.08%	42.79%	100%
	Fourth quintile		6,333	12,700	11,788	30,822
			20.55%	41.21%	38.25%	100%
	Fifth quintile		2,133	14,663	29,181	45,977
			4.64%	31.89%	63.47%	100%
	Total		22,297	46,204	61,082	129,584
			17.21%	35.66%	47.14%	100%
White	Socioeconomic quintile	$F(7.37, 1466.79) = 70.39$, $p < 0.001$				
	First quintile		91,974	40,467	27,140	159,581
			57.64%	25.36 %	17.01%	100%
	Second quintile		145,514	88,003	59,658	293,174
			49.63%	30.02%	20.35%	100%
	Third quintile		148,229	131,021	98,823	378,073
			39.21%	34.65%	26.14%	100%
	Fourth quintile		119,653	175,195	170,290	465,138
			25.72%	37.67%	36.61%	100%
	Fifth quintile		53,779	199,600	297,206	550,585

			9.768%	36.25%	53.98%	100%
Asian	Sex	$F(1.96, 389.51) = 6.52$, $p = 0.002$				
	Male		1,3701	2,9023	23,997	66,721
			20.54%	43.5%	35.97%	100%
	Female		8596	17181	37085	62862
			13.67%	27.33%	58.99%	100%
	Total		22,297	46,204	61,082	129,584
			17.21%	35.66%	47.14%	100%
White	Sex	$F(2.00, 397.48) = 33.24$, $p < 0.001$				
	Male		324,647	341,864	279,171	945,682
			34.33%	36.15%	29.52%	100%
	Female		234,502	292421	373945	900869
			26.03%	32.46%	41.51%	100%
	Total		559150	634285	653116	1846551
			30.28%	34.35%	35.37%	100%
Asian	Locale	$F(2.70, 536.54) = 1.36$, $p = 0.25$				
	City		12,704	24,730	28,752	66,185
			19.19%	37.36%	43.44%	100%
	Suburb		5,304	16,892	24,275	46,471
			11.41%	36.35%	52.24%	100%
	Town or rural		4290	4582	8,055	16,927
			25.34%	27.07%	47.59%	100%
	Total		22,297	46,204	61,082	129,584
			17.21%	35.66%	47.14%	100%
White	Locale	$F(3.59, 713.83) = 9.52$, $p < 0.001$				
	City		91,711	136,226	161,576	389,513
			23.54%	34.97%	41.48%	100%
	Suburb		174,037	232,623	251,800	658,460
			26.43%	35.33%	38.24%	100%
	Town or rural		293,402	265,436	239,740	798,577
			36.74 %	33.24%	30.02%	100%

	Total		559,150	634,285	653,116	1,846,551
			30.28%	34.35%	35.37%	100%
Asian	Immigration	$F(1.81, 360.60) = 0.25$, $p = 0.75$				
	Foreign born		4,514	15,683	22,574	42,772
			10.55%	36.67%	52.78%	100%
	Native born		11,180	37,650	43,924	92,754
			12.05%	40.59%	47.36%	100%
	Total		15,695	53,333	66,498	135,525
			11.58%	39.35%	49.07%	100%
White	Immigration	$F(1.92, 382.08) = 1.12$, $p = 0.33$				
	Foreign born		6,354	8,890	13,797	29,041
			21.88%	30.61%	47.51%	100%
	Native born		492,717	628,677	650,012	1.771,405
			27.82%	35.49%	36.69%	100%
	Total		499,070	637,567	663,809	1,800,446
			27.72%	35.41%	36.87%	100%
Asian	Home language	$F(1.89, 376.65) = 0.02$, $p = 0.97$				
	English		2,854	9,634	11,324	23,812
			11.98%	40.46%	47.56%	100%
	Other language		12,841	43,699	55,187	111,727
			11.49%	39.11%	49.39%	100%
	Total		15,695	53,333	66,511	135,539
			11.58%	39.35%	49.07%	100%
White	Home language	$F(1.98, 393.86) = 1.28$, $p = 0.28$				
	English		477,243	607,654	624,244	1,709,142
			27.92%	35.55%	36.52%	100%
	Other language		21,827	29,621	39,564	91,013
			23.98%	32.55%	43.47%	100%
	Total		499,070	637,275	663,809	1,800,154
			27.72%	35.40%	36.88%	100%

Note. BRR = Balanced Repeated Replication; Frequency is the top line and percentage is the bottom line for each cell

Bivariate Analyses of Educational Expectations and Access to Social Capital for Asian

American and White Subpopulations

Next, the bivariate relationships between the predictor variables that measured access to social capital and the second criterion variable, the highest level of education expected three years after high school, were examined. Presented in Table 18 are the results of the bivariate analyses for level of educational expectation and the variables that represented access to family and social capital.

As can be seen in Table 18, the relationship between educational expectation and congruent degree expectation, was the only bivariate relationship for the predictor variables that measured access to family and peer social capital that was statistically significant for Asian Americans, $F(1.82, 361.59) = 3.55$, $p = 0.03$. For Whites, all the predictor variables that measured access to family and peer social capital were statistically significant.

Since the Sense of School Belonging variable, which measured access to school social capital, is a continuous variable, an ordinal logistic regression was conducted to assess the relationship between sense of belonging and level of education expectation for Asian Americans and Whites. The ordinal logistic regression for Asian Americans was significant, $F(1, 199) = 8.42$, $p = 0.004$ with log odds of 0.43 (BRR $SE = 0.15$). Converting the log odds to probabilities indicated that the probability of Asian Americans' highest level of education expected to be less than a bachelor's degree is 0.17, the probability of Asian Americans' highest education expected to be a bachelor's degree, or a master's degree or higher is 0.83, and the probability of Asian Americans' highest education expected to be a master's degree or higher was 0.54. The ordinal logistic regression for Whites was also significant, $F(1,199) = 157.92$, $p < 0.001$ with log odds of 0.38 (BRR $SE = 0.30$). Converting the log odds to probabilities indicated that the probability for

Table 18

Bivariate Associations of Access to Family and Peer Social Capital and Educational Expectations for Asian American and White

Subpopulations Weighted With BRR

Subpopulation	Predictor	Designed Adjusted Rao-Scott F-Test	Less than Bachelor's Degree	Bachelor's Degree	Master's Degree or Higher	Total
Asian	Congruent degree expectations	$F(1.82, 361.59) = 3.55$, $p = 0.03$				
	Not congruent		9,352	25,878	18,122	53,353
			17.53%	48.5%	33.97%	100%
	Congruent		7,664	30,002	50,093	87,759
			8.733%	34.19%	57.08%	100%
	Total		17,017	55,880	68,215	141,112
			12.06%	39.6%	48.34%	100%
Whites	Congruent degree expectations	$F(1.96, 389.10) = 194.82$, $p < 0.001$				
	Not congruent		387,958	285,445	190,847	864,250
			44.89%	33.03%	22.08%	100%
	Congruent		138,279	370,456	491,568	1,000,303
			13.82%	37.03%	49.14%	100%
	Total		526,237	655,901	682,416	1,864,554
			28.22%	35.18%	36.6%	100%
Asian	Family involvement	$F(1.41, 279.64) = 0.07$, $p = 0.87$				
	No		9,650	32,867	40,966	83,483
			11.56%	39.37%	49.07%	100%
	Yes		5,226	15,907	23,811	44,945
			11.63%	35.39%	52.98%	100%
	Total		14,876	48,774	64,778	128,428
			11.58%	37.98%	50.44%	100%

White	Family Involvement	$F(1.99, 396.52) = 18.00$, $p < 0.001$				
	No		288,373	337,808	313,173	939,354
			30.70%	35.96%	33.34%	100%
	Yes		190,192	286,994	340,304	817,490
			23.27%	35.11%	41.63%	100%
	Total		478,565	624,802	653,477	1,756,844
			27.24%	35.56%	37.20%	100 %
Asian	Academically oriented peer	$F(1.94, 386.44) = 0.18$, $p = 0.83$				
	No		5,620	12,583	13,806	32,009
			17.56%	39.31%	43.13%	100%
	Yes		16,044	33,010	45,975	95,028
			16.88%	34.74%	48.38%	100%
	Total		21,663	45,593	59,781	12,7037
			17.05%	35.89%	47.06%	100%
White	Academically oriented peer	$F(2.00, 397.86) = 67.09$, $p < 0.001$				
	No		257,066	215,089	166,086	638,242
			40.28%	33.70 %	26.02%	100%
	Yes		291,751	404,528	479,881	1,176,161
			24.81%	34.39%	40.80%	100%
	Total		548,818	619,617	645,968	1,814,402
			30.25%	34.15%	35.60%	100%

Note: BRR = Balanced Repeated Replication; Frequency is the top line and percentage is the bottom line for each cell

White's highest level of education expected to be less than a bachelor's degree was 0.30, the probability of Whites' highest education expected to be a bachelor's degree, or a master's degree or higher was 0.70, and the probability of Whites highest education expected to be a master's degree or higher was 0.66. Based on the ordinal logistic regressions, the relationship between Sense of School Belonging and educational expectations was significant for both Asian Americans and Whites.

In summary, the bivariate relationships between highest education expected and all the predictor variables measuring access to social capital from the networks of family, peers, and parents were significant for Whites. In comparison, the relationship between highest education expected and congruent degree expectation, which is one form of family social capital, and the relationship between highest education expected and Sense of School Belonging, which measured school social capital, were the only bivariate relationships that were significant for Asian Americans.

Bivariate Analyses of Educational Expectations and Mobilization of Social Capital for Asian American and White Subpopulations

Lastly, the bivariate relationships between the variables representing mobilization of social capital and educational expectations were analyzed. The results for the Asian American and White subpopulations are presented in Table 19. The relationship between educational expectation and parental discussions for Asian Americans, $F(1.51, 300.36) = 0.51$, $p = 0.55$ was not significant. The relationship between educational expectation and peer discussions, $F(1.68, 333.57) = 0.34$, $p = 0.67$, was not statistically significant for Asian Americans. Finally, the relationship between educational expectation and institutional agent discussions was also not statistically significant, $F(1.99, 396.64) = 0.14$, $p = 0.87$. This means that none of the bivariate

Table 19

Bivariate Associations of Mobilization of Social Capital and Educational Expectations for Asian American and White Subpopulations

Weighted With BRR

Subpopulation	Predictor	Designed Adjusted Rao-Scott F-Test	Less than Bachelor	Bachelor's Degree	Master's Degree or higher	Total
Asian	Parental discussions					
	No	$F(1.51, 300.36) = 0.51,$	3,262	9,395	6,956	19,612
		$p = 0.55$	16.63%	47.9%	35.47%	100%
	Yes		13,774	45,017	60,867	119,657
			11.51%	37.62%	50.87%	100%
	Total		17,035	54,411	67,823	139,270
			12.23%	39.07%	48.70%	100%
White	Parental discussions					
	No	$F(1.99, 396.89) = 51.78,$	123,036	80,940	62,143	266,120
		$p < 0.001$	46.23%	30.42%	23.35%	100%
	Yes		396,649	566,891	615,887	1579,426
			25.11%	35.89%	38.99%	100%
	Total		519,685	647,831	678,030	1,845,546
			28.16%	35.10%	36.74%	100%
Asian	Peer discussions					
	No	$F(1.68, 333.57) = 0.34,$	9,958	16,156	25,680	51,794
		$p = 0.67$	19.23%	31.19%	49.58%	100%
	Yes		12,335	28,575	34,933	75,843
			16.26%	37.68%	46.06%	100%
	Total		22,292	44,731	60,613	127,637
			17.47 %	35.05%	47.49%	100%
White	Peer discussions					
	No	$F(1.95, 388.43) = 37.88,$	301,462	269,880	244,460	815,802
		$p < 0.001$	36.95%	33.08%	29.97%	100%
	Yes		245,707	350,858	400,493	997,058

			24.64%	35.19%	40.17%	100%
	Total		547,169	620,738	644,952	1,812,859
			30.18%	34.24 %	35.58%	100%
Asian	Institution agents discussions					
	No	$F(1.99, 396.64) = 0.14$, $p = 0.87$	16,075	32,018	41,867	89,960
			17.87%	35.59%	46.54%	100%
	Yes		6,217	12,713	18,747	37,677
			16.50 %	33.74%	49.76%	100%
	Total		22,292	44,731	60,613	127,637
			17.47%	35.05%	47.49%	100%
White	Institution agents discussions					
	No	$F(1.88, 374.25) = 7.94$, $p = 0.001$	416,514	448,875	442,129	1,307,518
			31.86%	34.33%	33.81%	100%
	Yes		130,655	171,863	202,824	505,342
			25.85%	34.01%	40.14%	100%
	Total		547,169	620,738	644,952	1812,859
			30.18%	34.24%	35.58%	100%

Note: BRR = Balanced Repeated Replication; Frequency is the top line and percentage is the bottom line for each cell

relationships measuring mobilization of social capital and educational expectations were statistically significant for Asian Americans.

In comparison, for Whites, the variables which represented students' mobilization of family social capital by discussing going to college with parents, $F(1.99, 396.89) = 51.78$, $p < 0.001$, students' mobilization of peer social capital by discussing going to college with peers, $F(1.95, 388.43) = 37.88$, $p < 0.001$, and students' mobilization of school social capital by discussing going to college with a teacher or counselor, $F(1.88, 374.25) = 7.94$, $p = 0.001$, were statistically significant for Whites. This means that in contrast to Asian Americans where none of the relationships between mobilization of social capital and educational expectations were statistically significant, all the relationships between mobilization of social capital and educational expectations were statistically significant for Whites.

Logistic Regressions

After the bivariate analyses, logistic regressions were performed to assess which predictor variables best explained the level of postsecondary educational enrollment for the Asian American and White subpopulations. According to Lin's (1999a, 2001, 2008) Network Theory of Social Capital, both access to social capital and mobilization of social capital are linked to the outcome. To assess if access to social capital and mobilization of social capital predict enrollment in a four-year postsecondary education enrollment, two logistic regressions were conducted for each subpopulation. In Model 1, the predictors for the first logistic regression model included demographic variables and the variables that represented access to social capital of the family, peer, and school social networks. In Model 2, the predictors for the second logistic regression model included demographic variables, variables that represented access to social

capital, and variables that represent mobilization of social capital of the family, peer, and school social networks.

Logistic Regressions for Asian Americans

Shown in Table 20 are the results of the logistic regressions for Model 1 and Model 2 for Asian Americans with the level of postsecondary education enrollment (four-year or two-year) as the criterion variable. Model 1 for Asian Americans had a weighted subpopulation size of 118,008 and was statistically significant, $F(13, 187) = 2.02$, $p = 0.02$. Although the Hosmer and Lemeshow test is commonly used to assess the goodness-of-fit, the Hosmer and Lemeshow test was not available after using the Stata svy estimation command (Archer & Lemeshow, 2006). The Archer and Lemeshow test is an alternative goodness-of-fit test that takes into account sampling weights and design (Archer & Lemeshow, 2006; Heeringa et al., 2017). The Archer and Lemeshow design-adjusted test was used to assess the goodness of fit for Model 1. The result of the goodness-of-fit test, $F(9, 191) = 0.67$, $p = 0.77$, suggests that the model fits the data well.

Review of the results in Model 1 showed that only two predictors were significant in predicting if Asian Americans enrolled in a four-year postsecondary education institution as opposed to a two-year postsecondary education institution: fifth socioeconomic quintile and congruent degree expectations. Holding all else constant, the odds of Asian Americans from the fifth socioeconomic quintile enrolling in a four-year postsecondary education institution were 4.73 times higher than Asian Americans from the first socioeconomic quintile, with a 95% confidence interval of [1.40, 16.04]. Additionally, the odds of Asian Americans whose degree expectations were congruent with those of their parents enrolling in a four-year postsecondary education institution were 3.17 times higher than Asian Americans whose degree expectations

Table 20

Logistic Regressions for Asian Americans' Four-Year Postsecondary Education Enrollment

	Model 1				95% C.I.		Model 2				95% C.I.	
	Odds Ratio	BRR SE	t	P> |t|	LB	UB	Odds Ratio	BRR SE	t	P> |t|	LB	UB
Socioeconomic quintile												
Second quintile	2.17	1.67	1.00	0.32	0.47	9.93	2.39	1.96	1.06	0.29	0.47	12.07
Third quintile	2.54	1.62	1.46	0.15	0.72	8.90	2.53	1.78	1.32	0.19	0.63	10.10
Fourth quintile	1.12	1.26	0.10	0.92	0.12	10.32	1.56	1.56	0.44	0.66	0.22	11.13
Fifth quintile	4.73	2.93	2.51	0.01	1.40	16.04	5.24	3.72	2.34	0.02	1.30	21.21
Female	1.53	0.67	0.97	0.33	0.64	3.63	1.29	0.58	0.58	0.56	0.54	3.12
School locale												
Suburb	1.65	0.98	0.84	0.40	0.52	5.31	1.30	0.75	0.46	0.65	0.42	4.02
Town or rural	1.05	0.86	0.06	0.96	0.21	5.32	0.79	0.64	-0.29	0.77	0.16	3.93
U.S. born	0.73	0.40	-0.59	0.56	0.24	2.15	0.76	0.42	-0.50	0.62	0.26	2.26
Other language spoken in home	0.79	0.72	-0.26	0.80	0.13	4.69	0.88	0.80	-0.14	0.89	0.15	5.26
Congruent degree expectation	3.17	1.28	2.85	0.01	1.43	7.03	3.21	1.31	2.86	0.01	1.44	7.18
Family Involvement	0.72	0.37	-0.63	0.54	0.27	1.98	0.64	0.33	-0.87	0.39	0.23	1.77
Academically orientated peer	1.61	0.89	0.86	0.39	0.54	4.79	1.70	0.91	1.00	0.32	0.60	4.86
Sense of school belonging	1.12	0.31	0.42	0.68	0.65	1.93	1.07	0.32	0.24	0.81	0.59	1.93
Parental discussions							1.47	0.87	0.65	0.52	0.46	4.71
Peer discussions							1.02	0.64	0.03	0.98	0.30	3.53
Institutional agents discussions							1.50	0.83	0.73	0.46	0.50	4.47
Constant	0.70	0.76	-0.33	0.74	0.08	5.92	0.48	0.58	-0.60	0.55	0.04	5.35

Note: BRR SE = Balanced Repeated Replication standard error. C.I. = Confidence Interval; LB = Lower Bound; UB = Upper Bound; Reference category for socioeconomic quintile = first quintile; Reference category for school locale = city

were not congruent with their parents' expectations with a 95% confidence interval of [1.43, 7.03], holding all else constant.

When the variables that represented mobilization of social capital were added for Model 2, with a weighted subpopulation size of 113,358, the model for Asian Americans was not statistically significant, $F(16, 184) = 1.52$, $p = 0.10$. This means that the predictors in Model 2 were not significant in predicting the level of postsecondary education institutions enrollment for Asian Americans.

Logistic Regressions for Whites

The logistic regression results for Model 1 and Model 2 for Whites are displayed in Table 21. Model 1 for Whites had a weighted subpopulation size of 1,490,036 and was statistically significant, $F(13, 187) = 22.90$, $p < 0.001$. The result of the Archer and Lemeshow design-adjusted goodness-of-fit test, $F(9, 191) = 1.47$, $p = 0.16$, suggests that the model fits the data well.

According to Model 1, the following predictors were significant in predicting Whites' enrollment in a four-year postsecondary education institution as opposed to a two-year postsecondary education institution: third socioeconomic quintile, fourth socioeconomic quintile, fifth socioeconomic quintile, town or rural school locale, parents and students having congruent degree expectations, family involvement, having academically oriented friends, and sense of school belonging. The significant predictors that were shared by both Asian Americans and Whites were the fifth socioeconomic quintile and congruent degree expectations.

The results for Model 1 suggested that similar to Asian Americans, the odds of Whites enrolling in a four-year postsecondary education institution as opposed to a two-year postsecondary education are higher for Whites from the fifth socioeconomic quintile than for

Table 21

Logistic Regressions for Whites' Four-Year Postsecondary Education Enrollment

	Model 1						Model 2					
	Odds Ratio	BRR *SE*	*t*	P> |t|	95% C.I. LB	UB	Odds Ratio	BRR *SE*	*t*	P> |t|	95% C.I. LB	UB
Socioeconomic quintile												
Second quintile	1.33	0.24	1.58	0.12	0.93	1.91	1.30	0.24	1.40	0.164	0.90	1.88
Third quintile	1.68	0.32	2.76	0.01	1.16	2.44	1.65	0.31	2.65	0.009	1.14	2.41
Fourth quintile	2.23	0.42	4.27	0.00	1.54	3.22	2.18	0.42	4.10	0.000	1.50	3.18
Fifth quintile (highest)	4.66	0.93	7.74	0.00	3.15	6.90	4.67	0.93	7.70	0.000	3.15	6.93
Female	1.18	0.11	1.80	0.07	0.98	1.42	1.16	0.11	1.65	0.101	0.97	1.40
School locale												
Suburb	0.87	0.13	-0.90	0.37	0.64	1.18	0.89	0.14	-0.74	0.458	0.65	1.21
Town or rural	0.72	0.10	-2.50	0.01	0.55	.93	0.72	0.10	-2.42	0.016	0.55	0.94
U.S. born	0.73	0.34	-0.66	0.51	0.29	1.84	0.75	0.35	-0.61	0.540	0.30	1.89
Other language spoken in home	0.95	0.26	-0.17	0.86	0.56	1.63	0.98	0.27	-0.09	0.929	0.57	1.68
Congruent degree expectations	2.04	0.22	6.55	0.00	1.65	2.53	1.99	0.22	6.33	0.000	1.61	2.47
Family involvement	1.28	0.14	2.27	0.02	1.03	1.59	1.30	0.14	2.37	0.019	1.05	1.62
Academically oriented friend	1.23	0.12	2.08	0.04	1.01	1.49	1.22	0.12	1.97	0.050	0.10	1.48
Sense of school belonging	1.21	0.06	3.72	0.00	1.09	1.34	1.21	0.06	3.58	0.000	1.09	1.34
Parental discussions							1.04	0.16	0.28	0.781	0.77	1.42
Peer discussions							1.19	0.13	1.65	0.101	0.97	1.46
Institutional agents discussions							0.93	0.10	-0.73	0.466	0.75	1.14
Constant	0.66	0.34	-0.81	0.42	0.23	1.84	0.59	0.32	-0.98	0.329	0.20	1.71

Note: BRR SE = Balanced Repeated Replication standard error. C.I. = Confidence Interval; LB = Lower Bound; UB = Upper Bound; Reference category for socioeconomic quintile = first quintile; Reference category for school locale = city

Whites from the first socioeconomic quintile. Holding all else constant, the odds of Whites from the fifth socioeconomic quintile enrolling in a four-year postsecondary education institution was 4.66 times higher than Whites from the first socioeconomic quintile, with a 95% confidence interval of [3.15, 6.90]. Additionally, the results suggested that the odds of enrolling in a four-year postsecondary education institution were higher for Whites in the third, fourth, or fifth socioeconomic quintile than Whites in the first socioeconomic quintile. This means that the odds of enrolling in a four-year postsecondary education institution were higher for Whites from higher socioeconomic status.

Also similar to Asian Americans, the odds of Whites whose degree expectations was congruent with their parents' degree expectation enrolling in a four-year postsecondary education institution were two times higher than those whose degree expectations were not congruent with their parents' degree expectations, with a 95% confidence interval of [1.65, 2.53].

Significant predictors that measured social capital for the first logistic regression model for Whites that were notably absent from the first logistic regression model for Asian Americans are the predictors for access to family social capital in the form of family involvement, access to peer social capital, and access to school social capital. According to the results in Table 21, holding all else constant, the odds of enrolling in a four-year postsecondary education institution for Whites whose family talked with a teacher or counselor about admissions requirements when the students were in ninth grade were 1.28 times higher than those whose family did not, with a 95% confidence interval of [1.03, 1.59]. Additionally, the odds of enrolling in a four-year postsecondary education institution for Whites whose closest friend in ninth grade was interested in school was 1.23 times higher than Whites whose closest friend was not interested in school with a 95% confidence interval of [1.01, 1.49], holding all else constant. Finally, holding all else

constant, every unit increase in access to school social capital in the form of sense of school belonging increased the odds of Whites enrolling in a four-year postsecondary education institution increased by a factor of 1.21 with a 95% confidence interval of [1.09, 1.34].

Model 2 for Whites, which had the variables for mobilization of social capital added, had a weighted sample size of 1,480,824 and was statistically significant, $F(16, 184) = 18.78$, $p < 0.001$. The result of the Archer and Lemeshow design-adjusted goodness of fit test, $F(9, 191) = 0.45$, $p = 0.90$, suggests that the model fits the data well. When the variables that measure mobilization of social capital were added in Model 2, the predictor variables that were significant in Model 1 for Whites remained significant predictors in Model 2, but the added variables that measured mobilization of social capital were not significant. This means that the variables representing mobilization of social capital, which measured if students discussed going to college with those in their social networks – parental discussion, peer discussion, and institutional agent discussions – were not statistically significant in predicting the level of postsecondary education enrollment for Whites.

Discriminant Function Analyses

Discriminant analyses were conducted to predict Asian Americans and Whites' highest level of education expected three years after most of the HSLS:09 respondents completed high school. The predictor variables selected in the design of the study for the discriminant function analyses were socioeconomic quintile, gender, school locale, immigration status, sense of school belonging, and mobilization of social capital. The variables that represented mobilization of family social capital, which measured if the student discussed going to college with their mother or father; mobilization of peer social capital, which measured if the student discussed going to college with their friends; and mobilization of school social capital, which measured if the

student discussed going to college with a teacher or counselor, were summed to create an aggregated mobilization of social capital variable for use with the discriminant function analyses. The aggregated mobilization of social capital variable ranged in values from zero to three with higher values representing higher mobilization of social capital. The criterion variable, highest level of education expected, consisted of three levels: less than bachelor's degree, bachelor's degree, and master's degree or higher. Discriminant function analysis was performed using SPSS version 29 with prior probabilities set proportional to group sizes and missing values replaced with the mean. The discriminant function analysis for Asian Americans is presented first followed by Whites.

Discriminant Function Analysis for Asian Americans

The analysis for Asian Americans resulted in two discriminant functions. The summary statistics of the discriminant function analysis for Asian Americans are displayed in Table 22. The first function had an eigenvalue of 0.128 and explained 89.2% of the variance. The second function had an eigenvalue of 0.015 and explained 10.8% of the variance. Both functions were statistically significant at the alpha level of 0.05.

Table 22

Summary Statistics of Discriminant Analysis for Asian Americans

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation	Wilks' λ	χ^2	df	Sig
1	0.128	89.2	89.2	0.337	0.873	119.900	12	< 0.001
2	0.015	10.8	100	0.123	0.985	13.516	5	0.019

Presented in Table 23 is the structure matrix correlation coefficients. The values represented the correlation coefficient of each variable with each function. The strongest predictors for the first function were Socioeconomic Quintile, Sense of School Belonging, and

Sex. This function was named "Demographics Influences." Mobilization of Social Capital, School Locale, and Immigration Status did not load on the first discriminant function. The strongest predictors for the second function were Sex, Socioeconomic Quintile, School Locale, and lastly Sense of School Belonging. This function was named "School Identity Influences." Mobilization of Social Capital and Immigration Status did not load on the second discriminant function.

Table 23

Structure Matrix Correlation Coefficients for Asian Americans

Variable	Function 1	Function 2
Socioeconomic quintile	**0.798**	**-0.539**
Sense of school belonging	**0.512**	**0.337**
Mobilization of social capital	0.213	0.173
Sex	**0.349**	**0.572**
School locale	0.112	**0.406**
Immigration status	0.009	-0.228

Note. Strong predictors are bolded.

The classification table results for Asian Americans is displayed in Table 24. The discriminant function analysis correctly predicted 0.60% of Asian Americans who expected to earn less than a bachelor's degree, 20.90% of Asian Americans who expected to earn a bachelor's degree, and 88.80% of Asian Americans who expected to earn a master's degree or higher. The results of the classification table suggested that the discriminant function analysis was good at predicting Asian Americans who expected to earn a master's degree or higher. The cross-validated classification showed that overall, 54.1% were correctly classified.

Table 24

Classification Table Results for Asian Americans' Highest Level of Education Expected

Highest level of education expected	Predicted Group Membership			
	Less than Bachelor's Degree	Bachelor's Degree	Master's Degree or higher	Total
Less than Bachelor's Degree	1 (0.60%)	55 (32%)	116 (67.40%)	172
Bachelor's Degree	2 (0.40%)	98 (20.90%)	369 (78.70%)	469
Master's Degree or higher	0 (0.00%)	81 (11.20%)	645 (88.80%)	726
Ungrouped	3 (0.50%)	118 (20.2%)	464 (79.30%)	585

Note. Frequencies are in the first row of each cell. Percentages are in parentheses in the second row of each cell.

Discriminant Function Analysis for Whites

The analysis for Whites also resulted in two discriminant functions. Shown in Table 25 are the summary statistics of the discriminant function analysis for Whites. The first function had an eigenvalue of 0.225 and explained 98.3% of the variance. The second function had an eigenvalue of 0.004 and explained 1.7% of the variance. Both functions were statistically significant.

Table 25

Summary Statistics of Discriminant Analysis for Whites

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation	Wilks' λ	χ2	df	Sig
1	0.255	98.3	98.3	0.451	0.794	1433.142	12	< 0.001
2	0.004	1.7	100	0.066	0.996	27.408	5	<0 .001

Presented in Table 26 is the structure matrix correlation coefficients. The strongest and only predictor for the first function was Socioeconomic Quintile. Sex, School Locale, Mobilization of Social Capital, Immigration Status, and Sense of School Belonging did not load on the first discriminant function. This first function was named "Socioeconomic Status." The strongest and only predictor for the second function was Sex. Socioeconomic Quintile, School Locale, Mobilization of Social Capital, Immigration Status, and Sense of School Belonging did not load on the second discriminant function. The second function was named "Sex."

Table 26

Structure Matrix Correlation Coefficients for Whites

Variable	Function 1	Function 2
Socioeconomic quintile	**0.804**	-0.269
Sex	0.223	**0.913**
School locale	-0.180	-0.029
Mobilization of social capital	0.243	-0.040
Immigration status	-0.063	-0.270
Sense of school belonging	0.297	0.043

Note. Strong predictors are bolded.

The classification table for Whites is shown in Table 27. The discriminant function analysis correctly predicted 49.40% of Whites who expected to earn less than a bachelor's degree, 24.40% of Whites who expected to earn a bachelor's degree, and 71.70% of Whites who expected to earn a master's degree or higher. The results of the classification table suggested that the analysis was much more successful in predicting Whites who expected to earn a master's degree or higher. The cross-validated classification showed that overall, 49.1% were correctly classified.

Table 27

Classification Table for Whites' Highest Level of Education Expected

Highest level of education expected	Predicted Group Membership			
	Less than Bachelor's Degree	Bachelor's Degree	Master's Degree or higher	Total
Less than Bachelor's Degree	1,063 (49.40%)	528 (24.50%)	561 (26.10%)	2,152
Bachelor's Degree	570 (20.70%)	670 (24.40%)	1,507 (54.90%)	2,742
Master's Degree or higher	350 (11.40%)	516 (16.90%)	2,194 (71.70%)	3,060
Ungrouped	1,554 (37.70%)	1,009 (24.50%)	1,560 (37.80%)	4,123

Note. Frequencies are in the first row of each cell. Percentages are in parentheses in the second row of each cell.

Summary

This chapter presents the results of descriptive statistics, bivariate analyses, logistic regressions, and discriminant function analyses to answer the following research questions guiding this study.

1. What are the four-year college and two-year college enrollment rates for Asian Americans and Whites?

2. What is the highest level of education expected for Asian Americans and Whites three years after high school?

3. To what extent do student characteristics, in particular socioeconomic status (SES), and access to social capital through the social networks of family, peers, and school predict four-year college enrollment for Asian Americans and Whites?

4. To what extent do student characteristics, in particular SES, access to, and *mobilization* of social capital through the social networks of family, peers, and school predict college enrollment in a four-year postsecondary education institution for Asian Americans and Whites?

5. What are the strongest predictors for the highest level of education expected for Asian Americans and Whites?

Results for Research Question One

The descriptive statistics answered the first research question. As shown in Table 13, with the BRR weight, approximately 32% of Asian Americans enrolled in a two-year postsecondary education while 68% enrolled in a four-year postsecondary education institution. Approximately 36% of the BRR weighted White respondents enrolled in a two-year postsecondary education institution while approximately 64% enrolled in a four-year postsecondary education institution. Overall, the enrollment rates of Asian Americans and Whites at two-year and four-year colleges were similar with Asian Americans' enrollment at each level being just slightly higher.

Of particular interest to this study is the enrollment by Asian Americans and Whites from the first and fifth socioeconomic status quintiles. As shown in Table 14, for Asians Americans, the bivariate analyses revealed that 49% of the BRR weighted respondents from the first (lowest) socioeconomic status quintile enrolled in a two-year postsecondary education institution while 12% of the BRR weighted Asian American respondents from the fifth (highest) socioeconomic status quintile enrolled in a two-year postsecondary education institution. This difference in enrollment at two-year institutions was statistically significant for Asian Americans, $F(2.65, 528.22) = 5.09$, $p = 0.003$. In comparison, 51% of the BRR weighted Asian American

respondents from the first socioeconomic status quintile enrolled in a four-year postsecondary education institution while 88% of the BRR weighted respondents from the fifth socioeconomic quintile enrolled in a four-year postsecondary education institution. The results suggest that while about half of Asian Americans from the lowest socioeconomic status quintile were enrolled in two-year postsecondary education institutions, enrollment for Asian Americans from the highest socioeconomic status quintile was concentrated in four-year postsecondary education institutions.

The bivariate analyses suggested that the pattern of enrollment for Whites was similar to that of Asian Americans. Over half, 58% of the BRR weighted White respondents from the first socioeconomic status quintile enrolled in a two-year postsecondary education institution while Whites from the fifth socioeconomic status (81% of the BRR weighted respondents) were concentrated in four-year postsecondary education institutions. The difference in enrollment based on socioeconomic status quintile for Whites was statistically significant, $F(3.51, 698.06) = 57.81$, $p < 0.001$. The results suggested that the enrollment pattern at two-year and four-year colleges for Asian Americans and Whites were similar in that more Asian Americans and Whites from the highest socioeconomic quintile enroll in four-year colleges than Asian Americans and Whites from the lowest socioeconomic quintile.

Results for Research Question Two

Research question two was also answered with descriptive statistics and bivariate analyses, as shown in Table 13 and Table 17. Approximately 17% of the BRR weighted Asian American respondents expected to earn less than a bachelor's degree three years after what would have been the HSLS:09 cohort's high school graduation, 39% of the BRR weighted Asian respondents expected to earn a bachelor's degree, and 44% of the BRR weighted Asian

respondents expected to earn a master's degree or higher. In comparison, 31% of the BRR weighted White respondents expected to earn less than a bachelor's degree, 34% of the BRR weighted White respondents expected to earn a bachelor's degree, and 36% of the BRR weighted White respondents expected to earn a master's degree or higher. The descriptive statistics for Asian Americans and Whites indicated that higher percentages of Asian Americans expected to earn a bachelor's degree or higher compared to Whites.

As shown in Table 17, when examining the educational expectations of Asian Americans by socioeconomic status quintiles, more Asian Americans in the first socioeconomic quintile (40% weighted) expected to earn a bachelor's degree while more Asian Americans in the fifth socioeconomic quintile expected to earn a master's degree or higher (64%). In comparison, more Whites in the first socioeconomic quintile (58%) expected to earn less than a bachelor's degree and more Whites in the fifth socioeconomic quintile (54%) expected to earn a master's degree. The results of the bivariate analyses suggests that Asian Americans may have higher educational expectations than Whites, particularly when comparing Asian Americans and Whites in the first socioeconomic quintile.

Results for Research Question Three

Logistic regressions helped answer the third research question. Shown in Table 20, family social capital in the form of students and their parents having congruent degree expectations and the fifth socioeconomic quintile were significant predictors for Asian Americans enrolling in a four-year postsecondary education institution. The odds of Asian Americans whose degree expectation was congruent with their parents' enrolling in a four-year postsecondary education institution as opposed to a two-year postsecondary education were 3.17 times higher than Asian Americans whose degree expectation was not congruent with their

parents' expectation. Additionally, the odds of Asian Americans from the fifth socioeconomic status quintile enrolling in a four-year postsecondary education institution were 4.73 times higher than Asian Americans from the first socioeconomic status quintile.

As shown in Table 21, for Whites, third socioeconomic quintile, fourth socioeconomic quintile, fifth socioeconomic quintile, attending school in a town or rural school setting, access to family social capital in the forms of congruent degree expectations, access to family social capital in the form of family involvement, access to peer social capital in the form of a close friend being academically oriented, and access to school social capital in the form of sense of school belonging were all significant predictors of enrolling in a four-year postsecondary education institution. The only significant predictors shared by both the Asian American and White subpopulations were respondents from the fifth socioeconomic quintile and congruent degree expectations.

Results for Research Question Four

The fourth research question was also answered through logistic regressions. The logistic regression model, Model 2 shown in Table 20, for Asian Americans for the fourth research question was not statistically significant at the 0.05 alpha level, $F(16, 184) = 1.52$, $p = 0.10$. This suggests that the combination of variables reflecting demographic background, access to social capital, and mobilization of social capital were not significant predictors of enrollment in a four-year postsecondary education institution for Asian Americans with an alpha level of 0.05.

The logistic regression for Whites for the fourth research question was statistically significant, $F(16, 184) = 18.78$, $p < 0.001$. As shown in Model 2 of Table 21, the predictors that were significant for the first logistic regression model in the third research question remained significant for the second logistic model for the fourth research question. However, none of the

variables reflecting mobilization of social capital from family, peers, and school networks were significant predictors.

Results for Research Question Five

The fifth research question was answered through discriminant function analyses for Asian Americans and Whites. The analysis resulted in two functions for both Asian Americans and Whites. The strongest predictors, as shown in Table 23, for the first function for Asian Americans were Socioeconomic Quintile, Sense of School Belonging, and Sex. The strongest predictors for the second function for Asian Americans were Sex, Socioeconomic Quintile, School Locale, and lastly Sense of School Belonging. As shown in Table 26, the strongest and only predictor for the first function for Whites was Socioeconomic Quintile. The strongest and only predictor for the second function for White was Sex. For both Asian Americans (shown in Table 24) and Whites (shown in Table 27), the discriminant function analysis was more successful at predicting the educational expectation of a master's degree or higher.

Chapter 5

Discussions and Recommendations

This chapter discusses the findings from this study. The chapter starts off with an overview of the study and a summary of the findings. A discussion of the findings and implications follows. The chapter closes with limitations, recommendations for practice, recommendations for policy, and recommendations for future research.

Overview of the Study

The purpose of this study was to better understand the transition to college for Asian Americans due to the bimodal college education enrollment pattern in the Asian American community. Whites were included for comparative purposes. This study explored if there was a relationship between social capital from the social networks of family, peers, and schools and the level of postsecondary education enrollment. Additionally, this study examined the educational expectations of Asian Americans and Whites three years after completion of high school. The theoretical framework for this study was Lin's (1999a, 2001, 2008) Network Theory of Social Capital, which theorized that access to and mobilization of social capital, which are influenced by social positions in society, are connected to instrumental outcomes that contribute to wealth, power, and reputation.

The following research questions guided this study.

1. What are the four-year college and two-year college enrollment rates for Asian Americans and Whites?

2. What is the highest level of education expected for Asian Americans and Whites three years after high school?

3. To what extent do student characteristics, in particular socioeconomic status (SES), and access to social capital through the social networks of family, peers, and school predict four-year college enrollment for Asian Americans and Whites?

4. To what extent do student characteristics, in particular SES, access to, and *mobilization* of social capital through the social networks of family, peers, and school predict college enrollment in a four-year postsecondary education institution for Asian Americans and Whites?

5. What are the strongest predictors for the highest level of education expected for Asian Americans and Whites?

Summary of Findings

A finding of this study was that socioeconomic status explains, in part, the postsecondary education enrollment pattern for Asian Americans and Whites who were ninth graders in 2009. For both Asian Americans and Whites, the enrollment patterns at two-year or four-year postsecondary education institutions reflected socioeconomic status. More Asian and Whites from higher socioeconomic quintiles enrolled in four-year postsecondary education institutions than Asian Americans and Whites from the lowest socioeconomic quintile. For both Asian Americans and Whites, respondents from the fifth (highest) socioeconomic quintile have higher odds of enrolling in a four-year college as opposed to a two-year college than respondents from the first (lowest) socioeconomic quintile. Additionally, socioeconomic status was a strong predictor in predicting the highest level of education expected three years after high school for both Asian Americans and Whites.

Another finding of this study was the importance of access to social capital, particularly access to family social capital in the form of students and parents both being congruent in their

expectations for the student to earn a bachelor's degree or higher. For Asian Americans, access to family social capital in the form of congruent degree expectations was the only social capital predictor that was significant. In comparison, all predictors that measured access to social capital from the social networks of family, peers, and school were significant predictors in explaining Whites' enrollment in a four-year postsecondary education institution. This suggests that having access to family social capital in which students and parents both share the same expectations can be beneficial for Asian Americans to enroll in a four-year college. In comparison, it can be potentially beneficial for Whites to have access to family social capital in which students and parents share the same expectations, access to family social capital in which family are involved in the college admissions preparation process, access to peer social capital in which the closest friend is interested in school, or access to school social capital where they feel a sense of belonging. This means that for Asian Americans, only family social capital in the form of congruent degree expectations explains Asian Americans' enrollment in a four-year postsecondary education institution. In comparison, access to social capital from any of the three social networks explains Whites' four-year postsecondary education institution enrollment.

A third finding is that mobilization of social capital was not a significant predictor for four-year postsecondary education institution enrollment or for students' educational expectations three years after high school completion. The finding suggests that access to social capital may be more important for both Asian Americans and Whites for four-year postsecondary educational enrollment and educational expectations than mobilizing or using social capital through their social networks.

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Discussion of Findings

The next section discusses the findings regarding socioeconomic status, access to social capital, and mobilization of social capital for four-year college enrollment and educational expectations of Asian Americans with comparison to Whites. A brief discussion of the findings of the relationship between sex and college enrollment and educational expectations follows.

Socioeconomic Status

The results from the univariate, bivariate, and multivariate analyses in this study suggested that the educational enrollment pattern and educational expectations of Asian Americans who were ninth graders in 2009 can be explained in part with socioeconomic status. The univariate analyses indicated that more Asian Americans from the highest socioeconomic status enrolled in four-year postsecondary education institutions while more Asian Americans from the lowest socioeconomic status enrolled in two-year postsecondary education institutions. The bivariate analyses provided further evidence that the differences in enrollment patterns and educational expectations between Asian Americans in the highest socioeconomic status and Asian Americans in the lowest socioeconomic status were significantly different. The multivariate analysis with logistic regression indicated that the odds of Asian Americans from the highest socioeconomic status enrolling in a four-year postsecondary education institution as opposed to a two-year postsecondary education institution was 4.73 times higher than Asian American from the lowest socioeconomic status. The findings from the multivariate analysis with discriminant function analysis suggested that socioeconomic status continued to explain the educational expectations of Asian Americans three years after completion of high school. The results from the univariate, bivariate, and multivariate analyses on socioeconomic status for Asian Americans were comparable with that of Whites. Thus, while the general perception is that

Asian Americans are overrepresented in four-year colleges (Wang, 2007), this perception is incomplete as the findings from this study suggest that Asian Americans who enrolled in four-year colleges were predominantly from the highest socioeconomic status.

Access to Social Capital

Lin's (199a, 2001, 2008) Network Theory of Social Capital theorized that access to social capital is associated with instrumental outcomes. Although Lin's (199a, 2001, 2008) Network Theory of Social Capital supports the findings for Whites, it only partially supports the findings for Asian Americans.

The univariate analyses indicated that there were more Asian Americans who reported having access to family social capital in the form of congruent degree expectations, access to peer social capital in the form of academically oriented friends, and access to school social capital with a sense of school belonging than Asian Americans who reported not having access to these forms of social capital in their social networks. The only form of social capital where there were more Asian Americans who reported not having access compared to Asian Americans who reported having access was family social capital in the form of family involvement with college admissions requirements.

Despite having access to most forms of social capital from their social networks, the bivariate analyses suggested that access to family social capital in the form of congruent degree expectations between students and parents was the only form of social capital that was significantly related to both the level of postsecondary educational enrollment and highest level of education expected for Asian Americans. The result of the logistic regression revealed that access to family social capital in the form of congruent degree expectations was ultimately the

only significant social capital predictor for enrollment in a four-year postsecondary education institution for Asian Americans.

In contrast, the univariate analyses indicated that there were more Whites who reported having access to social capital from all three social networks than Whites who reported not having access to social capital. The bivariate analyses were consistent with the univariate analyses, suggesting that access to social capital from each of the three social networks were significantly related to the level of postsecondary education institution enrollment for Whites. The results of the logistic regressions remained consistent with the results from the univariate and bivariate analyses. Access to family social capital in the form of congruent degree expectations, access to family social capital in the form of family involvement, access to peer social capital in the form of academically oriented peers, and access to school social capital in the form of sense of school belonging were all significant predictors in the level of postsecondary education institution enrollment for Whites.

The differences of the findings in this study for Asian Americans and Whites suggest that Lin's (1999a, 2001, 2008) Network Theory of Social Capital better explains the level of postsecondary educational enrollment for Whites than for Asian Americans. For Asian Americans, having access to family social capital in the form of congruent degree expectation could be beneficial for enrolling in a four-year higher institution. For Whites, access to social capital through family, peers, or school social networks could be beneficial.

What is notable is that access to social family social capital in the form of students and parents having congruent degree expectations was the only social capital predictor shared by both Asian Americans and Whites that was statistically significant in explaining enrollment in a four-year college. This finding is consistent with Kim and Schneider's (2005) study, which

found that the odds of students enrolling in a four-year postsecondary educational institution are higher when parents' and student's educational expectations are aligned. The finding in this study suggests that a relationship, described by Lin (1986; 2001) as reciprocal or binding, where parents and students share the same educational expectations is important for both Asian Americans and Whites as it increased the odds of enrolling in a four-year college, but is particularly relevant for Asian Americans. This is because it was the only form of social capital that increased Asian Americans' odds of enrolling in a four-year college compared to Whites in which access to social capital from other networks could also increase Whites' odds of enrolling in a four-year postsecondary education institution.

Another interesting finding with access to social capital is that access to family social capital in the form of family involvement was a significant predictor for Whites only. The finding that family involvement was not a significant predictor for Asian Americans appears to contradict prior research emphasizing the importance of family and parental involvement in the college choice process (McDonough, 1997; Perna & Titus, 2005). However, the finding for Asian Americans in this study is consistent with that of Sakamoto et al. (2009) who noted that Asian Americans achieve the same, or sometimes even higher levels of education than Whites despite less parental involvement and family resources. Additionally, in a meta-analysis of 21 studies that examined parental involvement and academic achievement of minority students, Jeynes (2003) found that parental involvement had smaller effect sizes on the educational achievement of Asian Americans in comparison to other racial and ethnic minority groups. Thus, the findings for this study suggest that while family social capital was a significant predictor for Asian Americans and Whites' enrollment in a four-year college, for Asian Americans, access to the form of family social capital matters. Having access to a relationship where the students' and

parents' expectations for a bachelor's degree or higher are congruent is more beneficial for Asian American students for a four-year college enrollment than parental or family involvement.

Given that prior studies (Bedsworth et al., 2006; Choy et al., 2000) found that academically oriented peers are influential in college enrollment, the findings for this study suggest that access to peer social capital in the form of a closest friend who is academically oriented is a significant predictor for only Whites was surprising. Although this finding was unexpected, a study by Steinberg and Monahan (2007) found that adolescents between the ages of 10 and 14 are the least resistant to peer influences with resistance increasing linearly between the age of 14 and 18. Considering the conclusions drawn by Steinberg and Monahan (2007), the findings for this study suggests that for Asian Americans the expectations of parents, more specifically, sharing the same educational expectations as their parents, may have a stronger influence on Asian Americans' enrollment in a four-year college than the influence of academically oriented peers as Asian Americans start their high school education.

Another surprising finding is that access to social capital in the form of sense of school belonging was a significant predictor for enrolling in a four-year college for Whites, but not for Asians. This study operationalized access to school social capital with the variable, sense of school belonging, which is a composite of whether respondents feel safe at school, feel proud of their school, have an adult at school they can talk with about problems, feel that school is a waste of time, and earn good grades. Prior studies have found that a sense of school belonging is positively associated with academic achievement, motivation, increased engagement with teachers and others in the school environment with positive interpersonal relationships, educational aspirations, self-esteem, and self-efficacy, while negatively associated with drop out (Korpershoek et al., 2020; Osterman, 2000).

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The finding that access to social capital is not a significant predictor for enrollment in a four-year college for Asian Americans is interesting as prior research has noted that connecting with institutional agents was important in preparing for and transition to college (Belasco, 2013; McDonough, 1997). Connecting to school social capital may not be a significant predictor of enrollment to a four-year college for Asian Americans because Asian Americans may have resources in their ethnic communities such as churches, for-hire college counselors, and influential community members to reinforce the value of education and provide information in navigating the college choice process (J. Lee & Zhou, 2014; Lew, 2006, 2010). Thus, this may explain the finding that sense of school belonging was not a significant predictor in the level of postsecondary education institution enrollment for Asian Americans

Although a sense of school belonging is not a significant predictor for enrollment in a four-year college for Asian Americans, it was one of the predictors that loaded onto the two functions in the discriminant function analysis for Asian Americans' highest level of education expected three years after completion of high school. As Korpershoek et al. (2020) and Osterman (2000) have noted, a sense of school belonging is positively associated with educational aspirations. However, the findings from this study suggests that the positive association between sense of school belonging and educational aspirations for Asian Americans could potentially persist long-term, even after graduating from high school.

Mobilization of Social Capital

According to Lin (2001), in addition to access to social capital, mobilization of social capital is also associated with instrumental returns. For this study, mobilization of social capital was operationalized as students' discussions with parents, peers, and institutional agents about going to college. Notably, the theory was not supported by the findings of this study. The logistic

regression model for Asian Americans was not significant, which was consistent with the bivariate analyses of the variables for mobilization of social capital, which were also not significant. The findings from the bivariate analyses and logistic regression suggest that discussions about going to college with parents, peers, and institutional agents do not explain enrollment in a four-year college for Asian Americans.

Although the logistic regression model for Whites with the variables for mobilization of social capital was statistically significant, none of the variables for mobilization of social capital were significant predictors for enrollment in a four-year college. Mobilization of social capital also did not load into the functions for Asian Americans and Whites in the discriminant function analyses for highest level of education expected. In combination, these findings suggest that contrary to the theoretical framework, mobilization of social capital is not related to four-year college enrollment or educational expectations for Asian Americans and Whites who were ninth graders in 2009.

Although the findings that mobilization of social capital was not a significant predictor for enrollment in a four-year postsecondary education institution or highest level of education expected was surprising, Lin (2008) anticipated that evidence of mobilized social capital may not be evident. According to Lin (2008), mobilization of social capital may have an "invisible return" (p. 53). This is because individuals may not recognize that their actions reflect mobilization of social capital or individuals may not recognize that information they received from their social networks to help achieve the desired outcome is a result of the individual mobilizing social capital through their connections with those in their networks (Lin, 2008).

Additionally, the unexpected finding that mobilization of social capital was not a significant predictor might be due to the variables that were used to operationalize mobilization

of social capital. The variables that measured mobilization of social capital were limited because they measured if the student discussed going to college with their parents, peers, and teachers or counselors. The variables, however, did not address the frequency or intensity of the talks the students have with the individuals in each of the social networks. Thus, the variables for mobilization of social capital may have underestimated the effects of mobilization.

Furthermore, the time frame of the data collection may have contributed to the findings that mobilization of social capital is not related to the level of postsecondary educational enrollment and highest level of education expected. Data for the students' base year was collected between September and February of the ninth-grade year. Thus, it may have been too early to fully capture the college preparation activities of students. Although most of the respondents reported that they did not discuss talking with a teacher or counselor about going to college, the response might not be an indicator that mobilization of social capital did not happen, but rather a reflection that the activity had not occurred yet. Perhaps if the data had been collected later in the ninth-grade year or the beginning of the tenth-grade year, the responses may have been different.

The findings from Bryan, Farmer-Hinton, et al.'s (2018) study which used the NCES 2002 Educational Longitudinal Studies dataset provided evidence that ninth grade may be too early to collect data on when students talk to institutional agents. In their study, Bryan, Farmer-Hinton, et al. (2018) measured the intensity of talking with a school counselor, teacher, or coach about college information in the tenth grade and twelfth grade. Bryan, Farmer-Hinton, et al. (2018) found that the odds of enrolling in a postsecondary education institution were greater for students when the intensity of the college talks occurred in the twelfth grade. The authors also found that the intensity of the college talks that occurred in the tenth grade were not a significant

predictor. The findings from Bryan, Farmer-Hinton, et al.'s (2018) study coupled with the findings from this study that measured discussions of going to college in the ninth grades suggest that while mobilization of social capital in the early high school years by talking with others about going to college may not be positively associated with enrolling in college, there remains a possibility that mobilization of social capital by talking to institutional agents in the later high school years could be positively associated with four-year postsecondary education enrollment.

Sex

Although sex was not a significant predictor for four-year enrollment for either Asian Americans or Whites, it was a significant predictor for both functions in the discriminant function analysis of the highest education expected for Asian Americans and the sole significant predictor for the second function in the discriminant function analysis for Whites. The findings from this study are consistent with Wells et al. (2011), who used NCES 2002 Educational Longitudinal Studies data and found differences in the educational aspirations of girls and boys. The findings from this study also suggest that while sex may be associated with educational expectations, it may not necessarily be associated with the action of enrolling in a four-year college.

<center>**Implications**</center>

The main implication of this study is that access to social capital is positively related to a four-year college enrollment. The form of social capital matters. For Asian Americans, what matters is access to family social capital in the form of parents and students' congruent educational expectation for a bachelor's degree. For Whites, access to family social capital in the form of congruent educational expectation, access to family social capital in the form of family

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involvement, access to academically oriented peers, and access to school social capital in the form of belonging matter in explaining Whites' enrollment in a four-year college.

The findings from this study suggest that for Asian Americans, it may be important to connect with both parents and students about enrolling in a four-year college. As Lew's (2006; 2010) studies on Korean Americans pointed out, Asian Americans from lower socioeconomic status backgrounds may be making decisions about their educational futures by themselves with little or no adult guidance. Thus, it may also be beneficial for parents and students to discuss and compare their educational expectations, which may be especially important for Asian Americans from lower socioeconomic statuses.

For Whites, it may also be important to connect with both parents and students about enrolling in a four-year college, and encourage parents and students to discuss and compare educational expectations. However, it appears that Whites can also benefit from encouraging parents to be involved in the college going process, creating an environment that would encourage peers to be academically motivated and engaged, and creating an environment where White students feel that they belong in an academic setting.

Another implication of this study is that socioeconomic status is also positively associated with college enrollment and the highest level of education expected. The findings from this study clarify that contrary to popular beliefs that Asian Americans are overrepresented in four-year postsecondary education institutions (Wang, 2007), Asian Americans enrolled at four-year postsecondary education institutions are more likely to be from the highest socioeconomic status. In contrast, Asian Americans from the lowest socioeconomic status are more likely to enroll in two-year postsecondary education institutions. This enrollment pattern for Asian Americans is not different from that of Whites. The findings from this study suggests

that more attention may be needed to better understand the college enrollment patterns of Asian Americans based on socioeconomic status. Additionally, more support may be needed by Asian Americans from lower socioeconomic status to help them enroll in four-year postsecondary education institutions as opposed to two-year postsecondary education institutions.

Limitations

There are several limitations to this study. First, while one of the foci of the HSLS:09 is to explore students' decisions in the transition from high school to adulthood and the factors that influence those decisions, a primary focus of the HSLS:09 is to explore entry into the STEM pipeline (Ingels, et al., 2011). Thus, by using secondary data, the operationalization of concepts to be measured in the study were limited to what had been collected. More specifically, the conceptualization of students mobilizing the social capital in their social networks may not have been fully captured with the variables that measured mobilization of social capital.

Relatedly, this study did not examine access to and mobilization of social capital in the community despite prior studies indicating that social capital in the Asian ethnic community is often a vital source of information and support in the college going process (J. Lee & Zhou, 2014; Lew, 2006, 2010; Louie, 2001). Since the HSLS:09 is a secondary data set, information about the role and influence of the ethnic communities were not available.

Another limitation with using an existing public-use national data set is that information that could identify the respondents, such as information about respondents' specific racial/ethnic group, is restricted to prevent disclosure of the respondents. Since the ethnic and racial groups cannot be further disaggregated with the public-use data set, multiracial Asian Americans might not be included in the study if they selected the multiracial category instead of the Asian category.

By using the public-use data set, the ability to make further adjustments to address item missingness was limited. However, as stated in the HSLS:09 file documents, NCES attempted to minimize the bias with non-response and item missingness as much as possible.

Since the sample in the High School Longitudinal Study was designed to be a national representation of ninth graders in the United States in 2009, even with Asian Americans being oversampled, there were large differences in the sample size of Asian Americans and Whites. The total unweighted sample of the White subpopulation ($n = 12,082$) was over six times that of the unweighted sample size of Asian Americans ($n = 1,952$) and the weighted sample of the White subpopulation ($n = 2,133,480$) was almost 15 times that of the weighted sample size of Asian Americans ($n = 142,405$). With a very large sample, small differences become statistically significant (M. Lin et al., 2013). Thus, some of the significant findings with the White subpopulation, particularly significant findings that were not shared with the Asian American subpopulation, should be interpreted with caution as they may be due to the large sample size.

Additionally, while this study was able to include socioeconomic status as a predictor variable in exploring the relationships between social capital and level of postsecondary education enrollment and highest level of education expected, the smaller case of the Asian American subpopulation in comparison to Whites by socioeconomic status, along with the combination of predictor variables in the study did not allow for further analyses.

Another limitation of this study is that this study may not fully explain the transition to college for Asian Americans and Whites because the study is focused on one aspect, social capital, which could influence students during the preparation and transition to college. There may be many other issues students take into consideration when deciding whether to enroll in a postsecondary education institution, such as GPA, tuition, geographic location of the college,

institution prestige or reputation, and relatives' input (McDonough, 1997; Teranishi, 2010), which were not considered in this study. Additionally, as the price of tuition across the United States has been increasing, enrollment has been declining as students and their families question affordability, access, and return on investment with a college education (Marken, 2019; Ward & Corral, 2022). The changing perspective of the value of higher education could also potentially factor in the decision to attend college and the level of college to attend, which were not considered in this study.

Lastly, another limitation of this study is the use of students' educational expectation and postsecondary educational enrollment to measure if an instrumental return is achieved. According to Lin (2001), instrumental returns reflect new resources that contribute to the dimensions of wealth, power, and reputation, which is typically associated with the attainment of a higher degree. Thus, educational attainment would be a more ideal measure to assess if instrumental return is achieved. However, since this study utilized student responded survey data from the second follow-up, which occurred three years after completion of high school for most of the students in the cohort, most of the students may have still been enrolled in college if they had pursued a college education.

The approach to use educational expectation and level of postsecondary educational enrollment instead of educational attainment in this study is partially supported by previous studies. Researchers have theorized that there is a direct path between educational expectations and educational attainment (Sewell et al., 2003). However, the researcher understands that the relationship between educational expectations and educational attainment is tentative. In Sandefur et al.'s (2006) study, they concluded that the relationship between educational expectations and educational attainment may not be as strong of a predictor for educational

attainment as suggested by previous studies. Rosenbaum (2001) further argued that although the United States' college-for-all approach encourages and expects all students to attend college, students are not informed of the requirements to be successful in college. Consequently, some students may not attain their educational goals because they are not aware that their academic achievement and efforts in high school are strong predictors of educational attainment (Rosenbaum, 2001).

Rosenbaum (2001) further argued that students could benefit from vocational training. Prior research found that vocational or occupational education, or Career Technical Education (CTE), improve future professional incomes (Bishop & Mane, 2004; Pham et al., 2020; Rosenbaum, 2001), and in some cases the resulting professions and incomes may be even higher than professions that require a college degree. The recognition that some occupations may require a high education level yet, afterwards provide an income less than that of skilled laborers, which Lenski (1954) refers to as "status inconsistency," could contribute to changes in students' educational expectations and trajectories over time and ultimately affect their educational attainment. Thus, students' educational expectations and postsecondary education enrollment may not necessarily translate to educational attainment.

Recommendations for Policies

The findings from this study indicate that socioeconomic status partly explains the college enrollment pattern and highest level of education expected for Asian Americans. Asian Americans are perceived to be overrepresented in four-year postsecondary education institutions (Wang, 2007). However, the enrollment pattern of Asian Americans is similar to Whites with those from higher socioeconomic backgrounds concentrated in four-year colleges while those from lower socioeconomic backgrounds are more often enrolled in two-year colleges. Based on

the findings of the study, it is recommended that educational and social polces not only continue to disaggregate by Asian ethnicity, but also by socioeconomic status to gain better insight into the educational trajectories of all Asian Americans.

Relatedly, while Asian Americans were oversampled in the HSLS:09 with racial/ethnic group as one of the stratifying variables in the complex sampling design, the HSLS:09 study did not sample based on socioeconomic status (E. Christopher, personal communication, January 5, 2023). As socioeconomic status is often an area of interest for many researchers, policies on national sampling could consider sampling based on socioeconomic status in addition to race/ethnicity. End users could then disaggregate racial and ethnic groups in the United States by socioeconomic status to be better informed as to how policies and practices influence students of different socioeconomic statuses.

In some ways, the current practice of disaggregating Asian Americans by Asian ethnic groups by focusing on Asian Americans with lower socioeconomic status backgrounds, such as Cambodian, Hmong, and Laotian, could be viewed as an unintentional proxy for examining Asian Americans by socioeconomic status. However, this workaround is not as effective as the ability to disaggregate the larger racial/ethnic group by socioeconomic status. As Sakamoto et al. (2009) noted, these Asian ethnic groups with lower socioeconomic represent only a small percentage of the Asian American population. Furthermore, as Drouhot and Garip (2021) pointed out, there are socioeconomic status difference within Asian American ethnic groups, even among Asian ethnic groups perceived to be well off economically. Thus, to examine socioeconomic inequality better effectively, it is recommended that there be more intentional sampling based not just on race/ethnicity, but also by socioeconomic status.

Recommendations for Practice

A main finding of this study was that access to family social capital in the form of parents and students sharing congruent degree expectations was the only form of social capital that predicted enrollment in a four-year postsecondary education institution for Asian Americans. This finding suggests that the parent-student relationship is of utmost importance in supporting Asian Americans in making the transition to enroll in a four-year college. Educational practitioners could support such a relationship by providing proactive outreach to parents and families to connect about educational expectations. As participants in Lew's (2006) and Teranishi's (2010) studies mentioned, parents may have at some point communicated the desire for their children to attend college, but many parents from lower socioeconomic status backgrounds may not reinforce the expectation because they are unfamiliar with the requirements for college admission, or cannot provide the attention and support needed due to their job schedules.

The student participants from lower socioeconomic status backgrounds in Lew's (2006, 2010) and Teranishi's (2010) studies mentioned it is often up to the students themselves to prioritize among competing priorities, such as school, career, and financial obligations. Through proactive outreach, educational practitioners could help reinforce the message that parents may have already communicated to their children about attending a four-year college. Through these proactive outreach efforts, educational practitioners could partner with ethnic community groups to call or send letters to parents and families about the goals students should aim to achieve for the semester and for the year to meet college admissions requirements. These outreach efforts could also be in the form of events or tabling at places within the community that are more visible, such as at a community center, place of worship, ethnic shopping centers, or community

events. School personnel can also connect with students to assess if the student' and parents' educational expectations are congruent and help manage mutual expectations.

Additionally, while access to family social capital in the form of congruent bachelor's degree expectation increased the odds of four-year college enrollment for both Asian Americans and Whites, the findings from this study suggest that access to other forms of social capital also appears to be beneficial for Whites. Thus, the findings suggest the approaches designed to support Asian Americans enrolling in a four-year college may differ from approaches for Whites. Rather than applying a one-size-fit all approach, educational practitioners could best support college going by considering the diversity of the student population and designing approaches and strategies that are racially and culturally informed.

Recommendations for Future Studies

Based on the findings and analyses of this study, there are several recommendations for future studies. First, the findings of this study suggest that Asian Americans from lower socioeconomic status backgrounds are more likely to be enrolled at a two-year college. Future studies could explore the issues that may contribute to the enrollment in two-year colleges for Asian Americans from lower socioeconomic status backgrounds.

Given that having congruent degree expectations with parents was a significant predictor for Asian Americans' four-year college enrollment, future studies can explore the educational outcomes for Asian Americans who do not have a strong parent-student relationship. With the diversity within the Asian American community, future studies can also explore if congruence of degree expectation is a significant predictor of four-year college enrollment for different Asian American ethnic groups, particularly when cultural expectations and norms of the different Asian American ethnic groups are taken into consideration.

As this study utilized data from the second follow-up, information about the cohort's postsecondary degree attainment was not yet available. Future studies can explore if access to and mobilization of social capital is associated with degree attainment for Asian Americans and Whites. Future studies could also examine if students' educational expectations three years after high school align with their eventual degree attainment.

Since a limitation of this study is not being able to include access to and mobilization of social capital from the ethnic community networks, future studies could build on this study by exploring whether access to and mobilization of community social capital predict four-year college enrollment and highest level of education expected.

Not included in this study were students who did not enroll in a two-year or four-year postsecondary education institution. While it is important to understand the factors that may contribute to the decision to enroll or not enroll in a postsecondary education institution, it is outside the scope of this study. Future studies may consider exploring the issues and factors that might contribute to students' decision to continue or not continue their education after completion of high school.

The logistic regressions suggest that when compared with the first socioeconomic quintile, the odds of enrolling in a four-year college increased as the socioeconomic quintile increased. This pattern, however, was interrupted with the fourth socioeconomic quintile, which showed a dip in the pattern before the upward trend resumed with the fifth socioeconomic quintile. This dip in the pattern with the fourth socioeconomic quintile could reflect several reasons, including the possibility of students from the fourth socioeconomic quintile taking a gap year. The gap year developed in Britian and has been gaining in popularity globally (O'Shea, 2014). O'Shea (2014) theorized that the gap year is an opportunity for students to be away from

family and friends and engage in personal growth activities that will increase cultural capital. Due to the expenses associated with such an experience, the gap year is concentrated among the middle and upper-classes (O'Shea, 2014). Future studies could explore possible issues, including the possibility of a gap year, that might contribute to the interruption of the college enrollment pattern for those in the fourth socioeconomic quintile.

While it was not possible for this study to explore if social capital predicts enrollment in a four-year postsecondary education institution for Asian Americans and Whites based on socioeconomic quintile using the public-use data set, future studies could take on this endeavor to provide insight into the educational transition and enrollment outcome of Asian Americans based on socioeconomic status.

Conclusion

Asian Americans are often perceived to be disproportionately enrolled in higher education due to the model minority myth. This perception that Asian Americans are overrepresented may be the reason for the limited studies on Asian Americans' higher education enrollment trends and educational expectations. This study explored the relationships between social capital and four-year college enrollment and educational expectations for Asian Americans and Whites to better understand what helps explain Asian Americans' transition to college. The findings suggest that higher socioeconomic status and access to family social capital increased the odds of Asian Americans enrolling in four-year higher education institutions. Significant predictors in explaining the transition to college for Whites, specifically access to family social capital in the form of family involvement, access to peer social capital, and access to school social capital, were not significant predictors for Asian Americans. Thus, racially and culturally informed strategies that consider socioeconomic status and the recognition of the

importance of students' relationships with parents may need to be considered when working with

and supporting Asian Americans in the transition to college.

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