

2013

A structural equation modeling analysis of the role of socioeconomic status in Asian American and Pacific Islander students' transition to college

Samuel D Museus, *University of Denver*

Rican Vue, *University of California - Los Angeles*



PROJECT MUSE®

Socioeconomic Status and Asian American and Pacific Islander Students' Transition to College: A Structural Equation Modeling Analysis

Samuel D. Museus, Rican Vue

The Review of Higher Education, Volume 37, Number 1, Fall 2013,
pp. 45-76 (Article)

Published by The Johns Hopkins University Press



➔ For additional information about this article

<http://muse.jhu.edu/journals/rhe/summary/v037/37.1.museus.html>

The Review of Higher Education

Fall 2013, Volume 37, No. 1, pp. 45–76

Copyright © 2013 Association for the Study of Higher Education

All Rights Reserved (ISSN 0162–5748)

Socioeconomic Status and Asian American and Pacific Islander Students' Transition to College: A Structural Equation Modeling Analysis

Samuel D. Museus and Rican Vue

Asian Americans and Pacific Islanders (AAPIs)¹ are often stereotyped as monolithic model minorities who achieve universal and unparalleled academic and occupational success (Museus, 2009; Museus & Kiang, 2009; Suzuki, 1989, 2002). This model minority myth has led to the exclusion of

SAMUEL D. MUSEUS is an Associate Professor of Higher Education at the University of Denver. His research agenda focuses on examining the factors that affect college access and persistence among underrepresented students in the K-16 pipeline. His current research is focused on the impact of organizational environments on college success among students of color. RICAN VUE is a Research Associate at the University of California, Los Angeles. As part of her research agenda on college access, equity, and diversity, her dissertation examines Hmong American college students' negotiations of campus diversity, particularly intersections of race and ethnicity. Address queries to Samuel D. Museus, University of Denver, Morgridge College of Education, 1999 E. Evans Ave., Denver, CO 80208; telephone: (303) 503–8941; fax: (303) 871–6582; email: sdm245@gmail.com.

¹The term “Asian Americans” includes individuals of Bangladeshi, Cambodian, Chinese, Filipino, Hmong, Indian, Indonesian, Japanese, Korean, Lao, Malaysian, Pakistani, Sri Lankan, Taiwanese, Thai, and Vietnamese descent. “Pacific Islanders” encompasses Native Hawaiian, Guamanian/Chamorro, Samoan, Tongan, Fijian, and other Pacific Islander populations.

AAPIs from higher education research and discourse (Museus, 2009; Museus & Kiang, 2009). Consequently, AAPIs are arguably the most misunderstood population in higher education (Chang, 2009), and more research is needed to generate more authentic and accurate understandings of this group (Museus, 2009; Museus & Kiang, 2009; Teranishi, 2007).

Our investigation is aimed at advancing knowledge regarding the role that socioeconomic status (SES) plays in AAPI students' transition to college. In the following sections, we provide the context for this examination. First, we discuss the invisibility of AAPIs in higher education research, then review literature on the factors that influence AAPIs' educational trajectories. The remainder of the article focuses on our structural equation modeling (SEM) analysis of the role of SES in AAPI students' transition to higher education.

THE INVISIBILITY OF AAPIS

It has been over 35 years since the model minority myth first emerged (Suzuki, 1977, 2002), and this stereotype has dominated higher education research and discourse since that time (Museus, 2009; Museus & Kiang, 2009). In addition, higher education researchers often rely on aggregate data and oversimplified analyses to suggest that AAPIs achieve the highest rates of educational success among all racial groups, thereby confirming the model minority stereotype (Kiang, 2009; Museus, 2009; Museus & Kiang, 2009). It is this model minority myth and the misleading data analyses reinforcing it that have functioned to perpetuate the exclusion of AAPIs from higher education research and discourse. In fact, one review of five of the most widely read peer-reviewed academic journals² in the field of higher education revealed that less than 1% of articles include any explicit focus on AAPIs (Museus, 2009).

The perpetuation of the model minority myth and the corresponding invisibility of AAPIs in higher education research are problematic for at least three reasons (Museus, 2009; Museus & Maramba, 2011). First, AAPIs are one of the fastest growing racial groups in the United States and are projected to comprise approximately one of every 10 U.S. citizens by 2050 (U.S. Census, 2004). If higher education researchers, policymakers, and practitioners are to serve their college student populations effectively, then they must respond to this demographic shift that is taking place in society, which will undoubtedly change the racial makeup of college campuses in the years to come.

Second, the model minority myth masks the needs of the AAPI population. Several scholars have now demonstrated that many AAPI ethnic groups suffer from drastic racial and ethnic disparities and achieve lower rates of educational attainment than other racial and ethnic groups and the overall

²The five journals reviewed were the *Journal of College Student Development*, *NASPA Journal*, *Journal of Higher Education*, *Research in Higher Education*, and *The Review of Higher Education*.

national population (Chang, Park, Lin, Poon, & Nakanishi, 2009; Hune, 2002; Kiang, 2002; Museus, 2009, 2011, 2013; Museus & Kiang, 2009). For example, analyses of recent census educational attainment data indicate that Southeast Asian American and Pacific Islander populations—including Vietnamese (26%), Chamorro Islander (21%), Native Hawaiian (17%), Hmong (14%), Cambodian (13%), Guamanian (13%), Laotian (12%), Fijian (11%), Tongan (11%), Samoan (10%), and Micronesian (4%) groups—continue to attain bachelor's degrees at rates lower than the total national population (28%) (Museus, 2013). In addition, extant research demonstrates that AAPIs who are first-generation college students and from low SES backgrounds may suffer from disparities in college-going outcomes as well (Museus, 2011; Teranishi, Ceja, Antonio, Allen, & McDonough, 2004). Therefore, there is an urgent need to better understand and address the needs of Southeast Asian Americans and Pacific Islanders, as well as first-generation (i.e., generation in college) and low-SES AAPIs in postsecondary education.

Finally, the model minority stereotype and the corresponding exclusion of AAPIs from higher education research and discourse function to mask serious challenges that many Asian American students face in college, such as substantial pressure from cultural conflict, unwelcoming climates, pressure from racial stereotypes, racial prejudice and discrimination, and relatively high rates of mental health issues (Chhuon & Hudley, 2008; Cress & Ikeda, 2003; Greenberger & Chen, 1996; Harper & Hurtado, 2007; Lagdameo, Lee, Nguyen, Liang, Lee, Kodama, & McEwen, 2002; Lewis, Chesler, & Forman, 2000; Museus, 2007, 2008a, 2008b, 2011; Museus & Truong, 2009). For these reasons, it is the moral and ethical responsibility of higher education researchers to include, better understand, and inform efforts to serve this population (Museus, 2009; Museus & Chang, 2009).

SES STATUS AND AAPIs' TRANSITION TO COLLEGE

Several higher education researchers have underscored the reality that SES shapes students' educational trajectories, including whether they pursue and enroll in institutions of higher education (Dickert-Conlin & Rubenstein, 2007; McDonough, 1997; Perna & Li, 2006; Rowan-Kenyon, 2007; Terenzini, Bernal, & Cabrera, 2001; Walpole, 2007). In their national study of the relationship between socioeconomic status and educational success, for example, Terenzini, Bernal, and Cabrera (2001) concluded that students' SES was associated with their educational and occupational expectations, parents' knowledge of financial aid, access to financial aid information, and enrollment in postsecondary education.

While researchers have provided substantial evidence that some AAPI subgroups suffer from racial and ethnic disparities in educational attain-

ment (Museus, 2013; Hune, 2002; Kiang, 2002; Museus, 2009, 2011, 2013; Museus & Kiang, 2009), little is known about socioeconomic inequities among AAPIs. Indeed, with few exceptions (e.g., Museus, 2011; Teranishi, Ceja, et al., 2004), researchers have not systematically examined how various factors, such as SES and generational status (e.g., first-generation versus continuing education), influence AAPI students' transitions to and through postsecondary education.

The research that does exist indicates that first-generation AAPIs suffer from disparities in college access compared to their continuing-generation peers, and that low-SES AAPIs face disparities in access to four-year and highly selective institutions when compared to high-SES AAPIs (Teranishi, Ceja, et al., 2004; Museus, 2011). In his mixed-methods analysis of college access and equity among first-generation AAPIs in higher education, for example, Museus provided (a) descriptive statistical analyses of differences in first-generation and continuing-generation AAPI students' educational expectations, rate of application to postsecondary institutions, and matriculation into higher education and (b) findings from a qualitative analysis focused on the factors that influenced the pursuit of higher education among first-generation AAPI students. His analysis revealed that first-generation AAPI students suffered from inequalities in each of these three categories, when compared to their continuing generation counterparts.

In addition, Teranishi, Ceja, et al. (2004) examined the college-choice process among a national sample of AAPI students using multiple regression techniques and concluded that, among several different AAPI ethnic groups (i.e., Chinese, Filipino, Japanese, Korean, and Southeast Asian), parental income and expectations were positive and significant predictors of AAPIs' attendance at a more selective colleges and universities. Yet such studies are sparse, and knowledge of the impact of SES on AAPI students' educational trajectories and the ways in which various factors influence the transition to higher education for different SES groups within the AAPI population is limited. More research in this area is warranted.

PERSPECTIVES ON AAPIs' TRANSITION TO COLLEGE

We used several perspectives to provide the context for our current inquiry. Although researchers have offered many perspectives to understand the college decision-making process (e.g., Cabrera & La Nasa, 2000; Hossler, Braxton, & Coopersmith, 1989; Hossler & Gallagher, 1987), Hossler and Gallagher's stage model provides an especially valuable lens for examining the transition to college among AAPIs. The authors identify three stages as students navigate the road to college: predisposition, search, and choice. There is evidence that this framework is useful for understanding AAPIs'

college access-related outcomes (e.g., Teranishi, Ceja, et al., 2004). Therefore, for the current investigation, we conceptualize the transition to college as encompassing these three stages of predisposition (e.g., the development of expectations to go to college), search (e.g., the application to college), and choice (e.g., enrolling in college). In the remainder of this section, we discuss three additional perspectives that helped inform our study because they shed light on the factors that influence AAPIs' transitions to college: the cultural mechanisms, teacher quality, and frog-pond perspectives.

Cultural Mechanisms Perspective

The cultural mechanisms perspective suggests that positive family cultural values contribute to the success of AAPIs (Min, 2003; Ngo & Lee, 2007). This perspective indicates, for example, that family ties and the family's valuing of education are responsible for the high levels of success among some AAPI groups. Such values can manifest in parents' expectations that their child will go to college and their own involvement in their child's education. A large body of empirical research buttresses the concept that such cultural values do, in fact, contribute to success among AAPIs (Caplan, Choy, & Whitmore, 1991; Freeman, 1995; Robbins, 2004; Zhou & Bankston, 1998). Specifically, research suggests that parental expectations regarding the highest level of education that their children will attain and parental involvement are positively associated with AAPI and other students' educational outcomes (Glick & White, 2004; Lee & Bowen, 2006; Museus, 2011; Museus, Harper, & Nichols, 2010; Peng & Wright, 1994; Perna, 2000; Perna & Titus, 2005; Rowan-Kenyon, 2007; Smith & Fleming, 2006; Thompson, Gorin, Obeidat, & Chen, 2006; Yan, 1999).

It is important to note that the relationship between parental influences and AAPIs' educational trajectories is complex. For example, while several researchers have found that parental expectations are positively associated with students' expectations of their own educational achievement (e.g., Museus, Harper, & Nichols, 2010; Peng & Wright, 1994), some qualitative evidence suggests that, when pressure from parents becomes excessive, it can negatively influence the college-going process (Museus, 2011), but this phenomenon is not well understood. Moreover, scholars have demonstrated that parent-child relationships and interactions (e.g., discussing education) are positively associated with academic achievement and college attendance (Stewart, 2008; Yan, 1999), while specific interactions, such as parental involvement in students' homework, might lead to lower levels of achievement (Peng & Wright, 1994).

Teacher Quality Perspectives

Second, the teacher quality perspective underscores the potential impact of teacher support on academic progress. Indeed, teachers interact with students

daily, can build important relationships with students, and can play a major role in shaping their college opportunities and outcomes (Gonzalez, Stoner, & Jovel, 2003; McDonough 1997; Stanton-Salazar, 2001). For example, teachers can serve as important school agents who can provide critical information and support to AAPI students (Stanton-Salazar, 2001). However, research examining the impact of teacher support on AAPI students' outcomes is difficult to find.

Another way in which teachers can influence AAPIs' educational trajectories is through their expectations of those students' educational potential. For example, teachers' expectations can communicate messages to their students about their academic ability and likelihood of success. Such messages have consequences for those students' educational outcomes. Indeed, there is evidence that teachers' expectations are associated with levels of academic performance that are congruent with those expectations (Cooper & Tom, 1984; Solomon, Battistich, & Hom, 1996).

Related to the impact of teacher expectations is the concept of stereotype threat, which refers to instances in which negative stereotypes or assumptions about individuals' social group (e.g., their racial group) can cause anxiety and lead them to perform poorly on academic tasks (Steele, 1997; Steele & Aronson, 1995). With regard to AAPIs specifically, researchers have asserted that these students may benefit from high expectations due to the model minority myth, which can be viewed as a positive academic stereotype (Zhou & Bankston, 1998). However, research on AAPIs suggests that even positive racial stereotypes can pose a threat and lead to negative outcomes because they can result in anxiety, fear of failure to conform to that stereotype, or "choking" under excess pressure to perform well academically and conform to stereotypes of the model minority (Cheryan & Bodenhausen, 2000; Museus, 2008a). Also, relevant to this study is the fact that low-income Southeast Asian Americans are also stereotyped as deviants (Ngo & Lee, 2007). Thus, this AAPI subgroup might encounter low teacher expectations that negatively influence their success.

Other research on the impact of teachers' expectations on AAPI students' aspirations or expectations to succeed in education is mixed. While researchers have found that teacher expectations influence AAPI and Black students' aspirations and expectations to go further in education (e.g., Flowers, Milner, & Moore, 2003; Museus, Harper, & Nichols, 2010), Cheng and Starks (2002) examined a nationally representative sample using regression analysis techniques and found that teacher expectations were significant predictors of Hispanic and White students' expectations, but not AAPIs' expectations. However, to date, no nationally representative studies systematically examine the impact of teachers on whether AAPI students actually make the transition to college.

Frog-Pond Perspective

A third perspective that informed our examination is the frog-pond perspective (Alwin & Otto, 1977; Meyer, 1970). This effect underscores the important, complex, and contradictory influence that peer academic orientations can have on students' educational outcomes. Specifically, the frog-pond effect suggests that higher academic standards among peers may increase students' educational aspirations by pushing those individuals to achieve academically or, alternatively, can exhibit a negative influence on students' aspirations because it creates a competitive atmosphere that can depress academic performance (Alwin & Otto, 1977; Meyer, 1970). Researchers have suggested that these contradictory effects may cancel each other out and ultimately result in peer context having a minimal or insignificant impact on educational outcomes (Alwin & Otto, 1977; Meyer, 1970; Nelson, 1972).

The impact of peer academic orientation on the likelihood of AAPIs entering college is not well understood. The evidence that does exist supports the concept that peers can have a significant impact on AAPIs' educational trajectories (Cheng & Starks, 2002; Le, Monfared, & Stockdale, Monfared, 2005; Museus, Harper, & Nichols, 2010). For example, Le, Monfared, and Stockdale (2005) reported that AAPIs who are associated with delinquent friends were significantly more likely to be delinquent themselves and less attached to their schools. Further, in an examination of National Education Longitudinal Study data, Museus, Harper, and Nichols (2010) controlled for a variety of demographic, interpersonal, and psychological variables and concluded that peer attitudes were statistically significant and positive predictors of how far AAPI seniors expected to go in their education, while the influence of peer attitudes on students' expectations was negligible for all other major racial groups in the sample. However, systematic examinations of whether peer attitudes or orientations actually influence how far AAPI students *do* go in the education system are virtually nonexistent.

While it is unclear if there are socioeconomic differences in the influence of peers on college-going behavior, evidence suggests that peers may be more important for those who lack support elsewhere, such as low-income urban minorities and those whose parents have no college education (Choy, Horn, Nunez, & Chen, 2000; Sokatch, 2006). Indeed, if low-income or first-generation students are not exposed to high educational expectations or academic orientations at home, it could be hypothesized that peers play an even more important role in providing that positive influence. However, how peer attitudes or orientations actually vary across different AAPI SES groups is unknown, and research is needed to clarify whether such differences exist.

PURPOSE OF THE STUDY

Our purpose in this investigation is to examine socioeconomic differences in the interpersonal factors that influence the transition to college among AAPI students. One overarching question guided our examination: How do interpersonal factors influence college transition (i.e., the completion of stages in the transition to college) among AAPIs from different SES backgrounds? Six additional questions also informed the inquiry:

- Do parents' expectations influence college transition among AAPIs?
- Does parental involvement influence AAPI students' college transition?
- Does teacher quality influence college transition among AAPIs?
- Does the level of academic orientation among peers influence college transition among AAPI students?
- Do these interpersonal factors indirectly influence AAPI students' college transition through academic factors (i.e., GPA and test scores)?
- How do the aforementioned relationships vary across SES?

Our investigation contributes to extant literature in three ways. First, it is the first national study to analyze how various interpersonal factors are statistically related to AAPI students' transition to college. Indeed, while researchers have quantitatively examined the role of generational status in AAPI college access and how SES influences the selectivity of AAPIs' chosen postsecondary institutions (Museus, 2011; Teranishi, Ceja, et al., 2004), researchers have not systematically examined the predictive power of interpersonal influences on AAPIs' completion of stages in the transition to higher education. Second, this study provides the first thorough analysis of how the processes by which interpersonal factors influence college transition among AAPIs vary across SES. Finally, this examination demonstrates the utility of using SEM techniques to examine indirect relationships and offers the first study to examine how interpersonal factors indirectly influence AAPIs' transition to college via academic variables.

CONCEPTUAL FRAMEWORK

Figure 1 shows the conceptual framework that provided the foundation for the current inquiry. We drew on the preceding literature review to construct this model, and it illustrates our hypotheses about how various interpersonal factors impact college transition. The model posits that each interpersonal factor (i.e., parental expectations, parental involvement, teacher quality, and peer academic orientation) has a direct influence on college transition. The conceptual model also suggests that those interpersonal factors have an indirect impact on college transition via their direct influence on test scores and high school GPAs.

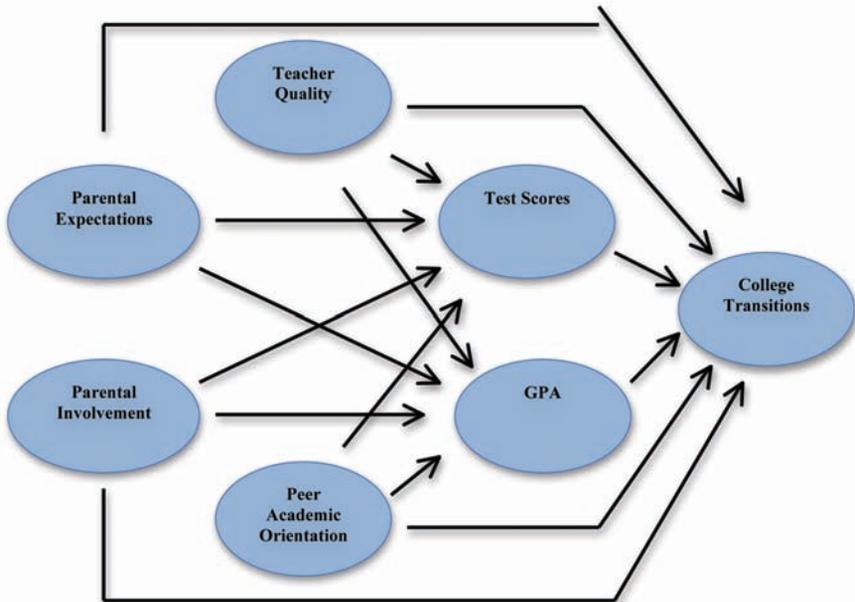


Figure 1. A model of interpersonal influences on college transitions.

METHODS

For the current investigation, we utilized the Education Longitudinal Study (ELS: 02/06) from the National Center for Education Statistics (NCES). For the ELS, the NCES surveyed a nationally representative sample of 10th graders in 2002. The NCES conducted a follow-up survey with those students in the spring of the ELS cohort's senior year in 2004 with a second follow-up in 2006. We included all 1,460 AAPI students who participated in the ELS surveys from the base year to the second follow-up (02:06) in the omnibus analysis. The AAPI sample was then divided into three subsamples: low SES ($n = 413$), middle SES ($n = 665$), and high SES ($n = 382$). The low-SES group included students who reported family incomes up to \$25,000; the middle-SES group consisted of those who reported family incomes from \$25,001 to \$75,000, and the high-SES group included students who reported a family income of \$75,001 and above.

The ELS is suitable for the current analysis for four reasons. First, the ELS includes a sufficient number of AAPIs to disaggregate by SES and analyze using SEM techniques. Second, the ELS includes a nationally representative sample, permitting the generalization of findings to the national population of AAPIs. Third, the ELS provides the most up-to-date and comprehensive national data on the transition from high school to college. Finally, the ELS

TABLE 1
KEY VARIABLE DEFINITIONS, ALPHA SCORES, AND NUMERICAL CODES

<i>Variable Name</i>	<i>Variable Description and Codes</i>
<i>Exogenous Independent Variables</i> Parental expectations	This observed ordinal variable measures how far the students' parents expect them to go in their educational career. The item was measured during respondents' 10th grade year and coded in the following way: 0 = less than high school diploma, 1 = high school diploma or GED, 2 = some college, 3 = bachelor's degree, 4 = master's degree, 5 = Ph.D., M.D., or professional degree.
Parental involvement (alpha = .79)	This latent variable was constructed by combining four survey items measuring the extent to which students' parents were involved in the education, including the following: How often students (1) discussed courses with parents, (2) discussed things studied in class with parents, (3) discussed ACT/SAT with parents, and (4) discussed going to college with parents. These items were measured during the 10th grade year and each survey item coded: 0 = never, 1 = sometimes, 2 = often.
Teacher quality	This latent variable was constructed by combining five survey items measuring teacher quality, including the following: The extent to which students agreed that (1) teaching is good, (2) teachers are interested in students, (3) teachers praise effort, (4) teachers expect their success in school, and (5) they often feel put down by teachers in class (reverse coded). These items were measured during the 10th grade year and each survey item coded: 0 = strongly disagree, 1 = disagree, 2 = agree, 3 = strongly agree.
Peer academic orientation (alpha = .70)	This latent variable was created by combining five survey items measuring peers' academic orientation, including the following: The extent to which respondents' friends think it is important to (1) attend class regularly, (2) study, (3) get good grades, (4) finish high school, and (5) continue education past high school. These items were measured during the 10th grade year and each survey item coded: 0 = not important, 1 = somewhat important, 2 = very important.

Endogenous Mediating Variables

High school grades

An ordinal variable measuring respondents' high school grade-point average. Coded by the following: 0 = 0.00-1.00, 1 = 1.01-1.50, 2 = 1.51-2.00, 3 = 2.01-2.50, 4 = 2.51-3.00, 5 = 3.01-3.50, 6 = 3.51-4.00.

Standardized test scores

A continuous variable measuring respondents' composite math and reading standardized test scores. This scale is a re-standardized scale that provides an estimate of respondents' test scores relative to the overall population.

Dependent Variable

College transition

A composite variable that measured students' completion of stages in the transition to college, which was constructed by adding the scores of three dichotomous indicators of college access: (1) whether student expected to go to college, (2) whether student applied to at least one college or university, and (3) whether student enrolled in college or university. Coded: 0 = none of the three events occurred, 1 = one of three events occurred, 2 = two of three events occurred, 3 = all three events occurred.

survey included variables that measure interpersonal factors (e.g., parental expectations and involvement, teacher quality, and peer academic orientation) that might influence AAPI students' college transition and other educational outcomes.

Instrument and Key Variables

The ELS survey includes a wide range of variables on students' demographic characteristics, interpersonal influences, academic performance, and educational outcomes. Control variables included in the current analysis included students' gender, generational status (in the U.S.), and language status (i.e., whether English was their primary language). Table 1 displays the variable names, alpha scores, definitions, and codes for each focal variable in the current inquiry. Those seven variables—four independent, two mediating, and one dependent—were included in the following structural equation model and are described below.

We included four exogenous independent variables in the analysis. The *parental expectations* variable was an observed variable that measures the level of education that parents expect their student to attain. The latent *parental involvement* ($\alpha = .79$) variable was defined as the extent to which parents were involved in their child's education. We constructed it using four survey items that were measured on a Likert-type scale. They indicated how often students (a) discussed courses with parents, (b) discussed things studied in class with parents, (c) discussed ACT/SAT with parents, and (d) discussed going to college with parents. We defined the *teacher quality* ($\alpha = .84$) variable as the extent to which the students felt that their teachers were supportive and had high expectations of them. It was also a latent construct created using five Likert-scaled items measuring the extent to which students agreed that (a) teaching is good, (b) teachers are interested in students, (c) teachers praise their effort, (d) teachers expect them to succeed in school, and (e) how often they feel put down by teachers in class, which was reverse coded. Finally, *peer academic orientation* ($\alpha = .70$) was a latent construct defined as the extent to which students' peers valued educational success. This variable was created using five Likert-scaled survey items measuring the extent to which respondents' friends think it is important to (a) attend class regularly, (b) study, (c) get good grades, (d) finish high school, and (e) continue education past high school.

Based on the assumption that the preceding interpersonal variables might indirectly influence college transition through their impact on academic preparation and performance, we included two endogenous mediating variables: test scores and GPA. The *test scores* variable was a continuous standardized composite measure of students' math and reading test scores, while the *GPA* variable was an observed ordinal variable that measured students' average GPA throughout high school. Finally, based on Hossler and Gallagher's (1987)

model, the endogenous dependent variable was labeled *college transition* and measured the extent to which students completed various components of the transition to college (e.g., development of expectations, application, and matriculation). We constructed this latent variable using three survey items measuring (a) whether students in the 12th grade expected to go to college, (b) whether students in the 12th grade had applied for college, and (c) whether they had matriculated at a college or university, up to two years after graduation. Because the three aforementioned items were measured as dichotomous (yes or no) variables, we created the composite college transition variable by adding the values of the three items, resulting in a single four-category construct that measured, on a scale from 0-3, how many college transition-related events occurred.

Data Analysis Procedures

We conducted the analysis in three phases. In Phase 1, we split the omnibus sample into low, middle, and high SES groups, and analyzed descriptive statistics—specifically, the means of each focal variable for the three subgroups. (See Table 2.) In Phase 2, we used the omnibus sample and exploratory principal components analysis with varimax rotation to (a) decrease the number of constructs that we included in the structural equation model and (b) identify the indicators that most accurately represent each of those focal constructs. We omitted all indicators with factor scores below .4 from the structural model. (See Table 1 for alpha scores for each latent factor.) The principal components analysis resulted in three latent constructs that represent parental involvement, teacher quality, and peer academic orientation. We used those three constructs, along with their indicators with factor scores above .4, and the other four observed variables to construct the structural equation model.

In Phase 3, we conducted the SEM analysis. SEM offers several advantages over other statistical procedures, including permitting the examination of overall model fit, analysis of indirect effects, and accounting of measurement error to maximize the accuracy of parameter estimates (Bollen, 1989). First, the seven variables discussed above were used to construct a structural model in the AMOS SEM software program. Then, because the AMOS software package does not permit the direct application of panel weights, we used Maximum Likelihood Estimation to impute missing values and utilized the appropriate panel weight to calculate an omnibus covariance matrix and separate covariance matrix for each SES group. We then loaded these results into the AMOS program for the final SEM analyses.

It is worth noting that the structural equation model included categorical variables, which can contribute to violations of SEM assumptions, such as the assumption of multivariate normality (Kline, 1998). The violation of SEM assumptions can bias parameter estimates. For example, non-normal

TABLE 2
SURVEY ITEM MEANS BY SOCIOECONOMIC STATUSES

	<i>Low</i> (<i>n</i> = 413)	<i>Middle</i> (<i>n</i> = 665)	<i>High</i> (<i>n</i> = 382)
<i>Parental expectations</i>	3.60	3.73	3.97
<i>Parental involvement</i>			
Discussed courses with parents	0.94	1.09	1.17
Discussed things studied in class with parents	0.88	0.97	1.00
Discussed ACT/SAT with parents	0.75	0.91	1.07
Discussed going to college with parents	1.26	1.40	1.45
<i>Teacher quality</i>			
Teaching is good	2.00	1.94	1.93
Teachers are interested in students	1.90	1.87	1.93
Teachers praise effort	1.90	1.84	1.77
Teachers expect their success in school	1.91	1.73	1.69
Often feel put down by teachers in class (reverse coded)	2.16	2.07	2.09
<i>Peer academic orientation</i>			
Important for friends to attend class regularly	1.48	1.50	1.59
Important for friends to study	1.33	1.37	1.39
Important for friends to get good grades	1.53	1.51	1.61
Important for friends to finish high school	1.66	1.75	1.78
Important for friends to continue past high school	1.51	1.60	1.71
<i>High school grades</i>	4.07	4.36	4.80
<i>Standardized test scores</i>	47.56	52.45	56.80
<i>College transition</i>			
Whether student expects to go to college	0.95	0.96	0.99
Whether student ever applied to college	0.86	0.89	0.94
Whether student ever attended college	0.79	0.87	0.94

ordinal data can lead to attenuated estimates of standard errors and increased probability of committing Type II errors or inaccurately concluding that a relationship is statistically significant. If ordinal data (a) have at least four categories and (b) are not skewed, the potential for biased estimates diminishes and parameter estimates that are produced by ordinal data are similar to those generated by continuous variables (Byrne, 2010). Thus, to address the categorical nature of the data, we analyzed descriptive data to ensure that the categorical variables were not skewed. In addition, for latent constructs that were comprised of indicators with fewer than four categories, we used the principal components analysis to generate a singular composite factor, which we entered into AMOS as a continuous variable.

LIMITATIONS

At least four limitations warrant consideration. First, our analysis did not account for the substantial ethnic diversity within the AAPI community, and we acknowledge that the AAPI population includes a diverse array of unique ethnic groups with distinct historical contexts, social conditions, and individual identities and experiences (Hune, 2002; Museus, 2009, 2011, 2013; Museus & Kiang, 2009).

Second, the analysis was limited to the variables included in the ELS dataset. For example, the ELS does not include institution-level variables (e.g., campus culture and climate), and such factors could be important predictors of students' college-going behavior. In addition, the ELS does not include variables that are adequate for analyzing students' financial attitudes, which evidence suggests can influence students' decisions to transition to higher education (e.g., King, 1996; Paulsen & St. John, 2002). While we could not include these variables in the analysis, our inquiry is based on the premise that there is value in analyzing the interpersonal factors that influence students' college transition.

Third, the standardized test scores collected by NCES were students' scores on an examination administered by the U.S. Department of Education (DOE), and those scores are proxies for students' performance on college entrance examinations; however, transferring interpretations of these scores to other exams (e.g., ACT or SAT) should be made with caution. Fourth, we used family income to measure students' socioeconomic status; if an alternative measure of socioeconomic status was used (e.g., combination of parents' educational level and income), the results might differ from those found herein.

FINDINGS

The descriptive statistics resulting from Phase 1 of the analysis are displayed in Table 2. They show that increases in SES are associated with increases in parental expectations. It appears that higher SES is also associated with higher levels of parental involvement and greater academic orientations among peers. AAPI students from higher SES backgrounds are also more likely to have higher GPAs, score higher on standardized tests, and complete various stages of the transition to college. Because the three variables used to construct the transition outcome are dichotomous, the means also represent the percentage of each subsample that completed that stage of the transition process. Thus, the table indicates that 94% of low-SES students developed expectations to go to college, compared to 96% of middle- and 97% of high-SES students.

With regard to applying to college, 86% of low-SES AAPIs completed this task, while 88% of middle- and 94% of high-SES students did so. And 79% of low-SES AAPIs matriculated into a college or university, compared to 87% of their middle- and 94% of their high-SES counterparts. These numbers appear to be somewhat high, but it is important to keep in mind that they do not account for the drastic ethnic disparities that exist within the AAPI community.

The Structural Equation Model

The results of the initial model indicated that it was not a good fit for the ELS data. We used relevant theory, knowledge of prior research, and the modification indices to improve the model fit through model-building techniques (Kline, 1998). Where modifications indices suggested that the addition of a missing relationship would substantially improve model fit (such as a correlation between two error variances and when the path was congruent with existing theory and research), then we added the path to the model and ran it again. The results of the final structural model are displayed in Table 3. The final model exhibited a CFI of .98, TLI of .96, RMSEA of .03, and PCLOSE of 1.00—all of which indicate that the final model was a good fit for the data. (See Table 3.) The final model explained 28% of the variance in college transitions among the low-SES sample, 26% of the variation in transitions to college in the middle-SES group, and 24% of the variance in college transitions for high-SES AAPIs.

Tables 4-6 display the standardized path coefficients for each SES subsample, while Figures 2-4 show the significant paths for each SES subgroup. The standardized path coefficients are similar to the standardized regression coefficients in multiple regression analyses and can be used to compare the magnitude of effects among predictor variables within the same model (i.e., within a given SES subsample). The standardized path coefficients, however,

TABLE 3
MODEL-FIT RESULTS

	<i>CFI</i>	<i>TLI</i>	<i>RMSEA</i>	<i>PCLOSE</i>
Structural Model	.98	.96	.03	1.00

Note: Good model fit is reflected by (a) CFI and TLI values greater than .95, (b) RMSEA less than .06, and (c) PCLOSE greater than .05 (Hu & Bentler, 1999).

cannot be used to compare the magnitude of path coefficients across models (i.e., across SES subsamples) because they are calculated using sample sizes and are therefore susceptible to the influence of variation in sample size. In order to make cross-model comparisons, unstandardized path coefficients, which do not take sample size into account, are displayed in Table 7. Due to the fact that some statistically significant paths had coefficients that were too small for interpretation, we discuss only those with standardized path coefficients of .05 and above.

Direct and Indirect Effects

For the low SES sample, GPA (.35) was the most powerful direct predictor of the transition to college. That relationship was positive and statistically significant ($p < .001$), followed by test scores (.17), peer academic orientation (.07), and parental involvement (.05), which were also positive and statistically significant predictors of college transition ($p < .001$). In other words, increased GPA and test scores, greater academic peer orientation, and greater parental involvement were associated with more progress in the transition to college.

The direct path coefficients from teacher quality and parental expectations to college transition were negligible. Parental expectations were also positively associated with GPA (.18) and test scores (.21), and both were significant at the .001 level. Parental involvement was also positively associated with GPA (.16) and test scores (.06), and both paths were statistically significant at the .001 level. In addition, peer academic orientation was positively and significantly related to GPA (.16) and test scores (.06), with both being significant at .001. Thus, as parental expectations, parental involvement, and peer academic orientation increase, so do students' GPAs and test scores, which in turn are related to increased transition to college among low SES AAPIs. While teacher quality was positively associated with GPA (.16, $p < .001$), its relationship with test scores was negligible, which indicates that teacher quality exhibited only an indirect positive influence on college transitions through its direct relationship with GPA.

TABLE 4

**DIRECT STANDARDIZED PATH COEFFICIENTS FOR EACH PREDICTOR
ON EACH OUTCOME VARIABLE FOR LOW SES SAMPLE**

<i>Predictor Variable</i>	<i>Outcome Variable</i>		
	<i>GPA</i>	<i>Test Scores</i>	<i>College Transition</i>
GPA	—	—	.35***
Test scores	—	—	.17***
Peer academic orientation	.16***	.06***	.07***
Teacher quality	.13***	.00	.02
Parental involvement	.16***	.06***	.05***
Parental expectations	.18***	.21***	.02

Note: * indicates statistical significance at the .05 level

** indicates statistical significance at the .01 level

*** indicates statistical significance at the .001 level

TABLE 5

**DIRECT STANDARDIZED PATH COEFFICIENTS FOR EACH PREDICTOR
ON EACH OUTCOME VARIABLE FOR MIDDLE SES SAMPLE**

<i>Predictor Variable</i>	<i>Outcome Variable</i>		
	<i>GPA</i>	<i>Test Scores</i>	<i>College Transition</i>
GPA	—	—	.32***
Test scores	—	—	.12***
Peer academic orientation	.16***	.08***	.12***
Teacher quality	.10***	-.03	-.02
Parental involvement	.11***	.14***	.01
Parental expectations	.17***	.34***	.06***

Note: * indicates statistical significance at the .05 level

** indicates statistical significance at the .01 level

*** indicates statistical significance at the .001 level

Similar to low-SES AAPIs, GPA (.32) exhibited the strongest influence on college transition for middle-SES students, followed by test scores (.12), peer academic orientation (.12), and parental expectations (.06); the path coefficients from all four of these predictors and the transition outcome were significant at the .001 level. The direct paths from parental involvement and teacher quality to college transition were negligible for middle-SES AAPIs. Parental expectations (.17), academic orientations among peers (.16), parental involvement (.11), and teacher quality (.10) were all positively associ-

TABLE 6
DIRECT STANDARDIZED PATH COEFFICIENTS FOR EACH PREDICTOR
ON EACH OUTCOME VARIABLE FOR HIGH SES SAMPLE

Predictor Variable	Outcome Variable		
	GPA	Test Scores	College Transition
GPA	—	—	.26***
Test scores	—	—	.15***
Peer academic orientation	.13***	.03	.11***
Teacher quality	.13***	.04	.07***
Parental involvement	.24***	.15***	.03
Parental expectations	.23***	.28***	.09***

Note: * indicates statistical significance at the .05 level
 ** indicates statistical significance at the .01 level
 *** indicates statistical significance at the .001 level

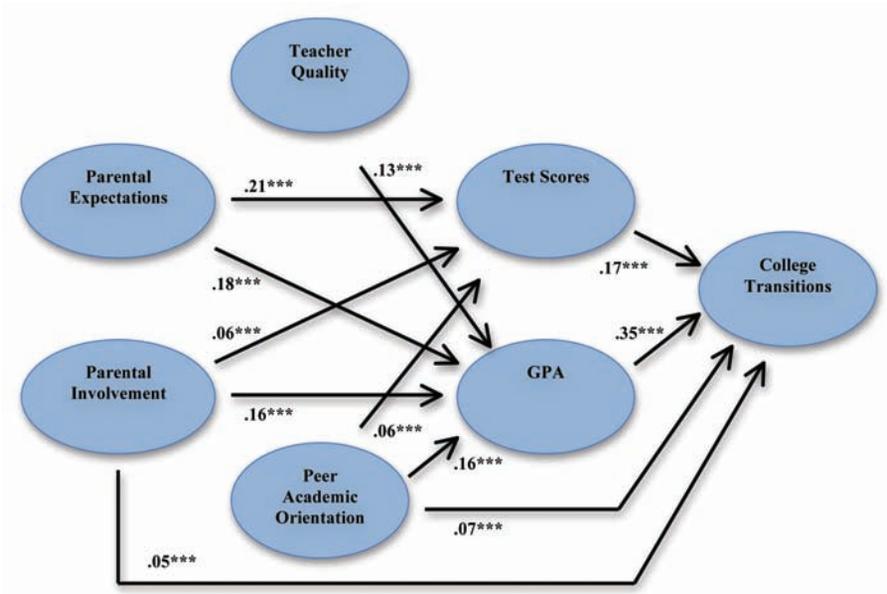


Figure 2. A model of low SES AAPI college transitions.

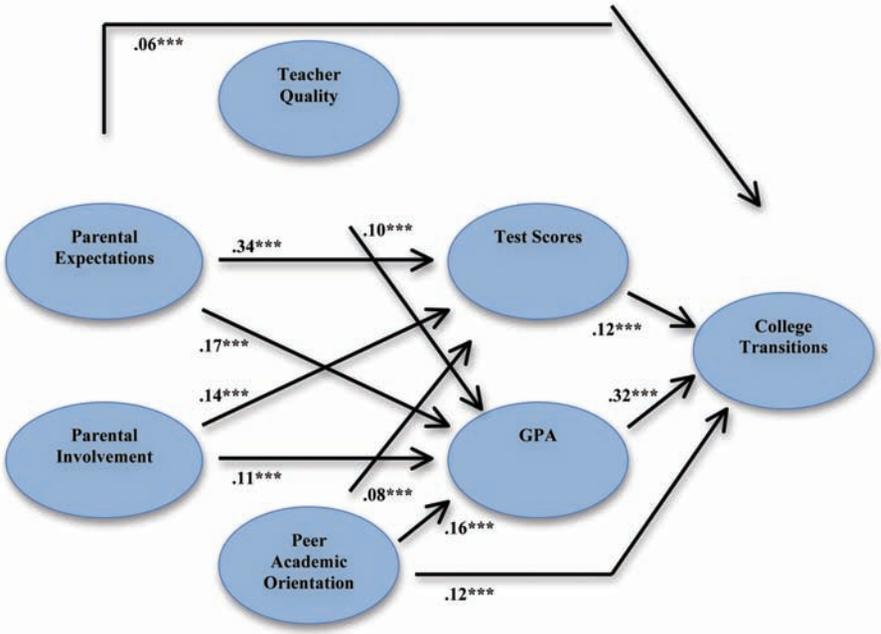


Figure 3. A model of middle SES AAPI college transitions.

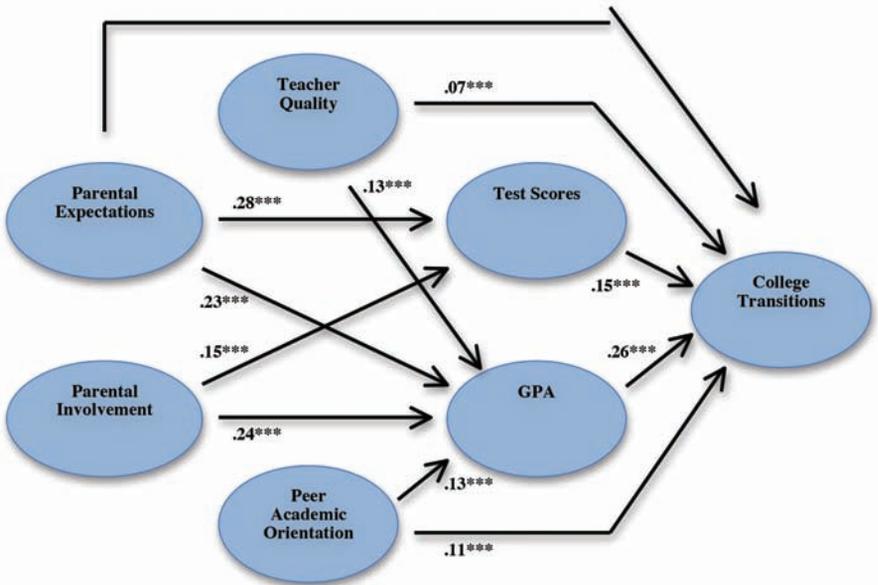


Figure 4. A model of high SES AAPI college transitions.

ated with higher GPA and those relationships were statistically significant at .001. Similarly, parental expectations (.34), parental involvement (.14), and peer academic orientation (.08) were all positively related to test scores ($p < .001$) among middle-SES AAPIs. Thus, the findings indicate that parental expectations, parental involvement, and peer academic orientation may all exhibit an indirect influence on college transitions through both GPA and standardized test performance, while teacher quality may exhibit an indirect positive influence on college transition through GPA only.

Among high-SES AAPIs, GPA (.24), test scores (.15), peer academic orientation (.11), parental expectations (.09), and teacher quality (.07) were associated with greater college transition, and those relationships were positively and statistically significant at the .001 level. The direct relationship between parental involvement and transitions to college was trivial. In contrast to the low- and middle-SES groups, teacher quality was significantly associated with the transition to college. Parental involvement (.24), parental expectations (.23), teacher quality (.13), and peer academic orientation (.13) was positively associated with GPA ($p < .001$). Thus, as parental involvement, parental expectations, teacher quality, and the level of academic orientation among peers increase, so do GPA and the level of transition to college for high-SES AAPIs. In addition, parental expectations (.28) and parental involvement (.16) were positively and significantly associated with test scores ($p < .001$), while the path coefficients from teacher quality and academic peer orientation to college transitions were negligible.

Conditional Effects

Table 7 provides the juxtaposition of unstandardized path coefficients and shows that there are differences across SES groups, both in terms of which factors predict the transition to college and the magnitude of those relationships. Several differences exist across SES groups. For example, the direct relationship from parental expectations to college transition was statistically significant for middle- and high-SES students, but not their low-SES peers, indicating that more affluent AAPI parents might impose higher and more rigid educational expectations on their students. Parental involvement exhibited a direct and positive influence on the transitions of low-SES students, but not their middle and high-SES counterparts. The path coefficient from teacher quality to college transition is significant only for the high-SES subsample.

Finally, teacher quality exhibited a statistically significant and positive influence on test scores for high-SES AAPIs—and therefore indirectly and positively influenced college transitions through increased test scores for that group—while that relationship was trivial for the other two groups. While these last two findings are beyond the scope of the current analysis, one possibility is that teachers have an influence on high-SES students, but

TABLE 7
COMPARISON OF UNSTANDARDIZED PATH COEFFICIENTS FOR EACH PREDICTOR ON EACH OUTCOME VARIABLE ACROSS SES

<i>Predictor Variable</i>	<i>College Transition</i>		
	<i>Low SES</i>	<i>Middle SES</i>	<i>High SES</i>
GPA	.18***	.15***	.09***
Test scores	.01***	.01***	.01***
Peer academic orientation	.05***	.08***	.04***
Teacher quality	.04	-.04	.08***
Parental involvement	.04***	.00	.01
Parental expectations	.01	.06***	.04***

	<i>Test Scores</i>		
	<i>Low SES</i>	<i>Middle SES</i>	<i>High SES</i>
Peer academic orientation	.53***	.72	.25***
Teacher quality	-.14	-.85	1.09***
Parental involvement	.50***	1.45***	1.50***
Parental expectations	1.86***	3.20***	3.13***

	<i>GPA</i>		
	<i>Low SES</i>	<i>Middle SES</i>	<i>High SES</i>
Peer academic orientation	.24***	.22***	.15***
Teacher quality	.69***	.43***	.43***
Parental involvement	.22***	.16***	.27***
Parental expectations	.25***	.24***	.29***

Note: * indicates statistical significance at the .05 level
 ** indicates statistical significance at the .01 level
 *** indicates statistical significance at the .001 level

not on their low-SES peers who might face too many other challenges that hinder teacher influence.

Also apparent in Table 7 is the fact that, while some path coefficients may have been significant across multiple or all groups, the magnitude of those relationships varied across subgroups. For example, the impact of GPA on college transitions was twice as strong for low-SES students as for their high-SES peers. The relationship between peer academic orientation and college transition appears to be highest among middle-SES AAPIs, and that relationship is twice as strong for this group as it is for their high-SES peers. The path coefficients from peer academic influence to GPA and test scores were also noticeably larger for middle- and low-SES students than

for their high-SES counterparts. The cause of the differential influence of peer orientation is unknown. One possible explanation is that middle- and low-SES AAPIs are less likely to have solidified their commitment to college or more likely to question whether they should enter higher education due to financial or other considerations, making them more susceptible to peer academic orientations and influence.

While the direct path from parental involvement to college transition was significant only for the low-SES group, the positive indirect influence of parental involvement on college transition through test scores was stronger for middle- and high-SES AAPIs than for their low-SES peers, and the positive indirect influence of parental involvement on college transition through GPA was strongest for the high-SES group. Thus, the influence of parental involvement on college transition among middle and high-SES AAPIs appears to be mainly indirect through increased academic performance.

While there could be several explanations for these differences, parents of low-SES AAPIs may have lower levels of education themselves and, therefore, be less equipped to engage in their students' learning effectively than middle- and high-SES parents. Thus, the former group may primarily influence their students by being involved in the college decision-making process, while parents in the latter group are also more involved in ensuring that their students understand their curriculum and get high grades.

GPA also appears to exhibit stronger direct and indirect influences on college transition for low- and middle-SES AAPIs than for their high-SES peers. Again, understanding the reason for this difference is beyond the scope of the current analysis, but it is possible that high-SES students are more likely to have an assumed set path to higher education, whereas low- and middle-SES students could be more likely to decide whether to make the transition to college by assessing the extent to which they are likely to succeed, using grades as an indication of their abilities to be successful in postsecondary education.

DISCUSSION

At least five major conclusions can be drawn from the results of this analysis. First and foremost, the current inquiry underscores the importance of disaggregating data on AAPIs. Thus, the inquiry confirms earlier assertions about the importance of such disaggregation in dispelling false myths and developing more authentic understandings of the AAPI population (Hune, 2002; Kiang, 2002; Museus, 2009, 2011, 2013; Museus & Chang, 2009; Museus & Kiang, 2009). And while several researchers have demonstrated the importance of disaggregating AAPI data by ethnicity, our study adds to that literature by demonstrating the importance of also disaggregating by other factors, such as SES.

Second, our findings confirm that differences in the college transition process exist across socioeconomic groups within the AAPI population. Researchers have previously provided evidence that AAPI educational experiences and outcomes might vary across SES (e.g., Museus, 2011; Teranishi, Ceja, et al., 2004). We add to that existing literature by advancing current levels of understanding regarding how the transition from high school to college might vary across different SES groups within the AAPI population. Specifically, it demonstrates that SES disparities exist, with higher SES AAPIs developing expectations for, applying to, and matriculating in college at higher rates than their lower SES peers. The findings also suggest that the process by which interpersonal factors influence the transition from high school to postsecondary education vary among SES subgroups. Third, our analysis underscores the utility of using structural equation modeling techniques to study college access. Because SEM permits the modeling of indirect effects, we were able to clarify that our data indicate that parental expectations and involvement indirectly influence the transition to college through their direct relationship with higher GPA and test scores. The use of other inferential techniques that do not explicitly take indirect influences into account, such as linear or logistic regression, might have resulted in conclusions that parental influences were insignificant. Such conclusions could be misleading at best and harmful at worst, given the salient role of parental expectations in influencing the educational outcomes of AAPI and other students (Glick & White, 2004; Lee & Bowen, 2006; Museus, 2011; Museus, Harper, & Nichols, 2010; Ngo & Lee, 2007; Peng & Wright, 1994; Perna, 2000; Perna & Titus, 2005; Rowan-Kenyon, 2007; Smith & Fleming, 2006; Thompson, Gorin, Obeidat, & Chen, 2006; Yan, 1999). Thus, SEM is a valuable tool for examining the transition to college.

Fourth, all of the interpersonal factors included in the current analysis appear to play a role in predicting AAPI students' transition to college, with variation in the impact of those interpersonal influences across SES groups. It does appear that teacher quality exhibits a weaker influence than other interpersonal factors in the current model. Indeed, teacher quality exhibited no direct influences or indirect influences through test scores on the transition outcome for low- and middle-SES AAPIs. This finding might seem counterintuitive, contradicting earlier findings that teacher expectations positively influence AAPIs' educational expectations (Museus, Harper, & Nichols, 2010), but it is congruent with evidence that teacher expectations are unrelated to those students' expectations regarding how far they will go in their education (Cheng & Starks, 2002). This analysis, however, does suggest that teacher quality positively influences GPA and, consequently, indirectly and positively influences the transition to college. Thus, teacher influence on college-going behavior among AAPIs might be primarily indi-

rect through teachers' influence on those students' academic performance in high school courses.

Finally, it is important to note that our inquiry focused on interpersonal and academic factors. The focus on these variables was, in part, determined by the availability of variables in the ELS database. The ELS includes data on over 2,000 variables—many of which are focused on measuring students' behaviors and experiences. Many of those variables, however, provide data that have limited utility in enhancing already existing understandings on how to foster greater educational success among students. Some race- and culture-conscious variables, such as culturally relevant teaching and curricula, have been shown to substantially influence the outcomes of AAPIs and other students of color. (For a comprehensive review, see Museus, in press-a.) Yet the ELS and other national datasets do not include these variables. Without such data, the ability of educational researchers to conduct empirical research that adds significantly to existing scholarship and to generate new ways of viewing AAPI and other students' progress through the education pipeline is limited.

IMPLICATIONS FOR HIGHER EDUCATION RESEARCH AND POLICY

The findings of this study have several important implications for higher education research and policy. First, with regard to future research, educational researchers should build upon this investigation by disaggregating AAPI samples and examining the factors that influence the transitions to and through college among other AAPI subgroups. Indeed, our findings demonstrate that significant differences in transitions to college exist across socioeconomic subgroups within the AAPI category, and future studies can disaggregate and examine college transitions and outcomes among AAPIs by gender and generational status.

Second, future research could utilize qualitative methods to understand in greater depth how these factors influence college access. Our study constitutes a comprehensive analysis of how various factors influence college-going behavior among AAPIs. Thus, the findings clarify which factors most positively or negatively influence AAPI students' transition to college. Qualitative analysis, if disaggregated by SES, could make a major contribution to understanding the ways in which SES intersects with family, peer, teacher, and academic influences to facilitate negative or positive college-going outcomes among AAPIs. In addition, similar quantitative and qualitative analyses must be conducted to examine how the college persistence and degree completion process might vary among various SES groups within the AAPI population; such information would be very helpful for higher education policymakers, faculty, administrators, and staff about how they can increase success among AAPI students who are already in college.

Third, more empirical research on low socioeconomic AAPIs' transitions to and experiences in postsecondary education is needed. Higher education scholars have begun to study various subgroups within the AAPI category (Museus, *in press-b*; Buenavista, Jayakumar, & Misa-Escalante, 2009; Chhuon & Hudley, 2008; Kiang, 2002, 2009; Museus & Maramba, 2011). However, such studies of AAPI subgroups remain sparse, and the vast majority of the research that does exist on AAPI subpopulations is focused on specific ethnic groups (e.g., Buenavista, Jayakumar, & Misa-Escalante, 2009; Chhuon & Hudley, 2008; Kiang, 2002, 2009; Museus & Maramba, 2011). As we discussed above, empirical investigations that are focused specifically on low-income and low-socioeconomic AAPIs in postsecondary education are very difficult to find, and expanding knowledge in this area is critical to help higher education policymakers and practitioners understand and effectively serve this population.

With regard to education policy, this study reinforces the need for policymakers to pay attention to AAPIs—particularly those from economically disadvantaged and underresourced backgrounds. Educational policymakers must acknowledge that some AAPI subgroups, including low-SES AAPIs, suffer from disparities in college access when compared to their more affluent counterparts. Thus, educational policymakers must consider the importance of allocating sufficient resources to assist these low-SES students in the college-going process. The last few years have seen a growth in the recognition of the importance of policymaking inclusive of AAPIs (Museus, 2013, *in press-a*). The development of the Asian American Native American and Pacific Islander Serving Institution (AANAPISI) designation for institutions serving high numbers of underprivileged AAPIs and Native Americans and the allocation of federal funding for programming at those institutions are two manifestations of such recognition. Nevertheless, they constitute only small initial steps in representing AAPI voices and needs in educational policymaking. Much more work needs to be done.

Another implication for education policy is that policy researchers in the DOE should acknowledge the importance of considering the knowledge and experiences of AAPIs and other populations of color when designing and disseminating national surveys. For example, researchers have underscored a variety of factors that influence educational experiences and outcomes among AAPI students and other students of color, including supplementary education systems within AAPI communities, family encouragement and expectations, cultural conflict, prejudice and discrimination, and culturally relevant and validating environments and curricula (Harper & Hurtado, 2007; Harper & Quaye, 2007; Kiang, 2002, 2009; Museus, 2008, *in press-a*; Museus, Lam, Huang, Kem, & Tan, 2012; Museus & Quaye, 2009; Ngo & Lee, 2007; Nora & Cabrera, 1996; Zhou & Kim, 2006). Thus, DOE research-

ers constructing and conducting large-scale surveys should make efforts to collect data on such factors so that researchers can utilize this information to conduct more meaningful analyses of AAPI educational trajectories. If policy researchers make such efforts, scholars who study AAPIs and other diverse populations will be better equipped to generate useful analysis to inform policy and practice.

As for educational practice, educators should be cognizant of the socio-economic diversity that exists within the AAPI population and of the need of some of these students as they navigate the college-going process. Indeed, although AAPI scholars have been writing about the problematic nature of the model minority myth and the importance of demystifying it for decades (e.g., Suzuki, 1989), there is ample evidence that this stereotype is still pervasive in education and society (Museus, in press-a). Educators must shed these overgeneralizations, develop more complex understandings of AAPIs, and make efforts to provide support for their low-SES AAPI students, who are more likely to lack sufficient resources and support.

Finally, educators should make efforts to involve AAPI parents in their children's education and college-going processes. Given the important role of parental expectations and involvement, it is important for educators to engage parents in educational processes and foster high educational expectations among both parents and students. Particularly among low-SES AAPIs, who report lower parental and personal expectations than their high-SES peers, such efforts are critical in fostering success among AAPI students. Educators should also realize that peers have a profound impact on students' college-going behavior. Therefore, teachers and counselors should consider exerting greater efforts to foster collective college-going orientations among student peer groups, rather than focusing on developing individual aspirations and expectations among students who may be receiving opposing messages that lower their expectations from peer groups with lower academic orientations.

REFERENCES

- Alwin, D. F., & Otto, L. B. (1977). High school context effects on aspirations. *Sociology of Education*, 50, 259–273.
- Bollen, K. A. (1989). *Structural equation modeling with latent variables*. New York: John Wiley.
- Buenavista, T. L., Jayakumar, U. M., & Misa-Escalante, K. (2009). Contextualizing Asian American education through critical race theory: An example of U.S. Pilipino college student experiences. In S. D. Museus (Ed.), *Conducting research on Asian Americans in higher education: New directions for institutional research* (No. 142, pp. 69–81). San Francisco: Jossey-Bass.
- Byrne, B. M. (2001). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. New York: Taylor & Francis.

- Cabrera, A. F., & La Nasa, S. (2000). Understanding the college-choice process. In A. F. Cabrera & S. La Nasa (Eds.), *Understanding the college-choice process: New directions for institutional research* (No. 107, pp. 5–22). San Francisco: Jossey-Bass.
- Caplan, N., Choy, M. H., & Whitmore, J. K. (1991). *Children of the boat people: A study of educational success*. Ann Arbor: University of Michigan Press.
- Chang, M. (2009). Asian evasion: A recipe for flawed solutions. *Diverse Issues in Higher Education*, 25(7), 26.
- Chang, M. J., Park, J. J., Lin, M. H., Poon, O. A., & Nakanishi, D. T. (2007). *Beyond myths: The growth and diversity of Asian American college freshmen, 1971–2005*. Los Angeles, CA: Higher Education Research Institute.
- Cheng, S., & Starks, B. (2002). Racial differences in the effects of significant others on students' educational aspirations. *Sociology of Education*, 75, 306–327.
- Cheryan, S., & Bodenhausen, G. V. (2000). When positive stereotypes threaten intellectual performance: The psychological hazards of “model minority” status. *Psychological Science*, 11, 399–402.
- Choy, S. P., Horn, L. J., Nunez, A., & Chen, X. (2000). Transition to college: What helps at-risk students and students whose parents did not attend college. *New directions for institutional research*, 107, 45–63.
- Chhuon, V., & Hudley, C. (2008). Factors supporting Cambodian American students' successful adjustment into the university. *Journal of College Student Development*, 49(1), 15–30.
- Cooper, H. M., & Tom, D. Y. H. (1984). Teacher expectation research: A review with implications for classroom instruction. *The Elementary School Journal*, 85(1), 76–89.
- Cress, C. M., & Ikeda, E. K. (2003). Distress under duress: The relationship between campus climate and depression in Asian American college students. *NASPA Journal*, 40(2), 74–97.
- Dickert-Conlin, S., & Rubenstein, R. (2007). *Economic inequality and higher education: Access, persistence, and success*. New York: Russell Sage Foundation.
- Flowers, L. A., Milner, H. R., & Moore, J. L., III. (2003). Effects of locus of control on African American high school seniors' educational aspirations: Implications for preservice and inservice high school teachers and counselors. *High School Journal*, 87, 39–50.
- Freeman, J. M. (1995). *Changing identities: Vietnamese Americans 1975–1995*. Boston: Allyn & Bacon.
- Glick, J. E., & White, M. J. (2004). Post-secondary school participation of immigrant and native youth: The role of familial resources and educational expectations. *Social Science Research*, 33, 272–299.
- Gonzalez, K. P., Stoner, C., & Jovel, J. E. (2003). Examining the role of social capital in access to college for Latinas: Toward a college opportunity framework. *Journal of Hispanic Higher Education*, 2(1), 146–170.
- Greenberger, E., & Chen, C. (1996). Perceived family relationships and depressed mood in early and late adolescence: A comparison of European and Asian Americans. *Developmental Psychology*, 32(4), 707–716.
- Harper, S. R., & Hurtado, S. (2007). Nine themes in campus racial climates and implications for institutional transformation. In S. R. Harper & L. D. Patton

- (Eds.), *Responding to the realities of race on campus: New directions for student services* (No. 120, pp. 7–24). San Francisco: Jossey-Bass.
- Harper, S. R., & Quaye, S. J. (2007). Student organizations as venues for Black identity expression and development among African American male student leaders. *Journal of College Student Development*, 48(2), 127–144.
- Hossler, D., Braxton, J., & Coopersmith, G. (1989). Understanding student college choice. In J. C. Smart (Ed.), *Higher education: Handbook of theory and research* (Vol. 5, pp. 231–288). New York: Agathon Press.
- Hossler, D., & Gallagher, K. S. (1987). Studying student college choice. A three phase model and the implications for policy makers. *College and University*, 2(3), 207–221.
- Hune, S. (2002). Demographics and diversity of Asian American college students. *Working with Asian American college students: New directions for student services* (No. 97, pp. 11–20). San Francisco: Jossey-Bass.
- Kiang, P. N. (2002). Stories and structures of persistence: Ethnographic learning through research and practice in Asian American studies. In Y. Zou & H. T. Trueba (Eds.), *Advances in ethnographic research: From our theoretical and methodological roots to post-modern critical ethnography* (pp. 223–255). Lanham, MD: Rowman & Littlefield.
- Kiang, P. N. (2009). A thematic analysis of persistence and long-term educational engagement with Southeast Asian American college students. In L. Zhan (Ed.), *Asian American voices: Engaging, empowering, enabling* (pp. 21–58). New York: NLN Press.
- King, J. E. (1996). *The decision to go to college: Attitudes and experiences associated with college attendance among low-income students*. Washington, DC: College Board.
- Kline, R. B. (1998). *Principles and practice of structural equation modeling*. New York: Guilford Press.
- Lagdameo, A., Lee, S., Nguyen, B., Liang, C. T. H., Lee, S., Kodama, C. M., & McEwen, M. K. (2002). Voices of Asian American students. *Working with Asian American college students: New directions for student services* (No. 97, pp. 5–10). San Francisco: Jossey-Bass.
- Le, T. N., Monfared, G., & Stockdale, G. D. (2005). The relationship of school, parent, and peer contextual factors with self-reported delinquency for Chinese, Cambodian, Laotian or Mien, and Vietnamese youth. *Crime and Delinquency*, 51(2), 191–219.
- Lee, J., & Bowen, N. K. (2006). Parent involvement, cultural capital, and the achievement gap among elementary school children. *American Educational Researcher* 43(2), 193–218.
- Lewis, A. E., Chesler, M., & Forman, T. A. (2000). The impact of “colorblind” ideologies on students of color: Intergroup relations at a predominantly White university. *The Journal of Negro Education*, 69(1–2), 74–91.
- McDonough, P. M. (1997). *Choosing colleges: How social class and schools structure opportunity*. Albany: State University of New York Press.
- Meyer, J. W. (1970). High school effects on college intentions. *American Journal of Sociology*, 76, 59–70.

- Min, P. G. (2003). Social science research on Asian Americans. In J. A. Banks & C. M. Banks (Eds.), *Handbook of research on multicultural education* (pp. 332–348). New York: Macmillan.
- Museus, S. D. (2007). Using qualitative methods to assess diverse institutional cultures. In S. R. Harper & S. D. Museus (Eds.), *Using qualitative methods in institutional assessment: New directions for institutional research* (No. 136, pp. 29–40). San Francisco: Jossey-Bass.
- Museus, S. D. (2008a). The model minority and the inferior minority myths: Inside stereotypes and their implications for student involvement. *About Campus*, 13(3), 2–8.
- Museus, S. D. (2008b). The role of ethnic student organizations in fostering African American and Asian American students' cultural adjustment and membership at predominantly White institutions. *Journal of College Student Development*, 49(6), 568–586.
- Museus, S. D. (2009a). A critical analysis of the exclusion of Asian American from higher education research and discourse. In L. Zhan (Ed.), *Asian American voices: Engaging, empowering, enabling* (pp. 59–76). New York: NLN Press.
- Museus, S. D. (2009b). Editor's notes. In S. D. Museus (Ed.), *Conducting research on Asian Americans in higher education: New directions for institutional research* (No. 142, pp. 1–4). San Francisco: Jossey-Bass.
- Museus, S. D. (2011). Mixing quantitative national survey data and qualitative interview data to understand college access and equity: An examination of first-generation Asian Americans and Pacific Islanders. In K. A. Griffin & S. D. Museus (Eds.), *Using mixed-methods approaches to study intersectionality in higher education: New directions for institutional research* (No. 151, pp. 63–75). San Francisco: Jossey-Bass.
- Museus, S. D. (2013). Asian Americans and Pacific Islanders: A national portrait of growth, diversity, and inequality. In S. D. Museus, D. C. Maramba, & R. T. Teranishi (Eds.), *The misrepresented minority: New insights on Asian Americans and Pacific Islanders, and their implications for higher education*. Sterling, VA: Stylus.
- Museus, S. D. (in press-a). *Asian American students in higher education*. New York: Routledge.
- Museus, S. D. (in press-b). Unpacking the complex and multifaceted nature of parental influences on Southeast Asian American college students' educational trajectories. *Journal of Higher Education*.
- Museus, S. D., & Chang, M. J. (2009). Rising to the challenge of conducting research on Asian Americans in higher education. In S. D. Museus (Ed.), *Conducting research on Asian Americans in higher education: New directions for institutional research* (No. 142, pp. 95–105). San Francisco: Jossey-Bass.
- Museus, S. D., Harper, S. R., & Nichols, A. H. (2010). Racial differences in the formation of postsecondary educational expectations: A structural model. *Teachers College Record*, 112(3), 811–842.
- Museus, S. D., & Kiang, P. N. (2009). The model minority myth and how it contributes to the invisible minority reality in higher education research. In S. D. Museus (Ed.), *Conducting research on Asian Americans in higher education: New directions for institutional research* (No. 142, pp. 5–15). San Francisco: Jossey-Bass.

- Museus, S. D., Lam, S., Huang, C., Kem, P., & Tan, K. (2012). Cultural integration in campus subcultures: Where the cultural, academic, and social spheres of college life collide. In S. D. Museus and U. M. Jayakumar (Eds.), *Creating campus cultures: Fostering success among racially diverse student populations* (pp. 106–129). New York: Routledge.
- Museus, S. D., & Maramba, D. C. (2011). The impact of culture on Filipino American students' sense of belonging. *The Review of Higher Education, 34*(2), 231–258.
- Museus, S. D., & Quaye, S. J. (2009). Toward an intercultural perspective of racial and ethnic minority college student persistence. *The Review of Higher Education, 33*(1), 67–94.
- Museus, S. D., & Truong, K. A. (2009). Disaggregating qualitative data on Asian Americans in campus climate research and assessment. In S. D. Museus (Ed.), *Conducting research on Asian Americans in higher education: New directions for institutional research* (No. 142, pp. 17–26). San Francisco: Jossey-Bass.
- Nelson, J. I. (1972). High school context and college plans: The impact of social structure on aspirations. *American Sociological Review, 37*, 143–148.
- Ngo, B., & Lee, S. J. (2007). Complicating the image of model minority success: A review of Southeast Asian American Education. *Review of Educational Research, 77*(4), 415–453.
- Nora, A., & Cabrera, A. (1996). The role of perceptions of prejudice and discrimination on the adjustment of minority students to college. *Journal of Higher Education, 67*, 119–148.
- Paulsen, M. B., & St. John, E. P. (2002). Social class and college costs: Examining the financial nexus between college choice and persistence. *Journal of Higher Education, 73*(2), 189–236.
- Peng, S. S., & Wright, D. (1994). Explanation of academic achievement of Asian American Students. *Journal of Educational Research, 87*(6), 346–352.
- Perna, L. W. (2000). Difference in the decision to attend college among African Americans, Hispanics, and Whites. *The Journal of Higher Education, 71*(2), 117–141.
- Perna, L. W., & Li, C. (2006). College affordability: Implications for college opportunity. *Journal of Student Financial Aid, 36*(1), 7–24.
- Perna, L. W., & Titus, M. (2005). The relationship between parental involvement as social capital and college enrollment: An examination of racial/ethnic group differences. *Journal of Higher Education, 76*, 485–451.
- Robbins, K. (2004). Struggling for equality/struggling for hierarchy: Gender dynamics in an English as an additional language classroom for adolescent Vietnamese refugees. *Feminist Teacher, 15*(1), 66–79.
- Rowan-Kenyon, H. T. (2007). Predictors of delayed college enrollment and the impact of socioeconomic status. *The Journal of Higher Education, 78*(2), 188–214.
- Smith, M. J., & Fleming, M. K. (2006). African American parents in search of college choice: Unintentional contributions to the female to male college enrollment gap. *Urban Education, 41*, 71–100.
- Sokatch, A. (2006). Peer influences on the college-going decisions of low socioeconomic status urban youth. *Education and Urban Society, 39*(1), 128–146.
- Solomon, D., Battistich, V., & Hom, A. (1996). Teacher beliefs and practices in schools serving communities that differ in socioeconomic level. *The Journal of Experimental Education, 64*(4), 327–347.

- Stanton-Salazar, R. D. (2001). *Manufacturing hope and despair: The school and kin support networks of U.S.-Mexican youth*. New York: Teachers College Press.
- Steele, C. M. (1997). A threat in the air: How stereotypes shape intellectual identity and performance. *American Psychologist*, 52, 613-629.
- Steele, C. M., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African Americans. *Journal of Personality and Social Psychology*, 69, 797-811.
- Stewart, E. (2008). School structural characteristics, student effort, peer associations, and parental involvement: The influence on school and individual level factors on academic achievement. *Education and Urban Society*, 40, 179-204.
- Suzuki, B. H. (1977). Education and the socialization of Asian Americans: A revisionist analysis of the 'model minority' thesis. *Amerasia Journal*, 4(2), 23-51.
- Suzuki, B. H. (2002). Revisiting the model minority stereotype: Implications for student affairs practice and higher education. *Working with Asian American College Students: New directions for student services* (No. 97, pp. 21-32). San Francisco: Jossey-Bass.
- Teranishi, R. T. (2007). Race, ethnicity, and higher education policy: The use of critical quantitative research. In F. Stage (Ed.), *Using quantitative research to answer critical questions: New directions for institutional research* (No. 133, 37-49). San Francisco: Jossey-Bass.
- Teranishi, R. T., Ceja, M., Antonio, A. L., Allen, W. R., & McDonough, P. M. (2004). The college-choice process for Asian Pacific Americans: Ethnicity and socioeconomic class in context. *The Review of Higher Education*, 27(4), 527-551.
- Terenzini, P. T., Bernal, E. M., Cabrera, A. F. (2001). *Swimming against the tide: The poor in American higher education*. New York: College Board.
- Thompson, M. S., Gorin, J. S., Obeidat, K., & Chen, Y. (2006). Understanding differences in postsecondary educational attainment: A comparison of predictive measures for Black and White students. *The Journal of Negro Education*, 75(3), 546-562.
- U.S. Census Bureau (2004). *U.S. interim projections by age, sex, race, and Hispanic origin*. Washington, DC: Author.
- Walpole, M. (2007). *Economically and educationally challenged students in higher education: Access to outcomes*. San Francisco: Jossey-Bass.
- Yan, W. (1999). Successful African American students: The role of parental involvement. *The Journal of Negro Education*, 68(1), 5-22.
- Zhou, M., & Bankston, C. L. (1998). *Growing up American: How Vietnamese children adapt to life in the United States*. New York: Russell Sage.
- Zhou, M., & Kim, S. (2006). Community forces, social capital, and educational achievement: The case of supplementary education in the Chinese and Korean immigrant communities. *Harvard Educational Review*, 76(1), 1-29.