

# Predicting Asian Americans' Academic Performance in the First Year of College: An Approach Combining SAT Scores and Noncognitive Variables

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*Factors related to academic performance and student retention of Asian American freshmen (N = 96) at a predominantly White university in the southeast were studied. In addition to SAT-mathematics score, three noncognitive variables were found to be significant predictors of GPA: realistic self-appraisal system, successful leadership experience, and demonstrated community service. Realistic self-appraisal and demonstrated community service were significant indicators of student retention. Implications for student affairs professionals and limitations of the study were discussed.*

Asian Americans are the fastest growing minority group in universities in the United States (American Council on Education, 1998). Between 1976 and 1996, the number of Asian American college students tripled from 2% to 6% of the total undergraduate student population (Snyder, 1999). The current estimated population of Asian Americans is only 4% of the U.S. population (U.S. Census Bureau, 1999). These figures imply Asian Americans may be slightly overrepresented in universities. They also reflect an increase in recent Asian immigration to U.S. and an emphasis on education among Asian cultures. This trend is likely to continue; by the year 2050, Asian Americans will constitute 10% of the U.S. population, primarily because of immigration (Atkinson, Morten, & Sue, 1993). To match the needs of this increasing population, student affairs professionals and other educators must gain more information about Asian Americans, including factors affecting their academic performance and retention in universities.

Asian Americans are often portrayed as a model minority because of their hard work and educational achievements, and for earning family

incomes close to White Americans (Kao, 1995; Okutsu, 1989; Taylor & Stern, 1997). Asian American students were found to spend significantly more time on homework and parents have higher educational expectations for their children than White Americans did (Mau, 1997). In spite of their accomplishments, Asian Americans continue to face problems such as a discrepancy between education and income (Atkinson et al., 1993), insufficient mastery of English (Sue & Sue, 1990), racism (Delucchi & Do, 1996; Leung, 1990; Tan, 1994), and psychosocial and mental problems such as loneliness, isolation, and anxiety (Solberg, Ritsma, Davis, Tata, & Jolly, 1994). Research studies show that, at colleges and universities, Asian Americans still face many challenges including inadequate services (Greene, 1987), challenge of affirmative action policy on admissions (Selingo, 1999), psychosocial problems when adjusting to universities (Abe & Zane, 1990), alcohol and substance abuse (Chi, Lubben, & Kitano, 1989), and less involvement than their White counterpart in student activities (Wang & Sedlacek, 1992). Many Asian Americans have expressed an interest in participating in student activities and also stated that they were not involved because of time constraints (Wang & Sedlacek, 1992). The resultant social isolation affects social well-being and student retention of ethnic minorities in universities (Loo & Rolison, 1986). Asian Americans were found to experience difficulties in social adjustment and dissatisfaction with the campus services (Abe & Zane, 1990; Bennet & Okinaka, 1989; Sue & Zane, 1985). Similar to other ethnic minorities, Asian Americans who were dissatisfied about the quality of campus life and felt socially alienated

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were more likely to drop out (Bennet & Okinaka, 1989; Sue & Zane, 1985).

Owing to their minority status and cultural background, Asian American students face many challenges in universities. Nonetheless, little has been found explaining academic performance of Asian Americans. Traditional studies adopting standardized test scores and high school grade-point-average GPA to predict students' academic performance have produced low validity (Fuentes, Sedlacek, & Liu, 1994). In addition, more bias in the validity of using SAT scores and high school GPA to predict college first year GPA was found for ethnic minorities than in the majority group (Sedlacek, 1998; Stone, 1990). The U.S. Education Department also issued a guideline reminding universities not to use SAT scores as the sole admission criterion (Healy, 1999). Therefore, this guideline reflects the possibility that SAT does not accurately portray academic abilities of Asian Americans.

Recent studies have shifted the focus to noncognitive or nontraditional factors. Astin (1993) found that student involvement in college, including physical and psychological energy devoted to college experience affected learning and personal development. Tinto (1993) reported in his Student Departure Model that a student's decision to remain or leave a university campus is a function of the student's personal and academic background and how well she or he integrates into the academic and social life of the campus. Adopting attribution theory to explore student motivation for academic studies, Yan and Gaier (1994) found that all students attributed academic success first to their efforts, then to ability, strategies, and finally to luck. Gender differences were not found. They reported that Asian American students had less of a self-serving bias than White American students did. A self-serving bias refers to the tendency to take credit for success but denying responsibility for failure. Owing to cultural influences on Asian Americans attributed effort as equally important for success and failure or even more important for failure. Placing greater emphasis on individualism and autonomy, Yan and Gaier found that White American were significantly less likely than their Asian Ameri-

can colleagues to attribute failure to lack of effort. In summary, noncognitive factors were found to explain student academic performance and such factors may vary among different ethnic groups.

Employing eight psychosocial variables in the Noncognitive Questionnaire (NCQ), Tracey and Sedlacek (1984, 1985, 1987) better predicted academic performance and student retention of Black and White students than using SAT scores. The Noncognitive Questionnaire (Tracey & Sedlacek, 1984, 1989) was designed to assess psychosocial aspects that influence college success: personal goals, college expectation, academic self-concept, self-appraisal system, leadership experience and community service in high school, knowledge acquired in a field, ability to understand and cope with racism, and availability of a strong support person.

The NCQ was found to have effective predictability of academic performance and student retention for different student populations: Asian Americans (Fuentes et al., 1994), African Americans (Boyer & Sedlacek, 1988; Sedlacek & Adams-Gaston, 1992); Hispanics (Fuentes & Sedlacek, 1995), White Americans and African Americans (Ting & Robinson, 1998; Tracey & Sedlacek, 1984, 1985, 1987), specially admitted students (Ting, 1997; White & Sedlacek, 1986), and low-income and first-generation students (Ting, 1998). Correlations with college grades and retention were significantly higher than the SAT scores alone when the noncognitive variables were used in conjunction with standardized test scores and earlier grades. In Fuentes et al.'s study, community service, realistic self-appraisal, and positive self-concept were found to be equally effective compared with SAT-math and SAT-verbal scores in predicting Asian Americans' first year GPAs. No significant predictors were found for student retention in the first year. In addition to confirming the predictive validity of Tracey and Sedlacek's (1984) psychosocial variables, Ting and Robinson (1998) also found that parent education level and need for financial aid were related to students' academic performance in the first year of college.

In summary, compared with other ethnic minorities, professional literature shows that

Asian Americans are able to attain their educational goals although they experience challenges in college, particularly in the area psychosocial adjustment. However, comparatively fewer studies were found studying how psychosocial adjustment may affect Asian Americans' academic performance and retention. Sedlacek (1998) suggested that each university should study psychosocial factors affecting student academic success. Although Fuertes et al (1994) reported psychosocial predictors of academic success of Asian Americans, their study was based on a campus where of Asian Americans comprised 9% of the student population, which may not be representative of U.S. population. Therefore, generalization of this study is somewhat limited. The purpose of the current study was to use SAT scores and Tracey and Sedlacek's psychosocial variables to predict Asian American students' GPA and retention in the first year of college.

## METHOD

### Participants

At a Southeastern public land-grant research university, 96 first-year Asian American students participated in the study in Fall 1996 as a part of the survey of the Noncognitive Variables Research Committee. This sample represents over 90% of the new Asian American freshmen at the university. The participants' mean age was 18.19. Fifty-nine of the participants were men and 37 were women.

### Measures

*NCQ.* The NCQ was designed to assess psychosocial aspects that affect student success in college. It contains 23 items: 18 Likert-type, 2 multiple choice, and 3 open-ended. The NCQ's eight scales are listed here (with the range of scores) are: (a) positive self-concept (7-27), (b) realistic self-appraisal system (4-14), (c) understanding and coping with racism (5-25), (d) preference of long-term goals (3-13), (e) a strong support person (3-15), (f) successful leadership experience (3-13), (g) demonstrated community service (2-8), and (h) acquired knowledge in a field (2-8). Tracey and Sedlacek

(1984) reported a 2-week test-retest reliability of a range from .74 to .94, with a median of .85 for the NCQ scales. Interrater reliability on the three open-ended NCQ items ranged from .73 to 1.00. The NCQ appears to have promising content validity, and strong construct and predictive validity (Ting & Robinson, 1998).

*Predictors.* Students' scores on the NCQ and the combined SAT score (verbal and mathematics) were the predictors.

*Criterion variables.* One criterion was academic performance during the freshmen year. This was measured by term GPA for the Fall and Spring semesters. The second criterion was retention at the end of Fall and Spring indicated by registration records. The students were categorized as being enrolled (coded as 1) or as having dropped out (coded as 0).

### Procedure

*Data collection.* The data was collected as a part of the study of the all-university Noncognitive Variables Research Committee. At the new student orientation, each student received a packet that included the NCQ (Tracey & Sedlacek, 1984) and a demographic and personal background form. Over 90% of the new students attended the orientation where they met in small groups were invited to participate voluntarily in the study completing the NCQ. Participants consented to access of their academic records. SAT scores and registration status in the first year were obtained from their university records.

*Data analysis.* College performance is defined here as students' GPA and continued enrollment. The author employed step-wise multiple regression analysis with the SPSS for windows (version 8.0) for the analysis. The author attempted to explore the relationships to noncognitive variables first before combining with SAT scores and background variables. Therefore, all NCQ variables were entered first in a step-wise procedure, then SAT scores. Such procedure was adopted for comparing two different measures in previous similar studies (Tracey & Sedlacek, 1981; Fuertes et al., 1994). Discriminant analysis was conducted to predict student retention.

TABLE 1.  
Means and Standard Deviations of  
Predictors and Criterion Variables

Variable	All Students	
	<i>M</i>	<i>SD</i>
SAT-verbal	537.53	105.79
SAT-math	621.29	77.60
Positive self-concept	19.04	2.44
Realistic self-appraisal system	10.53	1.84
Coping with racism	18.60	2.36
Preference of long-term goals	8.40	1.70
Availability of a strong support person	13.51	1.44
Successful leadership experience	8.77	1.97
Demonstrated community service	5.21	1.44
Acquired knowledge in a field	3.63	1.12
Fall GPA	2.92	0.98
Spring GPA	2.88	.87

Note. Number of students in Fall = 93; Number of students in Spring = 80.

## RESULTS

Table 1 shows the means and standard deviations of the predictor and criterion variables. The noncognitive variable scores were similar to those in the Fuertes et al. (1994) study, except that the scores of preference for long-term goals and acquired knowledge in a field were smaller. Table 2 illustrates a correlation matrix between college first-year GPA and predictor variables. SAT-math score and realistic self-appraisal were positively related to students' GPA in Fall and Spring.

Table 3 shows the prediction for GPA in Fall and Spring semesters. The multiple regression model explained 26.2% of the variance of Fall

GPA. Realistic self-appraisal, successful leadership experience, and SAT-math scores were significant predictors. In the Spring, the regression model accounted for 31.3% of the variance. Realistic self-appraisal, demonstrated community service, and SAT-math scores were significant indicators for Spring GPA.

Employing discriminant analysis with stepwise procedure, realistic self-appraisal and demonstrated community service were the effective indicators for fall student retention (Wilks's Lambda = .861,  $\chi^2 = 13.36$ ,  $df = 2$ , and  $p < .001$ ). In Spring, no variables were found to explain student retention.

## DISCUSSION

The current study revealed both cognitive and noncognitive variables for academic success of Asian American students in the first year of

TABLE 2.  
Correlation Coefficients between  
First-Year GPA and Predictor Variables

Variable	Fall GPA	Spring GPA
SAT-verbal scores	.06	.02
SAT-Mathematics scores	.44**	.48**
Positive self-concept	.10	.15
Realistic self-appraisal system	.32*	.31*
Coping with racism	-.04	-.10
Preference of long-term goals	.01	-.09
Availability of a strong support person	.15	-.07
Successful leadership experience	-.18	.05
Demonstrated community service	.04	-.08
Acquired knowledge in a field	.08	.12

\* $p < .01$ . \*\* $p < .001$ .

TABLE 3.  
Multiple Regression Models Predicting  
Fall and Spring GPAs

Variable		<i>R</i>	<i>R</i> <sup>2</sup>	Standardized Beta	<i>t</i>
Fall semester					
All students	Realistic self-appraisal system	.32	.10	.32	2.75*
	Successful leadership experience	.39	.15	-.23	3.85***
	SAT-math scores	.51	.26	.35	4.44***
Spring semester					
All students	Realistic self-appraisal system	.31	.10	.30	2.92**
	Demonstrated community service	.38	.15	-.24	-.21*
	SAT-math scores	.56	.31	.41	4.31***

\* $p < .01$ . \*\* $p < .005$ . \*\*\* $p < .001$ .

In the Fall semester,  $F = 10.267$ ;  $p < .002$  for the regression model with realistic self-appraisal system;  $F = 8.04$ ,  $p < .001$  for the regression model with realistic self-appraisal system and successful leadership experience;  $F = 10.54$ ;  $p < .0001$  for the regression model with realistic self-appraisal system, successful leadership experience, and SAT-mathematics score.

In the Spring semester,  $F = 8.52$ ;  $p < .005$  for the regression model with realistic self-appraisal system;  $F = 6.65$ ,  $p < .002$  for the regression model with realistic self-appraisal system and demonstrated community service;  $F = 11.55$ ;  $p < .0001$  for the regression model with realistic self-appraisal system, demonstrated community service, and SAT-mathematics score.

college. SAT-math score and NCQ variables as a group appear to be similarly important indicating the students' GPA. Regarding SAT-math score, previous studies show similar findings for Asian Americans (Fuertes et al., 1994; Sue & Abe, 1988). SAT-verbal score was not a predictor, probably because being a land-grant institution, the studied university was popular for science and technology disciplines. Also, Asian Americans have a tendency to value applied science versus arts and social studies (Sue & Sue, 1990). In addition to their cultural values, Sue and Sue (1990) suggested that other reasons for such a tendency include choosing to study in better-paid fields and struggle with English even after a few generations in the U.S.; therefore most Asian American students studied in these majors.

The noncognitive predictors in the current study explained a higher percentage of variance for student success than did Fuertes et al. (1994). In addition, a major difference between the two studies should be mentioned here. At the institution where the current study was conducted, Asian Americans comprised 3% of the student population, a closer representation of the current U.S. population than the institution where the earlier study was conducted.

Realistic self-appraisal, successful leadership experience, and demonstrated community service were important predictor of the students' GPA. A realistic self-appraisal system was a consistent predictor for first-year GPA and retention. The need for self-understanding and proper self-evaluation is clear. In regard to a proper self-appraisal system, Asian American

students need to understand their minority situation, recognize their level of academic performance and position and be able to cope with the social environment of the campus. They also need to be able to reward themselves appropriately for achievement as well as respond positively to failure or to obstacles such as racism. In Fuertes et al. (1994), a realistic self-appraisal system was also a factor related to first-year academic performance and continual enrollment beyond the sophomore year.

Successful leadership experience reflects the ability to communicate, engage in a social group, establish relationships in social situations, organize and complete a task in a team. Asian American students who had such experience would adjust better to a university campus than those who did not. In Fuertes et al.'s (1994) study, this factor was not found; however, a similar factor demonstrated community service was found to be an indicator for academic performance.

Noncognitive variables were related to student retention probably because they helped students cope with reported psychosocial stresses including loneliness, isolation, and anxiety (Abe & Zane, 1990; Solberg et al., 1994; Sue & Zane, 1985) and racism (Delucchi & Do, 1996; Leung, 1990; Tan, 1994). Specifically, minority students who have a realistic self-appraisal system understand their minority situation, recognize the social environment of the campus and understand ways to work through the existing system. Therefore, they are more likely to remain on the same campus.

Demonstrated community service was another indicator for student retention and academic performance. Community service reflects the ability for the Asian American students to have a sense of belonging and establish a link to the community. Asian Americans were found to be the most distant group from other ethnic minorities (Abe & Zane, 1990). They experienced problems adjusting to college life such as loneliness, anxiety, and depression (Abe & Zane, 1990; Loo & Rolison, 1986). Being an ethnic minority, Asian Americans need to integrate with the majority and other ethnic minority groups and contribute to the community in order to ease their adjustment and accomplish

their academic goals (Sue & Sue, 1990).

Professional literature reports academic support and student service programs that may enhance academic performance of Asian Americans (House & Wohlt, 1990; Mueller 1993; Tan, 1995). An ethnic minority student in a predominantly White American campus may experience isolation and loneliness (Loo & Rolison, 1986). In the process of integrating to the campus community, they particularly need a person who can help them when they have problems. Mueller (1993) reported a mentor program for Asian Americans and other ethnic minorities that enhanced students' academic and psychosocial development in the first year of college. Tan (1995) found that such mentors could enhance minority student satisfaction about university life and academic performance. This mentor or role model can be a faculty member, a student affairs professional or a peer. Therefore, Asian American students can benefit from student service by being both mentor or mentees. Tan (1995) also found that the Asian American and African American students did not feel their role models had to be from their own ethnic group.

A tutoring program helped improve Asian American freshmen's cumulative GPA after they had participated in it for a semester (House & Wohlt, 1990). Therefore, faculty and student affairs professionals, particularly those who teach first-year seminars should consider similar programs for Asian American students.

A few methodological limitations should be noted. First, the current study was based on only one institution and the sample size was relatively small for multiple analyses. Regarding the number and type of analyses, the small sample size increased the risk of Type I error. However, the alpha for all major analyses was comparatively small, below .05 level. Also, the results for the current study seem to be compatible with other studies mentioned in the Discussion and Introduction sections. However, further study with a larger sample is needed to examine the validity of the current findings. Second, this is a 1-year study. Indicators of success for years beyond the freshman year should be explored in future research.

In conclusion, the current results indicate

that both SAT scores and selected noncognitive variables can predict academic performance of Asian American students. However, such information about variations among Asian American subgroups are still lacking. Student affairs professionals should continue to investigate this topic, including differences within Asian American populations. Other noncognitive variables unidentified in this study, yet related to Asian American's college academic performance over 4 years, included positive self-concept, preference of long-term goals, availability of a strong support person, acquired knowledge in a field,

and coping with racism (Fuertes et al., 1994). In this regard, longitudinal studies are needed to provide additional information about which noncognitive variables are important for Asian Americans' long-term persistence and success in colleges and universities.

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