Statistical Report

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Validity of the SAT for Predicting FYGPA:

2007 SAT Validity Sample

Brian F. Patterson, Krista D. Mattern, & Jennifer L. Kobrin

The College Board

The College Board

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Executive Summary

The College Board formed a research consortium with four-year colleges and universities to build a national higher education database with the primary goal of validating the revised SAT, which consists of critical reading (SAT-CR), mathematics (SAT-M) and writing (SAT-W) for use in college admission. The first sample examined was the first-time, first-year students entering college in fall 2006, with 110 institutions providing students' first-year coursework, grades, and retention to the second-year. Results from "Validity of the SAT for Predicting First-Year College Grade Point Average" (Kobrin et al., 2008) and "Differential Validity and Prediction of the SAT" (Mattern et al., 2008) and other studies can be found on The College Board Research & Development department's homepage (www.collegeboard.com/research/home/).

The following year, participating as well as new colleges and universities were invited to provide first-year performance data on the first-time, first-year students that began in the fall of 2007. For the 2007 sample, a total of 71 of the original 110 institutions and 39 new institutions provided data. The 110 institutions in the 2007 sample contained 216,081 students. Please see the Appendix for a list of participating institutions.

This report presents the findings from a replication of the Kobrin et al. (2008) and Mattern et al. (2008) reports. Students who were missing at least one of the following were excluded from the analyses: SAT scores, a self-reported high school grade point average (HSGPA), and a valid first-year GPA (FYGPA); this resulted in a final sample size of 159,286. Based on Powers (2004), the analytical procedure for computing multiple correlations was modified slightly from what was done in the two original reports. Below are the updated tables for the 2007 sample, and the findings are largely the same.

References

College Board. (2007). 2007 College-Bound Seniors: Total Group Profile Report. New York, NY: The College Board.

Kobrin, J. L., Patterson, B. F., Shaw, E. J., Mattern, K. D., & Barbuti, S. M. (2008). Validity of the SAT® for predicting first-year college grade point average (College Board Research Rep. No. 2008-5). New York, NY: The College Board.

Mattern, K. D., Patterson, B. F., Shaw, E. J., Kobrin, J. L., & Barbuti, S. M. (2008). Differential validity and prediction of the SAT® (College Board Research Rep. No. 2008-4). New York, NY: The College Board.

Powers, D. E. (2004). Validity of graduate record examinations (GRE) general test scores for admission to colleges of veterinary medicine. Journal of Applied Psychology, 89(2), 208-219.

Table 1

Comparison of the 2007 Sample to the 2006 Sample and the Target Population

Institutional Characteristic		Population*	2007 Sample	2006 Sample
U.S. Region	Midwest	16%	16%	15%
	Mid-Atlantic	18%	21%	24%
	New England	13%	18%	22%
	South	25%	14%	11%
	Southwest	10%	13%	11%
	West	18%	18%	17%
Control	Public	57%	46%	43%
	Private	43%	54%	57%
Selectivity	Admits under 50%	20%	19%	24%
	Admits 50 to 75%	44%	57%	54%
	Admits over 75%	36%	24%	23%
Size	Small	18%	22%	20%
	Medium	43%	37%	39%
	Large	20%	17%	21%
	Very large	19%	24%	20%

Note. k = number of institutions = 110. Percentages may not sum to 100 due to rounding. Institution sizes are categorized by the number of undergraduates as follows: small = 750 to 1,999; medium = 2,000 to 7,499; large = 7,500 to 14,999; and very large = 15,000 or more.

* Population defined as the 726 four-year colleges and universities that (a) received at least 200 SAT score reports from the 2005 cohort of college-bound high school seniors; (b) enrolled at least 250 first-time, first-year students in 2006; and (c) responded to the College Board's Annual Survey of Colleges.

- The 2007 sample contained 71 of the 110 institutions from the 2006 sample and 39 additional institutions.
- Both the 2006 and 2007 samples were fairly representative of the target population. Efforts were made to better represent southern institutions in the 2007 sample.
- Relative to the population, the 2007 sample was fairly representative with the exception of Southern institutions, which were underrepresented even with the increase from the 2006 sample.
- The 2007 sample had about the same balance of public institutions compared to the 2006 sample; private institutions were over-represented in both samples as compared to the population.
- Compared to the population, the 2007 sample over-represented institutions that admit between 50 to 75% of applicants and under-represented those that admit more than 75%, which was similar for the 2006 sample.
- The 2007 sample has slightly more *very large* and fewer *medium-sized* institutions compared to either the 2006 sample or the 2007 population.

Table 2
Descriptive Statistics on the Total Sample

Variable	Mean	SD
HSGPA	3.62	0.50
SAT-CR	559	96
SAT-M	574	97
SAT-W	552	95
FYGPA	2.98	0.71

Note. N = number of students = 159,286.

- The 2007 sample performed very similarly to the 2006 sample in terms of mean HSGPA, SAT scores, and FYGPA.
- Similar to the finding that the 2006 sample outperformed the cohort of SAT-takers that graduated from high school in 2006, this sample outperformed the 2007 graduating seniors, whose mean SAT-CR, SAT-M and SAT-W were 502, 515, and 494, respectively, (College Board, 2007).

Table 3
Corrected (Raw) Correlation Matrix of SAT and HSGPA

Predictor	HSGPA	SAT-CR	SAT-M	SAT-W
HSGPA	-	0.46	0.49	0.49
SAT-CR	(0.20)	-	0.72	0.85
SAT-M	(0.23)	(0.50)	-	0.72
SAT-W	(0.24)	(0.71)	(0.50)	-

Note. N = 159,286. Pooled within-institution, restriction of range corrected correlations are presented. The raw correlations are shown in parentheses.

- The correlations between all predictors were similar to what was presented in Kobrin et. al. (2008), despite a slight difference in how the correlations were pooled across institutions.
- The corrected and raw multiple correlations of SAT-CR, SAT-M and SAT-W with HSGPA were 0.53 and 0.27, respectively.

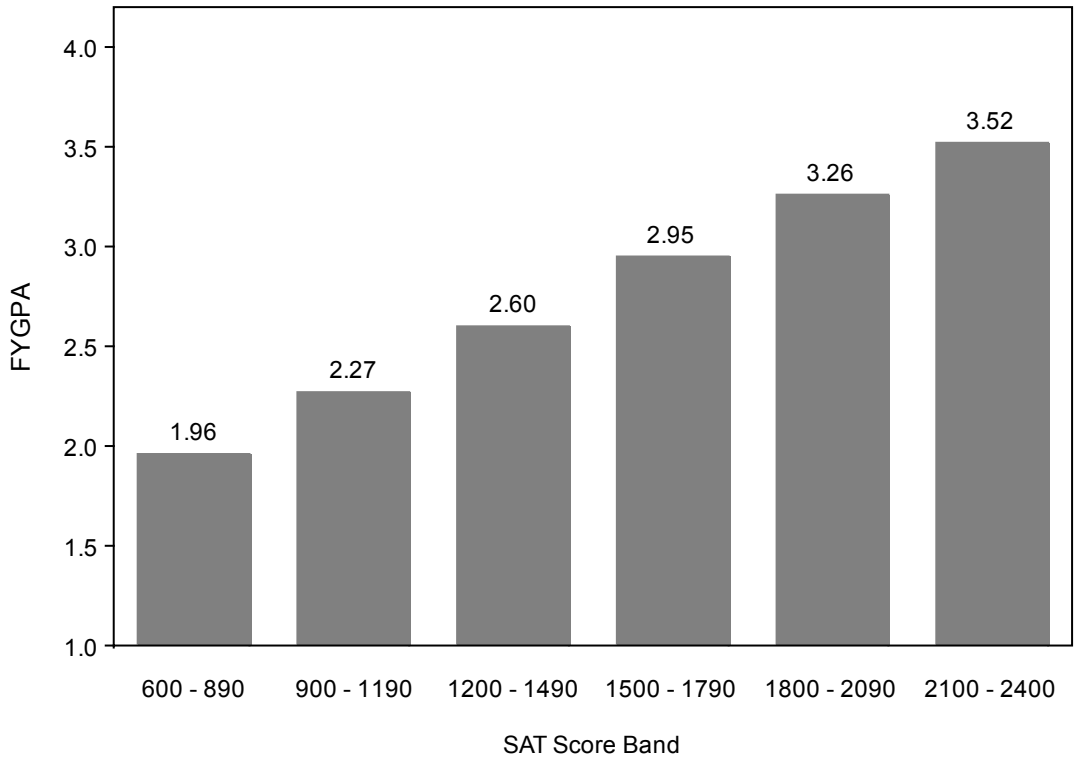
Table 4
Corrected (Raw) Correlations of Predictors with FYGPA

Predictor(s)	Correlation
1. HSGPA	0.56 (0.37)
2. SAT-CR	0.50 (0.30)
3. SAT-M	0.49 (0.28)
4. SAT-W	0.53 (0.34)
5. SAT-M, SAT-CR	0.54 (0.33)
6. HSGPA, SAT-M, SAT-CR	0.63 (0.45)
7. SAT-CR, SAT-M, SAT-W	0.56 (0.37)
8. HSGPA, SAT-CR, SAT-M, SAT-W	0.64 (0.46)

Note. N = 159,286. Pooled within-institution, restriction of range corrected correlations are presented. The raw correlations are shown in parentheses.

- The raw and corrected correlations of SAT scores and HSGPA with FYGPA among the 2007 sample are generally equal to or slightly higher than the correlations for the 2006 sample.
- As in the 2006 sample, the SAT writing section has the highest correlation with FYGPA among the three sections.
- The corrected correlation of HSGPA and FYGPA is identical to the correlation of SAT scores and FYGPA (0.56).
- As in the 2006 sample, the increment in predictive validity attributable to SAT scores over HSGPA is 0.08.

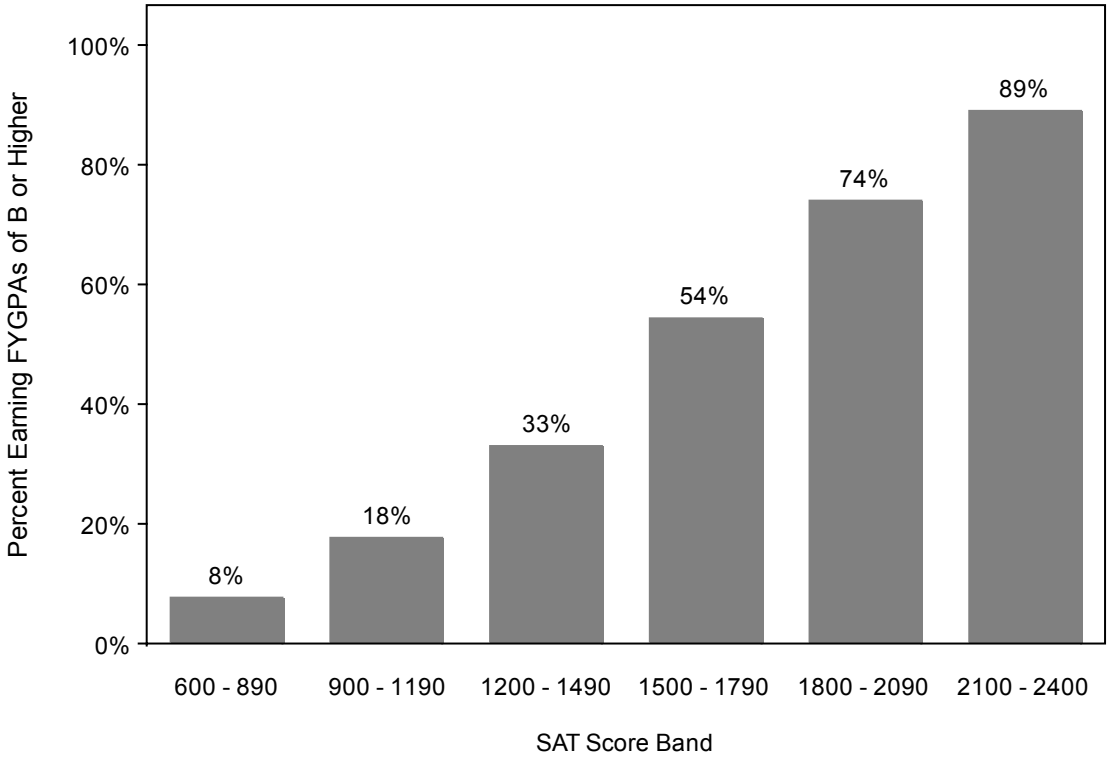
Figure 1
Mean FYGPA by SAT Score Band



Note. SAT score bands based on the sum of SAT-CR, SAT-M, and SAT-W.

- Figure 1 presents the mean FYGPA of students by SAT score band. This graphically demonstrates the strong positive relationship between SAT scores and FYGPA.

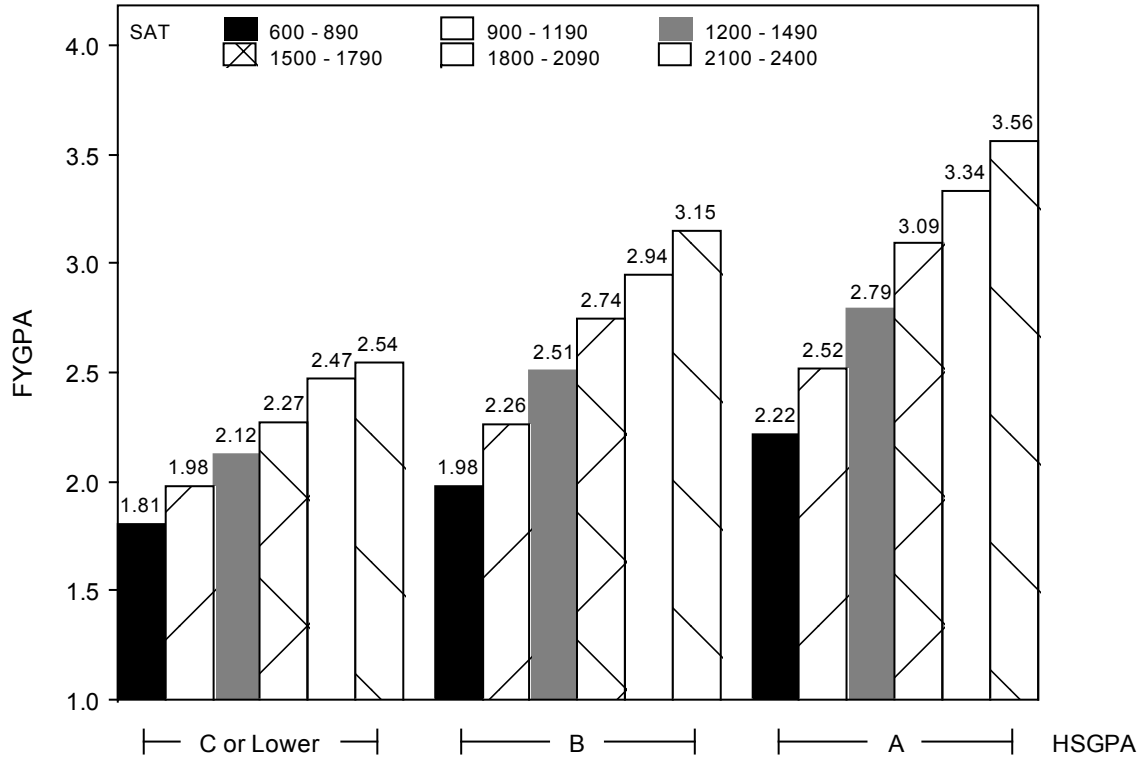
Figure 2
Percent of Students Earning a FYGPA of a B or Higher by SAT Score Band



Note. SAT score bands based on the sum of SAT-CR, SAT-M, and SAT-W. Students with FYGPAs ≥ 3.00 are considered to have earned a B or better.

- Figure 2 presents the percent of students by SAT score band who had a FYGPA of B (3.0) or higher and again the strong positive relationship between SAT scores and first-year college performance is evident.

Figure 3
Incremental Validity of the SAT:
Mean FYGPA by SAT Score Band Controlling for HSGPA



Note. SAT score bands based on the sum of SAT-CR, SAT-M, and SAT-W.
HSGPA ranges are defined as follows:
"A" range: 4.33 (A+), 4.00 (A), and 3.67 (A-);
"B" range: 3.33 (B+), 3.00 (B), and 2.67 (B-); and
"C or Lower" range: 2.33 (C+) and lower.

- Figure 3 presents students' mean FYGPA by SAT score band, controlling for HSGPA. Figure 3 graphically displays the unique information provided by SAT, controlling for HSGPA. Even within HSGPA levels, there is still a strong positive relationship between SAT and FYGPA. For example, of the students with a HSGPA equivalent to an A, those with an SAT total score between 600 to 890 had a mean FYGPA of 2.22 as compared to a mean FYGPA of 3.56 for students with an SAT total score between 2100 and 2400.

Table 5

Descriptive Statistics of Study Variables by Institutional Characteristics

Institutional Characteristic		n	k	SAT-CR		SAT-M		SAT-W		HSGPA		FYGPA	
				Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Control	Private	42,615	59	591	99	600	97	588	98	3.65	0.49	3.13	0.59
	Public	116,671	51	547	93	564	95	539	91	3.60	0.50	2.92	0.75
Selectivity	Admits under 50%	18,675	21	621	99	631	99	621	97	3.74	0.47	3.19	0.56
	Admits 50 to 75%	108,482	63	559	91	574	93	552	91	3.63	0.48	3.00	0.69
	Admits over 75%	32,129	26	521	90	539	92	513	87	3.49	0.56	2.77	0.81
Size	Small	7,678	24	554	112	554	106	549	110	3.49	0.58	2.90	0.71
	Medium	29,242	41	558	102	568	102	552	102	3.55	0.54	3.03	0.71
	Large	33,428	19	551	99	565	101	545	97	3.51	0.52	2.91	0.74
	Very large	88,938	26	562	91	581	92	555	91	3.69	0.46	3.00	0.70
Total		159,286	110	559	96	574	97	552	95	3.62	0.50	2.98	0.71

Note. k = number of institutions, n = subgroup sample size.

- Students at private institutions had higher mean SAT scores, HSGPA and FYGPA than those from public institutions.
- Students' mean SAT scores, HSGPA, and FYGPA increased as institutional selectivity increased (i.e., admittance rate decreased).
- Students attending very large institutions had the highest mean SAT scores, HSGPA, and FYGPA compared to smaller institutions, though the differences were small.

Table 6

Corrected Correlations of SAT and HSGPA with FYGPA by Institutional Characteristics

Institutional Characteristic		n	k	SAT-CR	SAT-M	SAT-W	SAT*	HSGPA	SAT* & HSGPA
Control	Private	42,615	59	0.54	0.53	0.57	0.60	0.58	0.68
	Public	116,671	51	0.49	0.48	0.52	0.54	0.55	0.63
Selectivity	Admits under 50%	18,675	21	0.55	0.54	0.58	0.61	0.57	0.67
	Admits 50 to 75%	108,482	63	0.50	0.49	0.53	0.56	0.56	0.64
	Admits over 75%	32,129	26	0.47	0.47	0.51	0.53	0.55	0.62
Size	Small	7,678	24	0.54	0.52	0.57	0.59	0.60	0.68
	Medium	29,242	41	0.51	0.50	0.54	0.56	0.58	0.66
	Large	33,428	19	0.48	0.48	0.52	0.54	0.56	0.63
	Very large	88,938	26	0.50	0.49	0.53	0.56	0.55	0.63
Total		159,286	110	0.50	0.49	0.53	0.56	0.56	0.64

Note. The correlations were corrected for restriction of range within institutions and pooled. Institution sizes are categorized by the number of undergraduates as follows: small = 750 to 1,999; medium = 2,000 to 7,499; large = 7,500 to 14,999; and very large = 15,000 or more. k = number of institutions, n = subgroup sample size.

* SAT refers to the inclusion of all three sections in the relevant multiple correlation.

- The correlation of scores on each SAT section with FYGPA was generally:
  - slightly higher in private institutions compared to public institutions;
  - higher in more selective institutions (those admitting less than half of their applicants) compared to those that admit at least half of their applicants; and
  - higher in small institutions compared to larger institutions.
- The same pattern emerges for the correlations of HSGPA with FYGPA, albeit with smaller differences.

Table 7

Raw Correlations of SAT and HSGPA with FYGPA by Institutional Characteristics

Institutional Characteristic		n	k	SAT-CR	SAT-M	SAT-W	SAT*	HSGPA	SAT* & HSGPA
Control	Private	42,615	59	0.32	0.28	0.36	0.39	0.38	0.48
	Public	116,671	51	0.30	0.27	0.34	0.36	0.37	0.46
Selectivity	Admits under 50%	18,675	21	0.30	0.27	0.33	0.37	0.32	0.44
	Admits 50 to 75%	108,482	63	0.31	0.27	0.35	0.37	0.37	0.46
	Admits over 75%	32,129	26	0.29	0.28	0.34	0.36	0.40	0.47
Size	Small	7,678	24	0.34	0.29	0.37	0.40	0.43	0.52
	Medium	29,242	41	0.29	0.27	0.34	0.36	0.40	0.48
	Large	33,428	19	0.27	0.26	0.32	0.34	0.37	0.45
	Very large	88,938	26	0.32	0.28	0.35	0.37	0.35	0.46
Total		159,286	110	0.30	0.28	0.34	0.37	0.37	0.46

Note. The correlations were computed within institution and pooled. Institution sizes are categorized by the number of undergraduates as follows: small = 750 to 1,999; medium = 2,000 to 7,499; large = 7,500 to 14,999; and very large = 15,000 or more. k = number of institutions, n = subgroup sample size.

* SAT refers to the inclusion of all three sections in the relevant multiple correlation.

- Patterns in Table 7 are the same as those in Table 6, however correlations in this table were not corrected for restriction of range.

Table 8

Descriptive Statistics of Study Variables by Student Characteristics

Student Characteristic		n	SAT-CR Mean	SAT-CR SD	SAT-M Mean	SAT-M SD	SAT-W Mean	SAT-W SD	HSGPA Mean	HSGPA SD	FYGPA Mean	FYGPA SD
Gender	Male	72,894	563	96	596	96	549	96	3.57	0.52	2.89	0.74
	Female	86,392	555	96	555	94	555	95	3.66	0.48	3.05	0.68
Race/ Ethnicity	American Indian or Alaska Native	823	539	95	552	95	527	91	3.53	0.54	2.83	0.76
	Asian, Asian-American, or Pacific Islander	14,555	569	104	623	98	567	103	3.68	0.45	3.05	0.67
	Black or African-American	10,224	492	91	491	91	484	90	3.39	0.57	2.57	0.76
	Hispanic, Latino, or Latin American	12,934	517	94	529	91	511	91	3.56	0.52	2.71	0.78
	Not Stated	7,117	583	102	586	98	571	101	3.63	0.51	3.04	0.68
	Other	4,480	560	97	571	97	556	95	3.60	0.49	2.97	0.70
	White	109,153	567	91	580	91	560	91	3.63	0.49	3.04	0.69
Best Language	English	147,117	562	95	575	96	555	94	3.62	0.50	2.99	0.71
	English and Another	8,521	522	101	554	106	524	101	3.61	0.49	2.85	0.74
	Another Language	1,556	464	105	593	125	473	106	3.67	0.46	2.98	0.71
	Not Stated	2,092	551	107	563	111	542	107	3.51	0.57	2.91	0.72
Total		159,286	559	96	574	97	552	95	3.62	0.50	2.98	0.71

Note. n = subgroup sample size.

- Similar to findings from the 2006 sample (Mattern et al., 2008):
  - Males had higher SAT-CR and SAT-M scores whereas females had higher SAT-W scores, HSGPA, and FYGPA.
  - Asian and White students outperformed other ethnic subgroups on all of the academic indicators.
  - Students whose best spoken language was a language other than English had higher SAT-M scores and lower SAT-CR and SAT-W scores relative to the other best language subgroups.

Table 9

Corrected Correlation of SAT Scores and HSGPA with FYGPA by Student Subgroups

Student Characteristic		n	k	SAT-CR	SAT-M	SAT-W	SAT*	HSGPA	SAT* & HSGPA
Gender	Male	72,894	108	0.48	0.48	0.51	0.53	0.54	0.62
	Female	86,392	110	0.54	0.55	0.56	0.60	0.56	0.66
Race/ Ethnicity	American Indian or Alaska Native	456	19	0.41	0.42	0.47	0.48	0.47	0.54
	Asian, Asian-American, or Pacific Islander	14,363	81	0.48	0.50	0.50	0.54	0.52	0.61
	Black or African-American	9,998	79	0.43	0.42	0.46	0.48	0.45	0.54
	Hispanic, Latino, or Latin American	12,717	85	0.46	0.44	0.48	0.51	0.51	0.58
	Not Stated	6,901	88	0.51	0.49	0.54	0.56	0.55	0.64
	Other	4,147	68	0.50	0.49	0.53	0.55	0.50	0.61
	White	109,153	109	0.49	0.48	0.53	0.55	0.58	0.64
Best Language	English Only	147,117	110	0.51	0.49	0.54	0.56	0.57	0.64
	English and Another	8,304	80	0.46	0.47	0.49	0.52	0.50	0.58
	Another Language	1,227	33	0.41	0.46	0.45	0.49	0.48	0.56
	Not Stated	1,678	51	0.47	0.47	0.50	0.52	0.49	0.58
Total		159,286	110	0.50	0.49	0.53	0.56	0.56	0.64

Note. The correlations were corrected for restriction of range within institutions and pooled. Computations were made within institutions for subgroups with at least 15 members. k = number of institutions, n = subgroup sample size.

* SAT refers to the inclusion of all three sections in the relevant multiple correlation.

- Overall, SAT scores and HSGPA are equally predictive of FYGPA, with corrected correlations of 0.56. Within subgroups, the multiple correlation of SAT scores was more predictive of FYGPA than HSGPA for all subgroups except White and Hispanic students and students whose best language is English Only.
- Similar to the results for the 2006 sample (Kobrin et al., 2008; Mattern et al., 2008), of the three SAT sections, SAT-W scores were most predictive of FYGPA, overall and for all subgroups, except for students whose best language is a language other than English.

Table 10

Raw Correlation of SAT Scores and HSGPA with FYGPA by Subgroups

Student Characteristic		n	k	SAT-CR	SAT-M	SAT-W	SAT*	HSGPA	SAT* & HSGPA
Gender	Male	72,894	108	0.28	0.28	0.31	0.35	0.36	0.44
	Female	86,392	110	0.34	0.35	0.36	0.41	0.36	0.48
Race/ Ethnicity	American Indian or Alaska Native	456	19	0.25	0.25	0.32	0.34	0.31	0.40
	Asian, Asian-American, or Pacific Islander	14,363	81	0.25	0.27	0.28	0.32	0.29	0.40
	Black or African-American	9,998	79	0.23	0.21	0.28	0.29	0.29	0.38
	Hispanic, Latino, or Latin American	12,717	85	0.26	0.23	0.28	0.31	0.32	0.41
	Not Stated	6,901	88	0.31	0.27	0.36	0.38	0.37	0.47
	Other	4,147	68	0.30	0.27	0.33	0.36	0.30	0.43
	White	109,153	109	0.28	0.24	0.32	0.34	0.38	0.46
Best Language	English Only	147,117	110	0.30	0.27	0.34	0.37	0.37	0.47
	English and Another	8,304	80	0.27	0.28	0.30	0.34	0.30	0.41
	Another Language	1,227	33	0.18	0.30	0.25	0.33	0.29	0.40
	Not Stated	1,678	51	0.31	0.30	0.35	0.38	0.33	0.45
Total		159,286	110	0.30	0.28	0.34	0.37	0.37	0.46

Note. The correlations were computed within institution and pooled. Computations were made within institutions for sub-groups with at least 15 members. k = number of institutions, n = subgroup sample size. SAT is the multiple correlation for all three sections.

* SAT refers to the inclusion of all three sections in the relevant multiple correlation.

- Patterns in Table 10 are the same as those in Table 9, however this table includes correlations that were not corrected for restriction of range.

Table 11

Average Over-prediction (-) and Under-prediction (+) of FYGPA for SAT Scores and HSGPA (Standardized FYGPA)

Student Characteristic		n	k	SAT-CR	SAT-M	SAT-W	SAT*	HSGPA	SAT* & HSGPA
Gender	Male	72,894	108	-0.15	-0.21	-0.12	-0.16	-0.09	-0.11
	Female	86,392	110	0.13	0.17	0.10	0.13	0.08	0.09
Race/ Ethnicity	American Indian or Alaska Native	823	101	-0.12	-0.12	-0.09	-0.09	-0.12	-0.07
	Asian, Asian-American, or Pacific Islander	14,555	109	0.05	-0.07	0.04	0.00	0.03	0.01
	Black or African-American	10,224	109	-0.31	-0.27	-0.27	-0.20	-0.36	-0.16
	Hispanic, Latino, or Latin American	12,934	110	-0.17	-0.16	-0.15	-0.11	-0.24	-0.11
	Not Stated	7,117	110	-0.01	0.03	0.00	0.00	0.05	0.00
	Other	4,480	110	-0.03	-0.02	-0.04	-0.02	-0.02	-0.01
	White	109,153	109	0.04	0.05	0.04	0.03	0.06	0.03
Best Language	English Only	147,117	110	0.00	0.01	0.00	0.00	0.01	0.00
	English and Another	8,521	110	-0.03	-0.08	-0.04	-0.02	-0.14	-0.03
	Another Language	1,556	101	0.34	-0.06	0.33	0.28	-0.03	0.21
	Not Stated	2,092	108	-0.10	-0.10	-0.08	-0.08	-0.07	-0.04

Note. Negative values indicate over-prediction; positive values indicate under-prediction. FYGPA prediction equations were estimated for each institution separately. Individual residuals were computed by subtracting predicted standardized FYGPA from actual standardized FYGPA. k = number of institutions, n = subgroup sample size.

* SAT refers to all three sections being entered as separate predictors.

- Similar to previous findings (Mattern et al., 2008), SAT scores over-predicted FYGPA for males and under-predicted FYGPA for females. The same pattern of results was found for HSGPA, however, with smaller prediction error.
- SAT scores and HSGPA both over-predicted FYGPA for American Indian, African American and Hispanic students; however, SAT scores resulted in less prediction error than HSGPA for all ethnic subgroups and the combination of SAT scores and HSGPA as predictors resulted in the least amount of prediction error.
- Relative to HSGPA, the use of SAT scores resulted in less prediction error for students who best language was English only and English and another language but resulted in greater prediction error for students whose best language is another language.

Table 12

Average Over-prediction (-) and Under-prediction (+) of FYGPA for SAT Scores and HSGPA (Raw FYGPA)

Student Characteristic		n	k	SAT-CR	SAT-M	SAT-W	SAT*	HSGPA	SAT* & HSGPA
Gender	Male	72,894	108	-0.10	-0.14	-0.08	-0.10	-0.06	-0.07
	Female	86,392	110	0.08	0.11	0.07	0.09	0.05	0.06
Race/ Ethnicity	American Indian or Alaska Native	823	101	-0.08	-0.08	-0.06	-0.06	-0.08	-0.05
	Asian, Asian-American, or Pacific Islander	14,555	109	0.04	-0.03	0.03	0.01	0.03	0.01
	Black or African-American	10,224	109	-0.20	-0.17	-0.18	-0.13	-0.23	-0.11
	Hispanic, Latino, or Latin American	12,934	110	-0.11	-0.10	-0.09	-0.07	-0.15	-0.07
	Not Stated	7,117	110	-0.01	0.02	0.00	0.00	0.03	0.00
	Other	4,480	110	-0.02	-0.01	-0.03	-0.02	-0.02	-0.01
	White	109,153	109	0.03	0.03	0.02	0.02	0.04	0.02
Best Language	English Only	147,117	110	0.00	0.00	0.00	0.00	0.01	0.00
	English and Another	8,521	110	-0.01	-0.04	-0.01	0.00	-0.08	-0.01
	Another Language	1,556	101	0.23	-0.02	0.23	0.19	-0.01	0.14
	Not Stated	2,092	108	-0.07	-0.07	-0.05	-0.05	-0.05	-0.03

Note. Negative values indicate over-prediction; positive values indicate under-prediction. FYGPA prediction equations were estimated for each institution separately. Individual residuals were computed by subtracting predicted raw FYGPA from actual raw FYGPA. k = number of institutions, n = subgroup sample size.

* SAT refers to all three sections being entered as separate predictors.

- Patterns in Table 12 are the same as those in Table 11, however in this table, FYGPAs were not standardized within institutions.

Appendix

Participating Institutions

Institution Name
Austin College
Babson College
Baldwin-Wallace College
Boston College
Brandeis University
California Lutheran University
Centre College
Chapman University
Claremont McKenna College
Clemson University
Coastal Carolina University
College of Charleston
Cornell College
Drew University
Earlham College
Emory University
Florida State University
Fordham University
Furman University
Georgia Institute of Technology
Gonzaga University
Indiana University - Bloomington
Indiana University - Gary
Indiana University - Kokomo
Indiana University - New Albany
Indiana University - Purdue University
Indiana University - South Bend
Iona College
Kenyon College
Keystone College
Kutztown University
Lafayette College
Lasell College
Lincoln University of Pennsylvania
Linfield College
Long Island University - Brooklyn
Long Island University - C.W. Post
Loyola Marymount University
Lycoming College
Meredith College
Millersville University of Pennsylvania

Institution Name
Moravian College
Mount Ida College
Northwestern University
Penn State University
Rutgers University
Salve Regina University
Samford University
Schreiner University
Seattle University
Smith College
Southern Connecticut State University
St. Anselm College
St. Michael's College
Syracuse University
Temple University
Texas A&M International University
Texas A&M University - College Station
Texas A&M University - Commerce
Texas Christian University
Texas State University - San Marcos
Texas Tech University
The Ohio State University
Tufts University
University of California - Merced
University of California - Santa Barbara
University of Cincinnati
University of Delaware
University of Denver
University of Georgia
University of Houston
University of Illinois at Urbana-Champaign
University of Massachusetts Dartmouth
University of Michigan
University of New Haven
University of North Texas
University of Pittsburgh
University of Portland
University of Puget Sound
University of Rhode Island
University of Southern California
University of Southern Indiana
University of Texas at Austin

Appendix (continued)

Institution Name
University of Texas at Brownsville
University of Texas: Pan American
University of the Pacific
University of Vermont
Valdosta State University
Vanderbilt University
Washington and Lee University
Washington State University - Pullman
Washington State University - Vancouver
Western Washington University
Wheaton College (Illinois)
Wilkes University
Williams College
Anonymous A
Anonymous B
Anonymous C
Anonymous D
Anonymous E
Anonymous F
Anonymous G
Anonymous H
Anonymous I
Anonymous J
Anonymous K
Anonymous L
Anonymous M
Anonymous N