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How Does the Use of Concordant Scores Impact Admission Decisions?

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Executive Summary

The current study examines the relationship between predictions of first-year grade point average (FYGPA) made by models using high school grade point average (HSGPA) and either actual admission test scores or concordant admission test scores. The results indicate that both scores (actual and concordant) make similar predictions of FYGPA. Furthermore, when concordant scores are used in a predictive model based on actual scores received, the predictions in FYGPA are the same. Results indicate that actual and concordant scores can, in this case, be used interchangeably and across students to predict college success as measured by FYGPA. The practical implications of these results, as they relate to the valid use of concordant scores in college admission decisions, will be discussed.

Introduction

College admission offices receive many different pieces of information on each applicant to their institution. The job of considering this information becomes further complicated when the information is not consistent across applicants. An example of one such complication is receiving SAT scores for some applicants and receiving ACT scores for other applicants. Educational measurement professionals have long recognized this conundrum and have produced concordance tables to provide a way to translate scores on the SAT to the ACT and vice versa (Pommerich, 2007). A concordance table ideally represents the correspondence between test scores that were not built to the same specifications but are similar with regard to content, have a strong relationship between scores on the tests, and where test performance is similar across demographic groups (Dorans, 2004). The concordant scores are then considered to be comparable but not equivalent. Note that these standards must be met in order to produce appropriate concordance tables, and it is inappropriate to link tests without critically and statistically evaluating their relationships.

Concordance tables are carefully developed using a thoughtful research design and sophisticated methodology. Typically, concordance tables are produced by having a single group of examinees that have taken both tests for the first time, close in time, in a counterbalanced order. It is critical that this group of examinees that serve as the sample be as representative of the population of examinees as possible. Scale-aligning methods such as equipercentile linking are used to identify comparable distributions of scores across the two related tests. Specifically, the percentile ranks of each score on each test are linked to one another to determine which scores correspond to each other between the two tests. Therefore, if concordant score points are used for admission or placement decisions, the same percentages of examinees will be selected using either test (Pommerich, 2007). Once the concordances are developed, analyses are conducted to determine the stability of the concordances at individual score points as well as the generalizability of the concordances to other samples (Pommerich, Hanson, Harris, & Sconing, 2004).

The SAT-ACT concordance table is an important resource to admission offices that use either SAT or ACT scores to make decisions about admission, placement, or academic scholarships, for example. Sawyer (2007) notes:

> If an institution is using a concordance table merely as an intermediate step in predicting academic success, and if it has sufficient outcome data from students who have taken either test, then it would do better just to develop separate predictions for each test and avoid concordance altogether. For institutions that want to use ACT or SAT scores interchangeably in an administrative system, the consistency rate is an informative indicator of the effectiveness of the table. Consistency rates estimated from past ACT-SAT concordance data are high. (p. 229)

While the recommended or preferred practice from a measurement perspective may be to develop separate predictions for each test or to develop an institutional concordance table, this is often not practical from an institutional perspective due to low sample sizes on one test versus another and due to limited resources with expertise in such measurement analyses (Pommerich, 2007). It is much more likely that institutions are using concordant scores in an interchangeable fashion with actual scores received on the other test. However, a concordant ACT score with its corresponding SAT score based on the concordance table does not indicate the two scores are equivalent. Rather, the table simply indicates that the two scores represent an equivalent percentage score point. Psychometricians and

educational measurement professionals issue clear warnings to test users that concordant scores cannot be used completely interchangeably the way scores on the same test can be (e.g., Dorans, 1999; Eignor, 2008; Lindquist, 1964; Pommerich, 2007). For example, Eignor (2008) writes, "… it will be important to find a way to put some 'teeth' behind the warnings that the relationship between scores in a concordance table not be treated as though these results originated from an equating of the scores." (p. 32)

Perhaps because of these warnings there has been little research on the practical uses and the implications of these practical uses of concordance tables. Research on concordance tables has instead focused on methodological procedures used to arrive at the links between the two tests. The current study will take a practical or applied approach to examine comparisons between the use of actual (native) scores versus concordant scores for admission decisions and will also examine how interchangeable the native and concordant scores may be for predicting academic success in college.

Method

Sample

The data analyzed in this study are from a longitudinal research effort to examine the validity of the SAT in partnership with four-year colleges and universities in the U.S. The students in this study entered college for the first time in fall 2011. There were 276,829 students from 149 four-year institutions in the sample; however, to be included in the final study sample, a student had to be an SAT taker, have a valid high school grade point average (HSGPA), and have a valid college first-year grade point average (FYGPA) on record. This resulted in a sample size of 206,789 students from 149 four-year institutions. The majority of the sample is female (55%) and white (66%), as displayed in Table 1. Table 1 also describes the 149 institutions in the sample by various institutional characteristics. The majority of the institutions in the sample are public (54%), moderately selective (57%), and of medium size (41%). Note that in comparison to all students who graduated from high school in 2011 and took the SAT, the study sample is more highly able, which is to be expected as this group of students has applied, enrolled, and completed their first year of college (College Board, 2011).

Measures

Native SAT score. Official pre-March-2016 SAT scores were obtained from the College Board. A student's most recent score was used in the analysis. The pre-March-2016 SAT includes three sections, Critical Reading (CR), Math (M), and Writing (W), and the score scale range for each section is 200 to 800. For this analysis a sum of the CR + M scores was created and is referred to as the native SAT (nSAT) score as this is an actual or nonconcordant score the student received when taking the SAT. For this sample, the native SAT CR + M composite score ranges from 510 to 1600 with a mean of 1120 (*SD* = 178).

Concordant ACT score. Concordant ACT (cACT) scores were mathematically arrived at for each student in the sample using the SAT-ACT concordance table and the student's native SAT composite score. This is not an actual score that a student earned but an estimate of a comparable ACT score based on a student's performance on the SAT. Concordant ACT scores have a score scale range of 11 to 36. The mean concordant ACT score is 24 (*SD* = 4.5).

Table 1.

Characteristics of Sample

Student Characteristics (n_s = 206,789)		%
Gender	Female	55
	Male	45
Race/Ethnicity	American Indian or Alaska Native	< 1
	Asian, Asian American, or Pacific Islander	10
	Black or African American	9
	Hispanic	11
	White	66
	Other	3
	No Response	1
Institutional Characteristic (n = 149)		**%**
Control	Private	46
	Public	54
Admittance Rate	25% and Under	4
	26% to 50%	19
	51% to 75%	57
	Over 75%	20
Undergraduate Enrollment	Small	20
	Medium	41
	Large	17
	Very Large	22

Note. Undergraduate enrollment includes the following size categories: Small, 750 to 1,999 undergraduates; Medium, 2,000 to 7,499 undergraduates; Large, 7,500 to 14,999 undergraduates; and Very Large, 15,000 or more undergraduates.

"Native" ACT score. ACT scores were simulated for all students in our sample using what we know about the relationship between the SAT and the ACT (e.g., they are correlated with each other r = 0.92 and assuming a normal distribution of scores) (Dorans, 1999). For this study, these simulated ACT scores were thought of as "native" ACT scores and range from 11 to 36 with a mean score of 24 (SD = 4.9).

Concordant SAT score. Concordant SAT (cSAT) scores were created using the SAT-ACT concordance table and the "native" ACT scores. Concordant SAT scores range from 530 to 1600 with a mean of 1120 (SD = 197).

High School GPA (HSGPA). Self-reported HSGPA was obtained from the SAT Questionnaire that students completed during registration for the pre-March-2016 SAT. This variable is on a 12-point scale ranging from A+ (97–100; 4.33) to E or F (Below 65; 0). The mean HSGPA for this sample was 3.61 (SD = 0.50).

First-Year GPA (FYGPA). Each participating institution supplied FYGPA values for its 2011 first-time, first-year students. The range of FYGPAs across institutions was 0.00 to 4.00 with a mean of 3.00 (SD = 0.72).

Analyses

All students in the sample had native SAT scores on all three sections of the test. ACT scores were simulated for each student in the sample using the known relationship between the SAT and ACT (Dorans, 1999). The simulated ACT scores were considered to be "native" for each student in this study. Using both native scores, SAT and ACT, a concordant score was created for each score using the SAT-ACT concordance table. To use the SAT-ACT concordance table, SAT Critical Reading and SAT Math section scores needed to be summed (SAT CR+M) to arrive at an SAT composite score that was on a scale of 400 to 1600. Based on this SAT composite score, one can locate the corresponding ACT score within the concordance table to arrive at the concordant ACT score for each student. For example, a score of 1290 on the SAT has a corresponding concordant score of 29 on the ACT. Further, using an ACT score, one can locate the concordant SAT score for that ACT score. For example, a score of 29 on the ACT has a corresponding concordant score of 1300 on the SAT. At the end of this process every student in the sample would have four different test scores: a native SAT score, a simulated ACT score, a concordant SAT score, and a concordant ACT score. Once concordant scores were recorded for each student in the sample, the students were grouped by institution and regression analysis was used to predict each student's first-year grade point average (FYGPA) with various models. Predicted FYGPAs were based on students' HSGPAs and standardized test scores and were calculated within each institution. Results in this study are aggregated across institutions.

The first set of analyses was designed to test whether there were meaningful differences in how well the different native or concordant SAT and ACT scores predicted a student's FYGPA. The second set of analyses compared predictions from each model to a student's actual FYGPA to examine each score's overprediction/underprediction.

To connect these analyses to real world test score use, imagine an institution primarily receives SAT scores from applicants, and this institution uses SAT scores and HSGPA to arrive at a predicted FYGPA for an applicant. The institution's predictions are based on the SAT, so if the institution receives ACT scores for some applicants, they would either need to: (1) develop a different predictive model based on ACT scores and HSGPA to arrive at a predicted FYGPA for students with ACT scores (similar to the aforementioned analyses), or (2) concord those ACT scores to SAT scores and use them in the pre-existing SAT model. As an institution would more likely concord those ACT scores to SAT scores and use the concordant SAT scores in their native SAT predictive model, it was important to examine the prediction accuracy in this scenario. The same idea fits an institution that primarily receives ACT scores from students. Table 2 illustrates the four scenarios that native SAT or ACT test takers (and institutions) could encounter.

To perform the first analysis of comparing predicted FYGPAs, two regression prediction models were created using native scores — one using native SAT scores (Native SAT model) and one using "native" ACT scores (Native ACT model). Recall for this sample that students had four different types of test scores: native SAT scores, simulated "native" ACT scores, concordant SAT scores, and concordant ACT scores. Predicted FYGPAs were estimated for each student using each model. Then, the concordant scores were plugged into their respective native models and FYGPAs were predicted based on these values. In other words, a student's concordant SAT score was plugged into the native SAT model and a predicted FYGPA was estimated. Concordant ACT scores were used in the same way. This process resulted in each student having four predicted FYGPAs as seen in Table 3.

Table 2.

Admission Test Score Common Use Scenarios

	Predominately SAT Institution	Predominately ACT Institution
Native SAT Taker	Institution uses score in primary model.	Institution uses lesser used/lesser populated SAT model if one exists. -or- Institution concords score to ACT scale and uses concordant ACT score in native ACT model.
Native ACT Taker	Institution uses lesser used/lesser populated ACT model if one exists. -or- Institution concords score to SAT scale and uses concordant SAT score in native SAT model.	School uses score in primary model.

Table 3.

Prediction Models of Interest

Model Used	Variables	Prediction Outcome
Native SAT Model	Native SAT, HSGPA	Predicted FYGPA using native SAT score and HSGPA in native SAT model
	Concordant SAT, HSGPA	Predicted FYGPA using concordant SAT scores and HSGPA in native SAT model
Native ACT Model	Native ACT, HSGPA	Predicted FYGPA using native ACT scores and HSGPA in native ACT model
	Concordant ACT, HSGPA	Predicted FYGPA using concordant ACT scores and HSGPA in native ACT model

Comparisons were then made between the predicted FYGPAs that could be produced for a student in an admission office with each type of native score. In other words, for a native SAT taker, the student's predicted FYGPA using their native SAT score in a native SAT model was compared to the predicted FYGPA using a concordant ACT score in an ACT model. This was done for both native SAT takers and native ACT takers (predictions using native ACT compared to prediction using concordant SAT).

For the second analysis, the differences between the predicted FYGPAs and the student's actual FYGPA were found for each predicted FYGPA. Then, using the same comparison pairs as in analysis one (refer to Table 3), these differences were compared to each other to determine if there were large differences in the accuracy of prediction using one model versus another.

Results

Analysis One: Comparing Predicted FYGPAs to Each Other

In analysis one, pairs of predicted FYGPAs are compared to each other. Two regression models were developed to calculate predicted FYGPAs. Model 1 used the student's native SAT score and HSGPA. Model 2 used the student's native ACT score and HSGPA. Predicted FYGPAs were calculated by plugging in the appropriate score into each model. Based on the relationships between scores in Table 4, two comparisons were made. First, predicted FYGPAs using SAT scores and HSGPA in an SAT model were compared to predicted FYGPAs using concordant ACT scores and HSGPA in an ACT model. Then predicted FYGPAs using

ACT scores and HSGPA in an ACT model were compared to predicted FYGPAs using concordant SAT scores and HSGPA in an SAT model. To assess these meaningful differences in prediction, it was determined that predicted FYGPAs that were within ±0.165 of each other would be considered to be highly similar estimates. This value was selected as it is half of 0.33 and since a change of 0.33 would place a student into a different letter grade category (e.g., typically a grade of B = 3.00 while a grade of B+ = 3.33). The results of these comparisons are listed in Table 4. When a predicted FYGPA using a native score is compared to the predicted FYGPA using the corresponding concordant score, you will see similar estimates almost all of the time for both the native SAT and native ACT taker.

Table 4.

Comparison of Predicted FYGPAs for Pairs of Native and Concordant Scores for a Given Student

	Highly Similar Estimate (within ±0.165)	Overestimate	Underestimate
The native SAT taker: Native SAT with HSGPA in native model compared to Concordant ACT with HSGPA in native model	99.60%	0.20%	0.10%
The native ACT taker: Native ACT with HSGPA in native model compared to Concordant SAT with HSGPA in native model	98.90%	0.40%	0.70%

Note. All comparisons were computed by subtracting the predicted FYGPA using the concordant score from the predicted FYGPA using the native score. An overestimate indicates the predicted FYGPA using a concordant score was larger than the predicted FYGPA using a native score. An underestimate indicates the predicted FYGPA using a concordant score was smaller than the predicted FYGPA using a native score.

Analysis Two: Comparing Predicted FYGPAs to Actual FYGPAs

The next step was to assess meaningful differences in prediction using a student's actual FYGPA and predictions of their FYGPA based on the different model and score combinations. Each predicted FYGPA was placed into one of three categories based on the difference between actual FYGPA and the prediction — accurate prediction, overprediction, or underprediction using the same threshold of ±0.165 as in Analysis One. Table 5 shows the prediction classification categories for a student's actual FYGPA and each of the four predicted FYGPAs from Analysis One. As is evident from the table, all four prediction models of FYGPA similarly predicted a student's actual FYGPA.

The results of these comparisons are listed in Table 4. When a predicted FYGPA using a native score is compared to the predicted FYGPA using the corresponding concordant score, you will see similar estimates almost all of the time for both the native SAT and native ACT taker.

Table 5.

Prediction Classification Categories for Differences Between Actual FYGPA and Each Predicted FYGPA

Test Taker Type	Predicted FYGPA Model	Accurate Prediction (within ±0.165)	Overprediction	Underprediction
Native SAT Taker	Native SAT scores and HSGPA in native SAT model	23.00%	32.50%	44.50%
	Concordant ACT scores and HSGPA in native ACT model	22.60%	32.70%	44.70%
Native ACT Taker	Native ACT scores and HSGPA in native ACT model	22.60%	32.80%	44.70%
	Concordant SAT scores and HSGPA in native SAT model	22.80%	32.80%	44.40%

Since all four predicted FYGPAs predicted a student's actual FYGPA in a similar way, the classification categories were then compared by native test taker type to see if any differences existed. The classification categories from predictions using native SAT scores and HSGPA in a native SAT model compared to actual FYGPA were analyzed against the prediction categories from predictions using concordant ACT scores and HSGPA in a native ACT model compared to actual FYGPA. Table 6 shows the relationship between the sets of predicted and actual FYGPAs for a native SAT taker. Both comparisons almost always produced the same type of prediction accuracy (accurately predict FYGPA within ±0.165, overpredict FYGPA, underpredict FYGPA) — you can see this by looking along the diagonal of Table 6. In fact, only 4.5% of the total sample had different prediction classifications based on the type of test score used to make that prediction. Furthermore, a student's performance is never overpredicted by one test score yet underpredicted by the other test score. When broken down by institutional and student characteristics, similar patterns in cross classification of predicted scores were evident; any minor deviations from the overall pattern followed the differential prediction literature for subgroups (Mattern, Patterson, Shaw, Kobrin, & Barbuti, 2008).

Both comparisons almost always produced the same type of prediction accuracy (accurately predict FYGPA within ±0.165, overpredict FYGPA, underpredict FYGPA)

Table 6.

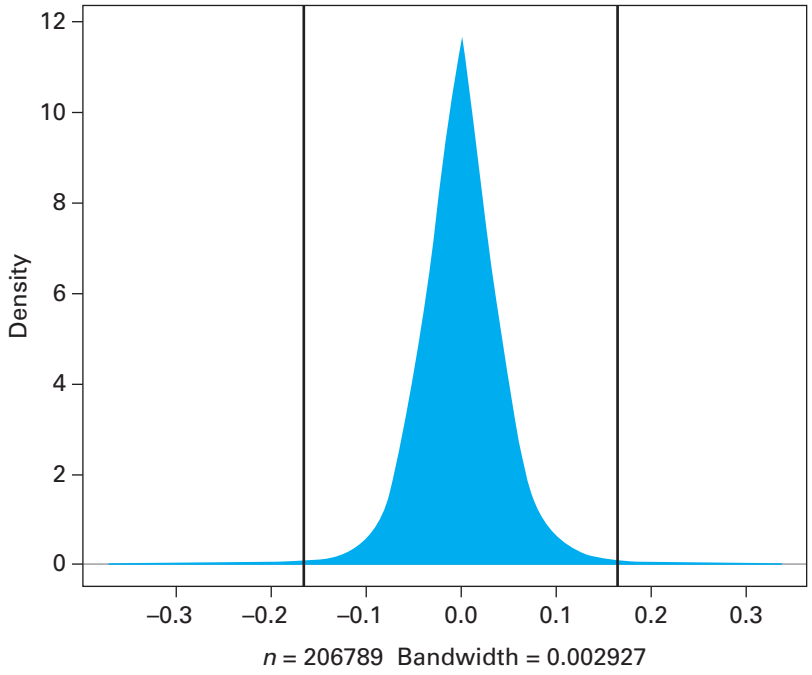
Relationship Between Predicted and Actual FYGPAs for a Native SAT Taker

		Concordant ACT Scores and HSGPA in Native ACT Model		
		Accurate Prediction (within ±0.165)	Overprediction	Underprediction
Native SAT scores and HSGPA in native SAT model	Accurate Prediction	20.60%	1.00%	1.40%
	Overprediction	0.90%	31.70%	0.00%
	Underprediction	1.20%	0.00%	43.30%

In addition, the differences between actual FYGPA and predicted FYGPA were compared to each other within student. In other words, the difference between actual FYGPA and predicted FYGPA using native SAT scores and HSGPA in a native SAT model was compared to the difference between actual FYGPA and predicted FYGPA using concordant ACT scores and HSGPA in a native ACT model. Almost all of these differences (99.6%) fell within the threshold of ±0.165. Figure 1 visualizes this relationship. The area in between the vertical lines represents the threshold of ±0.165.

Figure 1.

Differences between the differences in actual and predicted FYGPA for a native SAT taker.



The prediction categories were also compared for a native ACT taker to determine whether they predicted the student's actual FYGPA in the same way. The classification categories from predictions using native ACT scores and HSGPA in a native ACT model compared to actual FYGPA were analyzed against the prediction categories from predictions using concordant SAT scores and HSGPA in a native SAT model compared to actual FYGPA. Table 7 shows the relationship between the sets of predicted and actual FYGPAs for a native ACT taker. Both comparisons almost always produced the same type of prediction (accurately predict FYGPA within ±0.165, overpredict FYGPA, underpredict FYGPA) — you can see this by looking along the diagonal of Table 7. In fact, only 5.3% of the total sample had different prediction classifications based on the type of test score used to make that prediction. Furthermore, a student's performance is never overpredicted by one test score yet underpredicted by the other test score. When broken down by institutional and student characteristics, similar patterns in cross classification of predicted scores were evident; any minor deviations from the overall pattern followed the differential prediction literature for subgroups (Mattern et al., 2008).

Table 7.

Relationship Between Predicted and Actual FYGPAs for a Native ACT Taker

		Concordant SAT Scores and HSGPA in Native SAT Model		
		Accurate Prediction (within ±0.165)	Overprediction	Underprediction
Native ACT scores and HSGPA in native ACT model	Accurate Prediction	20.00%	1.10%	1.40%
	Overprediction	1.10%	31.60%	0.00%
	Underprediction	1.70%	0.00%	43.00%

Once again, the differences between actual FYGPA and predicted FYGPA were compared to each other within student. In other words, the difference between actual FYGPA and predicted FYGPA using native ACT scores and HSGPA in a native ACT model was compared to the difference between actual FYGPA and predicted FYGPA using concordant SAT scores and HSGPA in a native SAT model. Almost all of these differences (98.8%) fell within the threshold of ±0.165. Figure 2 visualizes this relationship. The area in between the vertical lines represents the threshold of ±0.165.

Figure 2.

Differences between the differences in actual and predicted FYGPA for a native ACT taker.

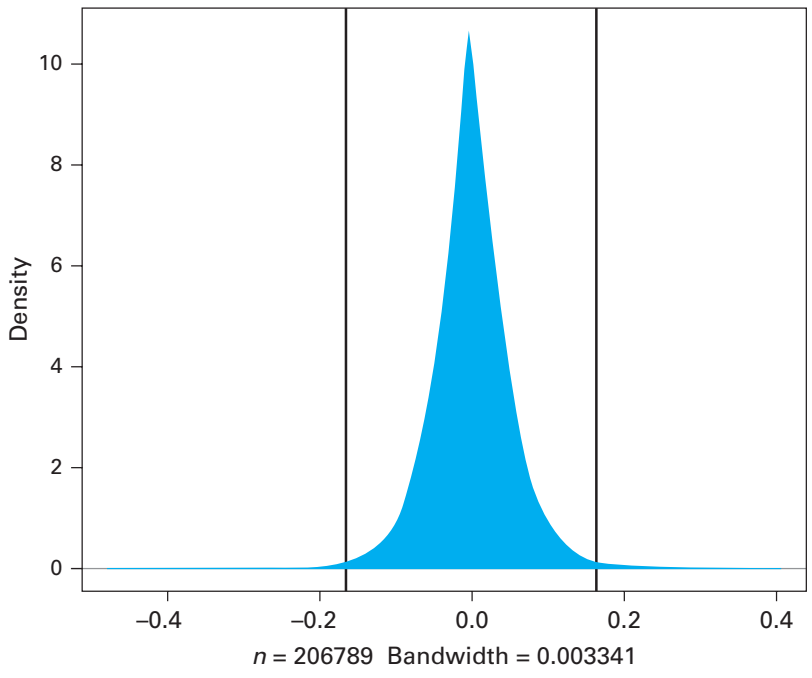


Table 8 shows descriptive statistics for the actual FYGPA and all four predicted FYGPAs as well as standardized mean differences between the predicted FYGPAs and the actual FYGPA. Overall, predicted FYGPAs are extremely similar to actual FYGPAs as evidenced by a standardized mean difference of zero. Looking at the predictions by student and institutional subgroups, it is also evident that native and concordant score types predict actual FYGPAs similarly. Standardized mean differences are generally small across all subgroups, indicating that the predicted mean values are close to the actual mean value for that group.

Table 8.

Descriptive Statistics for All FYGPAs Examined

			Actual FYGPA		Predicted FYGPA–Native SAT Model Native SAT, HSGPA			Predicted FYGPA–Native ACT Model Concordant ACT, HSGPA			Predicted FYGPA–Native ACT Model Native ACT, HSGPA			Predicted FYGPA–Native SAT Model Concordant SAT, HSGPA		
		N	Mean	SD	Mean	SD	*d*	Mean	SD	*d*	Mean	SD	*d*	Mean	SD	*d*
Overall		206,789	3.00	0.72	3.00	0.38	0.00	3.00	0.37	0.00	3.00	0.37	0.00	3.00	0.40	-0.01
Gender	**Female**	114,031	3.07	0.68	2.99	0.38	-0.12	3.00	0.36	-0.11	3.00	0.37	-0.11	2.99	0.39	-0.12
	Male	92,758	2.90	0.76	3.01	0.39	0.14	3.00	0.37	0.13	3.00	0.38	0.13	3.01	0.40	0.14
Race/Ethnicity	**Native American**	891	2.82	0.77	2.96	0.36	0.18	2.96	0.35	0.18	2.96	0.36	0.18	2.96	0.37	0.18
	Asian	21,350	3.11	0.65	3.11	0.33	0.00	3.11	0.31	0.00	3.11	0.32	-0.01	3.11	0.34	0.00
	Black	18,089	2.56	0.81	2.69	0.41	0.16	2.71	0.40	0.19	2.71	0.41	0.19	2.68	0.42	0.15
	Hispanic	21,921	2.81	0.75	2.86	0.37	0.06	2.87	0.35	0.08	2.87	0.36	0.08	2.85	0.39	0.06
	White	136,901	3.07	0.69	3.04	0.36	-0.04	3.04	0.35	-0.05	3.04	0.36	-0.05	3.04	0.38	-0.04
	Other	5,323	2.97	0.73	3.01	0.38	0.05	3.01	0.37	0.05	3.01	0.37	0.05	3.01	0.39	0.05
	No Response	2,314	2.94	0.74	2.97	0.38	0.04	2.97	0.37	0.04	2.97	0.38	0.04	2.97	0.40	0.04
Control	**Private**	58,408	3.15	0.60	3.15	0.33	0.00	3.15	0.32	0.00	3.15	0.32	0.00	3.15	0.35	-0.01
	Public	148,381	2.94	0.76	2.94	0.38	0.00	2.94	0.37	0.00	2.94	0.38	0.00	2.94	0.40	0.00
Admittance Rate	**25% and under**	6,704	3.36	0.43	3.36	0.18	-0.01	3.36	0.16	0.00	3.36	0.17	-0.01	3.36	0.19	-0.01
	26% to 50%	42,816	3.13	0.62	3.13	0.32	0.00	3.13	0.29	0.00	3.13	0.30	0.00	3.13	0.33	0.00
	51% to 75%	131,670	2.97	0.74	2.97	0.38	0.00	2.97	0.37	0.00	2.97	0.37	0.00	2.97	0.40	0.00
	Over 75%	25,599	2.83	0.78	2.83	0.40	0.00	2.83	0.38	0.00	2.83	0.38	0.00	2.83	0.41	0.00
Undergraduate Enrollment	**Small**	9,136	2.96	0.68	2.96	0.40	0.00	2.96	0.38	0.00	2.96	0.39	0.00	2.96	0.42	0.00
	Medium	40,028	3.02	0.74	3.02	0.44	0.00	3.02	0.43	0.00	3.02	0.43	0.00	3.02	0.45	0.00
	Large	50,247	2.98	0.72	2.98	0.39	0.00	2.98	0.37	0.00	2.98	0.38	0.00	2.98	0.40	0.00
	Very Large	107,378	3.00	0.72	3.00	0.35	0.00	3.00	0.34	0.00	3.00	0.34	0.00	3.00	0.37	0.00

Note. Standardized mean difference is represented by *d* in the table. Undergraduate enrollment includes the following size categories: Small, 750 to 1,999 undergraduates; Medium, 2,000 to 7,499 undergraduates; Large, 7,500 to 14,999 undergraduates; and Very Large, 15,000 or more undergraduates. Standardized mean differences were calculated by subtracting the actual FYGPA from the predicted GPA and dividing by the standard deviation of the actual FYGPA.

Discussion

The purpose of this study was to understand how well a student's HSGPA and actual admission test scores received by an institution (often called native scores in this study) predict an applicant's FYGPA when compared with the use of a concordant score for that student. We simulated the receipt of actual or native ACT scores and concorded these to SAT scores so that we could study the predicted FYGPA using concordant SAT scores as compared to a predicted FYGPA using native ACT scores. Two types of analyses were undertaken.

The first set of analyses examined differences in the predicted FYGPA by student when using a native SAT score versus a concordant ACT score. The second set of analyses compared the predicted FYGPAs to the student's actual FYGPA as well as the "comparison of different comparisons" of predicted FYGPA and actual FYGPA. These analyses all showed that each predicted FYGPA produced extremely similar results with very high consistency rates within student and across student and institutional subgroups. The results from these analyses signal that the concordance tables provide test users with scores that are similarly predictive of FYGPA, and both the native and concordant scores can be useful in predicting college outcomes for applicants.

A practical message from these research findings would be that institutions can feel comfortable using both native and concordant scores from the SAT and ACT in their admission processes in that the different scores provide highly similar information about how the student is expected to perform at the institution. In addition, using concordant scores in preexisting admission models based on native scores seems to produce highly similar predicted FYGPAs for students when compared with using their native score in the native model.

It is worth highlighting a limitation of this study that can impact the generalizability of the results. For this study, the only scores available for students were SAT scores whereas the ideal sample would have both had SAT and ACT scores on record for each student. This would allow for a more independent use of the concordance table(s) rather than relying on native SAT scores to be the basis for all other scores analyzed to arrive at predicted FYGPAs. Future research is planned to address this issue using the concordance table linking scores from the new SAT to the pre-March-2016 SAT. A concordance table will be developed for these two tests because a numerical score on one will not be strictly equivalent to a numerical score on the other. We will have data with student's native new SAT scores and their native pre-March-2016 SAT scores and therefore can conduct more independent and rigorous analyses on the use of concordant and native score types for predicting college outcomes.

The results from these analyses signal that the concordance tables provide test users with scores that are similarly predictive of FYGPA, and both the native and concordant scores can be useful in predicting college outcomes for applicants.

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