CollegeBoard

ACES (ADMITTED CLASS EVALUATION SERVICE™)

ACES Year-over-Year Study for Sample University

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Introduction

This Year-over-Year Study is designed to assess admission measure trends for students at Sample University by student entering cohort year and academic year at the institution. This report can inform the use of admission measures at your institution as they relate to the college performance outcome you selected for analysis: Cumulative GPA. Linear regression is used to fit predictive models to your student data. This report includes a number of tables and graphs that describe trends in your student data – both the data uploaded by Sample University and matched College Board data. It is a comparative report and does not contain the full detail presented in an Admitted Class Evaluation Service™ (ACES) Admission Validity Study: for example, the Year-over-Year Study does not present prediction equations or breakouts for student subgroups, or produce student matched files. This additional detail for any entering student cohort and institutional academic year combination appearing in this study can be downloaded from the ACES website if an Admission Validity Study was previously produced for those students and, if not, a new Admission Validity Study can be submitted.

Unlike other ACES validity studies, which analyze a single student dataset typically uploaded as part of the study submission, the Year-over-Year Study utilizes multiple student datasets selected from those previously submitted to, and processed by the ACES system.

In addition to Year-over-Year studies, ACES makes available Admission Validity studies to examine relationships between College Board exam scores and college success, and Placement Validity studies to examine relationships between College Board exam scores and performance in particular courses. The ACES system also offers Retention and Completion studies to examine relationships between College Board exam scores and student retention and completion outcomes at your institution.

The Year-over-Year Study contains several sections:

- *Description of the Study Design for Your Institution* presents the entering cohort years and academic years to be analyzed, the report options selected, and the variables to be used in the analyses.
- *Section 1: Trends in Predictive Strength of Admission* Measures assesses trends in the strength of the relationship between admission measures, both individually and in combination, and the college performance outcome measure you selected. [Note: unadjusted strength of relationship trends appear in Appendix A.]
- *Section 2: Trends in Admission Measures and Cumulative GPA* includes a series of reference graphs that present trends in mean admission measures and Cumulative GPA for your students, which may help identify changes in your student population. [Note: additional descriptive statistics for these measures are located in Appendix B.]
- *Appendix A: Additional Predictive Strength Statistics* presents the same set of graphs as appear in Section 1, but displays trends in the predictive strength of the relationship between admission measures and the college performance measure selected based on the unadjusted strength of relationship, i.e., raw Pearson correlations.
- *Appendix B: Additional Trend Statistics* presents trend tables that extend the trend graphs presenting means in Section 2 with additional descriptive statistics (standard deviation, N, minimum, and maximum), which can be helpful in assessing changes in your student body based on admission measures and GPA.

A supplementary interactive graph file for this Year-over-Year Study can be downloaded from the ACES website. It contains a dynamic version of the tables and graphs in this study that can be viewed, manipulated, and exported using a browser. Instances in which the dynamic version of a table or graph contains more information than the version appearing in this study are noted in the text of this report.

Description of the study design for Sample University

Your ACES Year-over-Year Study includes students who entered Sample University. Each student's record included a college criterion measure, a high school measure of academic achievement, and SAT® scores.

Cumulative GPA served as the criterion for college success in your study. HS GPA was supplied by your institution and served as the measure of high school academic achievement.

You requested that the following entering student cohort and student academic year datasets be included in your Year-over-Year Study: 2017 entering cohort, 1st academic year; 2017 entering cohort, 2nd academic year; 2018 entering cohort, 1st academic year.

ACES provided you with opportunities to customize your Year-over-Year study to more closely match the admission decision-making process at your institution.

- You had the option of selecting which SAT scores to include in your study. You chose to use SAT ERW Section and SAT Math Section.
- You requested 2 additional predictors from the ACES database: Number of Honors or AP courses and Average of AP Exam Scores. These additional predictors will be referred to as "Additional Predictors" in tables and graphs displaying combined admission measures.

Further information

- Visit: https://aces.collegeboard.org/
- Call: 800-439-8309
- E-mail: aces-collegeboard@norc.org

The complete statistical output for this report is available upon request by contacting ACES.

The College Board makes every effort to ensure that the information provided in this report and the accompanying data file are accurate. Inaccurate findings may be the result of missing or inaccurate data provided by the institution or discrepancies in matching the institution's data with the College Board database.

Section 1: Trends in predictive strength of admission measures

This section presents several graphs that examine the relationship between admission measures in your study and the measure of college success you selected: Cumulative GPA. For each admission measure or combination of measures a line chart presents the trend across academic years for the different entering student cohorts included in your study.

These graphs summarize the predictive strength of the individual admission measures in your study and the predictive strength of combinations of those measures. As a rule, combinations of admission measures tend to be more reliable predictors of a student's Cumulative GPA than a single admission measure. This is because different measures tend to capture different strengths, each of which may contribute to a student's success in college. For that reason, it is important to consider all the information available for a student when making an admission decision.

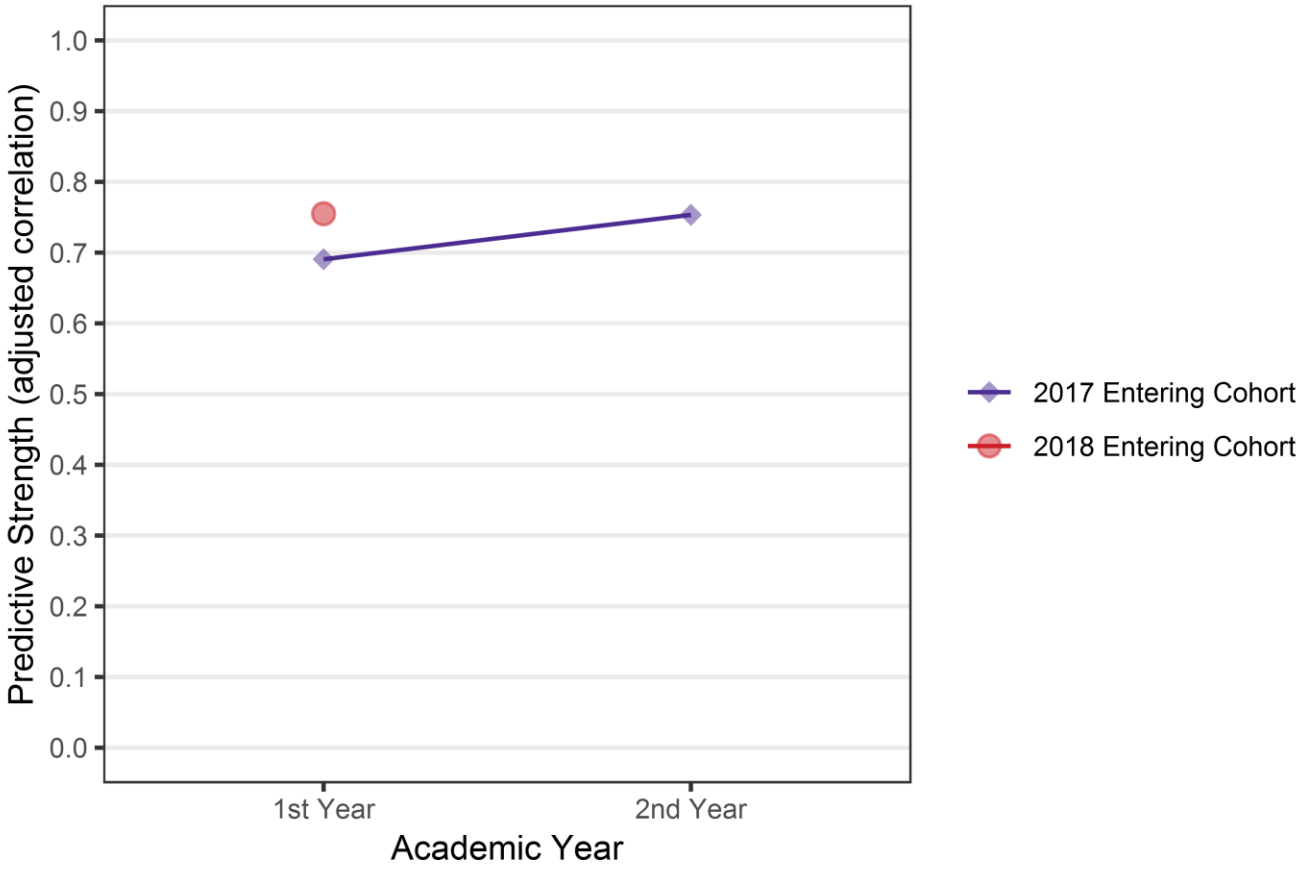
Each graph displays the trend in adjusted correlation (expressed as positive values) between Cumulative GPA, the measure of college success you chose for the study, and an individual or combined admission measure. Each line in a graph is based a different entering cohort year. The academic year appears along the horizontal axis, so each line represents the trend over academic years for a given entering student cohort. A line trending upward would indicate for an entering cohort that the strength of the relationship between the admission measure or combination of measures and Cumulative GPA increases in the students' later years at the institution. A line (or point) appearing above the others suggests a stronger relationship between the admission measure(s) and Cumulative GPA for this cohort (or for this cohort in a particular academic year). The graphs allow you to assess both trends over time for an entering cohort of students (an individual line) as well as differences between entering cohorts (comparing lines). Raw (unadjusted) correlations, which can be positive or negative for individual measures, are presented in Appendix A.

The notes below may be helpful in interpreting the line charts.

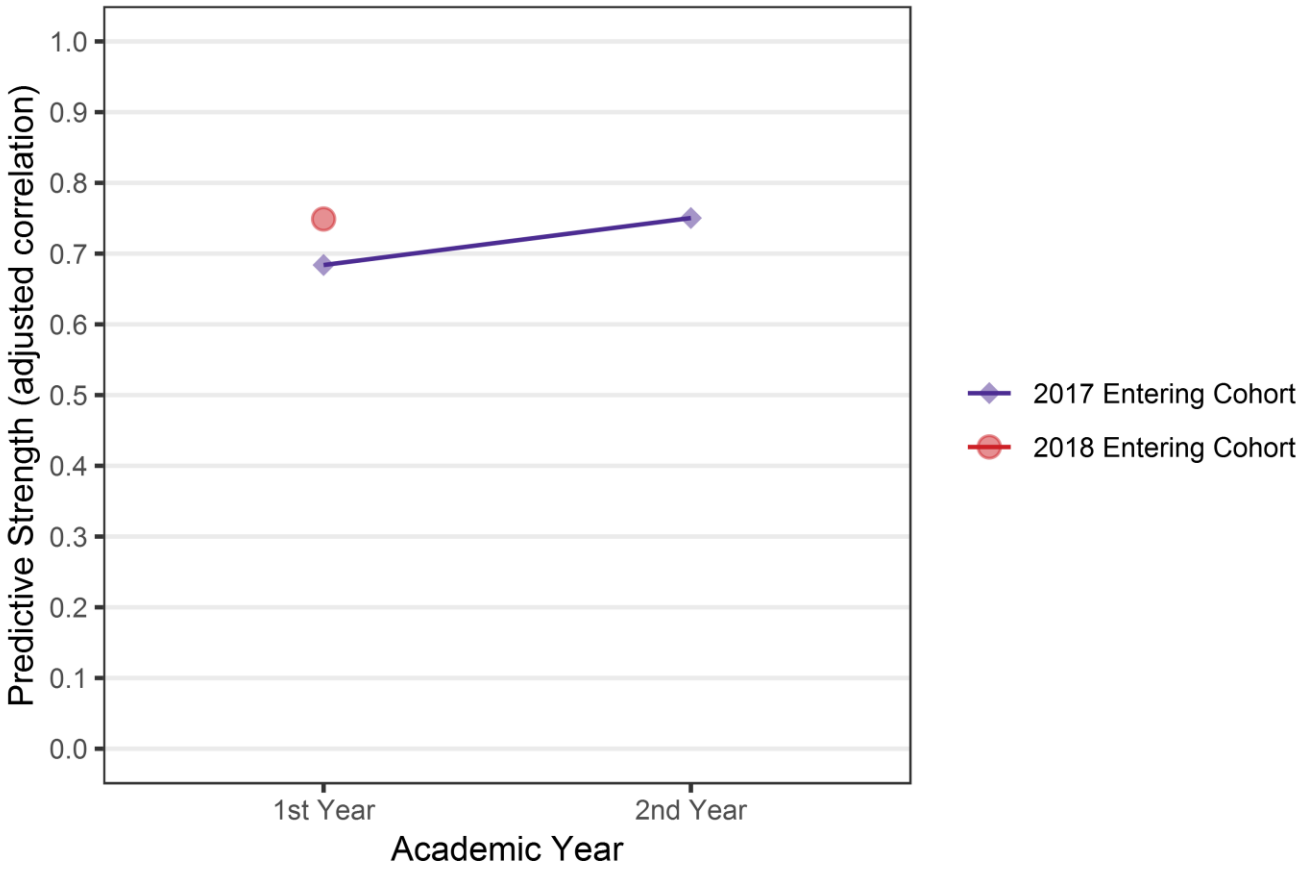
- The raw correlations between the individual and combined measures and Cumulative GPA have been adjusted to account for the selectivity of your student body. It is a widely accepted practice to statistically correct correlation coefficients in admission validity research for restriction of range because the raw correlation tends to underestimate the true relationship between the test scores and the college outcome (American Educational Research Association, American Psychological Association, and National Council on Measurement in Education, 2014). Without access to information on how students who were not admitted or did not enroll would have performed at the institution, we only have a small glimpse into how the tests work for selection–for those students who were admitted and enrolled. This has the effect of restricting the variability or range in test scores available for analysis, since the test scores available tend to be the higher scores of students who were admitted (selected in part by using those scores), minimizing the test score-criterion relationship.
- While not labeled as such in the line charts, adjusted correlations can be classified into three levels of predictive strength: strong, moderate, and weak. Strong correlations are defined as correlations with values of 0.50 or higher, moderate correlations are between 0.50 and 0.3, and weak correlations are 0.29 or lower. This classification is based on the work of Cohen, J. (1988). Statistical Power Analysis for the Behavioral Sciences (2nd ed.). Hillsdale, NJ: Erlbaum. Keeping these ranges in mind as you view the adjusted correlations may be helpful in assessing them.
- When you look at the graphs for combinations of admission measures compared to those presenting individual admission measures, you may find that some of the individual measures with strong correlations do not appear to contribute as much as you might expect to the strength of prediction when combined with other measures. This is because the measures may overlap with regard to what they are measuring–for example, the HS GPA and the SAT scores measure some, but not all, of the same academic abilities.
- For students in each entering cohort year, the year through which Cumulative GPA is accumulated is identified by the academic year. For example, for students first entering your institution in fall 2019, the Cumulative GPA through the 2019-2020 school year would be for their "1st year", while their Cumulative GPA through the 2020-2021 school year would be for their "2nd year", and so forth.
- A note about possible consequences of combining predictor variables that are highly correlated: The ACES user should exercise caution when interpreting ACES study results that include highly correlated predictor variables (multicollinearity). The analyses performed by ACES are made with the assumption that the predictor variables are independent (uncorrelated); violating this assumption may result in less precise prediction estimates with large standard errors. A typical situation where the correlation of predictor variables exists is when a composite variable, such as an admission index, is used as a predictor in the same analysis where any of the individual variables comprising the composite are also used. For instance, if the composite variable (e.g., admission index) includes SAT scores, then the models including both the composite variable and the SAT scores as predictors may yield results where the SAT scores seem to be contributing little, if anything, to the prediction. This outcome will occur because some of the predictive information contained in the SAT scores is attributed to the composite variable.

The following graph(s) presents the predictive strength (adjusted correlation) of various combinations of the admission measures you selected and Cumulative GPA for students at your institution. They are presented in decreasing order of complexity, so combinations with more admission measures appear earlier.

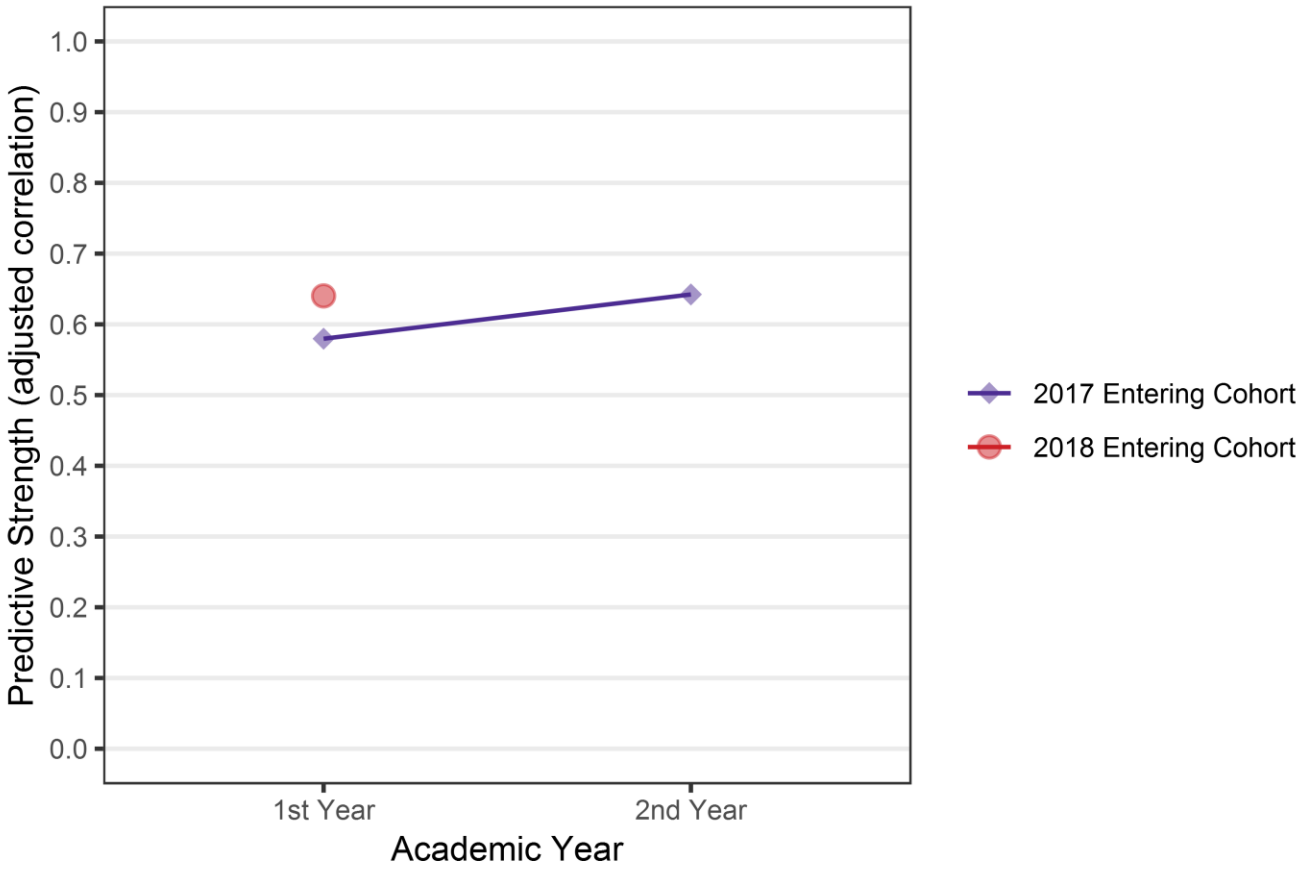
Predictive Strength of SAT Scores, HS GPA, and Additional Predictors



Predictive Strength of SAT Scores and HS GPA

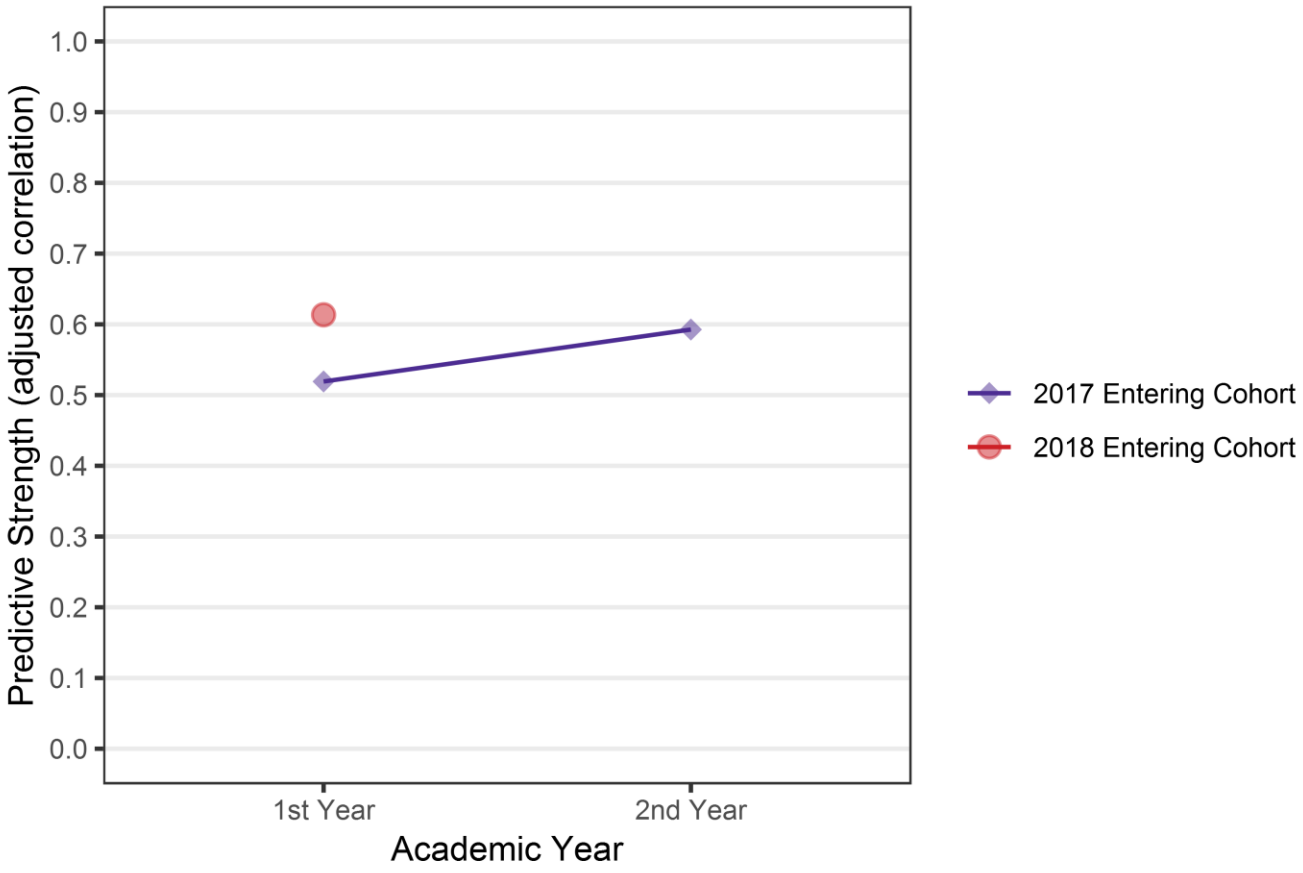


Predictive Strength of SAT Scores

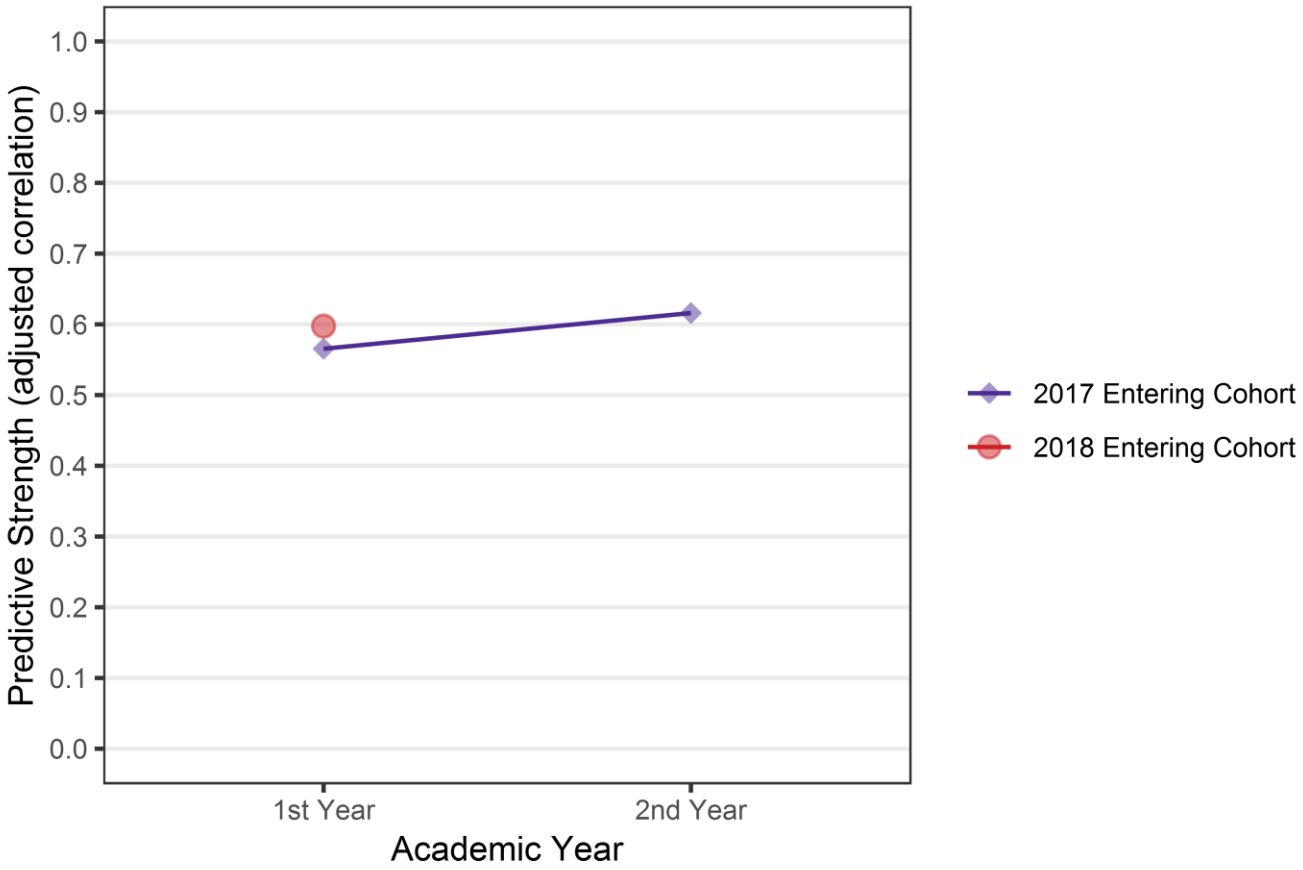


The graphs below present the predictive strength (adjusted correlation) of the individual admission measures you selected and Cumulative GPA at your institution.

Predictive Strength of SAT ERW Section

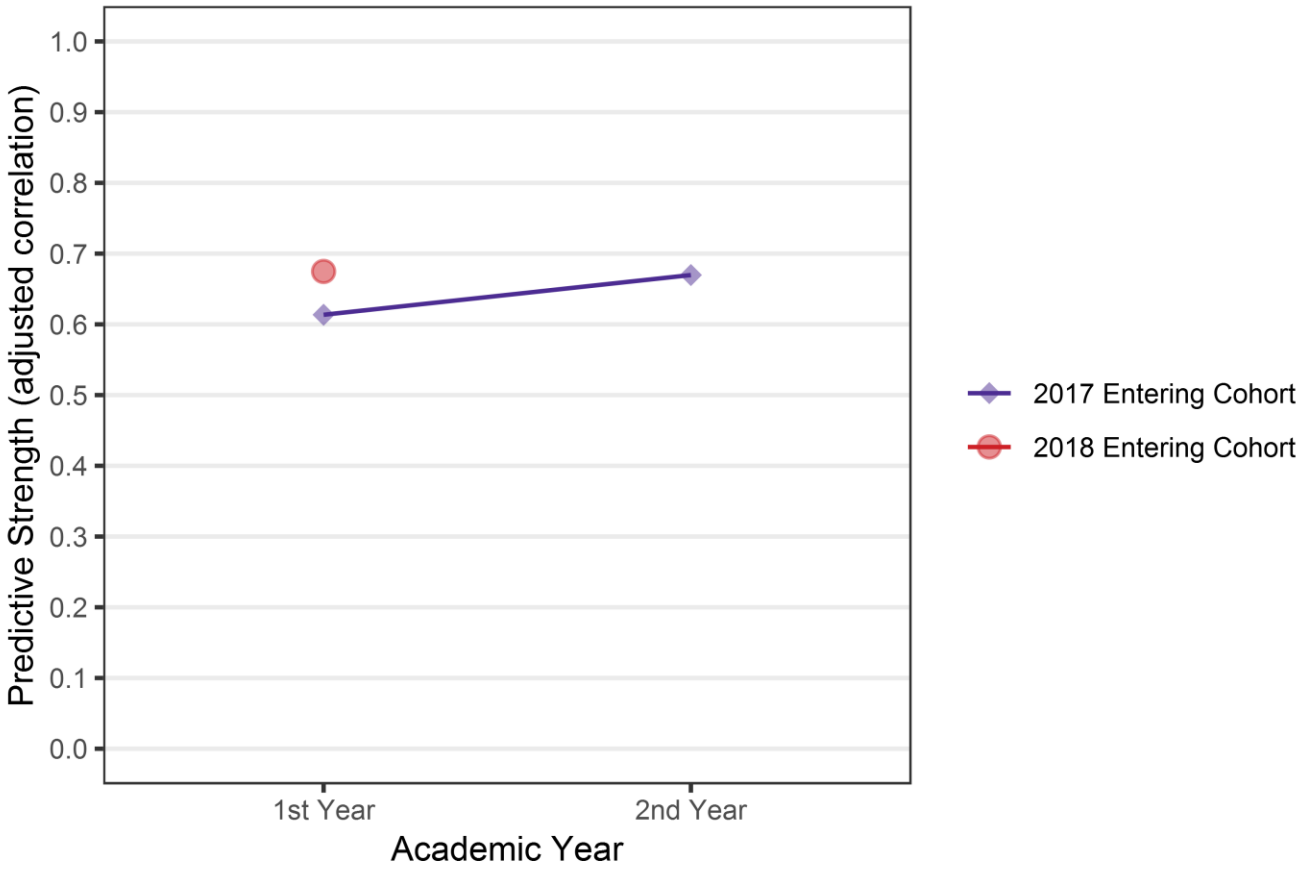


Predictive Strength of SAT Math Section



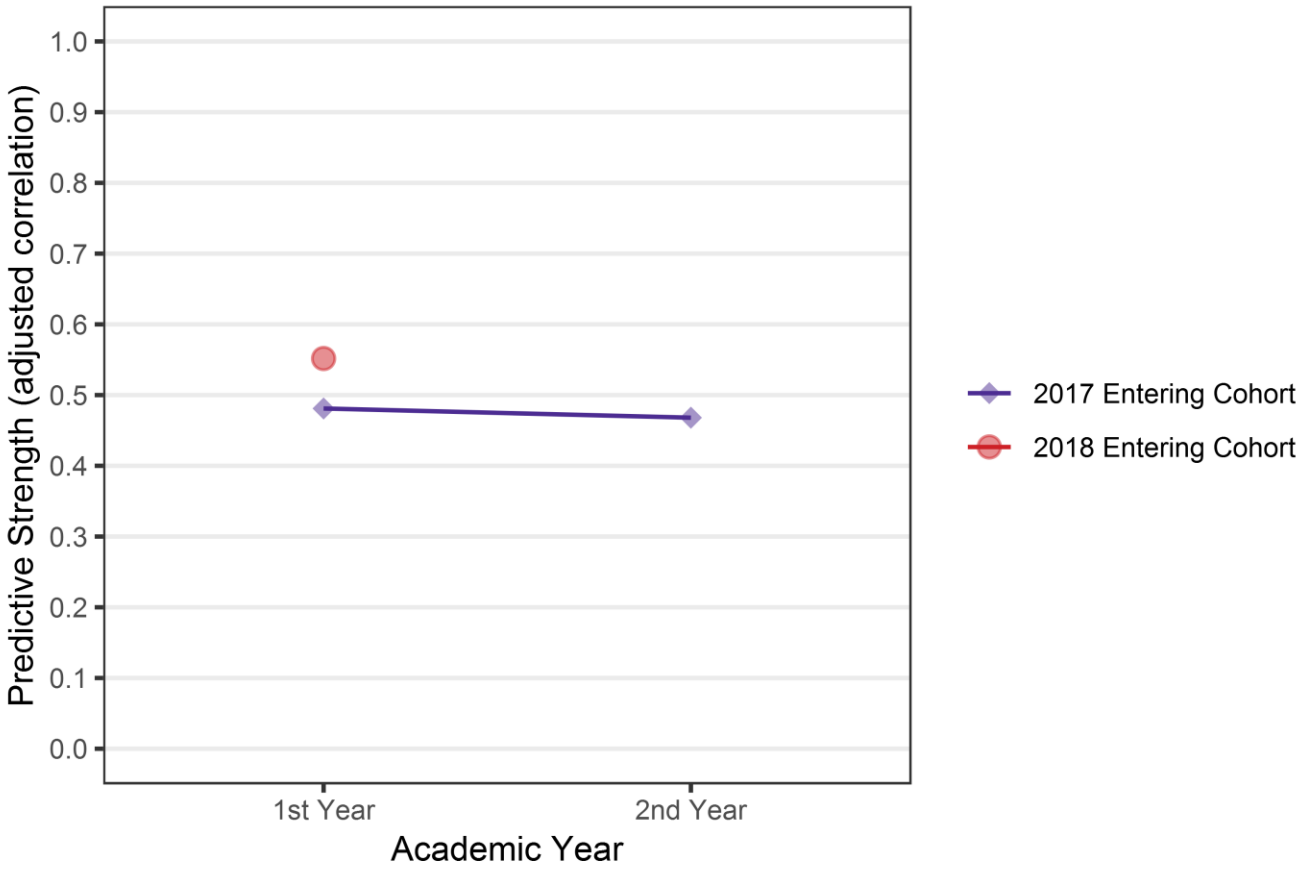
The next graph presents the predictive strength (adjusted correlation) of HS GPA with Cumulative GPA for students at your institution.

Predictive Strength of HS GPA

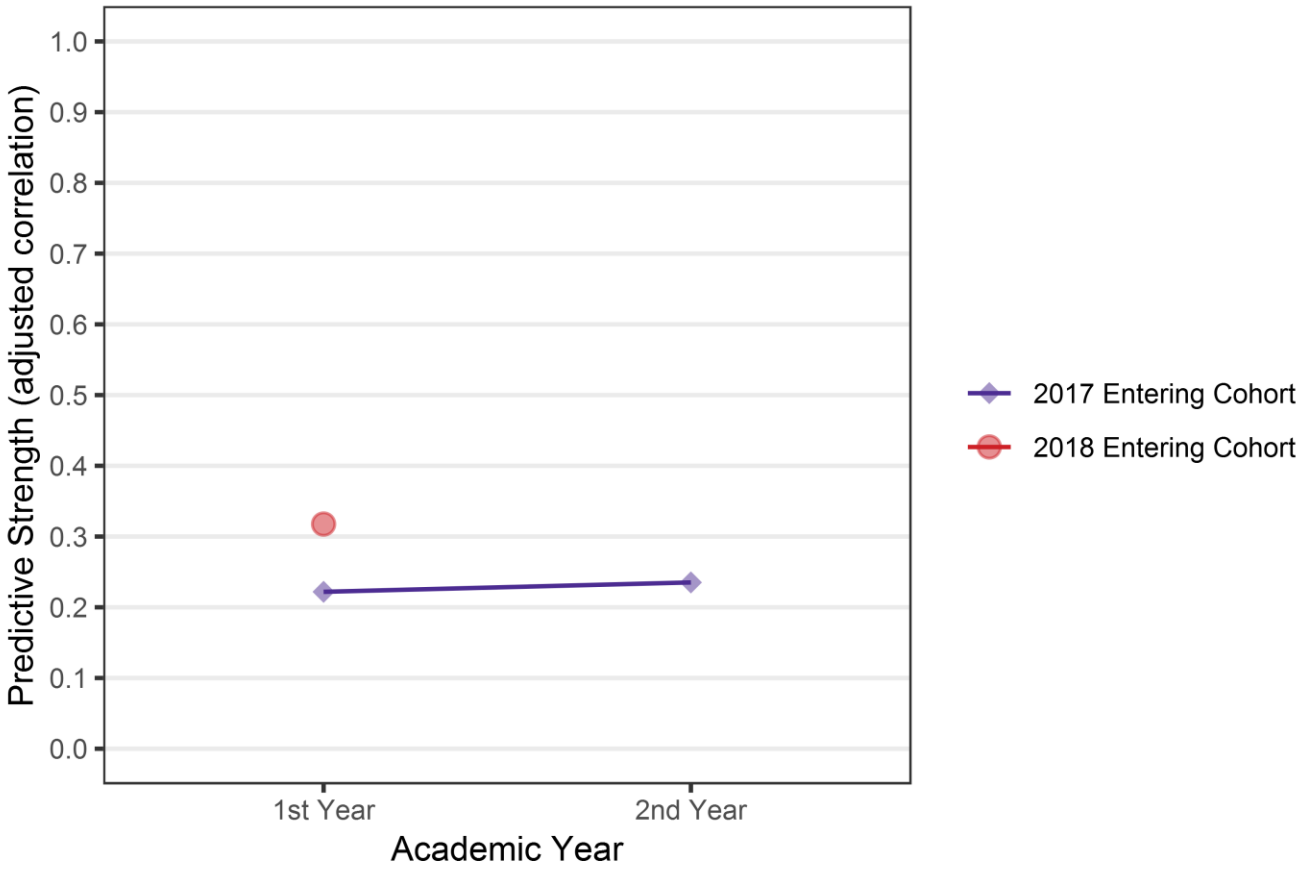


The graph(s) below display the predictive strength (adjusted correlation) of admission measures you selected from the ACES database with Cumulative GPA.

Predictive Strength of Average of AP Exam Scores



Predictive Strength of Number of Honors or AP courses



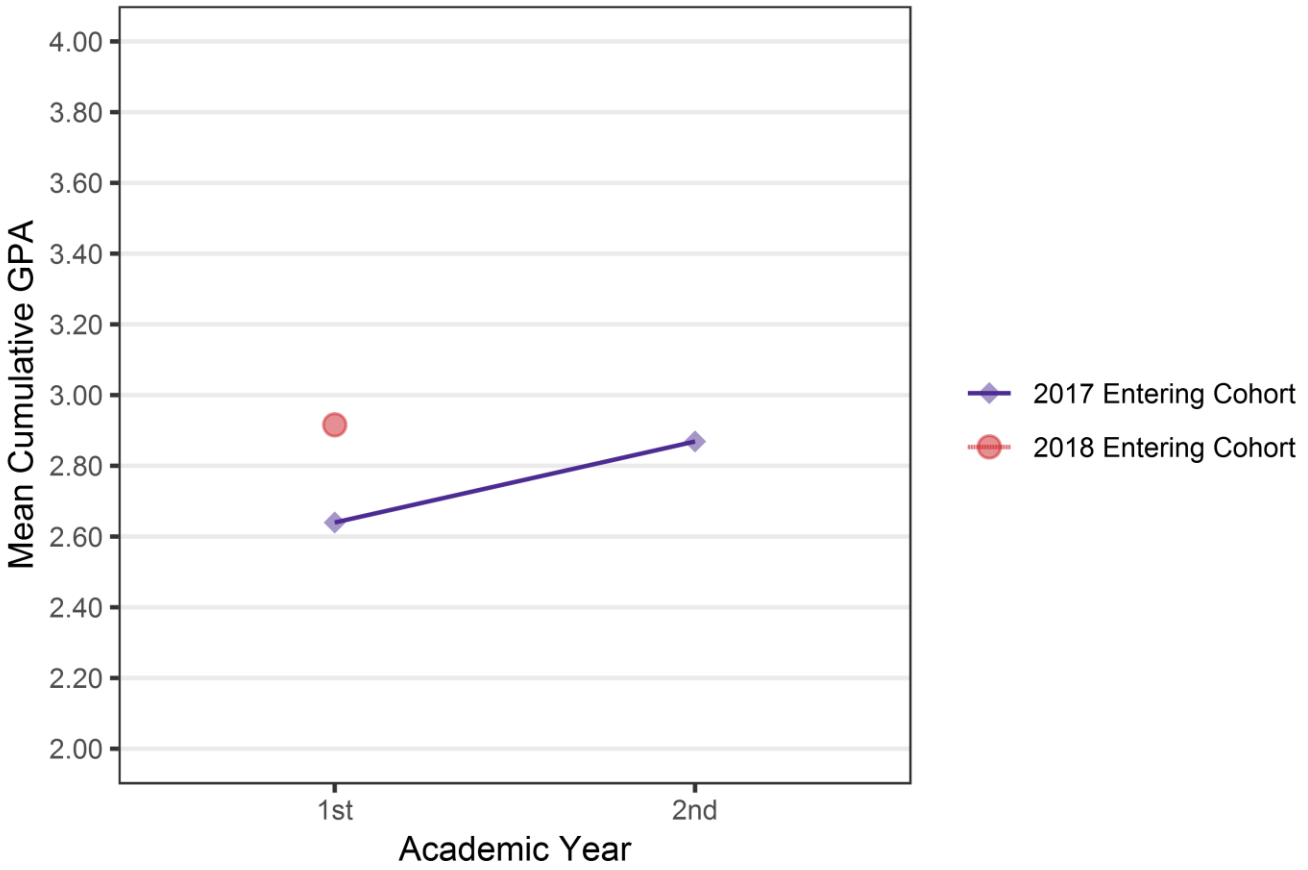
Section 2: Trends in admission measures and Cumulative GPA

This section includes line charts that display trends of the admission measures included in your study. First, trend lines of mean Cumulative GPA by academic year for different entering cohorts are presented in a line chart. Then, for each admission measure selected in your study, a line chart presents the mean of the admission measure by entering cohort year. These plots may provide insight into trends or shifts in the characteristics of your admitted student classes over time.

While the graphs in this section focus on mean trends, a more complete set of trend statistics for Cumulative GPA and each of the admission measures in your study can be found in Appendix B. These statistical tables include the mean, standard deviation, minimum, maximum, and number of students grouped by entering cohort year for admission measures, and by entering cohort year and academic year for Cumulative GPA.

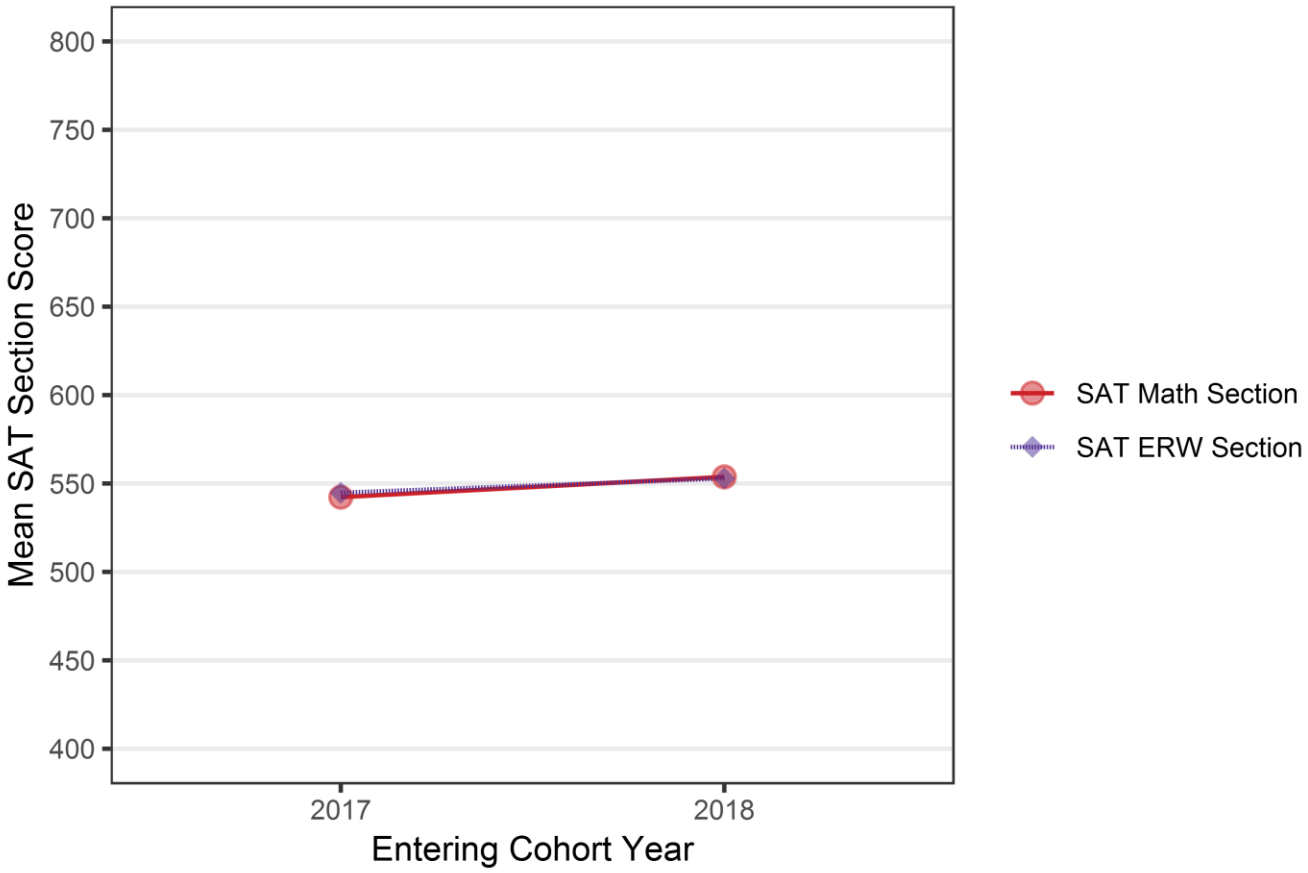
The first graph examines trends in mean Cumulative GPA by academic year for students in different entering cohorts.

Mean Cumulative GPA by Academic Year and Entering Cohort Year

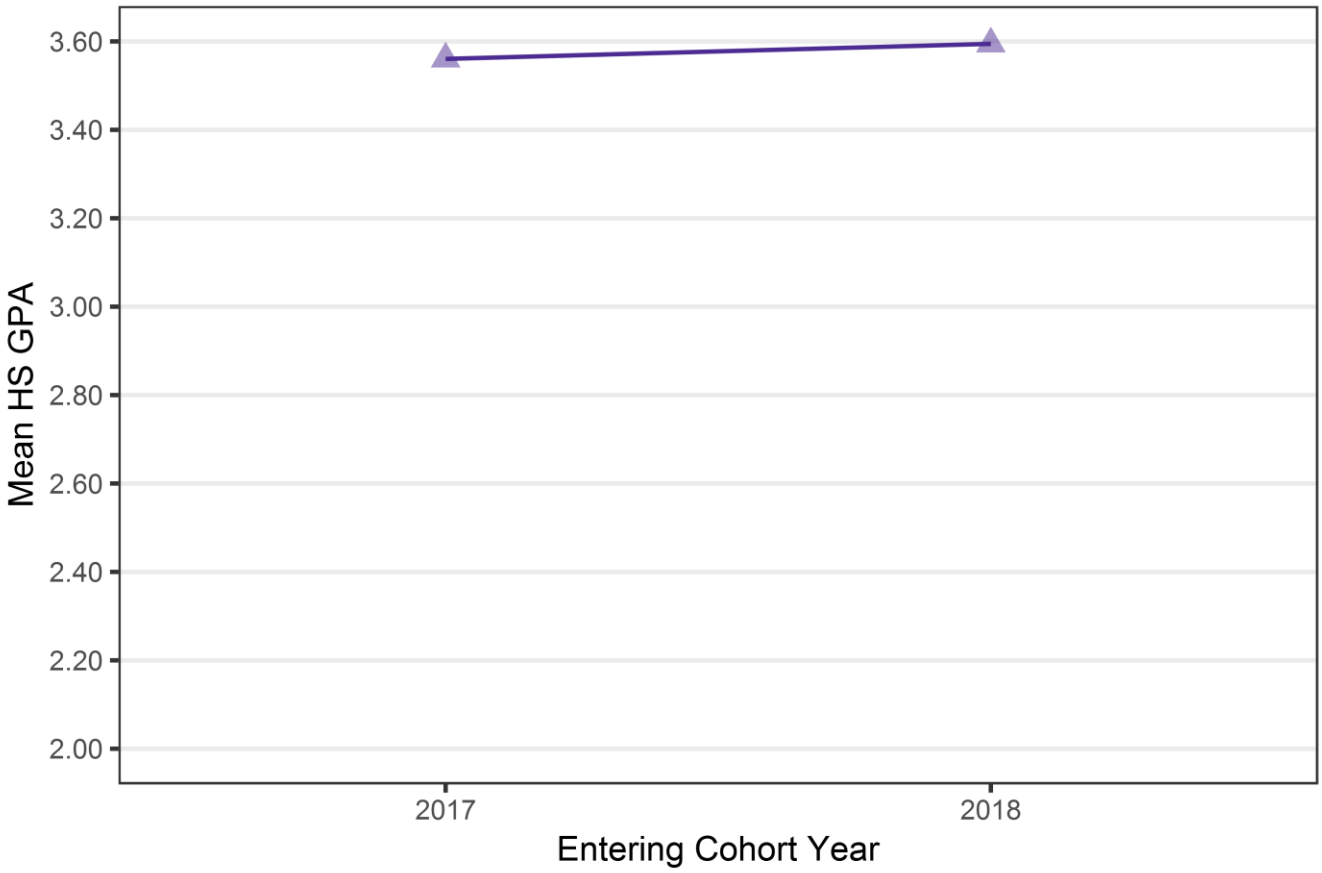


The remaining graphs in this section examine mean trends for your students by entering cohort year for each of the admission measures selected for your study.

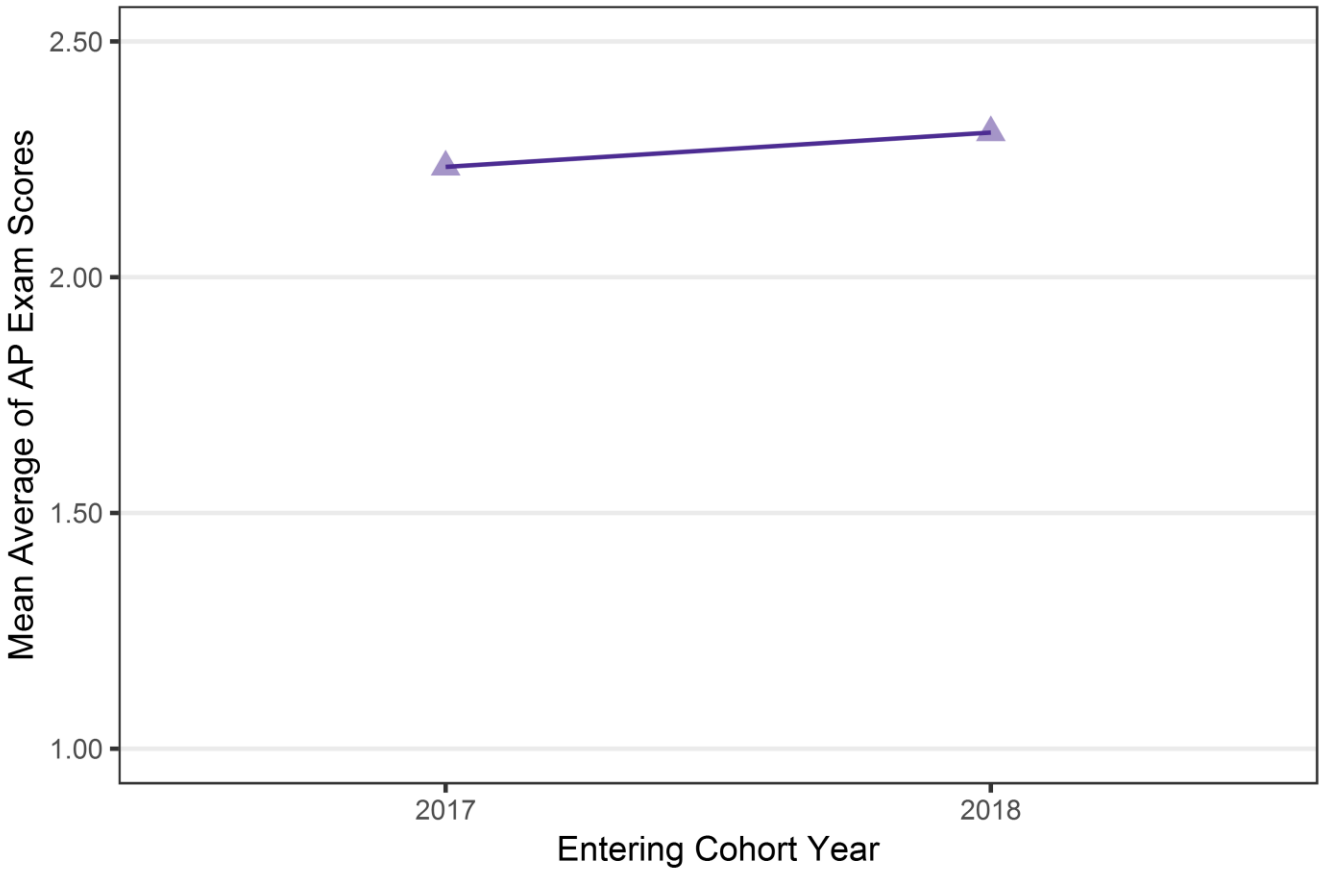
Mean SAT Section Scores by Entering Cohort Year



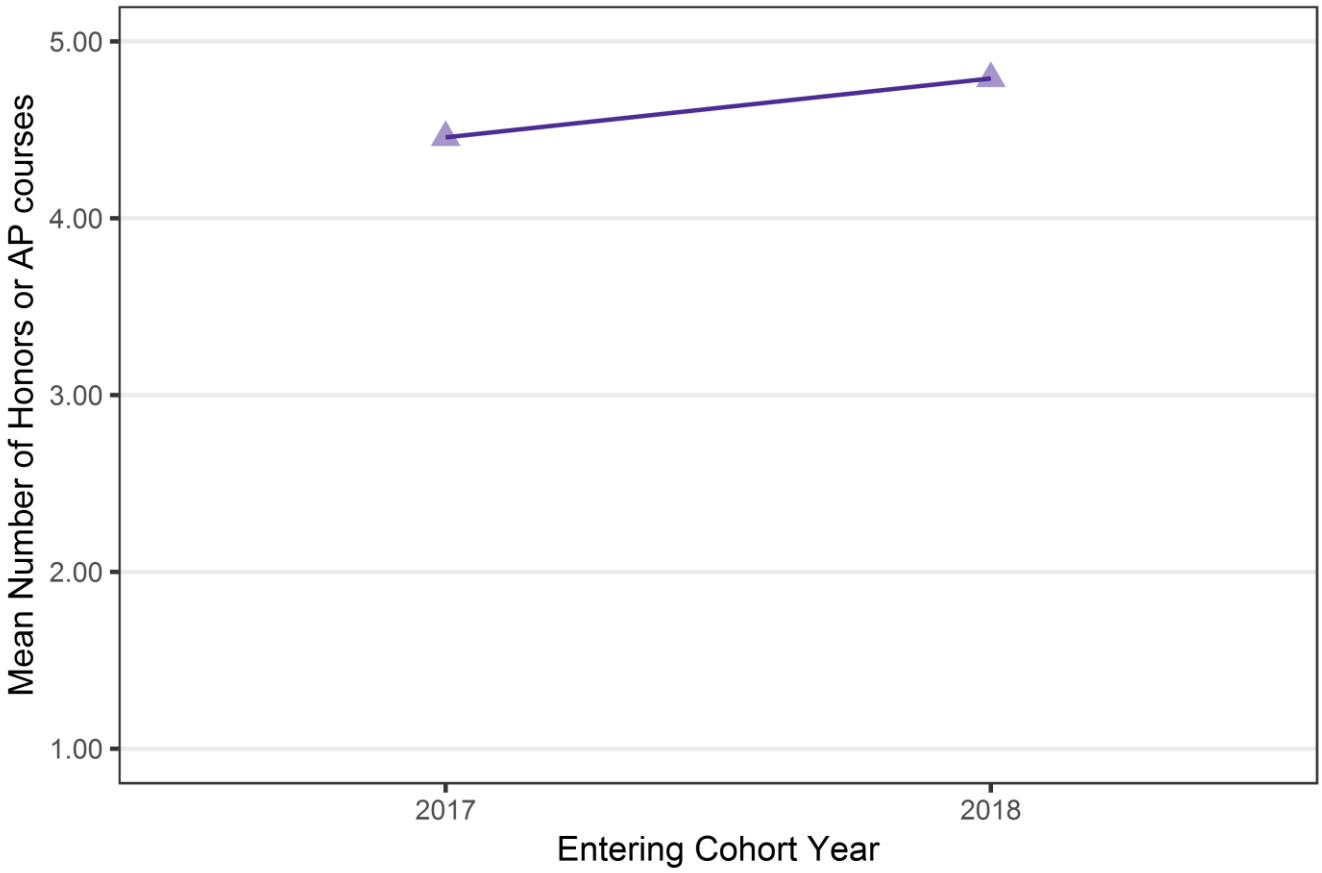
Mean HS GPA by Entering Cohort Year



Mean Average of AP Exam Scores by Entering Cohort Year



Mean Number of Honors or AP courses by Entering Cohort Year



Appendix A: Additional predictive strength statistics

This appendix presents a set of predictive strength graphs similar to those displayed in Section 1: Trends in the predictive strength of admission measures, which examine the relationship between admission measures in your study and the measure of college success you chose: Cumulative GPA. The main difference in this appendix is that the strength of association is measured by the unadjusted (raw) correlation, meaning there is no adjustment made for any restriction of range of the admission measures due to their use in the selection of students for your institution. Also, Section 1 presented unsigned (positive) correlation values, while the correlations appearing in this appendix are signed and can thus take on positive or negative values. For each admission measure or combination of measures a multiple line chart presents the trend across academic years for the different entering cohorts included in your study.

As was the case for the graphs in Section 1, these graphs summarize the predictive strength of the individual admission measures and combinations of those measures in your study. As a rule, combinations of admission measures tend to be more reliable predictors of a student's Cumulative GPA than a single admission measure. This is because different measures tend to capture different strengths, each of which may contribute to a student's success in college. For that reason, it is important to consider all the information available for a student when making an admission decision.

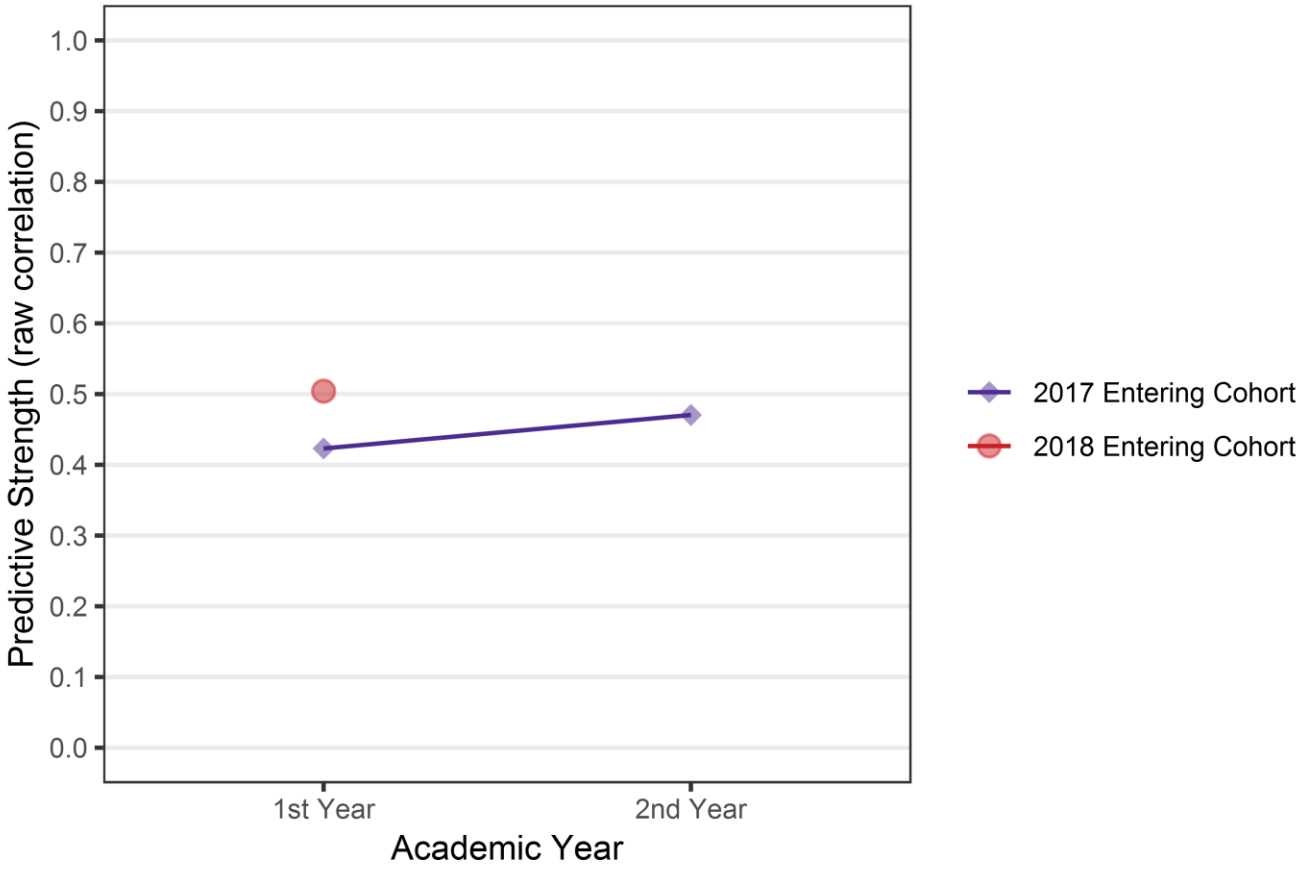
Each graph displays the trend in raw correlations, expressed as signed (positive or negative) values, between Cumulative GPA, the measure of college success you chose for the study, and an individual or combined admission measure. Each line in a graph is based on a different entering cohort year. Academic year appears along the horizontal axis, so each line represents the trend over academic years for a given entering student cohort. If the correlations are positive, a line trending upward would indicate for an entering cohort that the strength of the relationship between the admission measure or combination of measures and Cumulative GPA increases in the students' later years at the institution. Again when correlations are positive, a line (or point) appearing above the others suggests a stronger relationship between the admission measure(s) and Cumulative GPA, while one appearing below the others suggests a weaker relationship. These graphs allow you to assess both trends over time for an entering cohort of students (an individual line) as well as differences between entering cohorts (comparing lines).

The notes below may be helpful in interpreting the line charts.

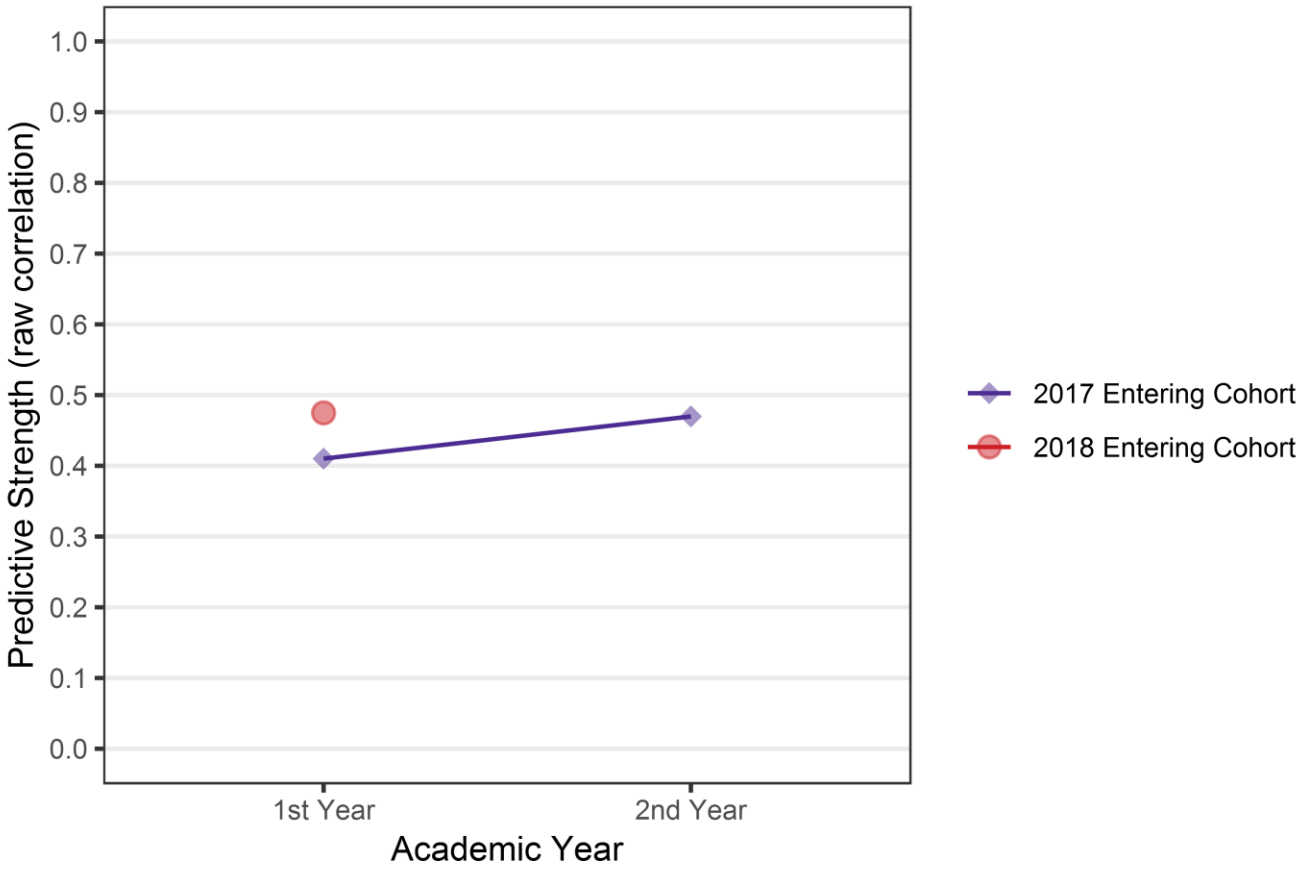
- When you look at the graphs for combinations of admission measures compared to those presenting individual admission measures, you may find that some of the individual measures with strong correlations do not appear to contribute as much as you might expect to the strength of prediction when combined with other measures. This is because the measures may overlap with regard to what they are measuringâ€“for example, the HS GPA and the SAT scores measure some, but not all, of the same academic abilities.
- For students in each entering cohort year, the year through which Cumulative GPA is accumulated is identified by the academic year. For example, students first entering your institution in fall 2019, the Cumulative GPA through the 2019-2020 school year would be for their "1st year", while their Cumulative GPA through the 2020-2021 school year would be for their "2nd year," and so forth.

The following graph(s) presents the predictive strength (raw correlation) of various combinations of the admission measures you selected and Cumulative GPA for students at your institution. They are presented in decreasing order of complexity, so combinations with more admission measures appear earlier.

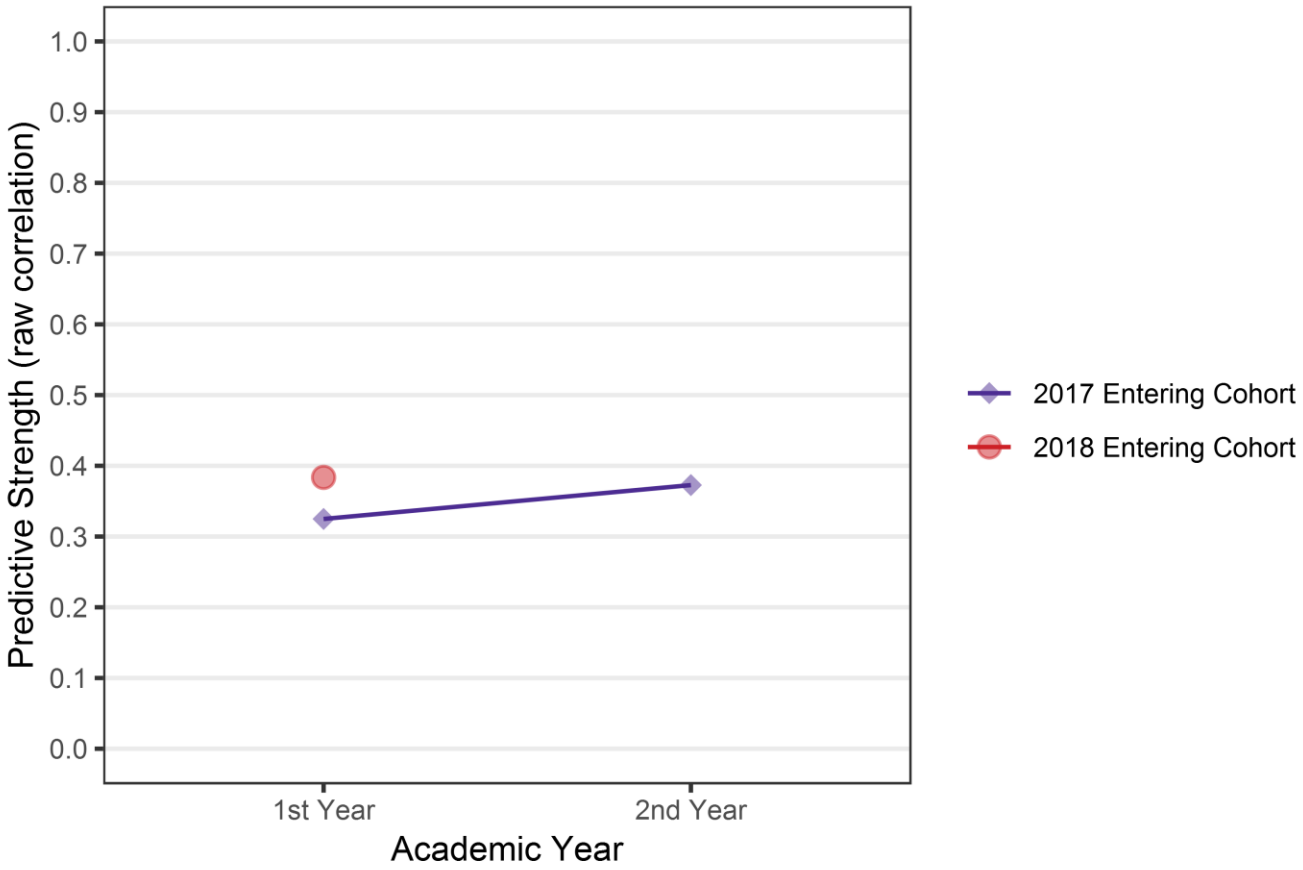
Predictive Strength (raw correlation) of SAT Scores, HS GPA, and Additional Predictors



Predictive Strength (raw correlation) of SAT Scores and HS GPA

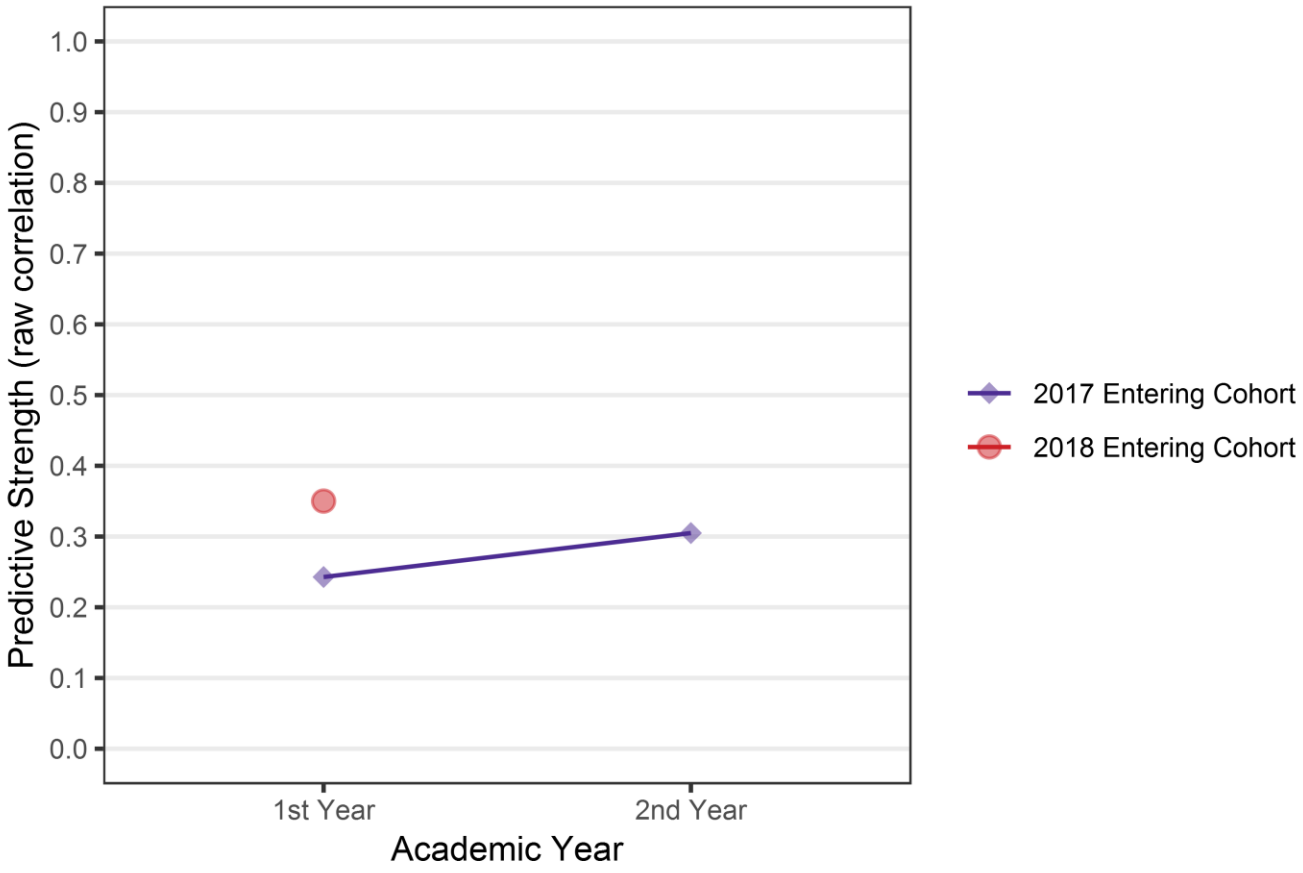


Predictive Strength (raw correlation) of SAT Scores

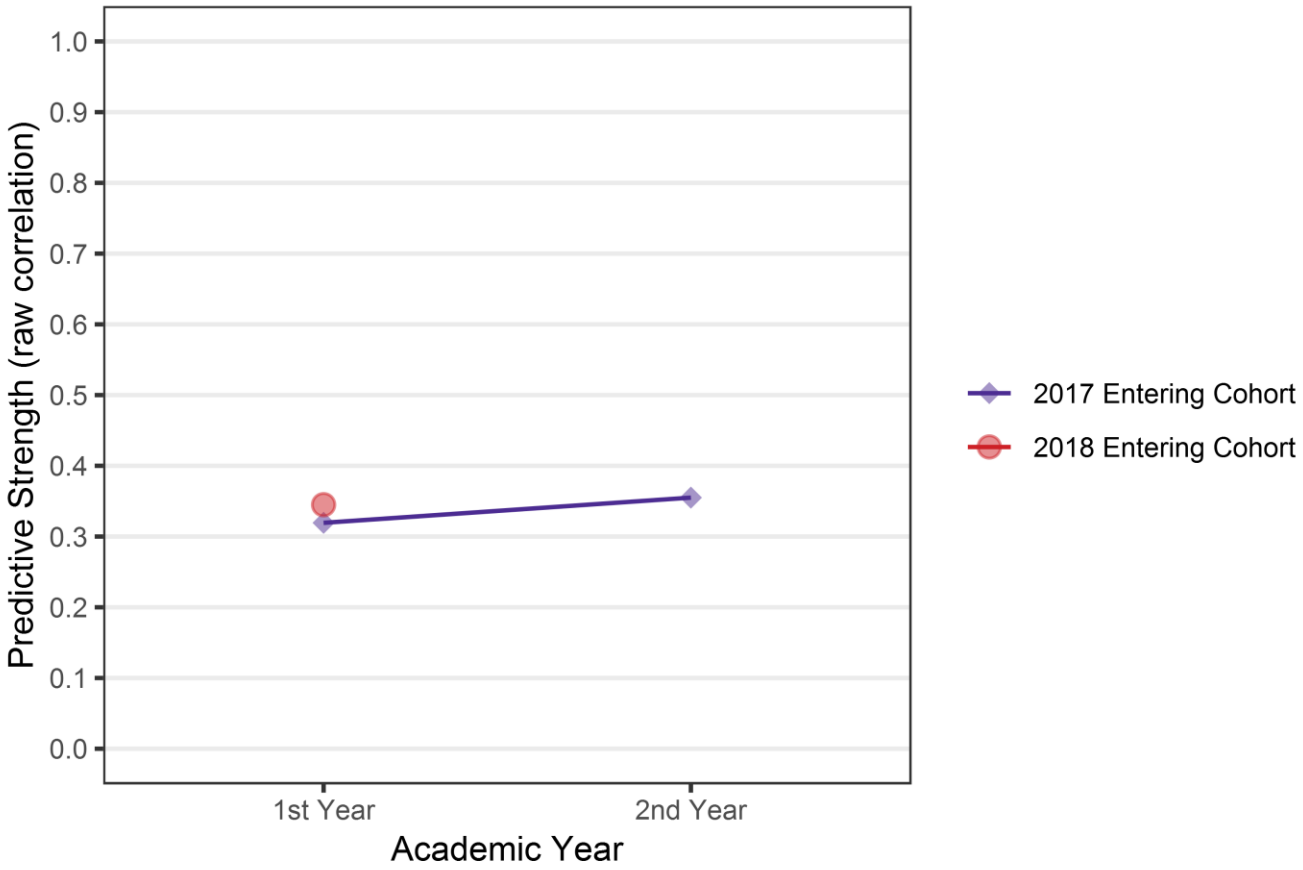


The graphs below present the predictive strength (raw correlation) of the individual admission measures you selected and Cumulative GPA at your institution.

Predictive Strength (raw correlation) of SAT ERW Section

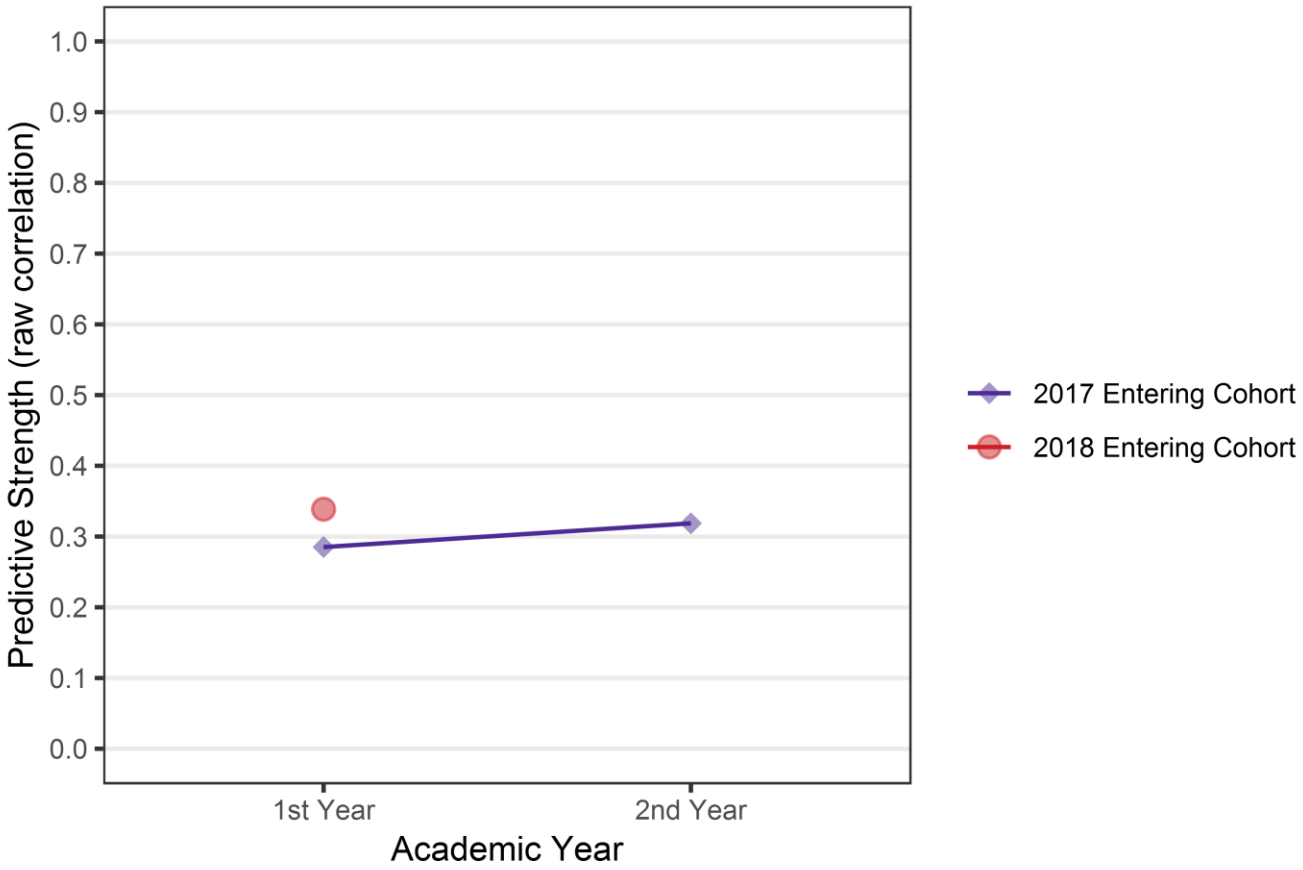


Predictive Strength (raw correlation) of SAT Math Section



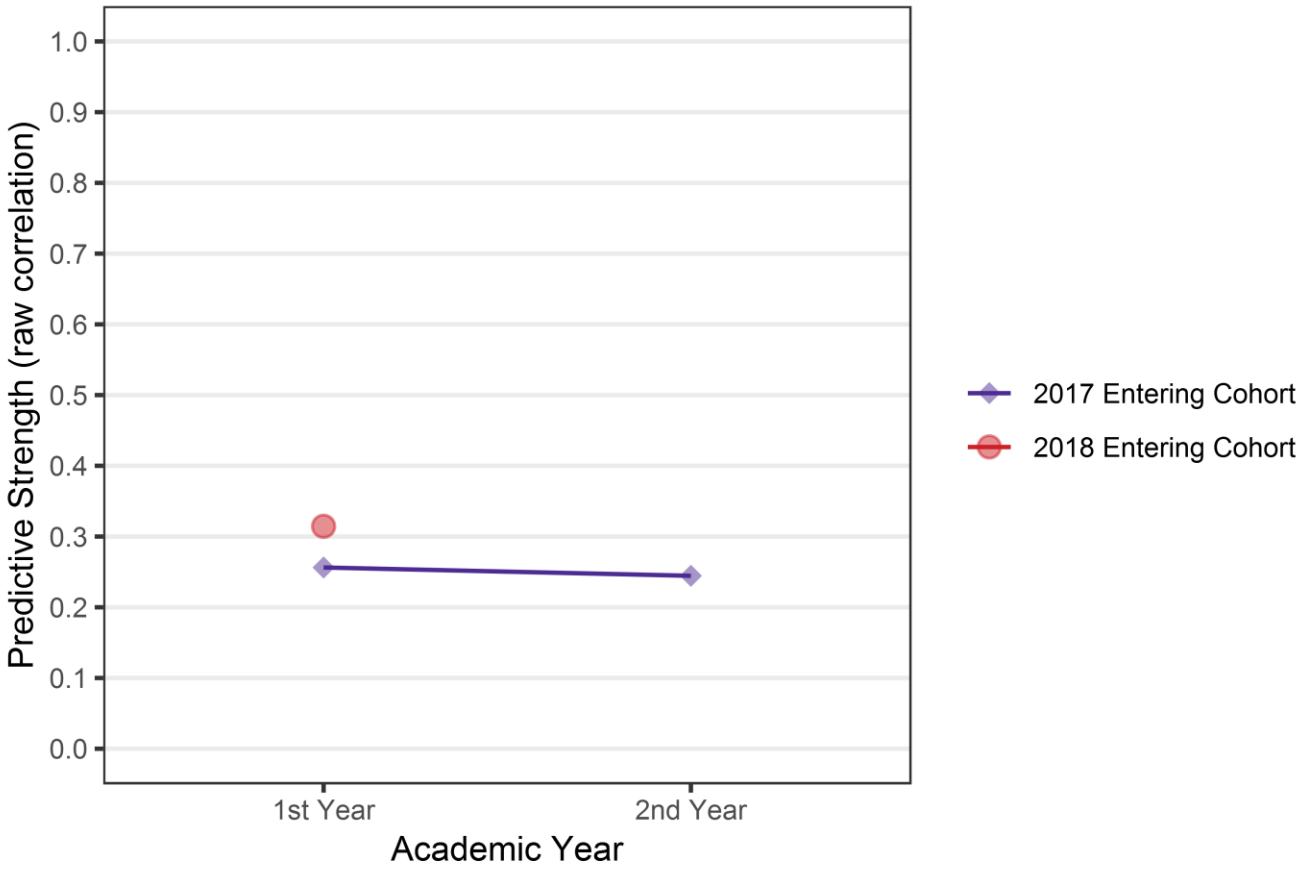
The next graph presents the predictive strength (raw correlation) of HS GPA with Cumulative GPA for students at your institution.

Predictive Strength (raw correlation) of HS GPA

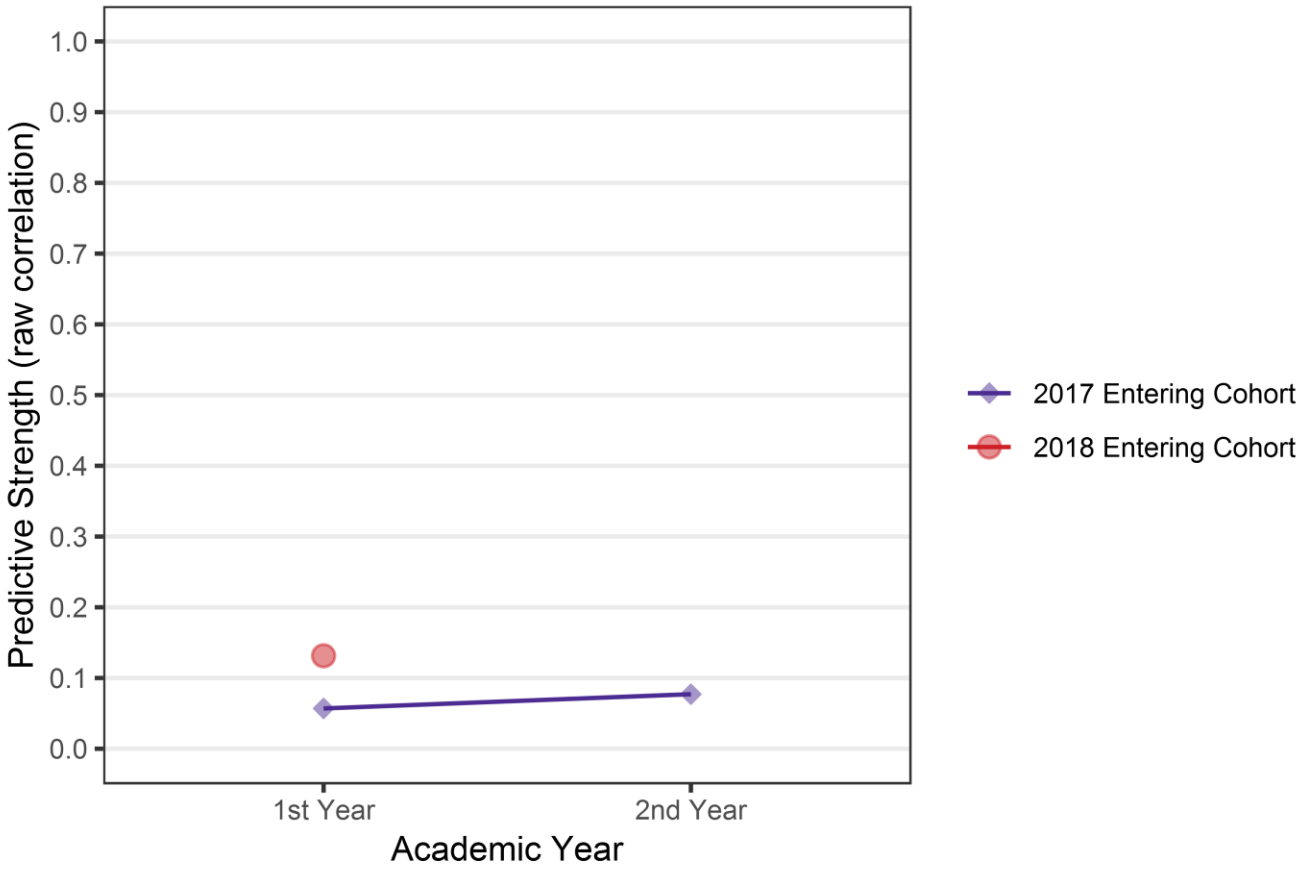


The graph(s) below display the predictive strength (raw correlation) of admission measures you selected from the ACES database with Cumulative GPA.

Predictive Strength (raw correlation) of Average of AP Exam Scores



Predictive Strength (raw correlation) of Number of Honors or AP courses



Appendix B: Additional trend statistics

The graphs in Section 2: Trends in predictive strength of the admission measures, presented mean trends for students at Sample University for Cumulative GPA and the admission measures selected for this study. The tables in this appendix expand the trend statistics to include the number of students, mean, standard deviation, minimum, and maximum values. Again, as was done in Section 2, these statistics are provided for students grouped by entering cohort year, and for Cumulative GPA, also by academic year.

These additional statistics may be useful when interpreting the Section 2 trends, especially any surprising patterns. If an unexpected mean value appears for an admission measure in a particular entering cohort year, the other statistics may provide context. For example, if an unexpected mean value were based on a small number of students or had a much larger standard deviation than found for the other entering cohorts, it would suggest that the admission measure for this entering cohort year is measured with less precision. Alternatively, higher or lower mean values may be related to particular changes your institution may have made to your recruitment and/or admission processes or policies.

Trends in Cumulative GPA by Academic Year and Entering Cohort Year

Entering Cohort Year	Academic Year	N	Mean (SD)	Minimum	Maximum
2017	1st	907	2.64 (0.72)	0.18	4.00
2017	2nd	714	2.87 (0.63)	0.86	4.00
2018	1st	898	2.92 (0.64)	0.37	4.00

Trend in Mean SAT ERW Section by Entering Cohort Year

Entering Cohort Year	N	Mean (SD)	Minimum	Maximum
2017	907	545 (64)	370	740
2018	898	553 (68)	380	760

Trend in Mean SAT Math Section by Entering Cohort Year

Entering Cohort Year	N	Mean (SD)	Minimum	Maximum
2017	907	542 (74)	320	790
2018	898	554 (78)	350	790

Trend in Mean HS GPA by Entering Cohort Year

Entering Cohort Year	N	Mean (SD)	Minimum	Maximum
2017	907	3.56 (0.31)	2.85	4.40
2018	898	3.59 (0.31)	3.00	4.36

Trend in Mean Number of Honors or AP courses by Entering Cohort Year

Entering Cohort Year	N	Mean (SD)	Minimum	Maximum
2017	842	4.46 (3.74)	0.00	17.00
2018	878	4.79 (3.56)	0.00	19.00

Trend in Mean Average of AP Exam Scores by Entering Cohort Year

Entering Cohort Year	N	Mean (SD)	Minimum	Maximum
2017	807	2.23 (0.88)	1.00	5.00
2018	805	2.31 (0.87)	1.00	5.00