

ACT Research Insights Part I: Research Insights in Recruitment and Admissions

Krista Mattern and Ty Cruce, ACT

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The ACT logo is displayed in white text on a dark blue background.

2018 Higher Education **RESEARCH DIGEST**



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Research included in the 2018 HERD can help inform discussions around:

- **Building a Diverse and College Ready Class**
- **Quantifying the rigor of students' high school experience**
- **Identifying students who are likely to declare a major that is consistent with their intentions**
- **Academic preparation level needed for Career Readiness versus College Readiness**
- **Identifying first-generation students who are likely to leave your institution**
- **Improving college completion rates through the consideration of both academic and social and emotional learning skills**

Roadmap

During this session, you will learn more about:

- 1. Building a Diverse and College Ready Class**
- 2. Quantifying the rigor of students' high school experience**
- 3. Identifying students who are likely to declare a major that is consistent with their intentions**
- 4. Publicly available enrollment management and 10 years trends databases**

BUILDING A DIVERSE AND
COLLEGE-READY CLASS:

THE POWER OF SOCIAL AND EMOTIONAL LEARNING SKILLS

Jeff Allen, Krista Mattern, and Jeffrey Steedle



Background and Study Objective

Background:

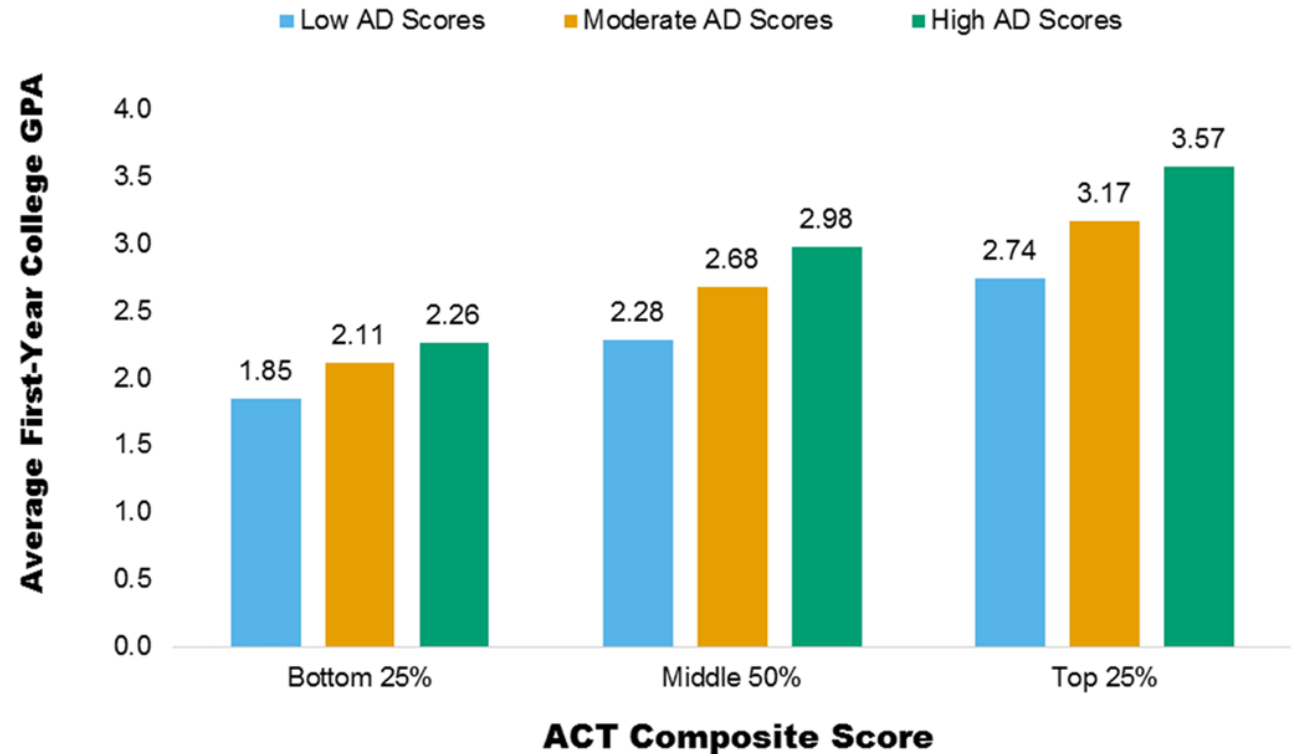
- **Competing enrollment goals: academic readiness and diversity**
- **Higher education → upward social mobility**
- **Subgroup differences of traditional admission measures**

Study Objective:

- **Examine the benefits of considering SEL skills in predicting student success AND increasing diversity**

Validity of SEL skills for College Success

- **Academic Discipline adds to the prediction of college outcomes**
- **Within each ACT Composite score band, higher levels of Academic Discipline are related to higher college grades**
- **High levels of Academic Discipline can compensate for lower test scores**



Subgroup differences on the ACT, HSGPA, and SEL

Student Characteristics	ACT Composite			HSGPA			Academic Discipline		
	M	SD	<i>d</i>	M	SD	<i>d</i>	M	SD	<i>d</i>
Ethnicity									
Asian	24.1	6.3	0.33	3.51	0.53	0.27	48.4	8.2	0.05
African American	17.3	4.3	-0.88	2.94	0.62	-0.62	47.3	8.6	-0.08
Hispanic	19.0	5.0	-0.57	3.11	0.63	-0.35	47.4	8.6	-0.06
Other	20.5	5.5	-0.30	3.17	0.65	-0.26	46.6	8.6	-0.16
White	22.3	5.4		3.33	0.61		47.9	8.5	
Income									
< \$36,000	18.0	4.5	-1.14	3.01	0.65	-0.75	46.7	8.6	-0.23
\$36,000 to \$60,000	20.0	5.0	-0.77	3.17	0.63	-0.49	47.3	8.5	-0.16
\$60,000 to \$100,000	21.9	5.2	-0.43	3.33	0.59	-0.24	48.1	8.4	-0.08
>\$100,000	24.4	5.5		3.48	0.54		48.7	8.2	

Note. Based on the 2017 ACT-tested graduating high school class with missing data imputed. M = mean, SD = standard deviation, *d* = standardized difference. White students and students reporting parental income greater than \$100,000 are the referent groups for the ethnicity and income analyses, respectively.

As compared to academic measures:

- **Virtually no subgroup differences in Academic Discipline for minority students as compared to White students**
- **Much smaller differences for low-income students compared to high-income students**

Subgroup differences on the ACT, HSGPA, and SEL

- **SEL skills can have a positive impact on the diversity of your campus.**
- **The increase in diversity of an admitted class by including SEL skills to admit students was simulated.**
- **Using all three measures slightly increases the percentage of minority and low-income students being admitted.**

Admissions Selectivity	Student Characteristics	HSGPA & ACT	HSGPA, ACT, AD	
Highly Selective (top 15%)	Ethnicity	Asian	11.0	10.6
		African American	2.8	3.3
		Hispanic	8.9	9.5
		Other	5.0	4.9
		White	72.3	71.8
	Income	< \$36,000	8.6	9.4
		\$36,000 to \$60,000	12.6	13.0
		\$60,000 to \$100,000	24.8	24.9
		>\$100,000	54.0	52.8
		Moderately Selective (top 50%)	Ethnicity	Asian
African American	6.0			6.6
Hispanic	13.4			13.8
Other	5.3			5.2
White	68.1			67.2
Income	< \$36,000		17.2	17.8
	\$36,000 to \$60,000		17.8	17.9
	\$60,000 to \$100,000		25.8	25.6
	>\$100,000		39.3	38.8
	Less Selective (top 85%)		Ethnicity	Asian
African American		11.2		11.5
Hispanic		17.4		17.5
Other		5.6		5.6
White		60.1		59.8
Income		< \$36,000	26.6	26.8
		\$36,000 to \$60,000	20.1	20.1
		\$60,000 to \$100,000	23.5	23.4
		>\$100,000	29.9	29.8

Note: Results are based on the 2017 ACT-tested graduating high school class with missing data imputed. Predicted FYGPAs were computed for each student based on two models: 1. ACT Composite score and HSGPA. 2. ACT Composite score, HSGPA, and Academic Discipline using data for the ACT Engage field study (Robbins et al., 2006). Students were ranked in order based on their predicted FYGPA; the top 15%, 50%, and 85% were selected for the three admission scenarios, and the demographic distributions were estimated.

Holistic Model of Student Success

Study implications

- SEL skills exhibit small to no subgroup differences
- SEL skills predict college success beyond academic skills
- SEL can help identify and recruit a more diverse applicant pool



NEW UNDERSTANDING
OF HIGH SCHOOL RIGOR
AND COLLEGE SUCCESS
PREDICTIONS:

AN EMPIRICALLY- DERIVED INDEX OF HIGH SCHOOL ACADEMIC RIGOR

Jeff Allen, Edwin Ndum, and Krista Mattern



Background and Study Objective

Background:

- **HSGPA is a commonly used admission criteria; not all HSGPAS are created equally**
- **Challenge for admission officers' efforts to make sense of applicants' HSGPA in relation to their coursework information**

Study Objective:

- **Develop and test a new index of high school academic rigor**

Current study
data

Study sample

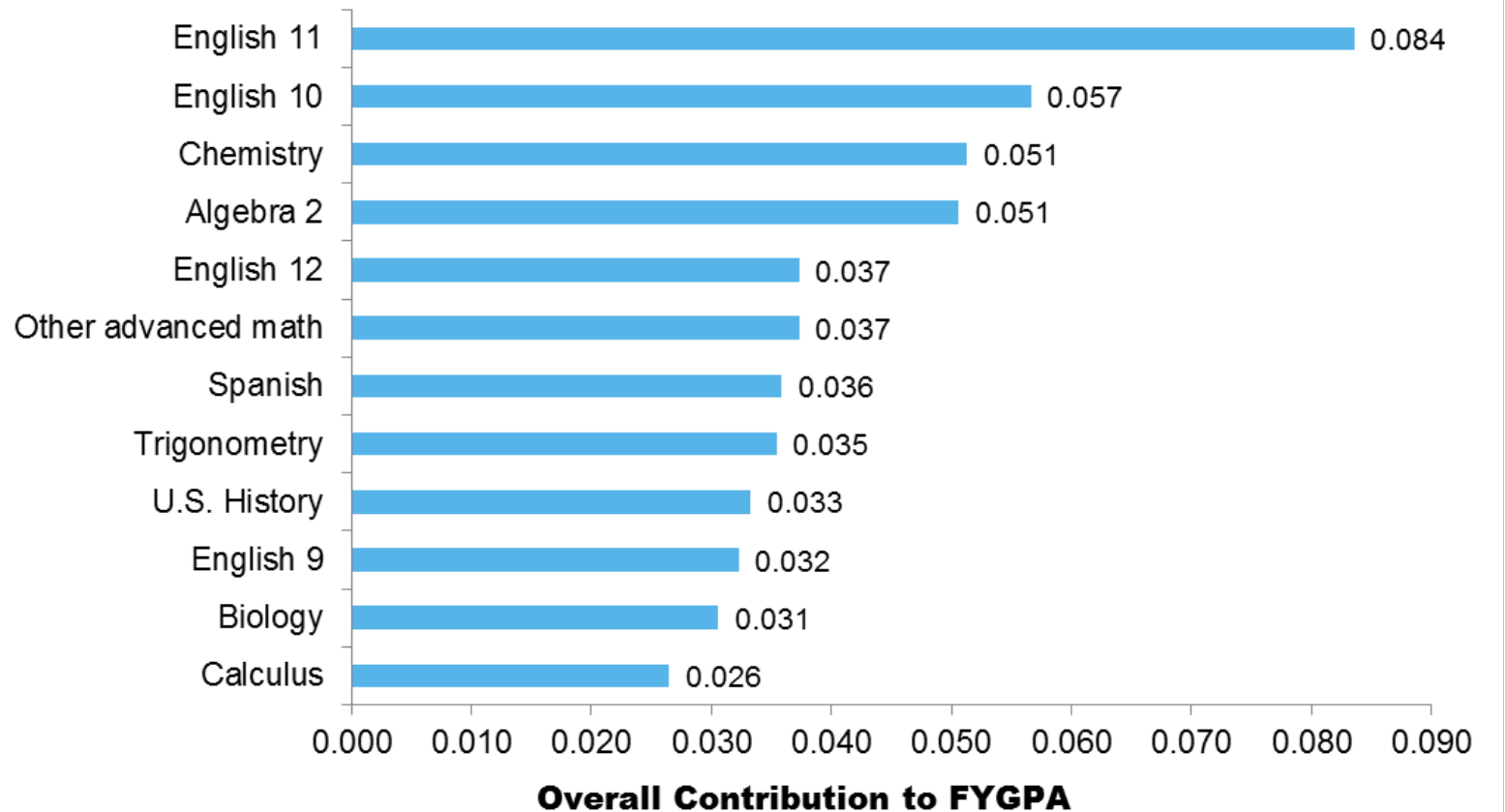
- **More than 100,000 students**
 - ACT Explore® test in 8th grade
 - Took the ACT® test in 11th or 12th grade
 - Graduated high school between 2006 and 2013
 - Enrolled in college
- **Coursework and grades data was collected during registration for the ACT.**
- **FYGPA was collected from 425 colleges and universities**
 - 322 4-year colleges and 103 2-year colleges

Development of HSAR index

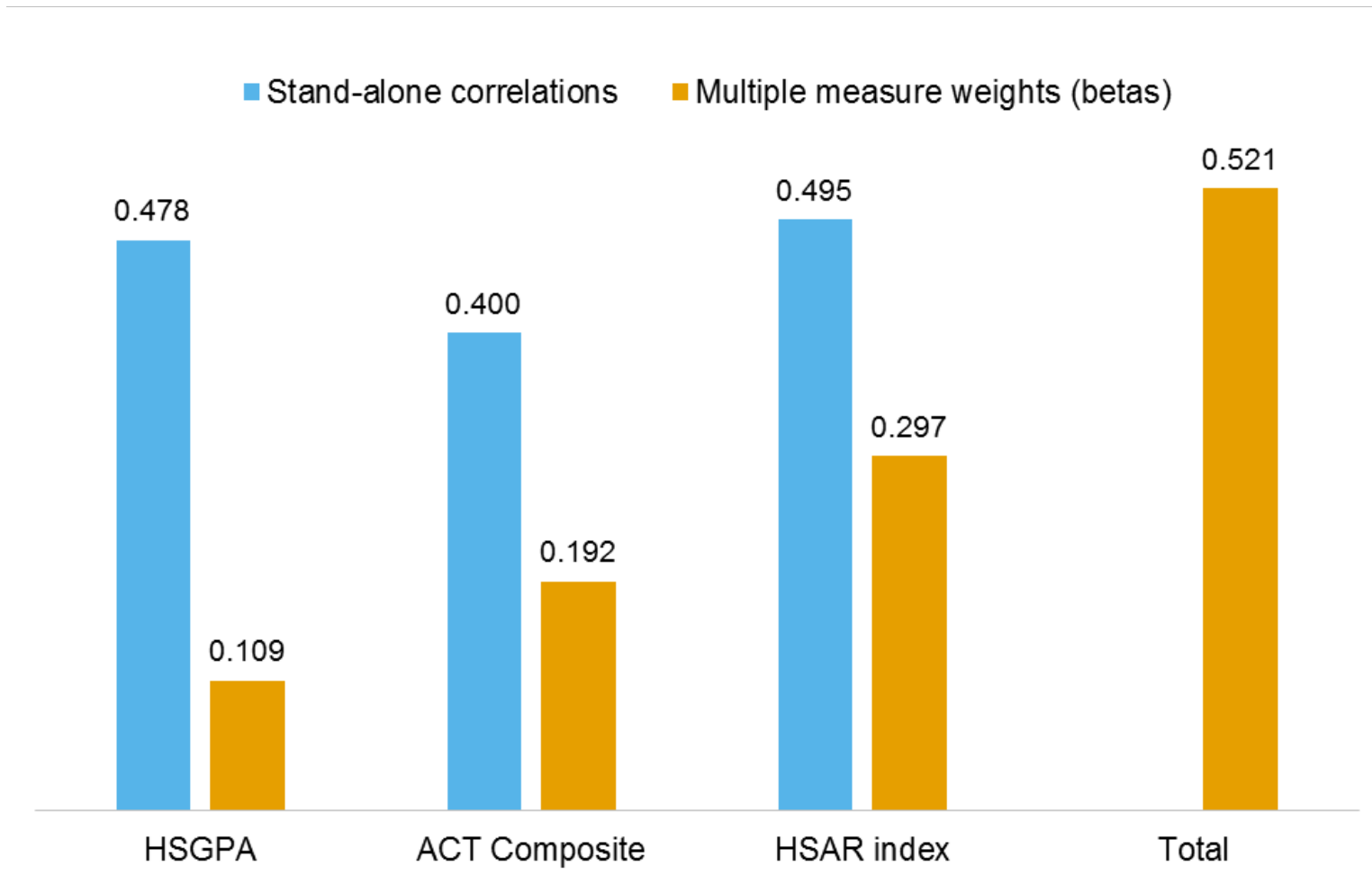
- Estimated by regressing FYGPA on the 30 high school course classification variables, as well as five indicators for advanced coursework
- The resulting index assigns greater value to courses and grades that are positively related to FYGPA
- The model does not place restrictions on how grades should be weighted
- To isolate the effect of high school coursework and grades on FYGPA, 8th-grade test scores were also included in the regression model used to develop the HSAR index.

High school courses with largest contributions to first-year college GPA

- The HSAR index is driven by which courses (and grades) contribute most to FYGPA.
- Courses can influence FYGPA due to effects of simply taking the course and/or effects of earning higher grades in the course.
- Courses with the largest contributions to FYGPA are shown.
- Large contributions to FYGPA are mainly due to the effects of earning higher grades in the course.



Predicted FYGPA based on ACT Composite Score and HSGPA



- **HSAR index was a stronger predictor of FYGPA than HSGPA and ACT Composite score.**
- **HSGPA was also a significant predictor of FYGPA.**
- **Using all three predictors, the correlation with FYGPA is maximized at 0.521**

Study implications

Practical applications of the study findings:

- 1. academic advising to college-bound students on which courses to take and perhaps where to prioritize effort**
- 2. guidance to college admission personnel, researchers, and survey developers on which high school courses are most important, given their relationship with future college success.**

STICKING TO THE PLAN:
**WHO IS LIKELY
TO DECLARE A
MAJOR THAT IS
CONSISTENT WITH
THEIR INTENTIONS?**

Ty Cruce and Krista Mattern



Background

Colleges need to...

- Anticipate demand for programs of study and particular courses
- Recruit, enroll, and retain students whose plans of study align well with the college

Background

Colleges turn to...

- Organizations that provide information on prospective college students
- Students' self-reported educational plans and interests

Colleges need to know more about the quality and utility of this information

Study
objective

Research Questions

- To what extent are students' intended and declared majors consistent?
- Which students are more likely to have consistency between their intended and declared majors?

Hypotheses

Consistency is a function of...

Certainty of Intended Major

- Self-reported measure

Interest-Major Fit

- Correlation of student interest profile with the average profile of successful students in that major

Academic-Major Fit

- Standardized difference between students' ACT score and the average score of successful students in that major

Methods

Data Sources

- ACT graduating class of 2013
- National Student Clearinghouse

Sample

- 229,210 students
- 939 four-year colleges

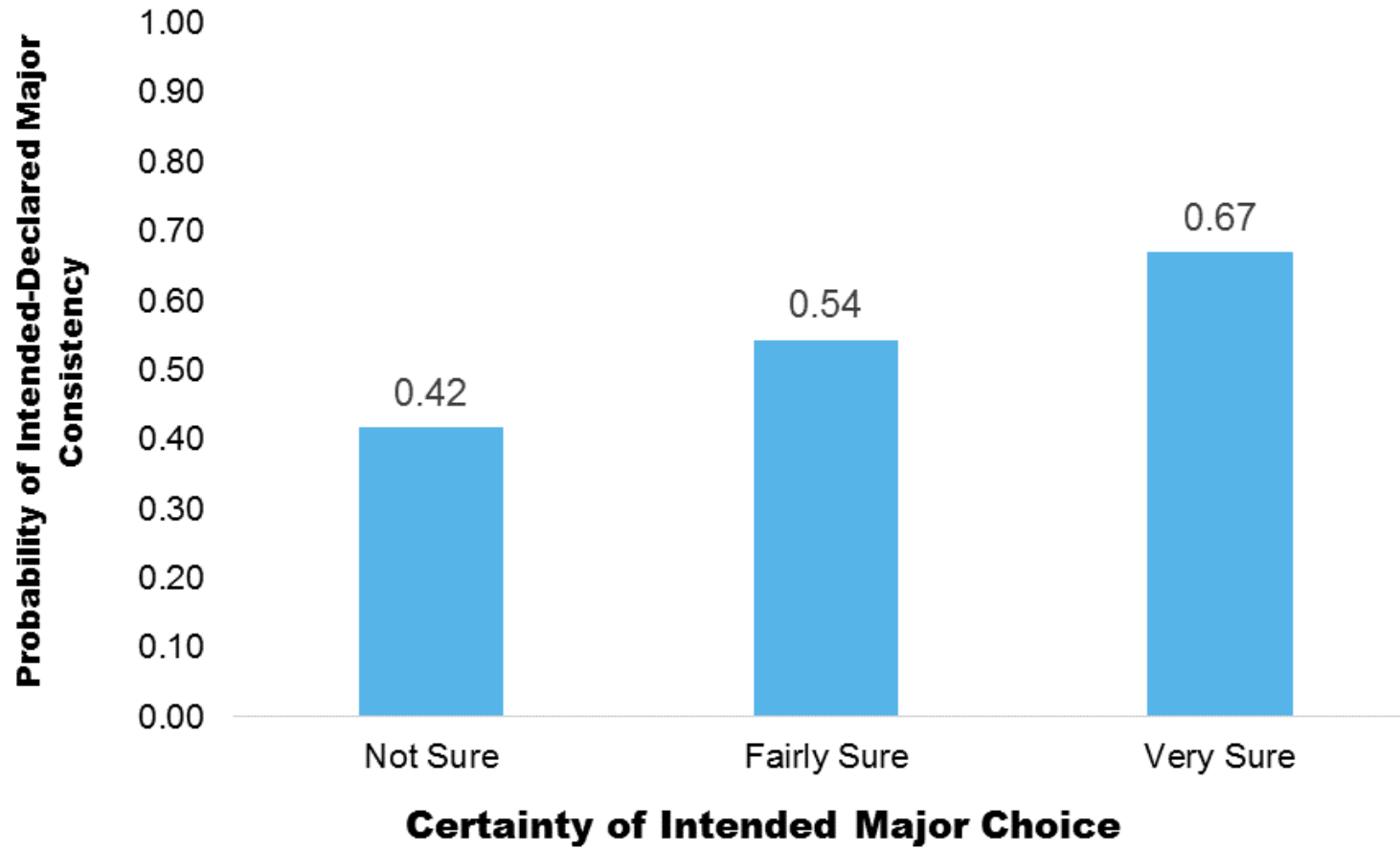
Outcome

- 294 intended majors
- 17 major areas
- Intended and declared major in same area

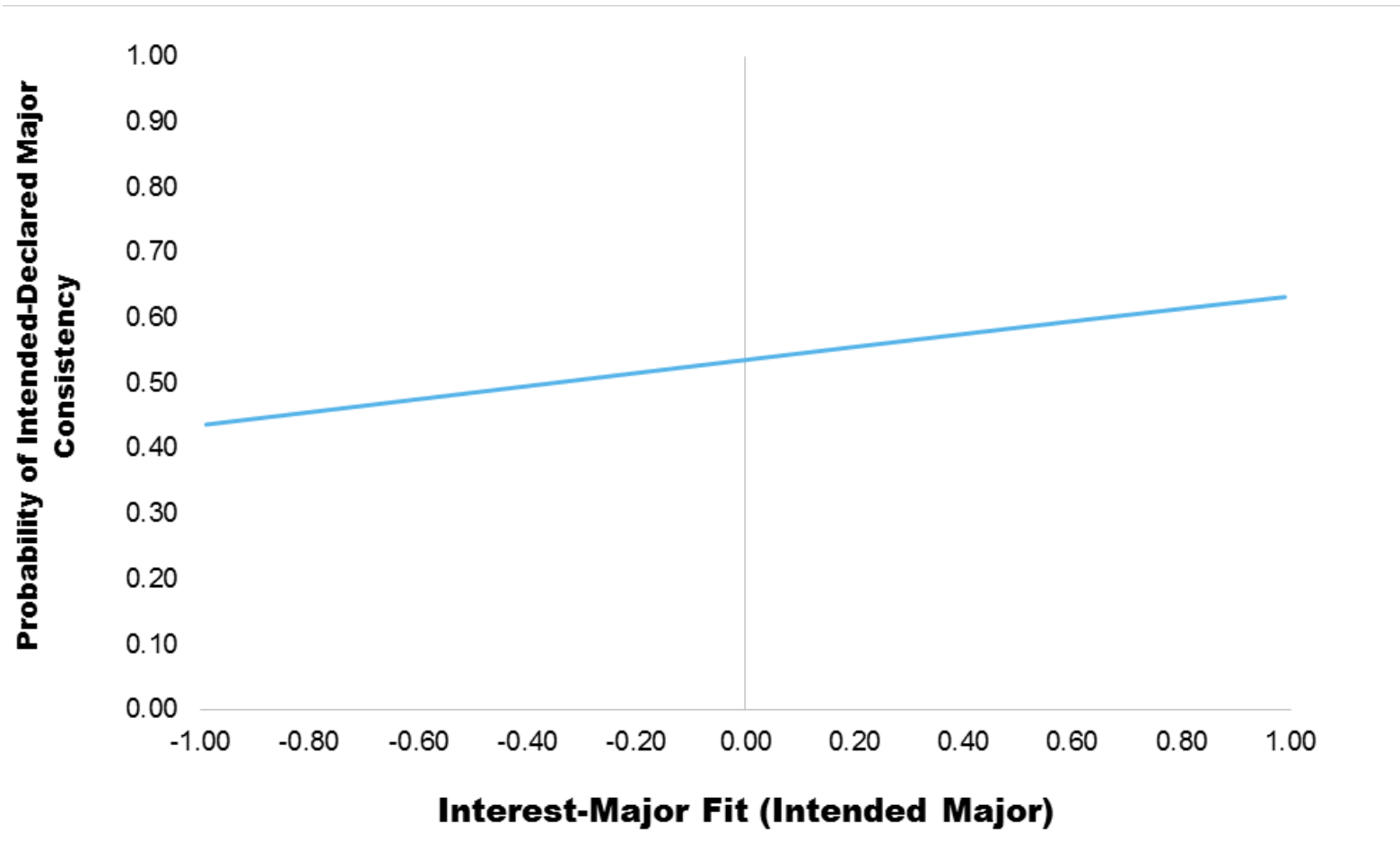
Model

- Logistic regression
- Statistical controls for gender, race/ethnicity, parents' education level, and major area

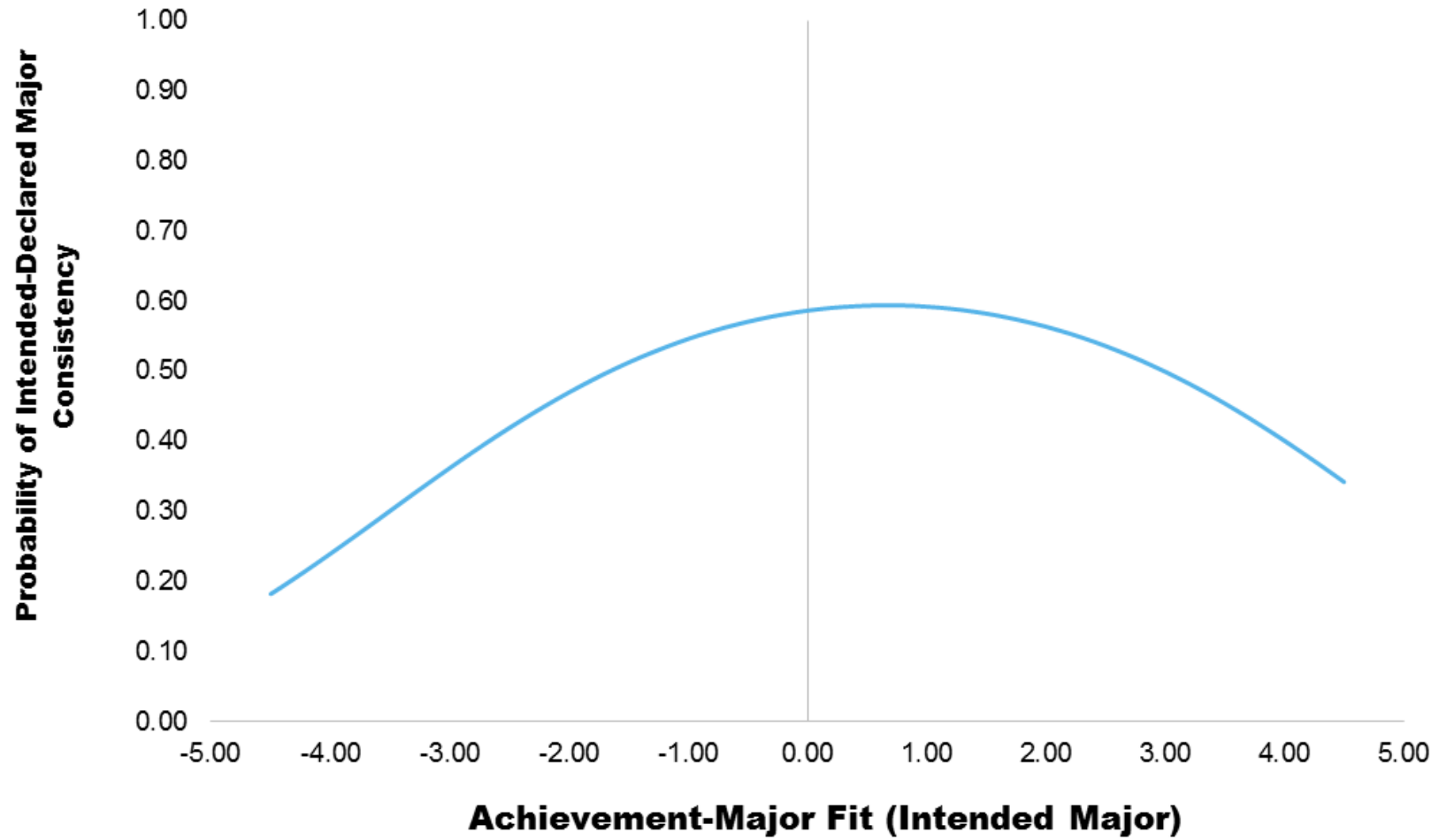
Results



Results



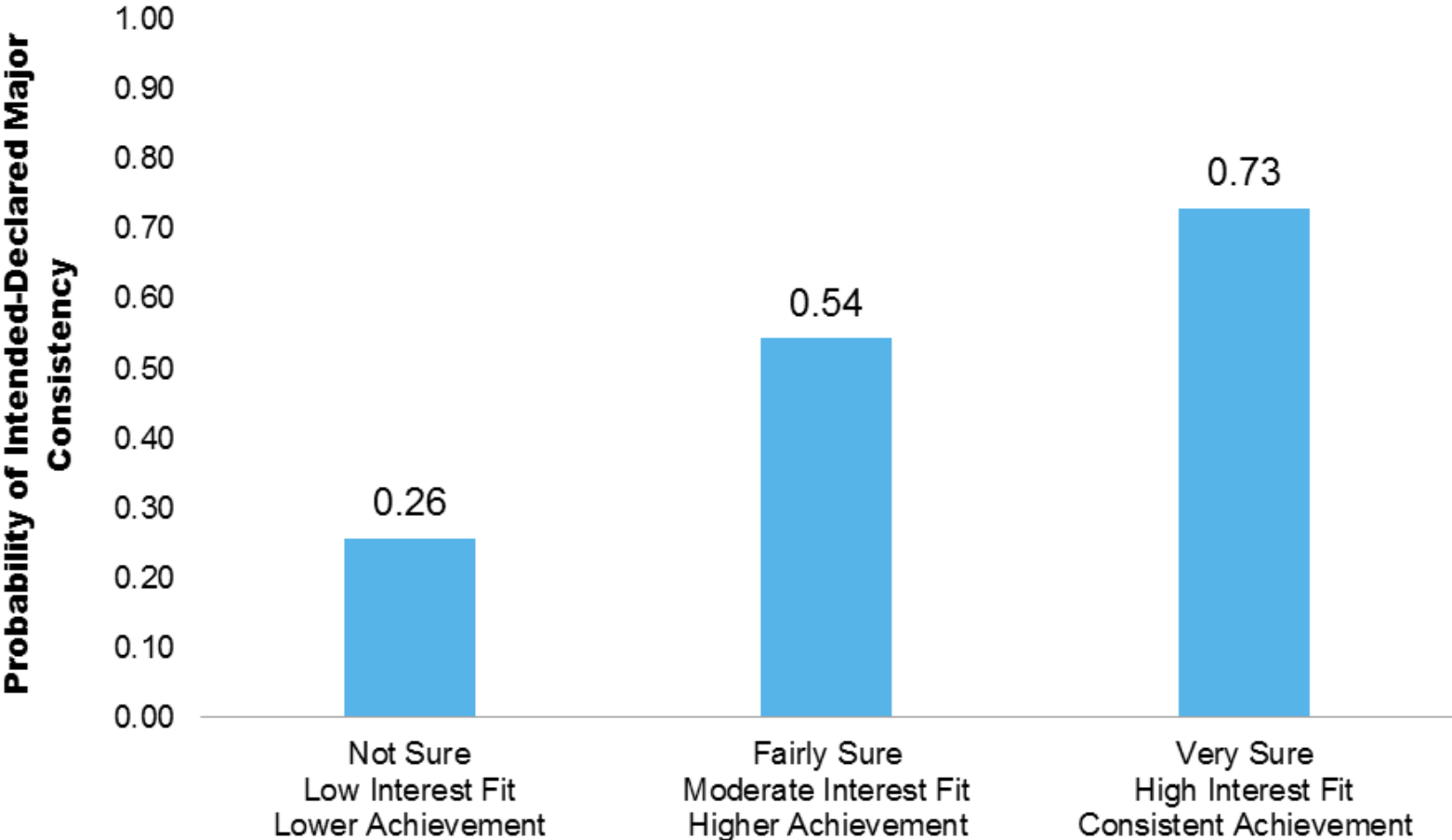
Results



Conclusions

- Intended major alone is a good indicator of declared major: 57% have consistency
- Knowing certainty of choice and fit with interest and achievement improves ability to predict declared major

The Value of Additional Information



Study implications

Planning for current/future demand

- Course scheduling/space allocation
- Staffing and teaching loads
- Revenues

Recruitment

- EOS criteria
- Expand pool based on interests
- Narrow pool based on achievement

Academic advising

- Interests
- Achievement

Research opportunities



Join **ACT** and other postsecondary institutions in one or more research opportunities:



NATIONAL ACT COLLEGE SUCCESS RESEARCH PARTNERSHIP

Collaborate on a broad research agenda related to student success and the use of ACT data.



ACT ENGLISH LANGUAGE ARTS (ELA) AND WRITING INITIATIVE

Examine relationships between scores and performance in postsecondary reading- and writing-intensive courses.



INTERNATIONAL STUDENT SUCCESS INITIATIVE

Examine relationships between ACT scores and first-year college performance for international students.



WORKKEYS/NCRC 2.0 EFFICACY STUDY

Examine relationships between ACT WorkKeys 2.0 scores and relevant performance outcomes (job performance ratings, productivity, grades, etc.).



TESSERA COLLEGE PILOT STUDY

Examine relationships between social and emotional skills and post-secondary academic achievement.

COLLABORATIVE RESEARCH PARTNERSHIP OPPORTUNITIES

Contact Lakisha Bates at Lakisha.Bates@act.org

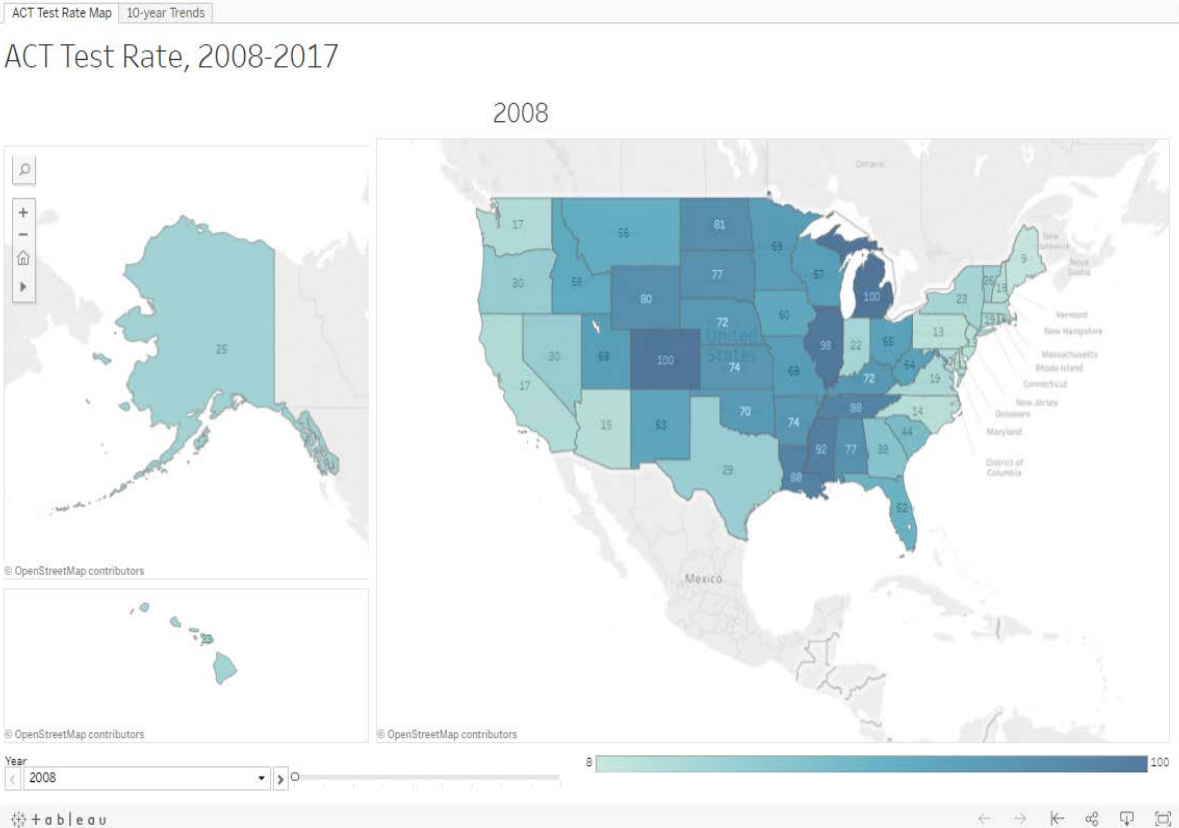
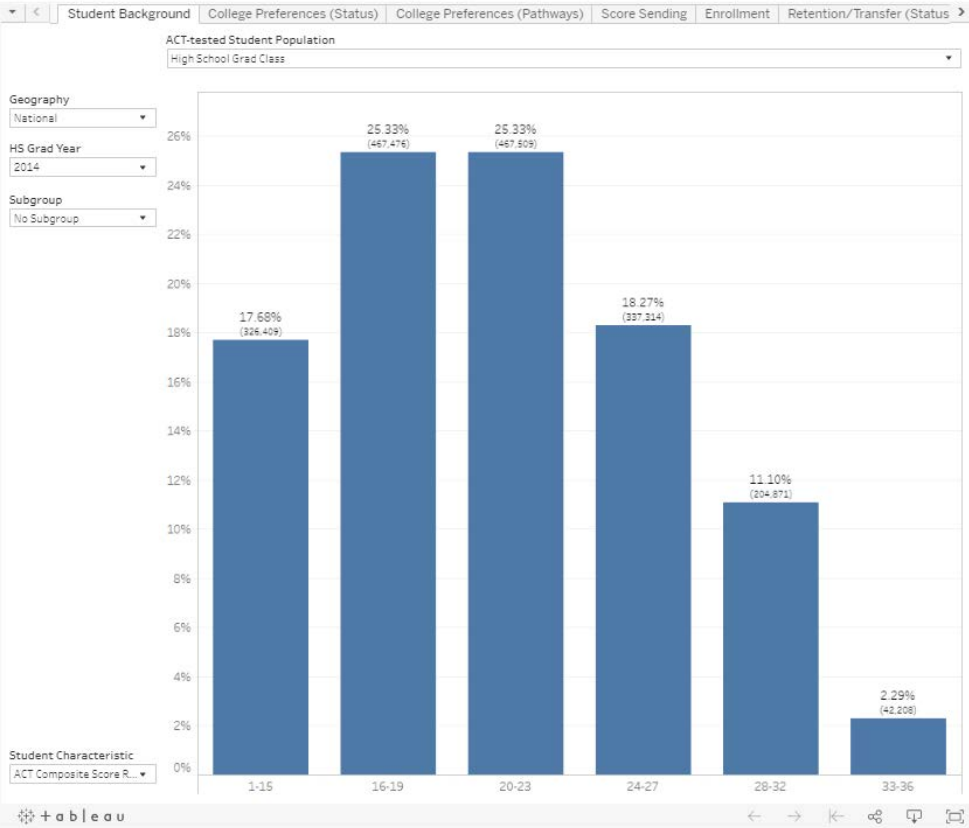




Enrollment Management Databases

Explore ACT data in three new databases designed to inform higher education recruitment, enrollment, and success strategies. User Guides for each of the three databases are linked below.

Demonstration of Enrollment Management and Ten-Year Trends Databases



Questions?